





OFFICIAL  
GAZETTE  
UNITED STATES  
PATENT OFFICE  
VOL. 865

AUGUST 1969

MICRO PHOTO DIVISION  
BELL & HOWELL COMPANY



U.S. DEPARTMENT OF COMMERCE  
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

August 5, 1969

Volume 865

Number 1

PATENTS  
NOTICES

Board of Appeals Decisions Rendered in the Month of  
June 1969

Examiner affirmed	185
Examiner affirmed in part	13
Examiner reversed	28
Total	226

Effect of Closing on July 21, 1969

In view of the fact that Federal Offices including the Patent Office were closed on July 21, 1969, the day proclaimed by President Nixon as a National Day of Participation, the Patent Office will consider Monday, July 21, 1969, a "holiday within the District of Columbia" under 35 USC 21. Any action due on that day is to be considered timely if taken on July 22, 1969.

July 22, 1969. WILLIAM E. SCHUYLER, JR.,  
Commissioner of Patents.

Availability of Certificates of Correction Forms

To facilitate the use of the new form PO-1050 (862 O.G. 2, May 6, 1969), practitioners may now obtain as many copies as desired from Correspondence and Mail Branch or the receptionist in Building 3, Crystal Plaza.

July 9, 1969. RICHARD A. WAHL,  
Assistant Commissioner.

Certificates of Correction for the Week of August 5, 1969

3,260,683	3,330,400	3,374,822
3,278,470	3,332,764	3,374,838
3,295,280	3,335,993	3,374,947
3,298,909	3,336,953	3,375,268
3,304,579	3,345,180	3,375,850
3,304,994	3,350,193	3,375,870
3,306,093	3,360,922	3,375,916
3,312,206	3,363,322	3,376,103
3,314,852	3,364,097	3,376,209
3,317,011	3,364,205	3,376,635
3,319,363	3,365,457	3,376,742
3,319,392	3,368,398	3,376,753
3,319,893	3,372,066	3,376,842
3,323,753	3,372,941	3,376,932
3,327,397	3,373,528	3,376,946
3,328,582	3,374,803	3,377,009

Foreign Patents Received in the Search Center as of  
June 30, 1969

Source	Date received	Highest number
Australia:		
(Abstracts)	June 16, 1969	52,308/68
(Patents)	June 19, 1969	287,588
Austria	May 26, 1969	269,750
Belgium	June 2, 1969	679,100
Canada	June 23, 1969	815,750
Czechoslovakia	June 23, 1969	129,250
Denmark:		
(Patents)	June 23, 1969	112,299
(Applications)	June 19, 1969	113,700
East Germany	June 27, 1969	67,081
Egypt	June 28, 1967	6,873
Finland:		
(Patents)	Apr. 7, 1969	37,180
(Applications)	Apr. 7, 1969	40,621
France:		
(Patents)	June 20, 1969	1,557,751
(Additions)	June 16, 1969	93,150
(Medicaments)	May 19, 1969	6,050
(Additions)	May 23, 1969	212 CAM
Germany:		
(Auslegeschriften)	May 20, 1969	1,283,170
(Offenlegungsschriften)	Feb. 3, 1969	1,424,800
(Patents)	May 20, 1969	1,267,156
Great Britain	June 25, 1969	1,153,900
India	Mar. 13, 1969	101,130
Ireland	June 19, 1969	28,311
Italy	Feb. 3, 1969	700,000
Japan	June 27, 1969	11,680
Korea	June 17, 1969	77/69
Netherlands:		
(Octrooiaanvragen)	Mar. 3, 1969	12,280/68
(Patents)	May 20, 1969	126,325
Norway:		
(Patents)	June 19, 1969	115,432
(Applications)	June 19, 1969	116,797
Pakistan	Mar. 3, 1964	112,446
Philippine Republic	Apr. 13, 1962	458
Poland	May 21, 1969	57,964
Rumania	Jan. 22, 1969	51,151
Rumania:		
(Patents)	June 27, 1969	309,000
(Applications)	June 27, 1969	310,810
Switzerland	June 16, 1969	470,827
U.S.S.R.	June 2, 1969	230,591

Australia: First 2,000 incomplete  
Belgium: First printed 493,079/1950  
Canada: First printed 445,931/1948  
Czechoslovakia: Not received between 81,300/1952 and 91,901/1959  
Finland: First printed 19,428/1941  
First 500 incomplete  
Hungary: First received 5,792/1896  
Latest 140,582/1951  
Ireland: First received 10,000/1929  
Italy: First 243,000 incomplete  
Rumania: First received 40,380/1957  
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958  
Yugoslavia: First received 10,001/1933  
Latest 16,461/1941

New Applications Received During June 1969

Patents	8843
Designs	562
Plant Patents	4
Reissues	46
Total	9455

Issue—August 5, 1969

Patents	1300—No. 3,458,863 to No. 3,460,162, incl.
Designs	37—No. 214,824 to No. 214,860, incl.
Plant Patents	2—No. 2,914 to No. 2,915, incl.
Total	1339



## Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 3,068,686, R. G. Harmon, VAPOR FRACTION ANALYSIS, decided Jan. 30, 1969, Interference No. 95,682, claims 1, 2, 7 and 8.

Patent No. 3,080,329, C. M. Barringer, POLYURETHANE CELLULAR MATERIALS, decided Feb. 17, 1969, Interference No. 95,290, claim 1.

Patent No. 3,129,218, J. Fried, T. B. Windholz and R. F. Hirschmann, 2-ALKOXYMETHYLENE STEROIDS OF THE ANDROSTANE AND PREGNANE SERIES, decided May 6, 1969, Interference No. 96,291, claim 1.

Patent No. 3,142,768, M. M. Kaufman, UNIDIRECTIONAL TUNNEL DIODE PULSE CIRCUITS, decided Feb. 10, 1969, Interference No. 95,800, claims 1, 2, 4 to 7, 9 to 11 and 13 to 15.

Patent No. 3,166,636, D. F. Rutland, B. F. Ambrosio and R. Turn, DATA COMPOSER, decided Dec. 19, 1968, Interference No. 95,614, claims 7 and 10.

Patent No. 3,189,544, H. Ratner and R. F. Bergstrom, NON-ASH-CONTAINING LUBRICATING OIL COMPOSITION, decided Jan. 30, 1969, Interference No. 95,732, claims 1, 3, 10 and 11.

Patent No. 3,235,144, R. A. Pitkin and S. T. Beale, MEASURING DISPENSER FOR CONTAINERS, decided Jan. 30, 1969, Interference No. 95,824, claims 1, 2, 4 and 5.

Patent No. 3,236,919, K. Szabo and J. G. Brady, BISORGANOPHOSPHORUS ESTERS, decided June 12, 1969, Interference No. 96,325, claim 3.

Patent No. 3,361,659, B. I. Bertelsen, PROCESS OF DEPOSITING THIN FILMS BY CATHODE SPUTTERING USING A CONTROLLED GRID, decided May 29, 1969, Interference No. 96,354, claims 1 and 5.

## PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

## CONDITION OF PATENT APPLICATIONS AS OF JULY 14, 1969

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
*Denotes oldest new application.	
<b>CHEMICAL EXAMINING GROUPS</b>	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director..... Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-03-67
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director..... Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Pesticides; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	*11-29-66
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—L. J. BERCOVITZ, Director..... Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	2-07-67
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director..... Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	1-03-67
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director..... Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	1-19-67
<b>ELECTRICAL EXAMINING GROUPS</b>	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director..... Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	1-02-68
SECURITY, GROUP 220—S. BOYD, Director..... Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	*10-31-66
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director..... Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	1-03-67
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director..... Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	5-31-67
PHYSICS, GROUP 280—R. L. EVANS, Director..... Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	8-30-67
DESIGNS, GROUP 290—S. BOYD, Director..... Industrial Arts; Household, Personal and Fine Arts.	11-19-68
<b>MECHANICAL EXAMINING GROUPS</b>	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director..... Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	4-01-69
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director..... Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*12-01-67
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director..... Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletary; Printing; Typewriters; Stationery; Information Dissemination.	1-02-68
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director..... Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	6-21-68
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director..... Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	4-17-68
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director..... Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	1-12-68
Total number of pending applications (excluding Designs).....	185,509
Total number of Design applications pending.....	2,899

Expiration of patents: The patents within the range of numbers indicated below expire during July 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 859, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents..... Numbers 2,601,679 to 2,605,465, inclusive  
Plant Patents..... Numbers 1,110 to 1,116, inclusive



# DECISIONS IN PATENT AND TRADEMARK CASES

## U.S. Court of Customs and Patent Appeals

IN RE NOEL F. HAMILTON

No. 8069. Decided January 9, 1969

[56 CCPA —; 404 F.2d 1388; 160 USPQ 199]

### 1. PATENTABILITY—OBVIOUSNESS—OMISSION OF FEATURE AND ITS FUNCTION.

"All of the disclosures in a reference must be evaluated for what they fairly teach one of ordinary skill in the art. *In re Boe*, 53 CCPA 1079, 355 F.2d 961, 148 USPQ 507; see also *In re Hessel*, 53 CCPA 756, 353 F.2d 244, 147 USPQ 491. Since Potter points out that large, persistent and readily detachable bubbles are required for his purpose, it seems to us that the reference can be fairly construed as teaching that when such an advantage is not desired 'solutions of any of the said ingredients individually' would be adequate for the purpose of detecting leaks and the multi-ingredient composition of Potter would not be required. The alkyl aryl sulfonate, dodecyl benzene sodium sulfonate, it is noted, is a major ingredient in Potter's composition. While La Vietes adds a gum to the composition to obtain a particular bubble effect, the teaching that a solution of wetting agent such as sodium alkyl aryl sulfonate and water alone will form bubbles is clear. We agree with the Board that, in view of these teachings, 'it would be quite obvious in the Potter method to employ a simplified bubble forming composition where the additional properties are not required.'"

### 2. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—REASONS OF APPEAL—AFFIDAVIT NOT CONSIDERED BY THE BOARD.

"\* \* \* appellant urges that the Board erred in refusing to consider commercial success as demonstrated by the affidavit. We note that no reason of appeal specifically raises the issue nor has clear error on the part of the Board been shown. Since the affidavit was not considered by the Board, it will not be considered here. *In re Pantzer*, 52 CCPA 1135, 341 F.2d 121, 144 USPQ 415."

### 3. PATENTABILITY—PARTICULAR SUBJECT MATTER—"METHOD OF DETECTING LEAKS AND A COMPOSITION THEREFOR."

The refusal of certain claims in an application entitled "Method of Detecting Leaks and a Composition Therefor," as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 394,353.

AFFIRMED.

Fay, Sharpe and Mulholland, Thomas D. Shaffner for appellant.  
Joseph Schimmel (Joseph Nakamura, of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, RICH and ALMOND, Associate Judges  
ALMOND, J., delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of claims 1, 2 and 3, the only claims in appellant's application entitled "Method of Detecting Leaks and a Composition Therefor."<sup>1</sup>

The invention resides in a method of detecting leaks in pressurized fluid systems and specifically in applying to the area to be tested a foam-forming composition of a particular sulfonate in specific concentrations in distilled water. The majority of liquid and gas line systems are checked for leaks that may exist due to faulty joints or the like. Appellant proposes to conduct these checks by applying a film of the leak detecting composition of the invention over the area of suspected

<sup>1</sup> Serial No. 394,353, filed September 3, 1964.

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leaking. Detection of leaks, if they exist, is rendered possible by the formation of small bubbles, or foaming due to the escaping gas. This bubbling action or foaming is initiated by the smallest seepage of gas and will continue over a long period of time, permitting visual location of the leak.

The present invention provides a composition which allegedly avoids the use of expensive and bulky materials previously used in detecting leaks. The liquid composition used here is noncorrosive to metal, dries clean and leaves no stains or residue on which dust would ordinarily collect.

Claim 1 is illustrative:

1. A method of detecting gas leaks which comprises applying effecting amounts of a foam-forming composition over the outer area of the suspected leak, said composition consisting essentially of distilled water and from about 0.1 to 1.2 percent by weight of a sulfonate characterized by the formula  $R_1-SO_3M$  in said water, wherein  $R_1$  is an organic radical having 5 to 22 carbon atoms per molecule and being selected from the group consisting of alkyl, aryl, aralkyl, and alkyl aryl radicals, and M is a metal selected from the group consisting of alkali and alkaline earth metals.

Claims 2 and 3, also method claims, are narrower than claim 1 in that they are restricted to the preferred alkyl aryl sulfonates and claim 2 further limits the concentration range to 0.5 to 1.0 percent while claim 3 recites a concentration of approximately 0.6 percent. The proportions of the sulfonate are disclosed as being critical only in that less than 0.1 percent of sulfonate failed to lower the surface tension of the water and thus failed to make the water sensitive to foaming while concentrations higher than 1.2 percent failed to go into solution and consequently were precipitated. The references relied upon are:

La Vietes, 2,469,045, May 3, 1949.

Potter, 2,665,257, Jan. 5, 1954.

"Water," National Association Institute of Dyeing and Cleaning, Inc., Silver Spring, Md., Bulletin Service No. 147, Apr. 11, 1944.

Potter discloses a method of detecting gas leaks by applying a bubble-forming composition on the surface of parts to be tested. The bubble-forming composition is a liquid prepared by adding 2 oz. of a mixture of solid ingredients to a gallon of water. The mixture of solid ingredients comprises as a major ingredient a sodium alkyl aryl sulfonate, the active constituent of which is dodecyl benzene sodium sulfonate, to which is added, in varying proportions, a mixture of alkyl sulfonate or a sulfated alcohol such as lauryl sodium sulfate and sodium benzoate or magnesium carbonate; defatted soy bean flour; sodium carboxymethylcellulose; and sodium sulfite. Whether or not the water is chemically pure is disclosed as being substantially immaterial and the use of hard or soft water, as well as sea water, is taught.

The patentee states that when water is added, some undetermined chemical reaction "is believed to occur although its nature has not been precisely determined," and that the resulting liquid "forms larger and more persistent bubbles, forms them more readily and they separate more readily from the surface on which they are formed as compared with \* \* \* solutions of any of the said ingredients individually \* \* \*."

La Vietes discloses the use of sodium alkyl aryl sulfonate as the wetting agent in a bubble-forming composition. The composition con-



sists of a solution of a wetting agent in water containing a water-soluble gum. The wetting agent is disclosed as having the function of producing the bubbles in cooperation with the water while the gum is the material which provides a desired parachute effect formed upon collapse of the bubble in order to permit it to settle downwardly relatively slowly.

The "Water" bulletin discloses that suds form more easily and with less soap with soft water than with hard water and that the former is obtainable from the latter by distillation.

The Examiner rejected the claims as being obvious over Potter in view of La Vietes and the "Water" article under 35 U.S.C. 103. The basis of the rejection was stated as follows:

Potter discloses a leak detecting composition and method of use. The composition contains water (can be soft) and an alkyl aryl sulfonate and detects leaks by foaming. La Vietes' patent discloses a foam producing composition. The composition employed is an alkyl aryl sulfonate as the foam producing ingredient. It would not involve invention to use the composition of La Vietes in the leak detecting method disclosed by Potter. The use of distilled water in the instant composition is of no patentable moment since it is known that foams form easier and in larger quantities when softer water is used.

The Board affirmed the rejection and responded to appellant's arguments as to the possibility of a chemical reaction occurring in Potter by stating that "[We] do not find that this disclosure renders unobvious the employment of the simpler water-sulfonate bubble forming materials known to the art for this purpose." The Board agreed with the Examiner's position as to the claimed use of distilled water and further pointed out disclosure in the Potter patent that "substantially meets appellant's contribution," and stated that the Potter patent, "if it does not fully meet appellant's claims (35 U.S.C. 102), clearly renders obvious the claimed composition in the disclosure \* \* \* that solutions of any of the ingredients *individually* can be used in the disclosed process \* \* \*"

Appellant requested reconsideration of the question of obviousness and submitted an affidavit to show commercial success of the product used in the claimed method. The Board denied the request and refused to consider the affidavit on the ground that it was not timely presented.

Appellant takes the position that the rejections amount to hindsight reconstruction of the prior art without any factual basis therefor, except his own disclosures, and further that the prior art involved actually teaches against the proposed modification.

The Potter reference, appellant contends, with its disclosure of an aqueous six-constituent, multi-phase, apparently reactive, heterogeneous suspension, which contains a bubble-forming material, fails to teach appellant's single phase unreactive homogenous solution consisting essentially of a specific concentration of a certain foam-forming material in distilled water. Potter, it is argued, teaches that each of his constituents is necessary and that they undergo a reaction and further that it is substantially immaterial whether or not the water employed is chemically pure.

Appellant submits that La Vietes and the "Water" article may not properly be substituted into the modified method of Potter since La Vietes is directed merely to a bubble-forming composition, used as a toy, which contains ingredients in addition to alkyl aryl sulfonate and the "Water" article describes soft water only, not pure water.

We cannot accept appellant's argument. [1] All of the disclosures in a reference must be evaluated for what they fairly teach one of

ordinary skill in the art. *In re Boe*, 53 CCPA 1079, 355 F.2d 961, 148 USPQ 507; see also *In re Hessel*, 53 CCPA 756, 353 F.2d 244, 147 USPQ 491. Since Potter points out that large, persistent and readily detachable bubbles are required for his purpose, it seems to us that the reference can be fairly construed as teaching that when such an advantage is not desired "solutions of any of the said ingredients individually" would be adequate for the purpose of detecting leaks and the multi-ingredient composition of Potter would not be required. The alkyl aryl sulfonate, dodecyl benzene sodium sulfonate, it is noted, is a major ingredient in Potter's composition. While La Vietes adds a gum to the composition to obtain a particular bubble effect, the teaching that a solution of wetting agent such as sodium alkyl aryl sulfonate and water alone will form bubbles is clear. We agree with the Board that, in view of these teachings, "it would be quite obvious in the Potter method to employ a simplified bubble forming composition where the additional properties are not required."

Appellant further argues that the use of distilled water would not be obvious. We have reviewed the Potter and "Water" references and find therein disclosed sufficient teaching to make one skilled in the art aware of the fact that distilled water is preferable for effective formation of bubbles.

[2] Finally, appellant urges that the Board erred in refusing to consider commercial success as demonstrated by the affidavit. We note that no reason of appeal specifically raises the issue nor has clear error on the part of the Board been shown. Since the affidavit was not considered by the Board, it will not be considered here. *In re Pantzer*, 52 CCPA 1135, 341 F.2d 121, 144 USPQ 415.

We have considered appellant's arguments and the cases cited in support thereof, however we are not convinced that the rejection of claims 1-3 as unpatentable over Potter in view of La Vietes and the "Water" articles is in error. The view we take renders it unnecessary to consider the Board's discussion of Potter alone.

[3] The decision is affirmed.

**AFFIRMED.**

BALDWIN, J., took no part in the consideration or decision of this case.

### U.S. Court of Customs and Patent Appeals

BLANCHARD IMPORTING & DISTRIBUTING CO., INC. v. SOCIÉTÉ E. BLANCHARD ET FILS

No. 8009. Decided November 14, 1968

[56 CCPA —; 402 F.2d 797; 159 USPQ 520]

#### 1. TRADEMARK—MOTION FOR SUMMARY JUDGMENT—CANCELLATION.

*Held*, in a trademark cancellation proceeding, "That summary judgment may be appropriate in trademark matters was recognized by this court in *Old Grantian Company Limited v. William Grant & Sons Limited*, 53 CCPA 1257, 361 F.2d 1018, 150 USPQ 58."

#### 2. SAME—SAME—SAME—PRIOR CIVIL ACTION BETWEEN THE PARTIES.

"Appellant sets forth several reasons for its contention that the Board erred in granting appellee's motion [for summary judgment in a trademark cancellation proceeding based on a prior decision in a civil action between the parties]. We disagree with appellant that the motion for summary judgment was untimely and that the Board should have decided the case on the merits. The appellee promptly filed its motion eight days after the Supreme Court denied appellant's petition for certiorari, thus making the Court of Appeals decision final. We also disagree with appellant's argument that this court



should disregard the conclusion of the Court of Appeals because the latter ignored the district court's findings and made new and different ones of its own. Appellant's argument that the opinion of the Court of Appeals was erroneous appears to be nothing more than an attempt to relitigate issues which have been finally adjudicated. The effect of the Court of Appeals decision was to reverse the findings of the district court which were inconsistent therewith. It is sufficient, for the purposes of the view we take regarding this case, that we interpret the Court of Appeals decision as finding that the appellee used the label Blanchard in commerce prior to appellant's use."

3. SAME—CANCELLATION—SUPPLEMENTAL REGISTER—TRADEMARK ACT OF 1946, SECTION 24.

"We turn to the question, one of law, of the nature of an action to cancel a Supplemental Register registration. Such an action is specifically governed by section 24, Trademark Act of 1946 (15 U.S.C. 1092) which gives any person who 'believes that he is or will be damaged by the registration of a mark on this [supplemental] register,' the right to apply to the Commissioner to cancel such registration. The quoted language is substantially identical to that which appears in section 14 of the Trademark Act of 1946 (15 U.S.C. 1064), which applies to cancellation of Principal Register registrations."

4. SAME—SAME—PRIOR USE OF NAME NOT TECHNICALLY A TRADEMARK—TRADEMARK ACT OF 1946, SECTION 14.

"Appellant does not controvert the proposition that prior use of a name which is not technically a trademark may be sufficient to show probable damage under section 14 of the act so as to enable such prior user to successfully cancel a Principal Register registration. *California Piece Dye Works v. California Hand Print, Inc.*, 34 CCPA 907, 159 F.2d 871, 72 USPQ 505."

5. SAME—SAME—SUPPLEMENTARY REGISTER—LIKELIHOOD OF CONFUSION AND PRIOR USE—PRIOR CIVIL ACTION BETWEEN THE PARTIES.

"We find nothing in the statute which indicates that it contemplates a greater showing of damage under the present circumstances [application for the Supplemental Register] than when a petition to cancel a registration on the Principal Register is involved. We are in agreement with the Board that the averments here of likelihood of confusion and priority of use apply equally as a basis for the cancellation of a registration on the Supplemental Register as on the Principal Register. In view of the fact that the issues of likelihood of confusion and priority of use were finally determined in the civil action involving the parties, there remains here no genuine issue as to any material fact and, therefore, summary judgment is proper."

Harold E. Cole for appellant.

Edward F. Levy for appellee.

Before WORLEY, Chief Judge, RICH, SMITH, ALMOND and BALDWIN, Associate Judges

ALMOND, J., delivered the opinion of the court.

This is an appeal by registrant-respondent Blanchard Importing & Distributing Co., Inc. from a decision of the Trademark Trial and Appeal board granting the motion for summary judgment of cancellation filed by petitioner Societe E. Blanchard et Fils.

The facts of record are as follows: Appellee-petitioner filed a petition to cancel appellant-respondent's Supplemental Register registration<sup>1</sup> of "Blanchard" for wines and champagne. The petition for cancellation, filed September 22, 1964, alleged, inter alia, as grounds for cancellation that appellee through its predecessor has been a producer and bottler of wines in France since the year 1918 and has since that time sold its products under the designation Blanchard alone and under such other designations as "Emile Blanchard," "E. Blanchard et Fils," and "Domaine Blanchard"; that appellee has sold its wines under the aforesaid designations in interstate commerce in the United States and in foreign commerce with the United States since 1933

<sup>1</sup> Reg. No. 748,258 issued April 16, 1963.

through its predecessor-in-interest and since 1957 in its own name; that appellee is the prior user of the term Blanchard as applied to wines; that appellee's application to register the marks Domaine Blanchard and E. Blanchard et Fils on the Principal Register was refused in view of appellant's registration; that in view of the foregoing and the fact that the marks of the parties as applied to the goods are confusingly similar, appellee is damaged by the continued existence of appellant's registration. After testimony taken by both parties, appellant requested and obtained from the Board a stay, postponing the filing of its brief until the final outcome of a civil action between the parties instituted prior to the issuance of the registration here involved. Shortly after the decision in the civil action became final, appellee filed a motion for summary judgment based on the contention that all of the facts and issues involved in the cancellation proceeding were finally adjudicated and determined in the civil action between the parties.

The civil action between the parties came before the United States District Court for the District of Massachusetts. Appellant, as plaintiff, sought recovery for infringement of three Principal Register registrations owned by it covering the marks Blanchard's 777 for blended whiskey,<sup>2</sup> Blanchard's 874 for blended whiskey,<sup>3</sup> and Blanchard's Hawaiian Cruise for vodka mix.<sup>4</sup> Appellee counterclaimed for cancellation of the three registrations, asserting that it was the prior user of the term Blanchard.

The district court found that the evidence did not establish any use of the name Blanchard by E. Blanchard et Fils as a trademark prior to Blanchard Importing & Distributing Co.'s first use in commerce of the word Blanchard, and enjoined E. Blanchard et Fils from further use of labels bearing that name alone within the State of Massachusetts. The court, however, ordered the appellant's three registrations cancelled on the ground that the marks thereof were primarily surnames. *Blanchard & Co. v. Charles Gilman & Son*, 239 F. Supp. 827, 145 USPQ 62.

Blanchard Importing & Distributing Co. appealed from the district court decision ordering cancellation of its three registrations. The United States Court of Appeals for the First Circuit affirmed the district court order, but upon different grounds. The court first held that Societe E. Blanchard et Fils established priority by its use in interstate commerce of the trademark Domaine Blanchard prior to the appellant's first use of the mark in commerce. The appellant petitioned for reconsideration on the ground that prior use of any kind is the controlling factor with regard to right of registration and that the appellant was the first to use Blanchard intrastate and before it was used by Societe E. Blanchard anywhere as a trademark. In response the Court of Appeals handed down a revised opinion sustaining the order cancelling the trademark registration on the ground that Societe E. Blanchard's prior use of the term Blanchard rendered the registrations invalid. *Blanchard Importing & Distributing Co. v. Charles Gilman & Son*, 353 F.2d 400, 147 USPQ 263. Appellant's petition to the Supreme Court for a writ of certiorari was denied (383 U.S. 968, 149 USPQ 905).

<sup>2</sup> Reg. No. 734,309, issued July 10, 1962, canceled.  
<sup>3</sup> Reg. No. 738,341, issued September 25, 1962, cancelled.  
<sup>4</sup> Reg. No. 740,323, issued November 6, 1962, cancelled.



The Trademark Trial and Appeal Board, in granting appellee's motion for summary judgment, stated:

Petitioner has predicated its claim of damage on an assertion of likelihood of confusion and priority of use, and such averments apply equally as a basis for the cancellation of a registration on the Supplemental Register as on the Principal Register. In respect to these questions, attention is directed to the revised opinion of the United States Court of Appeals of the First Circuit wherein the court held as follows:

"We shall not concern ourselves here with the question of whether plaintiff's trademarks consist of a mark which is primarily a surname. Rather, we prefer to sustain the order cancelling the trademark registrations on the ground that defendants' prior use of the term 'Blanchard' rendered these registrations invalid.

"As between conflicting claimants, it is well settled that the right to use the same mark is based on priority of appropriation. *Columbia Mill Co. v. Alcorn*, 150 U.S. 460 (1893); *American Foods, Inc. v. Golden Flake, Inc.*, 312 F.2d 619, 625 (5th Cir. 1963), and that prior use of a trademark is a valid ground for cancellation. *California Piece Dye Works v. California Hand Prints*, 159 F.2d 871 (CCPA 1947).

"From the record, it appears that the defendants used the label 'Blanchard' in commerce prior to plaintiff's use. However, the district court in declining to base its order of cancellation on prior use, found that the defendants did not use this label as a technical trademark.

"There is ample authority for the proposition that the right to cancellation is not limited to those who have made prior use of the term as a technical trademark. Any prior use of a name or word is sufficient to warrant cancellation on the ground that the prior user is injured by such registration. *California Piece [Dye] Works v. California Hand Prints*, supra; *Bellbrook Dairies v. Hawthorn-Melody Farms Dairy*, 253 F.2d 431 (CCPA 1958); *Krank v. Philippe*, 295 F. 1001 (D.C. Cir. 1924); *Lever Bros. Co. v. Nobio Products*, 103 F.2d 917 (CCPA 1939); *Bellbrook Dairies v. Bowman Dairy Co.*, 273 F.2d 620, 623 (CCPA 1960)."

It is abundantly clear from the foregoing that the issues of likelihood of confusion and priority of use were finally determined in the civil action involving the parties and are in all respects controlling in the instant proceeding. That is to say, if respondent could not maintain its registrations on the Principal Register, all three of which issued prior to the issuance of the one on the Supplemental Register, respondent cannot, in view of the express language of the court, maintain the supplement registration.

Appellant's petition for reconsideration was denied and an appeal to this court was taken.

We are governed here by rule 56 of the Federal Rules of Civil Procedure (see Rule 2.117, Trademark Rules of Practice), which provides, in pertinent part, as follows:

Rule 56. *Summary Judgment.*

\* \* \* \* \*

(c) Motion and Proceedings Thereon. \* \* \* [Summary judgment] shall be rendered forthwith if the pleadings, depositions, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law. \* \* \*

[1] That summary judgment may be appropriate in trademark matters was recognized by this court in *Old Grantian Company Limited v. William Grant & Sons Limited*, 53 CCPA 1257, 361 F.2d 1018, 150 USPQ 58.

[2] Appellant sets forth several reasons for its contention that the Board erred in granting appellee's motion. We disagree with appellant that the motion for summary judgment was untimely and that the Board should have decided the case on the merits. The appellee promptly filed its motion eight days after the Supreme Court denied

appellant's petition for certiorari, thus making the Court of Appeals decision final. We also disagree with appellant's argument that this court should disregard the conclusion of the Court of Appeals because the latter ignored the district court's findings and made new and different ones of its own. Appellant's argument that the opinion of the Court of Appeals was erroneous appears to be nothing more than an attempt to relitigate issues which have been finally adjudicated. The effect of the Court of Appeals decision was to reverse the findings of the district court which were inconsistent therewith. It is sufficient, for the purposes of the view we take regarding this case, that we interpret the Court of Appeals decision as finding that the appellee used the label Blanchard in commerce prior to appellant's use.

The principal issue for determination is that raised by appellant's contention that in view of the legal nature of a Supplemental Register registration, the appellant is not damaged because of the registration in issue and since registrations on the Supplemental Register are not to be treated as though they were on the Principal Register, the determination in the civil action ordering cancellation of registrations on the Principal Register is not binding in respect to the issues involved in the proceeding for cancellation of a Supplemental Register registration.

We do not interpret appellant's position to be in disagreement with the view that, except for the fact that the registration in controversy here is on the Supplemental Register, the Court of Appeals decision in the civil action, if free of error, would be determinative of the factual issues involved herein. That is, the marks involved, as well as the material facts and exhibits, are substantially the same.

[3] We turn to the question, one of law, of the nature of an action to cancel a Supplemental Register registration. Such an action is specifically governed by section 24, Trademark Act of 1946 (15 U.S.C. 1092) which gives any person who "believes that he is or will be damaged by the registration of a mark on this [supplemental] register," the right to apply to the Commissioner to cancel such registration. The quoted language is substantially identical to that which appears in section 14 of the Trademark Act of 1946 (15 U.S.C. 1064), which applies to cancellation of Principal Register registrations.

[4] Appellant does not controvert the proposition that prior use of a name which is not technically a trademark may be sufficient to show probable damage under section 14 of the act so as to enable such prior user to successfully cancel a Principal Register registration. *California Piece Dye Works v. California Hand Print, Inc.*, 34 CCPA 907, 159 F.2d 871, 72 USPQ 505.

In *Bellbrook Dairies, Inc. v. Bowman Dairy Company*, 47 CCPA 761, 273 F.2d 620, 124 USPQ 316, a case dealing with a petition for cancellation from the Supplemental Register, this court said:

As a prerequisite to the prosecution of this action, section 24 requires that the petitioner believes "that he is or will be damaged by the registration of a mark on this register \* \* \*." The matter was considered by the court in the "Vitalism" case and we agree with its holding in this connection wherein it was said, "Likelihood of confusion affords sufficient evidence of probable damage, even though the opposer may not have used its mark as a technical trademark."

See also *Clairol, Incorporated v. Roux Distributing Co.*, 47 CCPA 1165, 280 F.2d 863, 126 USPQ 397, and *Cummins Engine Co. v. Continental Motors Corp.*, 53 CCPA 1167, 359 F.2d 892, 149 USPQ 559,



wherein petitions to cancel registrations on the Supplemental Register on the basis of prior use not as a technical trademark were sustained.

[5] We find nothing in the statute which indicates that it contemplates a greater showing of damage under the present circumstances than when a petition to cancel a registration on the Principal Register is involved. We are in agreement with the Board that the averments here of likelihood of confusion and priority of use apply equally as a basis for the cancellation of a registration on the Supplemental Register as on the Principal Register. In view of the fact that the issues of likelihood of confusion and priority of use were finally determined in the civil action involving the parties, there remains here no genuine issue as to any material fact and, therefore, summary judgment is proper.

The decision is affirmed.

**AFFIRMED.**

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3,191,423. (See 3,117,473.)

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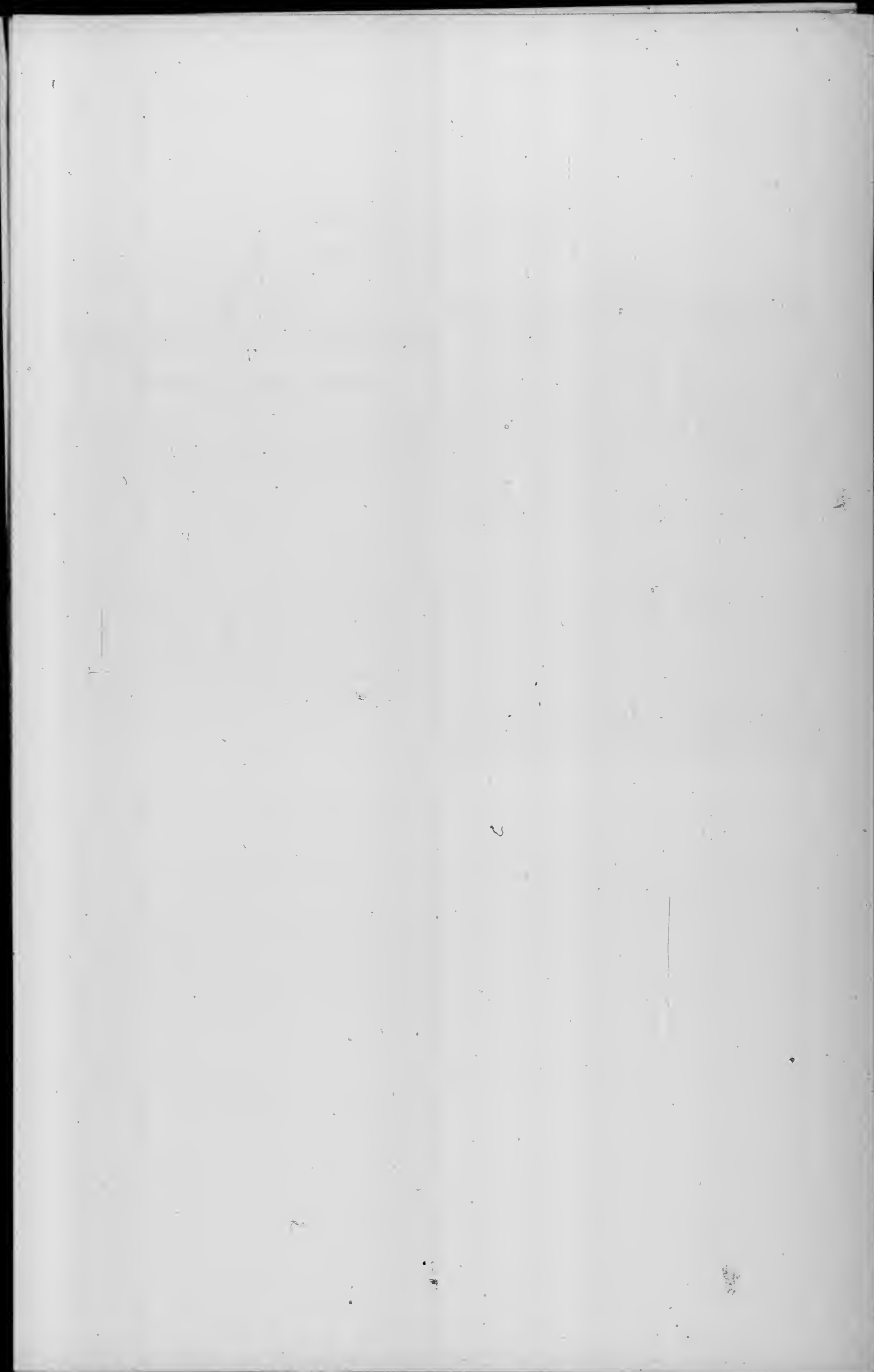
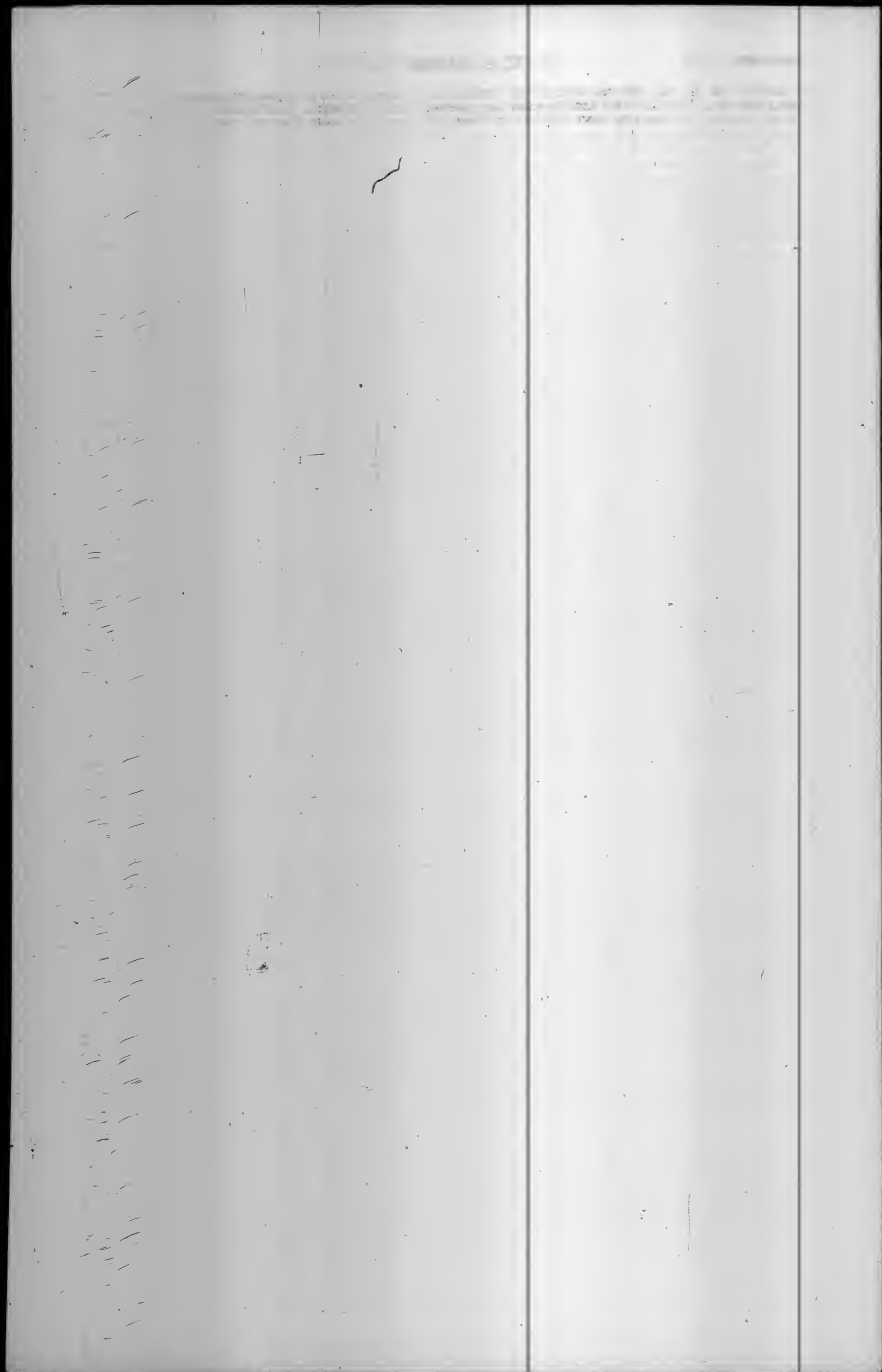
3,349,285. (See 3,129,432.)

3,413,177. (See 3,257,253.)

3,416,983. (See 3,257,253.)

3,436,357. (See 3,210,267.)





## PLANT PATENTS

GRANTED AUGUST 5, 1969

2,914

### ROSE PLANT

David L. Armstrong, Ontario, Calif., assignor to Armstrong Nurseries, Inc., Ontario, Calif., a corporation of California

Filed Dec. 13, 1967, Ser. No. 690,363

Int. Cl. A01h 5/02

U.S. Cl. Plt.—18

1 Claim

1. A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a vigorous plant having an attractive, upright-spreading, well-branched habit, attractive, medium to large, semi-glossy foliage, a habit of usually bearing the flowers on medium to long, single stems of good strength, double flowers of medium to large size, with an attractive urn-shaped bud form approaching that of the parent varieties, and with the open flowers being full-petaled and graceful, a distinctive and attractive light to medium pink blend flower color ranging between Azalea Pink and Carmine Rose, with some tinges of light yellow, particularly on the reverse side of the petals and a strong flower fragrance.

865 O.G.—1

2,915

### ROSE PLANT

David L. Armstrong, Ontario, Calif., assignor to Armstrong Nurseries, Inc., Ontario, Calif., a corporation of California

Filed Dec. 19, 1967, Ser. No. 691,917

Int. Cl. A01h 5/02

U.S. Cl. Plt.—6

1 Claim

1. A new and distinct variety of rose plant of the pillar-climbing floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of an everblooming, bushy, free-standing, vigorous, upright-spreading, climbing habit which can be left as a large, bushy shrub, or trained as a typical climbing plant having short to long arching or climbing canes up to five or six feet in length on established plants, glossy foliage of medium to large size which covers the plant well and is quite disease resistant and attractive, resembling the foliage of the parent variety "New Dawn," though somewhat larger, a very floriferous habit similar to the bush form of the parent variety "Embers," with all canes terminating in small to medium size flower clusters and usually producing much lateral growth varying from simple, short flower clusters to new long canes also having flowers later in the same season, as well as some flowering from long canes the next season, said flowers of the clusters being double in form and highly attractive, progressing from a high-centered form to a more flat-cupped form in the fully open flower stage, excellent flower substance and long-lasting qualities and a distinctive, attractive and relatively unfading flower color ranging between Cherry and Rose Red.

17



# PATENTS

GRANTED AUGUST 5, 1969

## GENERAL AND MECHANICAL

3,458,863

### LOWER LEG PROTECTIVE ARMOR

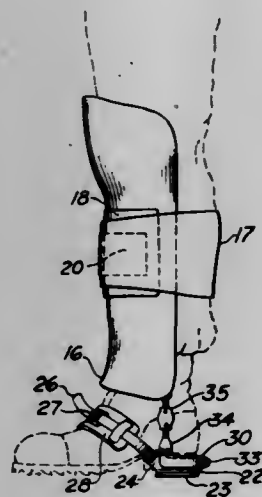
Clarence F. Lamber, Country Club Hills, and Richard A. Rodzen, Chicago, Ill., and Edward R. Barron, Framingham, Mass., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Dec. 20, 1967, Ser. No. 692,027

Int. Cl. F41k 1/02; F41h 1/00

U.S. Cl. 2-2.5

9 Claims



Lower leg protective armor comprising a shaped one-piece covering for the frontal aspect of the lower leg and knee formed of rigid armor material, an articulating support bracket for the armor which attaches to the heel portion of the wearer's shoe and quick release means for attaching the armor to the lower leg.

3,458,864

### PROTECTIVE HOOD

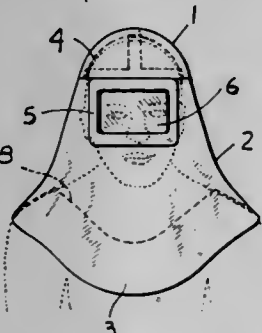
Harry W. Austin, Monroeville, and William C. Hess, Pittsburgh, Pa., assignors to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 22, 1968, Ser. No. 699,669

Int. Cl. A42b 1/00

U.S. Cl. 2-5

2 Claims



A protective hood for the head has a depending skirt for covering the chest and shoulders and upper back. Inside the skirt there is an annular flap that has an outer edge secured to the edge of the skirt. The front and back portions of the flap will hang from the shoulders of the wearer and pull the edge of the skirt in against his body.

3,458,865

### LENS RETAINING DEVICE

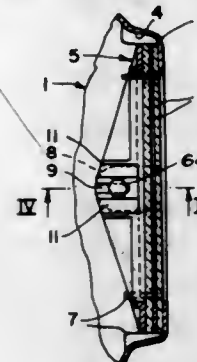
Jack N. Simpson, Sinking Spring, and Charles J. Boyer, Reading, Pa., assignors to ESB Incorporated, Philadelphia, Pa.

Filed July 20, 1967, Ser. No. 654,802

Int. Cl. A42b 3/00

U.S. Cl. 2-8

2 Claims



A lens retainer for a safety or welding helmet which holds any combination of lenses or filters by means of a retainer bracket which nests and is easily and quickly secured to the inside of the helmet by two screws and two nuts.

3,458,866

### EYEGLASS HINGE CONSTRUCTION

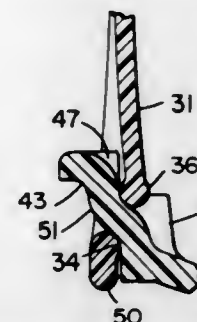
Heiko T. de Man, Moraga, Calif., assignor to Precision Plastics, Inc., San Francisco, Calif., a corporation of California

Filed Dec. 7, 1967, Ser. No. 688,778

Int. Cl. E05d 9/00, 15/00

U.S. Cl. 2-12

6 Claims



A plastic, frameless, eyeshield has three parts, an opening-free, one-piece eyecover and two temples. A hinge connection between the temple and eyecover includes two spaced pivots on each temple which move over a corrugated plate extending from the eyecover. A centering element is formed above the nose piece of the cover and clip elements are formed on the inside of the temples to mount the eyeshield on prescription spectacles.

3,458,867

### ELBOW PROTECTOR FOR BEDFAST PERSONS

Francis C. Moore, 3935 Arthington Blvd., and Leon R. Perkinson, 4925 E. 40th St., both of Indianapolis, Ind. 46226

Filed May 1, 1968, Ser. No. 725,692

Int. Cl. A61f 5/30, 13/10, 13/00

U.S. Cl. 2-16

8 Claims

An elbow band for protecting bedridden persons against decubitus ulcers includes an elongated belt of resilient, stretchable, air-permeable sheet material having an enlarged central portion with oppositely-extending side

AUGUST 5, 1969

GENERAL AND MECHANICAL

19

straps. A cushioning pad of the same material as, and preferably thicker than, the belt conforms to the shape of the central portion of the belt. The cushioning pad is attached to one surface of the central portion. A paper film is bonded to the other surface, covering the enlarged por-

pregnating the fabrics from which the garments are produced with an aqueous solution containing an aldehyde and a synergistic catalyst, the synergistic catalyst comprising an acid salt of a primary aliphatic amine and a quaternary ammonium salt of the formula:



wherein R is an aliphatic hydrocarbon group containing about twelve to about eighteen carbon atoms, Y is



is an aliphatic tertiary amine or a heterocyclic tertiary amine and X<sup>-</sup> is a halogen atom or mineral acid radical; and optionally an additional catalyst constituent selected from the group consisting of a salt of (1) a metal of Groups II, III or IV of the Periodic Table and (2) an organic acid, which additional constituent will impart a pH of below 7 to the aqueous solution. The impregnated fabric is then dried, cut and sewn and creased as desired to form the garment and thereafter cured at an elevated temperature.

3,458,870

### ARTIFICIAL CORNEAL IMPLANTS HAVING A REMOVABLE LENS MEMBER

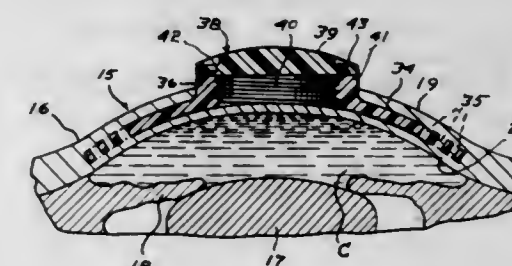
William Stone, Jr., 478 Commonwealth Ave., Boston Mass. 02115

Filed May 25, 1964, Ser. No. 369,770

Int. Cl. A61f 1/16

U.S. Cl. 3-13

6 Claims



6. A corneal implant of the type that is adapted to be marginally located between anterior and posterior corneal layers, said implant including a holding member of concavo-convex form having an opening extending therethrough and a plurality of passages adjacent its periphery through which corneal stroma may grow and by such growing permanently anchor the implant, and a lens member removably held in said opening and including a head overlying the holding member marginally of said opening, one of said members having in the zone where said members overlap, portions engageable by a tool for removing said lens member, each member being of a material inert with respect to aqueous humor, at least the portion of the holding member provided with anchoring passages being sufficiently inert to be tolerated by corneal stroma, and the lens member being sufficiently clear for optical purposes.

3,458,868

### REVERSIBLE NECKTIE

Robert C. Smith, 1422 E. 22nd Ave., Denver, Colo. 80205

Filed Feb. 8, 1968, Ser. No. 703,991

Int. Cl. A41d 25/02

U.S. Cl. 2-150

8 Claims



A four-in-hand type necktie including a simulated knot portion and a drape portion each of which is swivelly supported for rotation to expose either of two circumferential halves of the knot portion and either side of the drape portion. One circumferential half of the knot portion is of the same color or material as one side of the drape portion and the other half of the knot portion similarly matches the other half of the drape portion, so that the necktie is reversible to exposure either matching portions of the knot and drape.

3,458,869

### METHOD OF PRODUCING PRESS-FREE GARMENTS AND PRODUCTS THEREOF

Alex F. Gordon, Black Mountain, N.C., assignor to United Merchants and Manufacturers, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 15, 1966, Ser. No. 542,742

Int. Cl. A41d; D06m 13/34

U.S. Cl. 2-243

9 Claims

Process for the production of press-free garments which will retain their crease, which includes the steps of im-

3,458,871

### SANITARY ASSEMBLY OF RESTRICTED SIZE

Stefano Rivetti di Valcervo, Maratea, Potenza, Italy

Filed Aug. 8, 1966, Ser. No. 570,933

Claims priority, application Italy, Feb. 22, 1966, 4,263/66

Int. Cl. A47k 4/00

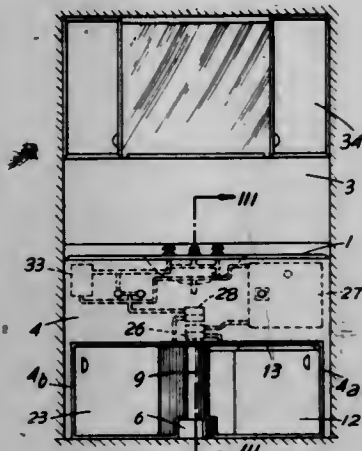
U.S. Cl. 4-3

9 Claims

A compact assembly of a wash basin, water-closet, and bidet, wherein the bidet and water-closet are individually



rotatable from positions underneath the wash basin to a using position in front of the wash basin. The water-closet is attached to a rotating vertical column rotatably mounted to a base, and the bidet is rotatably attached to this rotating column.



The supply tank for the water-closet, and a heater for the bidet, are mounted beneath the wash basin; and supply the toilet and bidet through respective pivotal manifolds. The supporting column for the bidet and toilet is also the drain pipe therefor and for the basin above as well.

3,458,872

**WATER CLOSET TILTABLE SEAT**

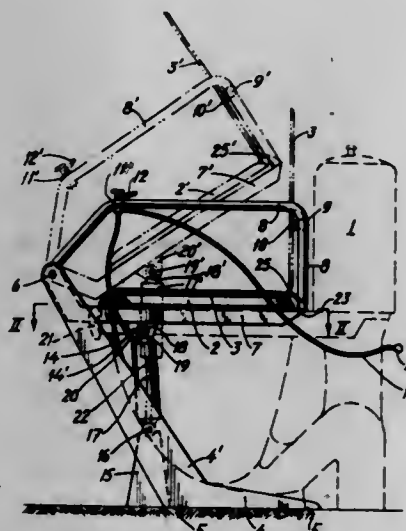
Nils Erik Hellstrom and Rolf Leo Ekholm, Nyland, Sweden, assignors to Aktiebolaget Electrolux, Stockholm, Sweden

Filed June 2, 1966, Ser. No. 554,854  
Claims priority, application Sweden, June 2, 1965, 7,197/65

Int. Cl. A47k 13/00

U.S. Cl. 4-237

4 Claims

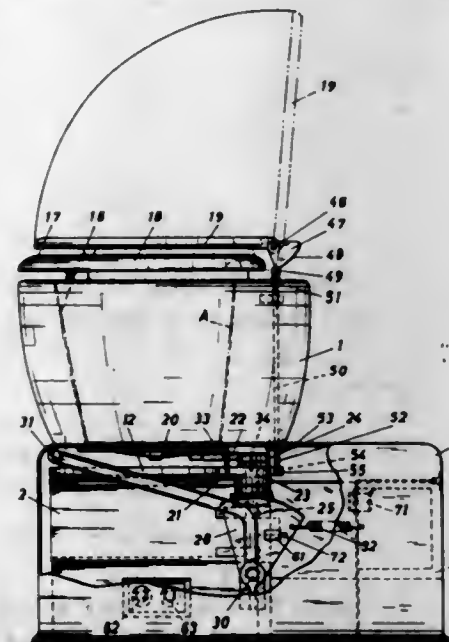


A water closet for disabled persons in which a holder having two mutually parallel legs extending one on each of the seat is at a height above the floor corresponding to the knee joint of a standing person and is pivotally connected in front of the seat to brackets fixed to the floor with one bracket being located on each side of the seat. Power means are operably connected to the legs to tilt the holder and seat between a position in which the seat is approximately horizontal and a position in which the seat is in a forwardly inclined position.

3,458,873  
**SANITARY ELECTRIC DRY CLOSET**  
Hans Josef Nordstedt and Lars Folke Delin, Amal, Sweden, assignors to Aktiebolaget Hakansson's Industrier, Amal, Sweden, a corporation of Sweden  
Filed July 11, 1966, Ser. No. 564,151  
Claims priority, application Sweden, Aug. 4, 1965, 10,176/65; Nov. 26, 1965, 15,360/65  
Int. Cl. A47k 11/02

U.S. Cl. 4-131

15 Claims



An electric coupling for electric closets having a combustion chamber for the incineration of faeces. An electric heating element is provided for heating the combustion chamber with a fan and an electric motor for driving the fan. A contactor having a holding coil and a current source is coupled between the poles of the current source and the electric heating element. A plurality of switches controlled by thermostats are under the influence of the temperature in the combustion chamber at the incineration of the faeces. An operation switch is connected in series with the holding coil and the thermostatically controlled switches connected to the contactor before and after the disconnection points of the same. The combustion chamber is provided with a lid to close the operation switch when the lid is in its closing position. The motor for driving the fan is coupled in series with a thermostatically operated switch having one pole also coupled to the heating element after one of the main disconnection points of said contactor.

3,458,874

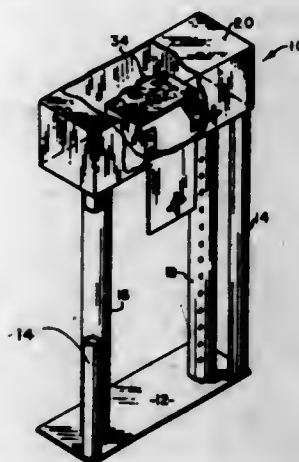
**THERMAL SURGE SHOWER UNIT**

Martin J. Fritz, Box 5, Pacific Palisades, Calif. 90272  
Filed Jan. 12, 1966, Ser. No. 520,128

Int. Cl. A47k 3/00

U.S. Cl. 4-145

4 Claims



A shower in which very hot and very cold water are caused to flash instantaneously into a shower area in

alternate rapid sequence such that, before the human system detects discomfort of one extreme, the opposite is applied, to produce a stimulating comfortable reaction.

3,458,875

**ABOVEGROUND SWIMMING POOLS**

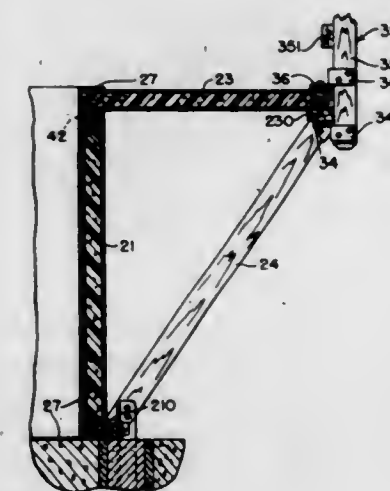
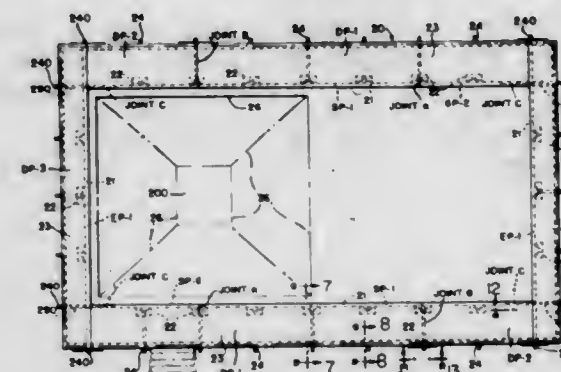
Richard E. Michalke, Livonia, Joseph Valle, Detroit, and Melvin M. Grant, Livonia, Mich., assignors to Sun Valley Pools, Inc., Dearborn Heights, Mich., a corporation of Michigan

Filed Apr. 25, 1967, Ser. No. 633,517

Int. Cl. E04h 3/16

U.S. Cl. 4-172

4 Claims



An aboveground swimming pool employing a plastic liner wherein the liner supporting walls and deck are constructed of insulated prefabricated structural panels secured together in a manner to form an integral whole capable of resisting all swimming pool stresses and being readily and economically assembled and disassembled for reassembly on a different site without substantial damage to or replacement of major aboveground materials and components, the said insulated panels serving to prevent heat loss in the swimming pool water through the side walls of the pool.

3,458,876

**BATHTUB SEAT**

Robert A. Struthers, 27 NE. Killingsworth, Portland, Oreg. 97211

Filed Sept. 12, 1966, Ser. No. 578,691

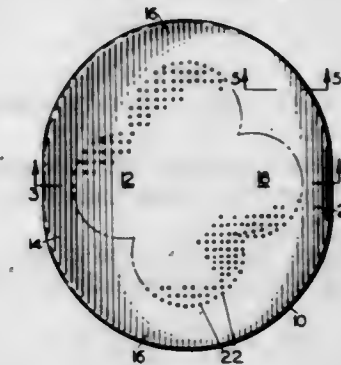
Int. Cl. A47k 3/12

U.S. Cl. 4-185

1 Claim

A bathtub seat structure comprising a seat portion contoured to support a person in seated position, individual legs on the under surfaces of such seat portion arranged for engagement with the bottom of a bathtub

to elevate the seat from the bottom of the tube and reinforcing ribs extending between and formed integrally



with the individual legs to provide a compact and stable structure.

3,458,877

**SOFA BED COMBINATION**

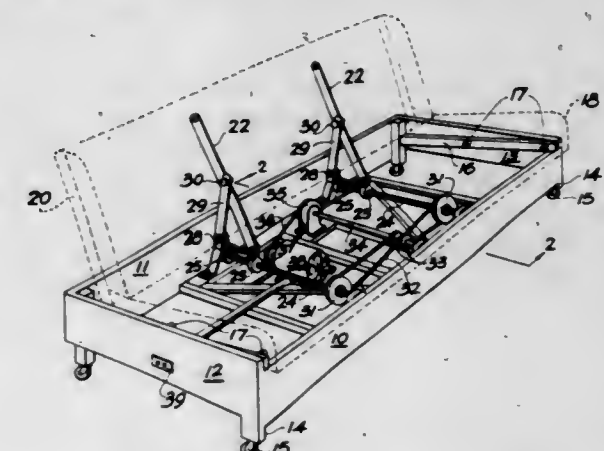
John Edwards, R.R. 1, Box 299 H.Y., Countryside Drive, Tampa, Fla. 33612

Filed Sept. 29, 1967, Ser. No. 671,664

Int. Cl. A47c 17/00

U.S. Cl. 5-43

5 Claims



A sofa bed combination having a seat portion and a back portion movable from sofa configuration to bed configuration by means of levers engaged on followers positioned on revolvable threaded shafts in said combination.

3,458,878

**DEVICE FOR USE IN MOVING BED PATIENTS**

Milford M. Combs, 207 Bay St., Glens Falls, N.Y. 12801

Filed Nov. 18, 1968, Ser. No. 776,420

Int. Cl. A61g 7/06

U.S. Cl. 5-92

5 Claims



A device for use in moving a bed patient, including an elongated main strap fitted with a buckle at one end thereof, said one end being securable to the side rail of a hospital bed. The central portion of the main strap is disposed beneath the patient's hips, and by pulling the other strap end the patient can then be moved. A harness is provided for fitting the body of patients who cannot ele-



vate their knees, and is detachably mountable on the main strap, and by grasping both ends of the main strap it can also be used as a sling to carry a patient.

3,458,879

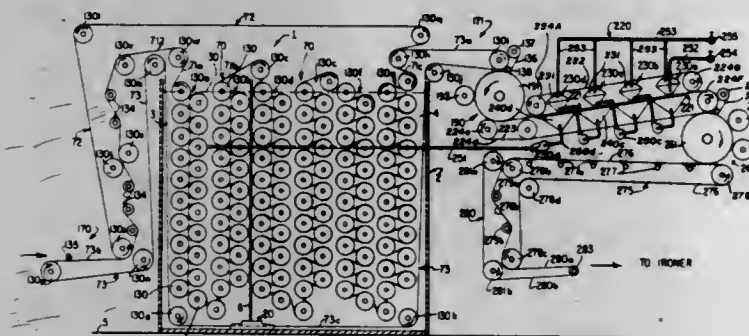
# CONTINUOUS WASHING AND RINSING METHOD AND APPARATUS

Erwin B. Bahnsen, Hinsdale, Ill., assignor to Steiner American Corporation, Salt Lake City, Utah, a corporation of Nevada  
Original application Oct. 21, 1965, Ser. No. 499,137.  
Divided and this application July 19, 1968, Ser. No. 746,033

Int. Cl. B08b 7/02

U.S. Cl. 8—149.1

41 Claims



A method and an apparatus for washing, rinsing and drying soiled fabric articles, wherein the articles are washed by transporting them on a foraminous belt along a sinuous path through a soil loosening alkaline solution and then through a soil removing detergent solution all while subjecting elemental portions of the fabric to cycloidal motion at a repetition rate of four hundred per minute and a maximum displacement of one-quarter inch, and wherein the articles are rinsed by forcing a mixture of water and gas repeatedly through the articles in a counter-current manner while the articles are transported along an upwardly inclined path, and wherein the articles are dried by subjecting them successively to radiant heat and blasts of warm air while the articles are transported along a horizontal path.

3,458,880

# POLYESTER AND POLYAMIDE FIBER DYEING WITH 7-AMINO-COUMARINS

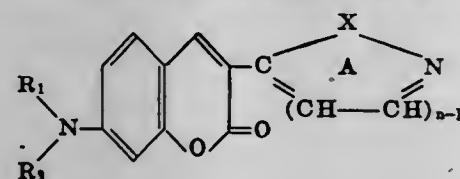
Jacques Voltz and Heinrich Hausermann, Riehen, near Basel, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland  
No Drawing. Filed Oct. 7, 1965, Ser. No. 493,881  
Claims priority, application Switzerland, Nov. 13, 1964, 14,663/64

Int. Cl. D06p 3/24, 3/52

U.S. Cl. 8—162

16 Claims

1. A process for the coloring of polyester fibers comprising treating said fibers with an aqueous dispersion containing dispersed therein a dispersible coumarin compound free from water-solubilizing groups which dissociate acid in water, which compound is of the formula



wherein:

X represents a divalent radical which makes up the nitrogen-containing ring A into a five- or six-membered ring of aromatic character, and shifts light absorption of the N-substituted 7-amino-coumarin moiety sufficiently into the visible range to achieve a yellow fluorescent coloring effect,  
n represents the number 1 or 2, and

each of R<sub>1</sub> and R<sub>2</sub> represents hydrogen, alkyl of from 1 to 6 carbon atoms, chloro-lower alkyl, bromo-lower alkyl, cyano-lower alkyl, hydroxy-lower alkyl, lower alkoxy-lower alkyl, lower alkanoyloxy-lower alkyl, lower alkoxy-carbonyl, phenyl-lower alkyl, and

R<sub>1</sub> and R<sub>2</sub> together with the nitrogen atom to which they are linked, form pyrrolidino, piperidino or morpholino, the process being carried out at super-atmospheric pressure and at a temperature of from 100 to 130° C., said coumarin compound being present in an amount sufficient to provide a greenish-yellow fiber having good color strength.

3,458,881

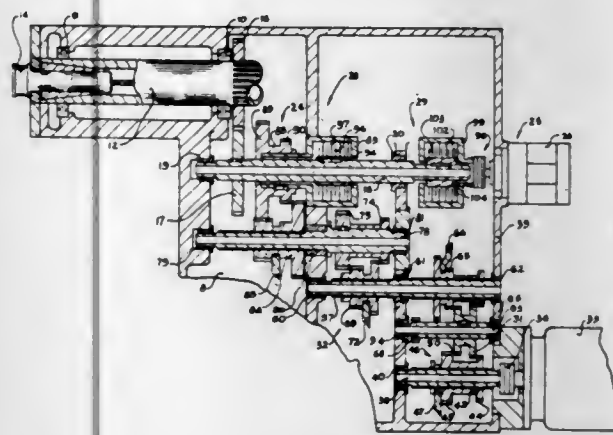
# MACHINE TOOL VARIABLE POWER TRANSMISSION

Erich F. Drechsler, Milwaukee, and John L. Martin, Wauwatosa, Wis., assignors to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin  
Filed Dec. 2, 1966, Ser. No. 598,785

Int. Cl. B23g 1/16; F16h 37/06; B23c 1/00

U.S. Cl. 10—139

6 Claims



This disclosure relates to an improved variable speed and variable power transmission mechanism for driving a machine tool spindle operative to perform a wide variety of machining operations including drilling, tapping and boring. To accomplish this with maximum effectiveness, a separate input power drive shaft is connected directly to rotate the tool spindle at a selected speed in one of two different power ranges and one of two different speed ranges. The first power train comprises a relatively high power motor driving a shiftably geared transmission connectible by a first clutch to rotate the spindle input drive shaft. A second drive train comprises a relatively low power servo motor connectible by a second clutch to rotate the spindle drive shaft independently of the first power train. During servo driven operation, the second clutch is engaged and the first clutch is disengaged to completely eliminate the inertia and backlash inherent in a shiftably geared transmission as well as any additional unnecessary gears keyed directly to the input drive shaft. This arrangement insures a considerably more accurate control of both the speed rate and a coordinately controlled feed drive during a tapping operation.

3,458,882

# THREAD-CUTTING DEVICE

Gerald W. Kelly, 7447 Dixie Highway, Bridgeport, Mich. 48722

Filed Mar. 27, 1967, Ser. No. 626,065

Int. Cl. B23g 5/06

U.S. Cl. 10—141

8 Claims

A tap having a body threaded for a portion of its length and at one end of which the thread is interrupted

by one or more outwardly concave flutes which communicate with a corresponding number of axially extending, outwardly convex grooves which interrupt the



thread. At the opposite end of the body is a pair of tandem headed coupling members separated from one another by an annular groove.

3,458,883

# SHOE UPPER LACING MACHINES

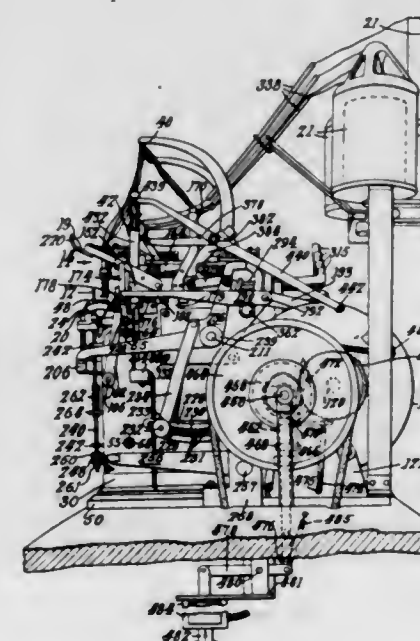
Joseph Fossa, 2538 E. Elm St., Tucson, Ariz. 85716

Filed Apr. 5, 1968, Ser. No. 719,124

Int. Cl. A43d 95/00

U.S. Cl. 12—58.5

16 Claims



A reciprocating hook needle shoe lacing machine for inserting cord loops into eyelets and for forming knots between the legs of the loops arranged to retain each loop on a needle from the time the cord forming that loop is laid in that needle hook until a succeeding loop is retracted through that loop. This is accomplished by rotating the needles as they are reciprocated to bring the loops into surrounding relation to the needle shanks while at the lower ends of their reciprocating strokes.

3,458,884

# DYNAMICALLY BUOYANT PORTABLE BRIDGE

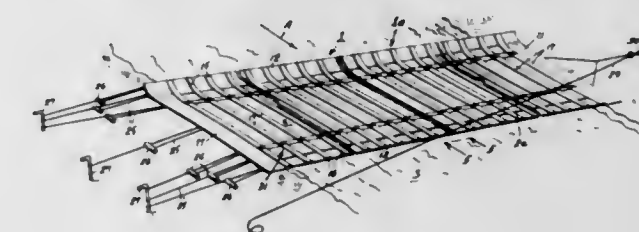
Joseph T. Gurganious, Bel Air, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed Nov. 2, 1967, Ser. No. 680,143

Int. Cl. E01d 15/14

U.S. Cl. 14—27

9 Claims



A flat, flexible self-buoyant foot bridge unit consisting of a laminated blanket rigidized laterally by spaced flexible ribs and supported by longitudinally arranged straps. Snap hooks at each end of the straps provide means for tying the unit on each side of a stream and a row of snap hooks attached to the blanket edges provide means for attaching additional units to accommodate wider streams.

3,458,885

# CONCRETE AGGREGATE EXPOSING APPARATUS

Jan O. Danielsson, P.O. Box 7,

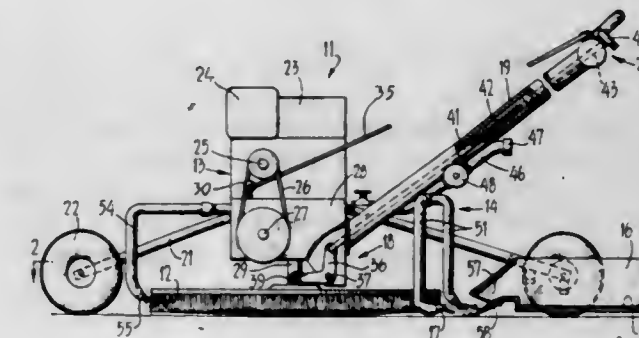
Larkspur, Calif. 94939

Filed Dec. 19, 1966, Ser. No. 602,900

Int. Cl. A47l 11/00; E01h 1/04; B24b 23/00

U.S. Cl. 15—50

3 Claims



This disclosure concerns apparatus for removing the top layer of cement and sand from a partly set concrete surface to provide an exposed aggregate concrete surface. The apparatus includes a vehicle upon which is mounted a rotary disc brush which is positioned so as to brush the surface and remove the top layer of cement. Suitable piping is included on the vehicle for wetting the surface before passage of the brush and for flushing the loosened cement therefrom. A collection box is also provided on the vehicle for collecting the loosened cement for suitable disposal.

3,458,886

# COLLAPSIBLE MOP HOLDER

Arthur C. Goettel, 1920 Cleveland, Miami, Okla. 74354

Filed Oct. 13, 1967, Ser. No. 675,221

Int. Cl. A47l 13/253

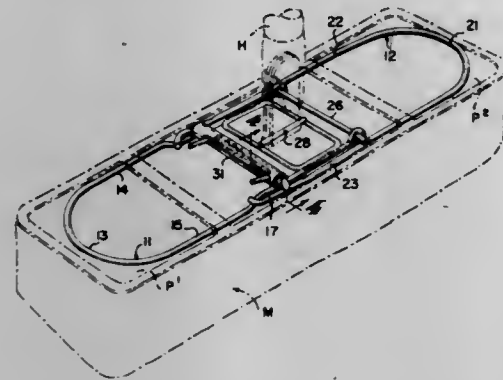
U.S. Cl. 15—147

4 Claims

A collapsible mop holder formed by a pair of relatively pivoted generally U-shaped members which are normally locked relative to each other in a common plane but can



be released to facilitate the insertion upon or the removal from of a cloth mop. Cam means are provided for locking the U-shaped members in an operative position,



and adjacent legs of the U-shaped member are arranged in overlapping relationship to prevent movement of the member beyond the common planar position thereof.

3,458,887

**BASTING IMPLEMENT**

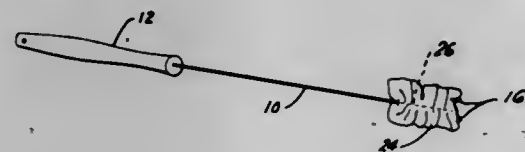
Henry E. Radack, 4278 Shurmer, Houston, Tex.

Filed Aug. 10, 1967, Ser. No. 659,734

Int. Cl. B43I 21/04; A47k 7/02

U.S. Cl. 15—210

2 Claims



A basting implement for applying liquids to foods in the cooking of the same. The implement is of fork-like character, having an elongated handle and spaced apart tines which are disposed in a common plane. The tines are formed at their free ends with rebent, hook-like portions opening toward the handle and which extend in opposite directions away from the plane of the tines. The invention includes a sleeve-like pad of absorbent material, open at the ends and provided with a central, longitudinally extending stitched seam to enable the pad to be removably positioned on the tines by extending the tines therethrough on opposite sides of the central seam so that the outer end of the pad will be engaged in the hooks to prevent the pad from slipping off of the tines. The inner end of the pad at the location of the central seam engages the bottom of the fork between the tines to prevent the pad from sliding onto the shank portion of the handle.

3,458,888

**WINDSHIELD WASHER ARM**

Keith H. Carpenter, Kettering, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 15, 1965, Ser. No. 514,009

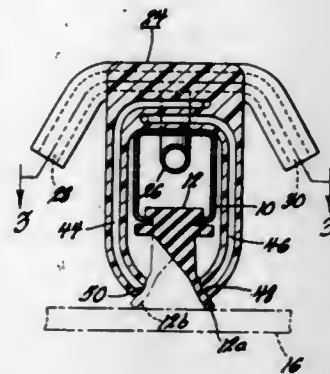
Int. Cl. B60s 1/04, 1/46; F15c 1/08

U.S. Cl. 15—250.04

5 Claims

This disclosure relates to a windshield cleaning system having a wiper blade carried by a wiper arm for wiping the windshield when moved in opposite directions thereacross and in which the wiper blade is deflectable in opposite directions about its longitudinal axis between first and second positions, the wiper blade deflecting between these positions upon reversal of movement of the wiper arm and with the wiper blade deflecting in a direction

opposite to the direction in which it is being moved after reversal. The windshield cleaning system further includes a dispensing means carried by the wiper arm and having outlets for directing fluid from either side of the wiper arm. The dispensing means includes a fluid amplifier



means operable automatically in response to deflecting movement of the wiper blade about its longitudinal axis upon reversal of movement of the wiper arm for causing the cleaning fluid to be emitted only through the outlet which directs the same in front of the direction of movement of the wiper blade.

3,458,889

**INTERMITTENT WINDSHIELD WIPER CLEANING SYSTEM**

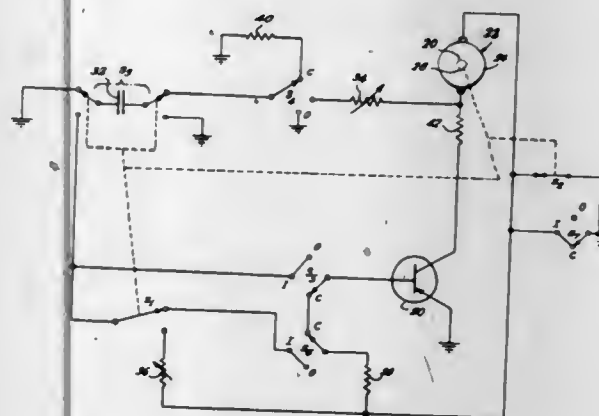
David Tann, 333 Covington Drive, Detroit, Mich. 48203

Filed Apr. 8, 1966, Ser. No. 541,152

Int. Cl. A47I 1/02; B60s 1/08

U.S. Cl. 15—250.12

7 Claims



A control device for activating a windshield wiper motor unit intermittently with a dwell period at the end of each wiping cycle. The moisture on the windshield is sensed while a wiping cycle is in progress and the amount of moisture sensed is used to control the length of time of the succeeding dwell period, the length of time of the dwell periods varying inversely with the moisture on the windshield.

3,458,890

**CROSS-FLOW JET**

Richard D. Neal, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Continuation-in-part of application Ser. No. 518,668

Jan. 4, 1966. This application May 9, 1966, Ser. No. 548,637

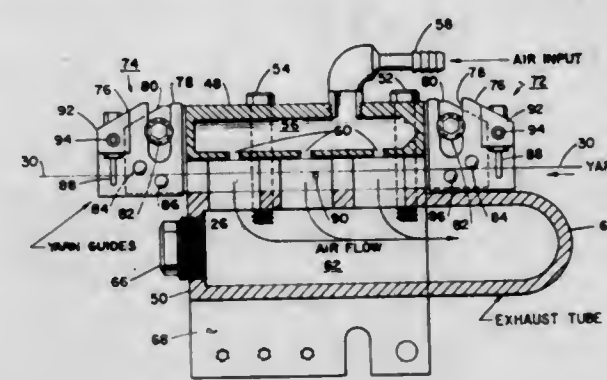
Int. Cl. A47I 5/38, 15/00; F26b 11/02

U.S. Cl. 15—306

1 Claim

A gas jet treating apparatus capable of removing residual liquid-like substances from moving filamentary

products. The jet apparatus includes a product passage-way which enables the user to easily thread the apparatus without disassembling it, and also has interior structural features that position the filamentary product relative to



the gas treating media orifices. The apparatus further includes a vacuum collection chamber to receive and exhaust the expended treating media and entrained residue liquid-like substances, and exterior guides to direct the filamentary product as it enters and exits the apparatus.

3,458,891

**SUCTION CLEANER**

Karl Gustav Grellsson, Sollentuna, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden

Filed July 19, 1967, Ser. No. 654,493

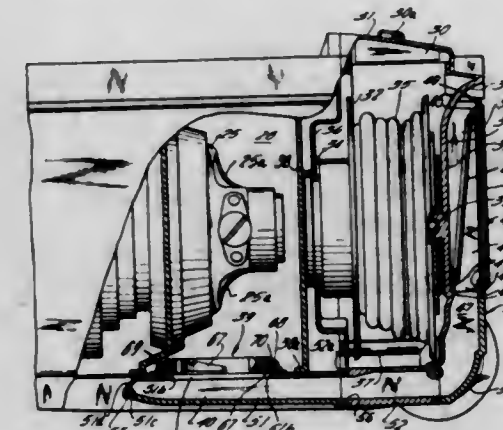
Claims priority, application Sweden, July 22, 1966,

10,082/66

Int. Cl. A47I 5/00, 9/10

U.S. Cl. 15—327

10 Claims



A tank-type suction cleaner having an elongated casing is normally positioned horizontally on a surface and provided with a motor-fan unit for moving air in a path of flow between an air inlet and an air outlet. The bottom of the casing intermediate the ends thereof is provided with an imperforate transverse partition and an air discharge opening adjacent thereto. Air flowing in the casing from the air inlet at a first end of the casing is directed therefrom by the partition and passes exteriorly of the casing through the air discharge opening into an air duct which is at the bottom of the casing. The air duct extends lengthwise of and exteriorly of the casing to the second opposite end thereof at which region air is discharged upward from the duct into a vertically extending diffusion chamber of an air filter having at least one wall formed of air-permeable material which has a cross-sectional area greater than that of the air discharge opening and functions to remove fine dust particles from air and discharge air from the diffusion chamber in a direction from the surface.

3,458,892

**ELECTRIC CLEANER**

Tsuneo Kobayashi, Hirakata-shi, Kenzo Tatematsu, Amagasaki-shi, and Koichi Yoshimura and Yoshio Yamamoto, Kadoma-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed Nov. 20, 1967, Ser. No. 684,328

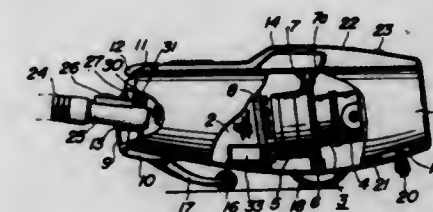
Claims priority, application Japan, Nov. 22, 1966,

41/77,028

Int. Cl. A47I 9/28; H01h 3/00

U.S. Cl. 15—327

4 Claims



A vacuum cleaner of the type in which a dust bag and an electric blower are provided in a body thereof and the dust sucked into the body of the cleaner through a flexible hose connected to the suction port of the body is collected in said dust bag, said vacuum cleaner being characterized in that a switch provided at the grip portion of said flexible hose is connected to the control winding of a variable reactor in the body of the cleaner through a pair of leads, while a high voltage relay adapted to be actuated by said switch to open and close the main circuit of said electric blower is connected to the main circuit of said variable reactor in series, whereby the low voltage circuit of a remote control circuit for a motor including said switch is electrically separated from the main circuit of the electric blower.

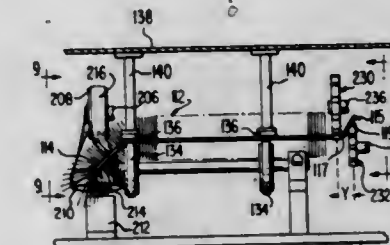
3,458,893

**ARTIFICIAL TREE LIMB TAPERING MACHINE**Percy Dieffenbach, R.D. 1, Olyphant, Pa. 18447  
Division of application Ser. No. 573,752, Aug. 3, 1966, now Patent No. 3,365,529, dated Jan. 23, 1968. Continuation-in-part of application Ser. No. 504,578, Oct. 24, 1965. This application Jan. 3, 1968, Ser. No. 714,143

Int. Cl. B29b 3/00

U.S. Cl. 18—1

18 Claims



1. Apparatus for tapering the tip end of artificial Christmas tree limbs formed of constant length, precut plastic filaments captured by a pair of twisted wires with the filaments normally projecting radially of the limb at right angles to the limb axis comprising; means for moving a series of spaced limbs along a path through said apparatus, means for raising the temperature of those filaments within the tip section of each limb during transport to reduce their elastic memory, means for bending said heated filaments away from their right angle, radial position to a position generally in line with the axis of said limb and toward said tip extremity, and means for maintaining those heated filaments at the tip extremity in their in-line position for a longer period of time than



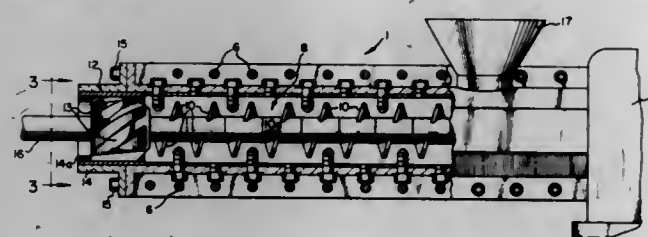
those heated filaments spaced inwardly thereof, whereby, upon cooling, said limb is provided with a tip section characterized by a full taper rather than mere in-line matting of said tip section filaments.

### 3,458,894 MIXING APPARATUS

Dennis A. Wheeler, Saginaw, Mich., assignor to Baker Perkins, Inc., Saginaw, Mich., a corporation of New York

Filed Sept. 13, 1966, Ser. No. 579,030  
Int. Cl. B28c 5/14; A21c 1/14

U.S. Cl. 18—2 11 Claims

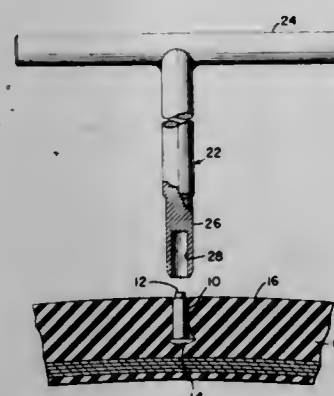


Mixing apparatus wherein a tubular barrel has generally axially split liner means comprising a plurality of non-continuous separate removable members making up a perimetral surface removably secured to the interior of the barrel and forming a mixing chamber, a rotating and reciprocating mixer shaft is mounted within the mixing chamber, interrupted flight mixing blades are provided on the shaft and lugs are mounted to extend into the mixing chamber from the liner means, adjacent the interrupted portions of said blade means and in position such that the interrupted blades clear the lugs during the rotation and reciprocating movement.

### 3,458,895

TOOL FOR ADJUSTING STUDS IN TIRES  
William P. Miller II, Akron, Ohio, assignor to The Good-year Tire & Rubber Company, Akron, Ohio, a corporation of Ohio  
Original application Sept. 7, 1965, Ser. No. 485,379.  
Divided and this application Nov. 3, 1967, Ser. No. 704,963

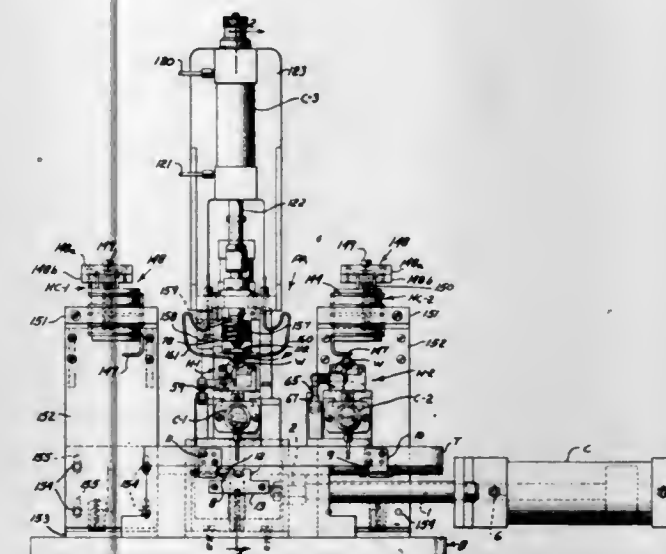
U.S. Cl. 81—3 2 Claims



A tool for removing or adjusting a tire stud from or in a recess in a tire, which recess is either preformed during manufacture of the tire or is provided after manufacture of the tire. The tool comprises a tubular member having an outer diameter which is no greater than the outer diameter of a flange adjacent the inner end of a stud. The tool is telescopically arranged over the stud after the stud has been inserted into the tire. The tool is then inclined relative to the normal axis of the stud receiving recess and rotated about the recess to cause a similar inclination and movement of the stud and to effect a movement of the stud outwardly of the recess.

3,458,896  
PLASTIC APPLICATOR AND PROCESS  
Rune A. E. Zetterlund, Willow Grove, and Ronald Waeltz, Hatboro, Pa., assignors to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania  
Filed Dec. 27, 1965, Ser. No. 516,654  
Int. Cl. B29c 27/12

U.S. Cl. 18—5 10 Claims

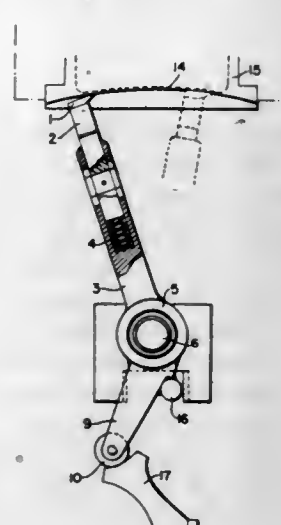


A machine for applying a plastic element to a workpiece. The workpiece is heated and a prescribed amount of plastic is positioned between the heated workpiece and a heated punch. The punch, upon movement toward the workpiece, presses the plastic against the workpiece. With the punch in this position and the plastic pressed against the workpiece, both the punch and the workpiece are cooled.

### 3,458,897

DEVICE FOR THE AUTOMATIC REMOVAL OF RIDGES FROM THE BOTTOM OF HOLLOW OBJECTS FORMED OF PLASTIC MATERIALS  
Van Asbroeck Roger, Neerijse, Belgium, assignor, by mesne assignments, to Vypak Corporation, New York, N.Y., a corporation of New York  
Filed June 1, 1966, Ser. No. 554,508  
Claims priority, application Belgium, June 15, 1965, 665,432

U.S. Cl. 18—5 6 Claims

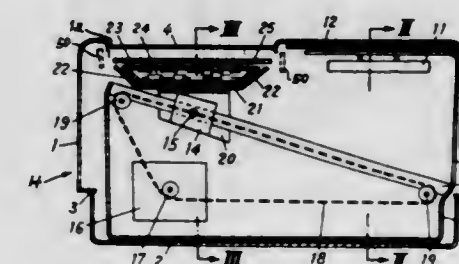


An apparatus for the automatic removal of ridges from the bottom of blow molded plastic containers. A knife is attached to a pivotable telescopic arm mounted on a

portion of the mold. A cam arm section extends from the telescopic arm and contacts a cam surface causing the knife to traverse the closed surface at the bottom of the mold to cut the ridge from the bottom of the plastic container. A resilient means is provided for returning the knife to its initial position.

3,458,898  
APPARATUS FOR THE PRODUCTION OF ORTHOPEDIC FOOTREST OR SUPPORT  
Hermann Casparis, Zelglistrasse 3, Forch, Switzerland  
Filed Jan. 24, 1966, Ser. No. 522,472  
Claims priority, application Germany, Jan. 28, 1965, C 34,964

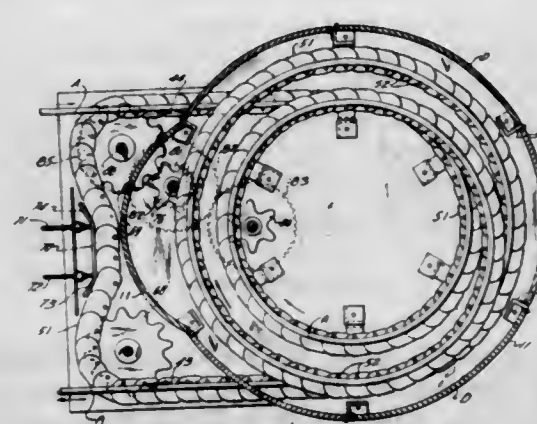
U.S. Cl. 18—5.1 13 Claims



A novel apparatus for manufacturing orthopedic foot supports is disclosed. The novel apparatus comprises, in combination, flexible cushion means, a layer of heat-insulating material overlying the flexible cushion means and adapted to serve as a support for a thermo-plastic plate member. A further layer of heat-insulating material provides a protective means for the foot which is to be placed upon the plate member, the further layer being located above the first layer. Means are also included for heating the thermo-plastic plate member.

3,458,899  
TREATMENT APPARATUS FOR ELONGATED ARTICLE  
Alfred Heijlbrunn, Scranton, Pa., assignor to Topps Chewing Gum, Incorporated, Brooklyn, N.Y., a corporation of New York  
Filed July 24, 1967, Ser. No. 655,503  
Int. Cl. B29f 3/02; B65g 15/02

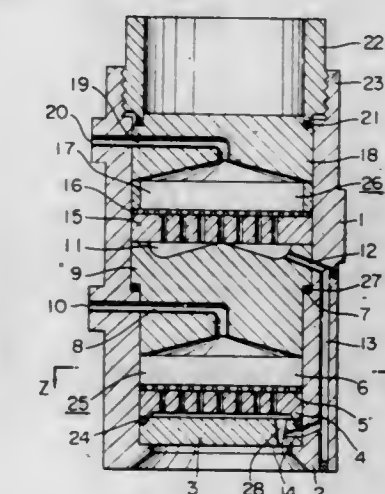
U.S. Cl. 18—6 14 Claims



A treatment apparatus for exposing a continuous article, such as an extrusion, to a particular environment with minimal working or flexure of the article, comprising an enclosure having disposed therein a conveyor, such as an endless chain having generally horizontally disposed article support surfaces, the conveyor or chain being disposed in a configuration defining at least two concentric helices, one helix surrounding the other, the pitch of one such helix being opposite to the pitch of the other helix.

3,458,900  
SPINNING PACK ASSEMBLY FOR MANUFACTURING COMPOSITE FILAMENTS  
Akihiro Shinkai, Masumi Fujiura, and Tooru Yonezawa, Mishima-shi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan  
Filed July 24, 1967, Ser. No. 655,581  
Claims priority, application Japan, July 26, 1966, 41/70,244

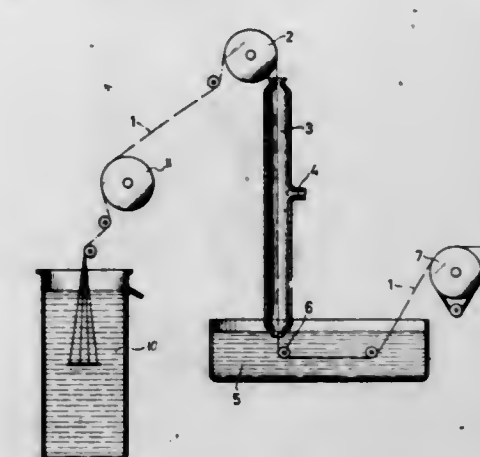
U.S. Cl. 18—8 1 Claim



Two filtering means, each of them being for each spinning material, spinneret for spinning the materials into composite filaments, and spacer for separating the two means are mounted in one cylindrical housing, which has channels therethrough for transmitting one of the filtered materials to the spinneret. The upper surface of the spacer serves as a pool for said filtered material. From the pool, said material bypasses the filtering means for the other material, passes through said channels in the housing, and reaches the spinneret, where it meets the other filtered material. Undesirable interference of the materials is avoidable by this pack.

3,458,901  
DEVICE FOR SPINNING VISCOSE  
Rainer Thomas, Wilfried Keller, and Paul Weber, Siegburg, Germany, assignors to Phrix-Werke Aktiengesellschaft, Hamburg, Germany  
Filed Aug. 1, 1966, Ser. No. 569,382  
Claims priority, application Germany, Aug. 19, 1965, P 37,483

U.S. Cl. 18—8 6 Claims



Regenerated cellulose is spun by extruding viscose into a formaldehyde-containing precipitating bath so as to form a rope of coagulated filaments, the thus-formed rope is passed downwardly through a steaming zone in which the rope is contacted with steam having a temperature between 95 and 110° C., and from there directly through a watering zone in which the steamed rope is contacted from all sides with hot water having a tem-



perature between about 70 and 95° C., and the rope is stretched during the steaming and watering thereof to between about 300% and 500% of its original length.

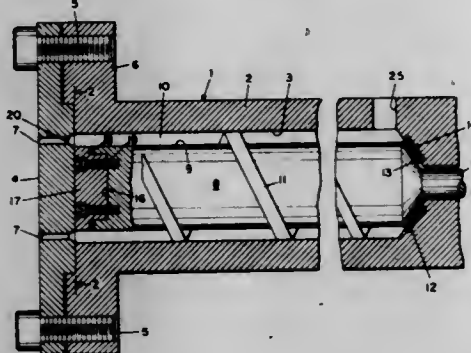
sure is applied to the retaining ring, a portion of the sealing ring moves radially outwardly to stretch the hot thermoplastic material.

**3,458,902**  
**EXTRUSION APPARATUS FOR THERMOPLASTIC MATERIALS**  
Robert T. Burns, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

Filed July 28, 1967, Ser. No. 656,732  
Int. Cl. B29f 3/04

U.S. Cl. 18—12

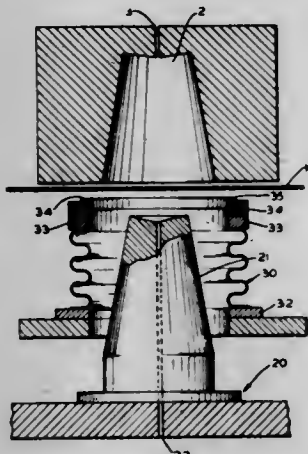
2 Claims



This invention relates to an extruder and particularly to an extruder for making foamable thermoplastic pellets, and is characterized by a smooth flow path for the extrudate from the extruder screw through the die whereby there are no pockets in which the extrudate can hang up. The smooth flow path is obtained by an extension disposed in the gap that is normally present between the end of the extruder screw and the die and by flaring the input end of the die holes to encompass the entire area at the output end of the extruder.

**3,458,903**  
**FORMATION OF PLASTIC ARTICLES BY EMPLOYING A POSITIVE PRESSURE**  
Richard K. Shelby, Chicago, Ill., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
Filed Mar. 15, 1966, Ser. No. 534,441  
Int. Cl. B29c 17/04, 17/07  
U.S. Cl. 18—19

4 Claims



A pressure sealing ring which is adapted to be mounted upon rigid retaining rings in pressure applicators used in molding operations where the retaining ring receives gaseous pressure. The sealing ring comprises a linear copolymer of approximately 55 to 65 weight percent of vinylidene fluoride and approximately 45 to 35 weight percent hexafluoropropylene. The sealing ring engages a soft heated thermoplastic material and when gaseous pres-

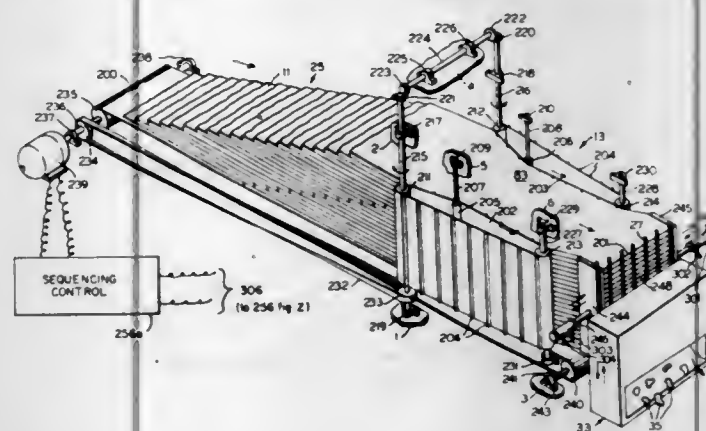
**3,458,904**  
**FIBER BLENDER (SRRL BALE-OPENER-BLENDER)**  
James I. Kotter and Harold L. Salaun, Jr., Metairie, Eugene F. Wallace, Chalmette, and James P. Langgan, Jr., Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture

Filed Apr. 21, 1967, Ser. No. 632,657

Int. Cl. D01g 7/04, 9/16

U.S. Cl. 19—80

2 Claims



This invention relates to an opening and blending machine designed to process and produce a homogenous blend from an endless stagger-layered package of fibers which package may incorporate as many as 20 individual bales.

An endless belt conveyor with coating side belts support and urge the face of the stagger-layered package against the spaced vertically disposed bar components of a stationary barrier means. A processing head comprising counter rotating cylinders with hooked teeth traverses, with a reciprocating motion, the opposite side of the barrier means and the tooth components of the said cylinders extend through the barrier means between the individual bars a sufficient distance to extract fiber tufts from the plurality of layers presented on the package face.

The machine is characterized particularly by a means for periodically shifting the face of the fiber package from side to side during the pauses between reciprocal strokes of the processing head as it traverses the barrier means.

Periodic shifting of the face of the fiber package, which shifting also coincides with a relaxing of the force urging the face of the fiber package against the barrier or alternatively coincides with complete withdrawal of the face of the fiber package from the barrier, insures uniformity of the fiber tufts plucked through the barrier means by the toothed rolls, prevents localized packing and occlusion of fiber masses behind the vertical bar components of the barrier means and attendant channeling of the package face.

**3,458,905**  
**APPARATUS FOR ENTANGLING FIBERS**  
William C. Dodson, Jr., Wilmington, and George R. Long, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Application July 5, 1966, Ser. No. 564,499, now Patent No. 3,339,362, dated Sept. 5, 1967, which is a division of application Ser. No. 563,934, July 5, 1966, now Patent No. 3,353,225, dated Nov. 21, 1967. Divided and this application Aug. 3, 1967, Ser. No. 658,224

Int. Cl. D04h 11/00

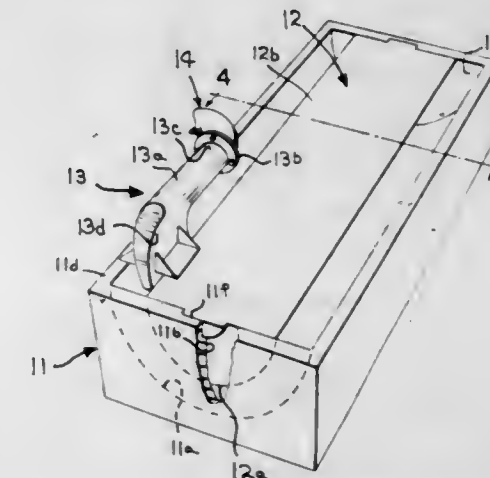
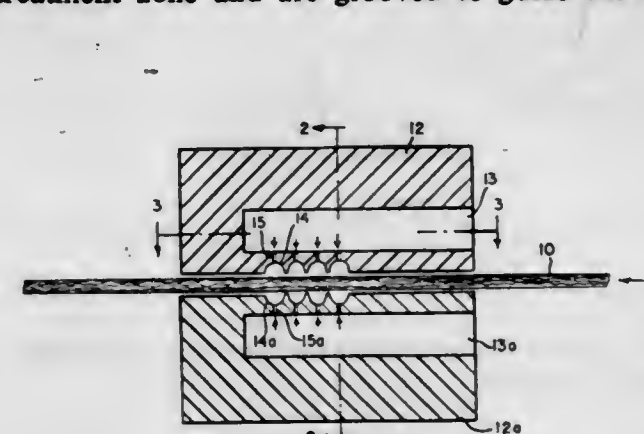
U.S. Cl. 19—161

16 Claims

Apparatus is disclosed for entangling fibers in an assembly of fibers to produce patterned nonwoven fabric

or to unite layers, including splicing of tows. High velocity streams are jetted from orifices of jet devices having opposed face portions which are spaced to provide a treatment zone and are grooved to guide the outflow

tubular inlet portion for receiving the slurry and an off-set convergent discharge portion to partially restrict the

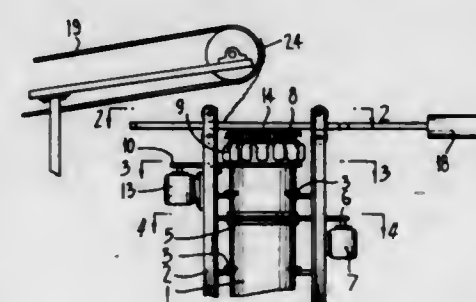


of jetted fluid along bilateral paths. The assembly of fibers is moved between the jet devices in a direction transverse to the grooves to entangle fibres within the streams.

slurry flow as it is discharged from the nozzle and into the mold.

**3,458,906**  
**FIBRE PREPARATION FOR WAD OR FELT MANUFACTURE**  
George Francis Flanagan, Pascoe Vale, Victoria, Australia, assignor to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia, a body corporate  
Filed Nov. 14, 1966, Ser. No. 594,227  
Claims priority, application Australia, Nov. 15, 1965, 66,549/65  
Int. Cl. D04h 11/00; D01b 3/04  
U.S. Cl. 19—163

9 Claims



Apparatus is provided for forming a uniform felt on batt; the apparatus includes a web distributing device which is reciprocated across the mouth of a rotating conduit and deposits a layer of fibers thereover. Each layer overlaps the mouth of the conduit and is forced there-through by each added layer. Any portion of the layers of fibers extending outwardly from the conduit mouth is trimmed therefrom.

**3,458,907**  
**SLURRY POURING MEANS AND MOLD**  
Richard F. Shannon, Lancaster, Ohio, assignor to Owens-Corning Fiberglass Corporation, a corporation of Delaware  
Continuation-in-part of application Ser. No. 286,351, June 7, 1963. This application Dec. 6, 1966, Ser. No. 599,507  
Int. Cl. B28b 1/14, 7/28, 13/00

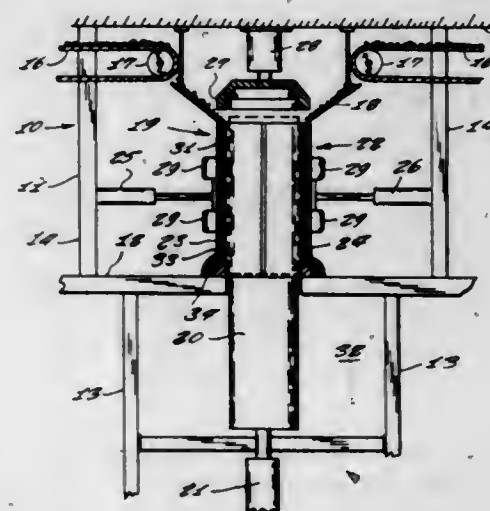
U.S. Cl. 25—30

5 Claims

A slurry pouring nozzle and method useful in filling molds for in situ conversion of a cementitious slurry to thermal insulation material. The pouring nozzle has a

**3,458,908**  
**HYDRAULIC CONCRETE PIPEMAKING MACHINES**  
Keith L. Burchett, 26 Valley Road, Beloit, Wis. 53511  
Filed Mar. 22, 1967, Ser. No. 625,106  
Int. Cl. B28b 21/16, 21/18  
U.S. Cl. 25—31

3 Claims



A machine for making concrete pipe by employing a hydraulic pressure, the machine including conveyors for delivering concrete to a charging hopper placed above a pipe form assembly which includes an inside form, and outside form comprised of two halves and a press, the forms and press being hydraulically operated to mold the concrete into a pipe.

**3,458,909**  
**VIBRATORY MOLDING APPARATUS**  
George R. Hansen, Nixon, N.J., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

Filed Aug. 29, 1966, Ser. No. 575,762

Int. Cl. B28b 1/08; B01f 11/00

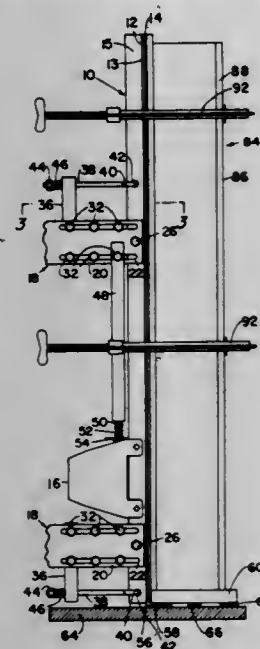
U.S. Cl. 25—41

8 Claims

Molding apparatus, particularly for producing long, refractory shapes, comprises an elongated vertical frame, an elongated mold detachably secured to said frame, supporting means for said frame and means for permitting vertical movement of said frame relative to said supporting means, means mounted on said frame for impart-



ing vertical vibration thereto, means for controlling horizontal vibration of said frame and a strike plate beneath



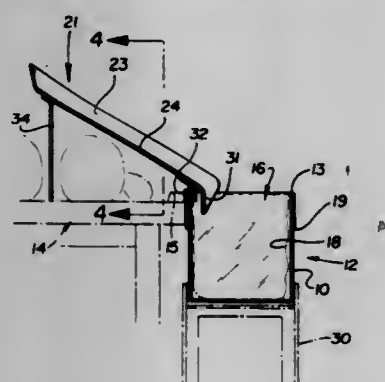
said frame and adjustably engageable by a portion of said frame.

### 3,458,910 APPARATUS AND METHOD OF HANDLING AND EMBALMING VISCERA

Robert Donald C. Ritchey, 2589 Alice Way,  
Pinole, Calif. 94564  
Filed Dec. 5, 1966, Ser. No. 599,127  
Int. Cl. A01n 1/00

U.S. Cl. 27-21

10 Claims



An apparatus and method of handling and embalming viscera, and particularly human viscera, is disclosed which incorporates and utilizes a tray, plastic bag, and bucket. Viscera is severed from the body during autopsy, studied and then placed on the tray, which is inclined toward and superimposed over the bucket lined with the bag. Thus, the severed viscera passes into the bag. Upon completion of the autopsy, the bag containing the viscera is removed from the bucket, substantially sealed and then placed in the body cavity. The incision in the body is closed and the body may be transported to the mortician. The mortician may open the incision and remove the bag for final preparation of the body or leave the bag in the body and use a trocar or similar instrument to treat the viscera.

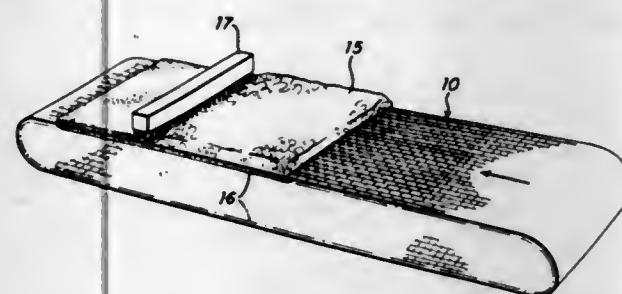
### 3,458,911 METHOD OF MAKING PAPERMAKERS' FELT

John P. Koester, Piqua, Ohio, assignor to The Orr Felt & Blanket Company, Piqua, Ohio, a corporation of Ohio  
Original application Dec. 7, 1964, Ser. No. 416,273.  
Divided and this application Mar. 17, 1967, Ser. No. 623,968  
Int. Cl. D04h 18/00; D06c 1/00; D02g 1/16  
U.S. Cl. 28-72.2

3 Claims

A papermakers' felt and method of making the same is disclosed in which a woven base material is woven with

soluble filler yarns formed of calcium alginate and which are removed after battings have been needled into the



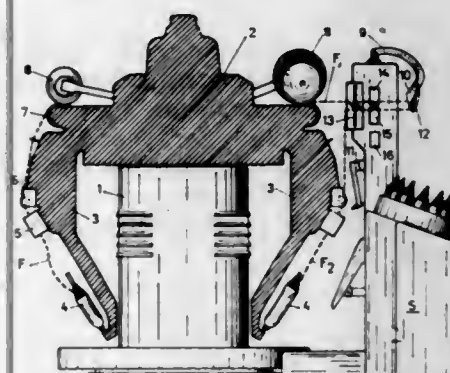
base material to form a finished felt substantially free of crosswise structure.

### 3,458,912 YARN MONITORING SYSTEM

Hermann Werffell, Horgen, Switzerland, assignor to Maschinenfabrik Schweizer AG., Horgen, Switzerland, a corporation of Switzerland  
Filed Aug. 7, 1967, Ser. No. 658,910  
Claims priority, application Switzerland, Aug. 17, 1966, 11,847/66  
Int. Cl. B65h 69/04

U.S. Cl. 28-64

11 Claims



A yarn monitoring system including measuring cells, one measuring cell being associated with each yarn so as to provide an individual monitoring of the condition of each yarn. The individual monitorings are correlated by an evaluation circuit. Yarn cutting means, one for each yarn, are operatively connected with the evaluation circuit.

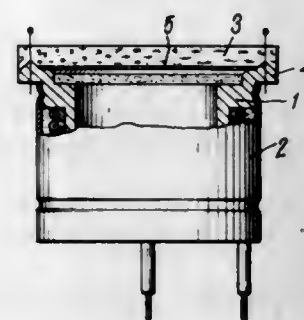
### 3,458,913 SUPPLY CATHODE FOR ELECTRICAL DISCHARGE VESSELS AND METHOD FOR ITS PRODUCTION

Walter Schmidt, Dieter Vitzthum, Herbert Hoffmann, and Helmut Katz, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed Apr. 19, 1966, Ser. No. 543,529  
Int. Cl. H01j 9/00, 19/00

U.S. Cl. 29-25.17

6 Claims



The method of producing a dispenser type cathode comprising forming an emission substance supply container

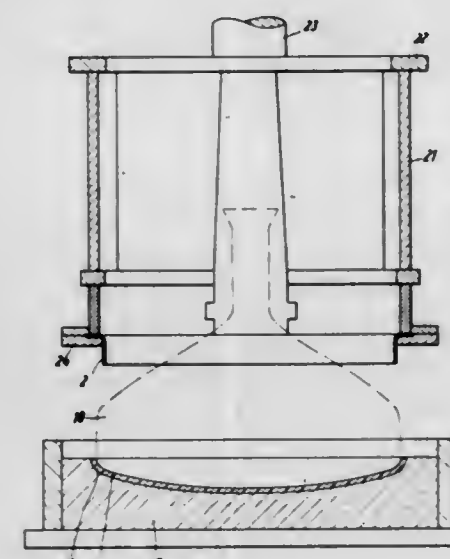
and a porous disk that seals the container, applying a layer of a hydroxide that is thermally convertible to a corresponding oxide on a face (which may have portions thereof masked) of the carrier disk, thermally converting the hydroxide to the corresponding oxide, filling the supply container with an emission substance and sintering the carrier disk onto the supply container with the coated inner face thereof adjacent the emission substance.

### 3,458,914 METHOD AND APPARATUS FOR MAKING VIDEO TUBES IMPLOSIONPROOF

Rudolf Wittenbecher, Berlin, Germany, assignor to Standard Elektrik Lorenz AG, Stuttgart-Zuffenhausen, Germany, a corporation of Germany  
Filed Oct. 26, 1966, Ser. No. 589,638  
Int. Cl. H04n 5/00

U.S. Cl. 29-25.19

4 Claims



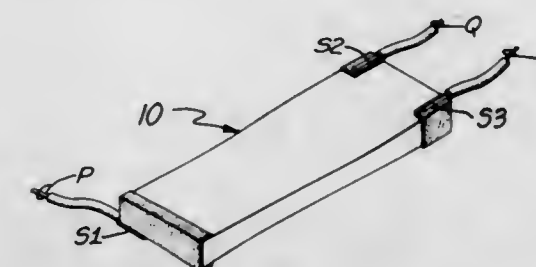
Apparatus is provided for pressing an implosion preventing metal band onto a video picture tube. The metal band has a flange for mounting to a support structure and a circumference smaller than the largest circumference of the tube. The apparatus forces the band onto the tube adjacent the screen and enlarges the band to press-fit thereon.

### 3,458,915 METHOD OF MAKING A PIEZOELECTRIC DEVICE

Kenneth F. Miller, Riverside, and Melvin H. Smith, Perris, Calif., assignors to Bourns, Inc.  
Original application Jan. 5, 1966, Ser. No. 518,902, now Patent No. 3,378,704, dated Apr. 16, 1968. Divided and this application Oct. 20, 1967, Ser. No. 676,934  
Int. Cl. H04r 17/00

U.S. Cl. 29-25.35

4 Claims



Method of making a monolithic piezoelectric device comprising forming thin films of ceramic greenware comprising piezoelectric material, providing a conductive film element on the face of each of a plurality of the films, superposing the films, compacting the films into a unitary mass by applied force, firing the unitary mass, interconnecting alternate conductive film elements to provide

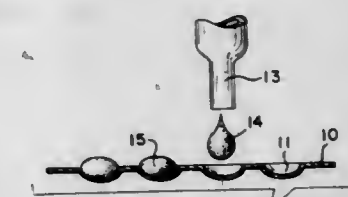
a first termination, interconnecting a first set of the intervening film elements in a first portion of the mass to provide a second termination, interconnecting a second set of the intervening film elements in a second portion of the mass to provide a third termination, heating the mass to a temperature above the Curie point and cooling the mass to a temperature below the Curie point while applying to said second and third terminations potentials of opposite polarities relative to said first termination, to oppositely polarize said first and second portions of said mass.

### 3,458,916 POWDER ON FOIL SOLID TANTALUM CAPACITOR

Gerhart P. Klein, Manchester, Mass., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware  
Original application Dec. 13, 1965, Ser. No. 513,457, now Patent No. 3,403,303, dated Sept. 24, 1968. Divided and this application Mar. 1, 1968, Ser. No. 729,847  
Int. Cl. H01g 13/00; B22f 3/24

U.S. Cl. 29-25.42

20 Claims



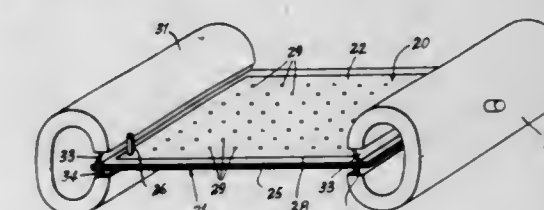
An electrolytic device is made by producing a depressed portion in a body of film forming material, placing a moistened mass of particles of the same material in the depression and bonding the mass to the body while sintering the mass to form a porous body having an uninterrupted dielectric film in the unbonded areas.

### 3,458,917 METHOD OF FABRICATING METAL SHEETS WITH FLUID PASSAGES

Paul Mueller, Springfield, Mo., assignor to Paul Mueller Company, Springfield, Mo., a corporation of Missouri  
Filed Jan. 3, 1966, Ser. No. 518,465  
Int. Cl. B21d 53/00; B23p 15/26

U.S. Cl. 29-157.3

7 Claims



A method of forming fluid passages in sheets by inflating unwelded portions of the plates between welded portions while the sheets are held under tension.

### 3,458,918 TUYERE REPLACEMENT APPARATUS

Daishu Kitajima, Kitakyushu, and Masaaki Nagatomi, Fukuoka, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, and Toku Pneumatic Co., Ltd., Fukuoka, Fukuoka Prefecture, Japan  
Filed Aug. 29, 1967, Ser. No. 664,072  
Claims priority, application Japan, Sept. 6, 1966, 41/58,459

U.S. Cl. 29-239

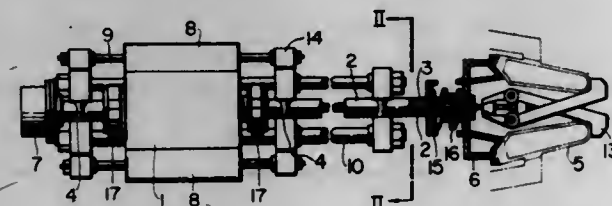
Int. Cl. B23p 19/04

7 Claims

This invention concerns a tuyere replacement apparatus comprising a mandrel equipped with a drawing jig at one end and securely fixed to the rod of an opening and clos-



ing cylinder of the other. Said mandrel is contained within a hollow drawing rod which has a push-in fixture at one end. The invention further comprises a reciprocating air hammer which is movably fitted to the intermediate portion of said drawing rod, and two pull and push cylin-

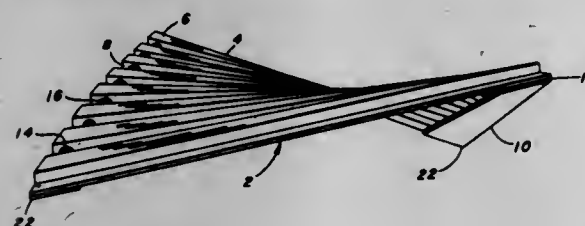


ders which are disposed with said hammer interposed between them. The apparatus is constructed so as to effect the horizontal shifting of said mandrel and drawing rod, and also, so that said air hammer will exert an impact on the drawing rod.

**3,458,919**  
**METHOD OF FORMING A HYPERBOLIC PARABOLOID CONSTRUCTION COMPONENT**  
John F. McDermott, Monroeville, Pa., assignor to United States Steel Corporation, a corporation of Delaware  
Filed July 29, 1966, Ser. No. 568,954  
Int. Cl. B23p 11/02

U.S. Cl. 29-446

2 Claims

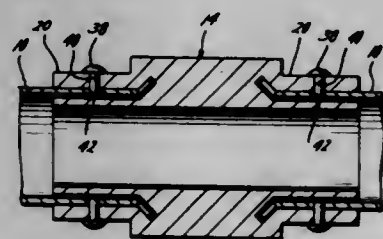


The method of the disclosure comprises loosely affixing an elongated metal strip edge member to the underside of a corrugated metal panel at two opposed edges thereof extending transversely of the corrugations of the panel. The edge members are loosely fastened to the panel by means of threaded studs which project upwardly from the edge members through elongated slots in the valleys of the panel members; and bolts threaded on the studs over washers which, in turn, overlie the slots in the panel. After the panel and edge members have been thus loosely assembled, two diametrically opposed corners of the assembly are bent downwardly out of the horizontal plane containing the other two corners of the assembly. After the bending operation, the nuts are tightened on the studs to fix the assembly in hyperbolic paraboloidal shape.

**3,458,920**  
**METHOD OF COUPLING PIPE**  
Joseph R. Crump, 2018 Timber Lane,  
Houston, Tex. 77027  
Continuation of application Ser. No. 251,878, Jan. 16, 1963. This application Apr. 12, 1965, Ser. No. 449,682  
Int. Cl. B23p 3/00, 25/00

U.S. Cl. 29-458

2 Claims



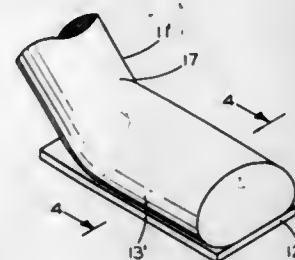
A coupling having oppositely disposed grooves, with a frusto-conical portion in each groove, is positioned at

each end of a pipe segment. Plastically deformable sealant material is placed within such frusto-conical portion prior to insertion therein of the pipe end. Pressure is applied so as to force the pipe ends into the grooves' frusto-conical portion which contains the sealant.

**3,458,921**  
**SHORT PULSE VIBRATORY BONDING**  
Frank W. Christensen, Pennington, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York  
Filed July 19, 1965, Ser. No. 472,999  
Int. Cl. B23k 31/02

U.S. Cl. 29-470.1

22 Claims

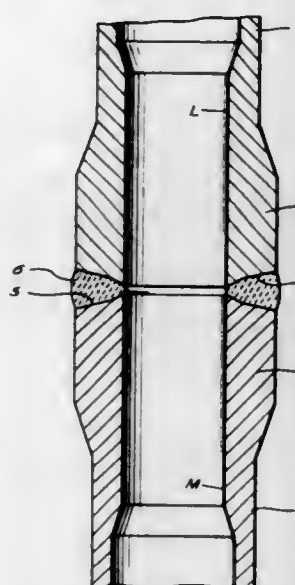


An optimum ultrasonic bond is formed by accurately controlling the amount of ultrasonic energy applied to the bond. It has been found that if too much ultrasonic energy is applied degradation of the bond occurs and if too little ultrasonic energy is applied no bond occurs. Damping facilities are employed to stop continuing vibration or ringing down of an ultrasonic bonding apparatus to facilitate accurate control of the bonding interval.

**3,458,922**  
**METHOD OF CONSTRUCTING A DRILL PIPE PROTECTOR MEANS**  
Herman J. Schellstede, Houma, and Thomas M. Sanders, New Iberia, La., assignors, by mesne assignments, to Herman J. Schellstede, New Iberia, La.  
Filed June 13, 1967, Ser. No. 645,738  
Int. Cl. B23k 11/02

U.S. Cl. 29-475

2 Claims

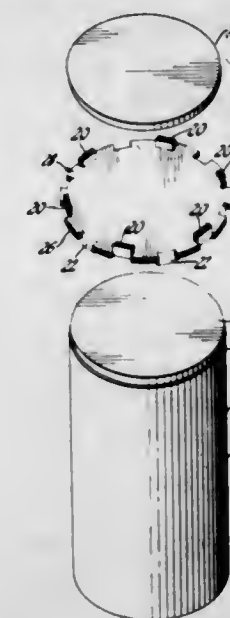


A method of fabricating a drill pipe assembly from a plurality of sections of drill pipe. The method includes forming thickened end portions on at least one end of each section, forming threaded couplings on the other ends of at least two of the sections, aligning the sections with the thickened end portions thereof in abutting relationship and welding the abutting end portions together to form a continuous pipe assembly. The welded portions form a continuous, integral thickened protector collar located intermediately of the pipe assembly.

**3,458,923**  
**METHOD OF MAKING A VALVE LIFTER**  
Donald J. Hoffman, Grand Rapids, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Oct. 7, 1966, Ser. No. 585,104  
Int. Cl. F01l 1/00; B23k 1/04

U.S. Cl. 29-501

4 Claims

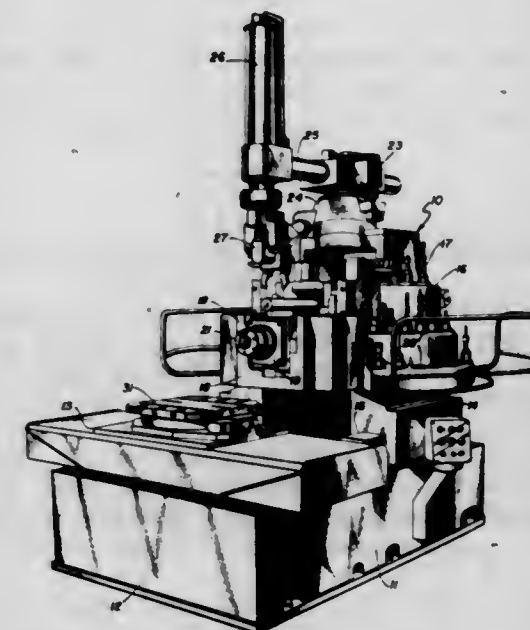


A method of brazing together two metallic members is disclosed. In a preferred embodiment a filler metal member in the form of a sheet or disc is provided having a plurality of alternately upwardly and downwardly directed tangs at its periphery. The filler metal is interposed between the members to be joined in sandwich form, the tangs being employed to assist in locating and maintaining the members in a desired relationship until the brazing operation is accomplished.

**3,458,924**  
**MACHINE TOOL**  
Richard G. Oslebo, Holden, Robert F. Newton, Worcester, and Alden H. Jacobson, Princeton, Mass., assignors to The Heald Machine Company, Worcester, Mass., a corporation of Delaware  
Filed Aug. 23, 1967, Ser. No. 662,745  
Int. Cl. B23q 1/08, 3/157

U.S. Cl. 29-568

10 Claims

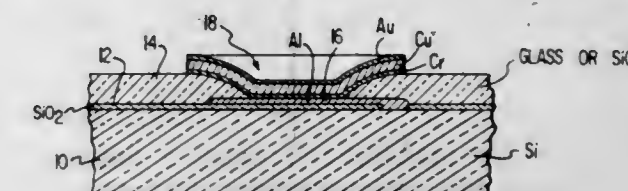


This invention relates to a machine tool and, more particularly, to apparatus for boring, drilling, and other operations with a plurality of cutting tools wherein means is provided for removing the tools one by one from a storage rack and introducing them to the work area.

**3,458,925**  
**METHOD OF FORMING SOLDER MOUNDS ON SUBSTRATES**  
John Napier, Poughquag, and Raeman P. Sopher, Paul A. Totta, David De Witt, and Clarence Karan, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Jan. 20, 1966, Ser. No. 521,988  
Int. Cl. B01j 17/00; B23k 31/02

U.S. Cl. 29-578

6 Claims

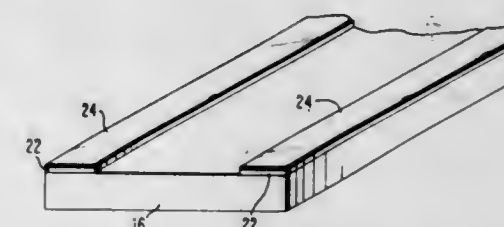


A method of forming mounds of solder on integrated circuit chips having lands thereon comprising masking the surface of the chips so as to expose only the land and area immediately therearound, evaporating a layer of solder in the mask and subsequently heating the solder above its melting point whereby the solder de-wets the area around the lands and contracts to form solder mounds on the lands.

**3,458,926**  
**METHOD OF FORMING A GLASS FILLED GAP**  
Leon I. Maissel, Poughkeepsie, and David L. Wilcox, Hopewell Junction, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Oct. 8, 1965, Ser. No. 494,140  
Int. Cl. G11b 5/42

U.S. Cl. 29-603

8 Claims



A method of spacing circuit parts of a magnetic head to define a gap with an adherent layer of glass by (1) applying by R.F. sputter techniques a first layer of glass of a predetermined thickness to each of the respective parts, (2) applying by R.F. sputter techniques a relatively thin layer of glass over at least one of the first layers of glass, the glass of a second layer having a softening point appreciably less than the softening point of the glass of the first layer, (3) positioning the respective parts with the layers of glass in abutting relation, and (4) heating the assembly to the softening point temperature of the glass of the second layer to thereby fuse the glass layers.

**3,458,927**  
**METHOD FOR IMPROVING THE SWITCHING COEFFICIENT OF FERRITES WITH HYSTERESIS LOOPS OF RECTANGULAR SHAPE**  
Walter J. Wiechec, Santry, Dublin, Ireland, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Nov. 15, 1965, Ser. No. 507,908  
Int. Cl. B22f 3/24

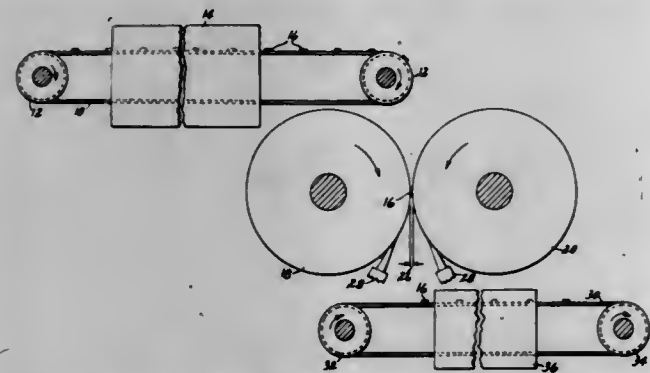
U.S. Cl. 29-604

7 Claims

A method of making ferrite bodies having a shortened switching time for use in computers and the like is disclosed. The ferrite metal oxide powder is compacted in a mold to form a body. The body is then partially sintered in a furnace and removed therefrom. The partially sintered ferrite body is then pressed between heated rolls

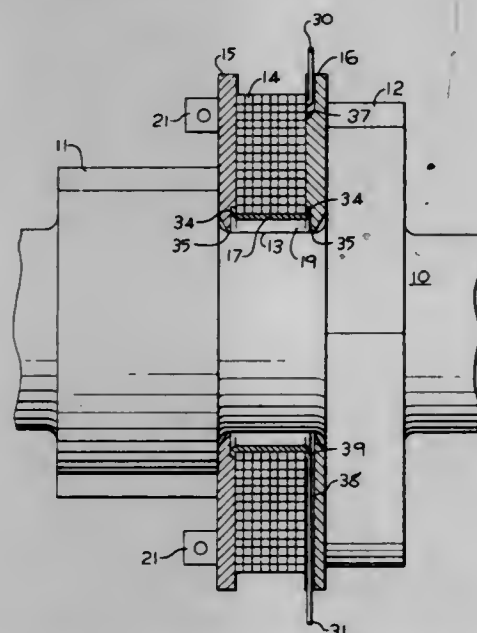


to complete the sintering thereof. After being hot pressed the ferrite bodies are annealed to relieve the stresses



created by hot pressing to produce a square loop ferrite body having fast switching time characteristics.

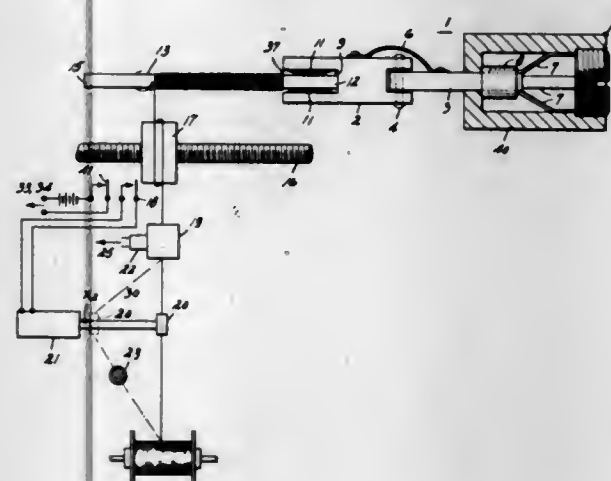
**3,458,928**  
**METHOD FOR FORMING ROTOR CONSTRAINED ELECTRICAL COILS**  
James L. Crawford, Chillicothe, and Paul J. Staebler, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California  
Filed Feb. 23, 1966, Ser. No. 529,365  
Int. Cl. H01f 7/00; H02k 15/04  
U.S. Cl. 29—605 **7 Claims**



In a method for winding electrical coils, a split bobbin is first assembled about the reduced core portion of a rotor between two of its axially spaced apart radially projecting pole pieces. A pair of removable split annular coil side forms is then assembled about the core, one on each side of the split bobbin. Conductor is wound about the bobbin and simultaneously epoxy resin may optionally be applied to each layer of the wound coil. The outermost layer thereof is then wound with banding tape, the rotor constrained coils are cured, and the pair of coil side forms removed. Additional banding, grinding, and curing of the formed coil may optionally follow.

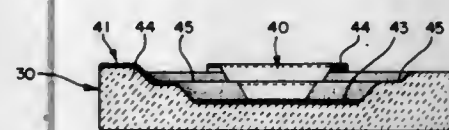
**3,458,929**  
**METHOD OF WINDING AND CALIBRATING ELECTRICAL COILS**  
Oswald I. Gilbertson, Nutley, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York  
Original application Feb. 26, 1962, Ser. No. 175,633, now Patent No. 3,302,897, dated Feb. 7, 1967. Divided and this application Dec. 30, 1966, Ser. No. 624,105  
Int. Cl. B65h 81/06  
U.S. Cl. 29—605 **7 Claims**  
The present disclosure embraces a method of winding electrical coils having a predetermined magnitude of an

electrical property, such as resistance or inductance, which comprises the following steps: winding a moving wire about a core, connecting measuring facilities to the moving wire at a point in advance of the core only when



almost the required number of turns have been wound, severing the wire when the predetermined magnitude is measured by the measuring facilities and continuing to wind the wire on the core until the severed end is reached.

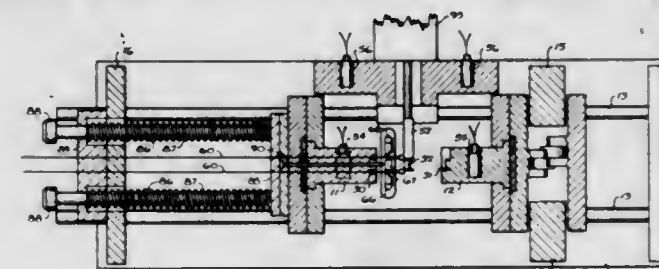
**3,458,930**  
**LEADLESS INVERTED DEVICE FORMING PROCESS**  
Torleiv O. Melkeraen, Chicago, and Raymond G. Capek, Elmhurst, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware  
Filed Dec. 7, 1967, Ser. No. 688,903  
Int. Cl. B41m 3/08; H05k 3/12  
U.S. Cl. 29—625 **3 Claims**



Semiconductor element supporting packages for use in leadless inverted solid state circuit devices are produced by printing a conductive terminal coating array on a flat uncured insulation sheet from which the packages are later punched. Coating prior to final formation and solidification of the package provides improved tolerance considerations while using simplified coating techniques.

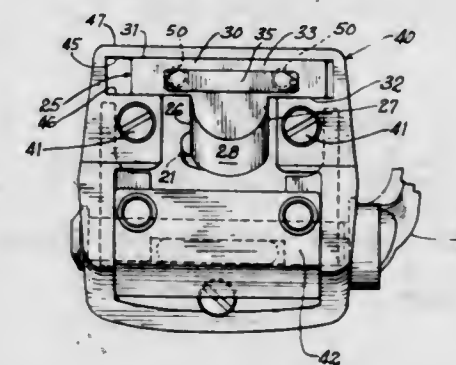
**3,458,931**  
**METHOD FOR MOLDING TERMINALS IN WORKPIECES**  
Robert M. Carlson, Gahanna, Larry P. Jasorka, Columbus, and John F. Mulconrey and Glenn A. Trimble, Gahanna, Ohio, assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York  
Original application Sept. 16, 1963, Ser. No. 309,125, now Patent No. 3,330,019, dated July 11, 1967. Divided and this application June 9, 1967, Ser. No. 652,646  
Int. Cl. H01r 9/00; B23p 17/00  
U.S. Cl. 29—630 **4 Claims**  
Methods of molding terminals in bobbins including the steps of threading a plurality of wires through openings formed in a first die block so that the ends of the wires extend from a portion of the die block which forms a mold cavity when joined with a second die block. The ends of the wires are enlarged slightly by coining and the first die block is moved toward the second die block

thereby pulling the enlarged, coined ends of the wires therewith into the mold cavity formed by the joined first and second die blocks. A plastic material is deposited into the mold cavity and is cured therein to form the bobbin having the coined ends of the wires embedded



therein. Thereafter, the first and second die blocks are moved apart and intermediate portions of the wires are cut to provide the terminals extending from the bobbin. Additionally, the ends of the wires are coined in preparation for the molding of a subsequent bobbin.

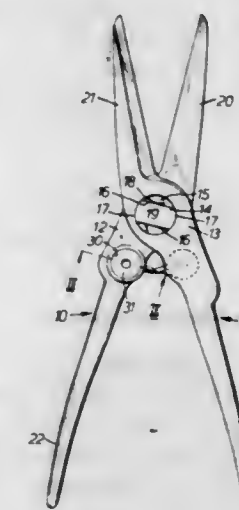
**3,458,932**  
**TRANSMISSION FOR ELECTRIC HAIR CLIPPER**  
James H. Fox, Torrance, Calif., assignor to Wahl Clipper Corporation, Sterling, Ill., a corporation of Illinois  
Filed Sept. 11, 1967, Ser. No. 666,656  
Int. Cl. B26b 19/36  
U.S. Cl. 30—220 **8 Claims**



An electric hair clipper having a transmission mechanism between a rotary motor shaft and reciprocating cutter blade which converts rotary motion of the motor shaft into reciprocating motion of the cutter blade, the transmission mechanism including a circular cam member on the motor shaft, a cam follower member in operative relation with the cam member, a stationary guide member for the cam follower member, and force-exerting means providing bias via the cam follower member on the cutter blade. In preferred form, the cam member, the cam follower member and the guide member have cooperating portions made of plastic material whereby zero clearance fits with low friction characteristics are provided to insure proper guiding action, an extended life and low noise and heat levels without employing close tolerances in the members.

**3,458,933**  
**HANDTOOLS**  
Edward A. Rogers, London, England, assignor to Wilkinson Sword Limited, London, England, a British company  
Filed Nov. 16, 1966, Ser. No. 594,812  
Claims priority, application Great Britain, Nov. 27, 1965, 50,491/65  
Int. Cl. B26b 13/00; B25b 7/02, 7/08  
U.S. Cl. 30—261 **3 Claims**  
In a first embodiment of a handtool a pair of cutter blades is pivotally connected by a pivot pin fast with one member having a T head which engages in a slot in the

other member when said members are angularly disposed beyond their normal working relationship. The members and blades rigid therewith are biased apart by two elastomer sleeves, fitted in respective recesses in the members and acting on pins which extend towards one another and



make contact with one another when the blades are forced together. In a second embodiment a restoring action is provided by four elastomer cylinders cooperating in a recess of square section in one member with a boss of square section in the other member.

**3,458,934**  
**CERVICAL TRACTION ORTHODONTIC BRACE**  
John Robert Matthews, 4195 Balboa Way, San Diego, Calif. 92117, and Melvin J. David, 16221 Quemada Road, Encino, Calif. 91316  
Filed June 8, 1967, Ser. No. 644,636  
Int. Cl. A61c 7/00  
U.S. Cl. 32—14 **6 Claims**

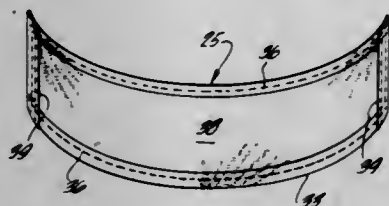


The orthodontic brace has a unitary intra-oral bow and a unitary extra-oral bow which are secured together in positive alignment without soldering, the intra-oral bow incorporating a spring portion which locks onto and adds to the spring effect of the extra-oral bow, the locking means being easily releasable to allow lateral adjustment of the extra-oral bow for unsymmetrical pressure on selected teeth when required.

**3,458,935**  
**ORTHODONTIC NECKBAND**  
Warren R. Mayne, Middleton, Mass., and Frank W. Johnson, Monrovia, Calif., assignors to Unitek Corporation, Monrovia, Calif., a corporation of California  
Filed Sept. 11, 1967, Ser. No. 666,579  
Int. Cl. A61c 7/00  
U.S. Cl. 32—14 **6 Claims**  
An orthodontic neckband which is pre-contoured to fit smoothly against a patient's neck without wrinkling or curling. The neckband is formed from several strips of material which are stitched together to impart a desired



curvature. An outer cover strip or panel is formed from a decorative fabric to enhance the appearance of the neckband. An elastic strap passes through a pocket in the



neckband, and includes a plurality of sockets to anchor a pair of hooks adapted for attachment to an extra-oral orthodontic appliance.

3,458,936

**DENTAL MODEL WITH TEETH-RETAINER PINS**

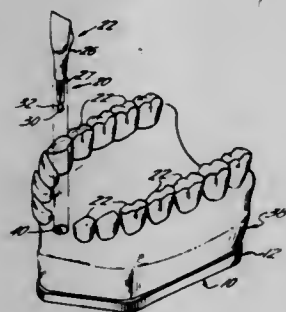
John F. Schulz, Locust Valley, N.Y., and Joseph J. Tuccillo, Norwalk, Conn., assignors to J. F. Jelenko & Co., Inc., New Rochelle, N.Y., a corporation of New York

Filed June 21, 1967, Ser. No. 647,810

Int. Cl. A61c 13/10; G09b 23/28

U.S. Cl. 32-71

5 Claims



The dental model and artificial teeth of the present invention comprises an articulation or other anatomical simulating form or mounting means for the teeth, with the provision of improved interengaging means on the form and on the teeth for the automatic releasable securing of the teeth in position on the form in response to the positioning of the teeth in their positions on the form.

3,458,937

**FOLDING MEASURING INSTRUMENT INCORPORATING IMPROVED SPRINGS**

Andre Quenot, Besancon, Doubs, France, assignor to Quenot & Cie S.a.r.l., Besancon, Doubs, France, a company of France

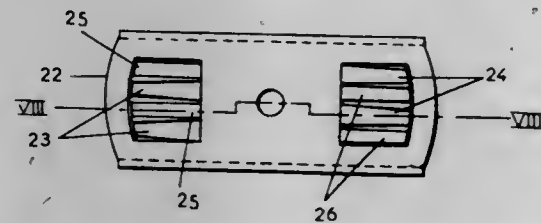
Filed Sept. 15, 1967, Ser. No. 667,895

Claims priority, application France, Apr. 28, 1967, 104,667

Int. Cl. B43I 7/06; G01b 3/06

U.S. Cl. 33-118

1 Claim

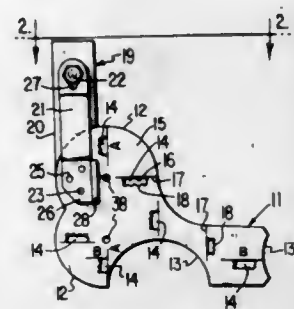


The folding measuring instrument has alternate pairs of bosses and openings on each side of the pivot on each linkage member with a pair of openings on one side of the pivot aligned with a pair of bosses on the other side of the pivot.

3,458,938  
**CENTER-LINE GAUGES**  
Ludwig F. Perwas, Mountainview Ave.,  
Orangeburg, N.Y. 10962  
Filed Oct. 24, 1965, Ser. No. 504,317  
Int. Cl. G01b 3/00, 5/00

U.S. Cl. 33-174

4 Claims



A device for checking the center-line position of a radius on a workpiece above a working surface or reference plane by taking only one dial indicator reading from a center-line gauge instead of several readings and calculations. This is accomplished by a flat piece of material having a plurality of arcs on its perimeter and within the parallel surface area through slots having at least one side radially aligned with a related arc while the non-radially aligned slot surfaces are irregularly shaped to avoid being utilized as a gauge surface. An attachable precision alignment arm is used for quicker setups.

3,458,939

**DIAMETER GAUGE**

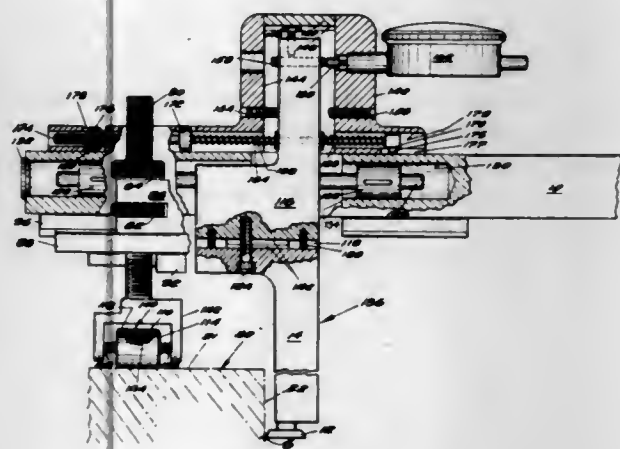
Robert A. Plante, Erving, Mass., assignor to the L. S. Starrett Company, Athol, Mass., a corporation of Massachusetts

Filed Aug. 17, 1966, Ser. No. 572,972

Int. Cl. G01b 5/12

U.S. Cl. 33-147

7 Claims



A gauge for measuring a dimension of a workpiece at a given distance from a reference surface has an elongated beam that is supported by rest legs which in turn are abuttingly engageable with the reference surface of the workpiece to position the beam in predetermined relation to the reference surface. A pair of probes are supported by drop legs which in turn are mounted to and are spaced along the length of the beam. The drop legs extend along the workpiece to position the probes at the desired distance from the reference surface. One of the drop legs is movable along the beam to enable its associated probe to be moved toward and away from the other drop leg and its associated probe so that the probes may measure the desired workpiece dimension. The work-

piece engaging portion of each rest leg is provided with a bearing to reduce friction between the rest legs and the reference surface.

the frozen product. In this manner an inexpensive supply of an inert gas of low humidity is made available for the drying operation. The low oxygen content of the gas reduces oxidative damage to the product as it is dried.

3,458,940

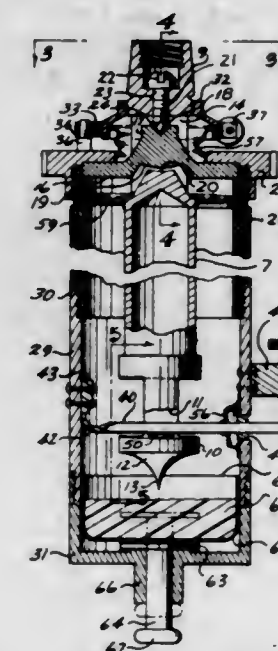
**LEVEL-ESTABLISHING DEVICE**

Edgar Schmued, 5051 Palos Verdes Drive North,  
Rolling Hills Estates, Calif. 90274  
Filed Feb. 10, 1967, Ser. No. 615,199

Int. Cl. G01c 15/10

U.S. Cl. 33-215

3 Claims



A pendulum apparatus used to align the optical axis of an instrument along a horizontal plane normal to the true vertical axis. The instrument features a locking bar extending through an aperture in the bob to allow frictional engagement and a hardening liquid for stabilizing and maintaining the bob in a vertical position. A resilient liquid filled cup allows the application of an intermittent damping force to the bob. Various materials such as glass and plastic beads, sand, liquid, and solidifying fluids are used for damping.

3,458,942

**HEAT EXCHANGER**

Edward J. Martin, London, and Bryan R. Radcliffe,  
Epsom Downs, England, assignors to A.P.V.-  
Kestner Limited, Greenhithe, Kent, England

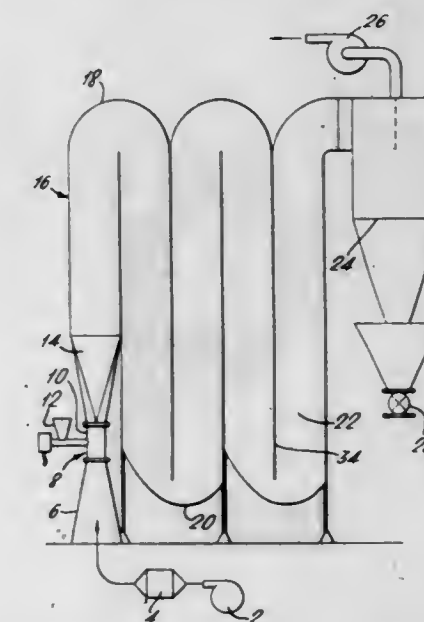
Filed Apr. 20, 1967, Ser. No. 632,401

Claims priority, application Great Britain, Apr. 20, 1966, 17,330/66

Int. Cl. F26b 17/00

U.S. Cl. 34-57

11 Claims



In a heat exchanger of the type in which particulate material to be heated or cooled is entrained in a fluid heat transfer medium, the passages of the exchanger are folded to reduce the overall height and the bottom bends are given a special cross-section to prevent deposition of entrained particles.

3,458,943

**MODEL AND METHOD FOR TEACHING HAIR AND WIG STYLING**

Alice M. Trowbridge, 334 Busch Terrace,  
Minneapolis, Minn. 55409

Filed Mar. 30, 1967, Ser. No. 627,138

Int. Cl. G09b 29/00; A41g 3/00, 5/00

U.S. Cl. 35-59

6 Claims



A model of a human head is covered with Velcro nylon loop binder material. Swatches of hair simulating material are bonded to wig fabric and a strip of Velcro nylon hook fastener material is provided around the periphery of such fabric. These swatches, when placed on the model, together form, with the model, a mannequin head having hair when can be shaped, curled, rolled, combed, back-combed and back-laced, brushed and smoothed into a finished style.

3,458,941

**FREEZE DRYING APPARATUS AND PROCESS**

Rolf Gunnar Gidlow, St. Paul, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware

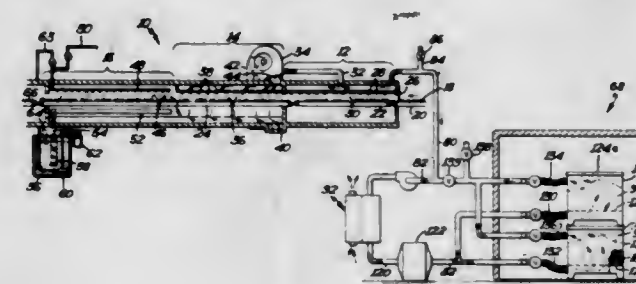
Continuation-in-part of application Ser. No. 673,593,

Oct. 9, 1967. This application Mar. 13, 1968, Ser. No. 712,775

Int. Cl. F26b 5/06, 15/18, 5/10

U.S. Cl. 34-5

12 Claims



Apparatus for drying products in a frozen condition consisting of a chamber for freezing the products under cryogenic conditions by exposing the food products to liquid nitrogen, solid CO<sub>2</sub> or similar cooling medium, ducts for collecting the gas that is evolved in the process of freezing the material and a chamber for drying the product. The collected gas is circulated through the drying chamber in heat and mass transfer relationship with

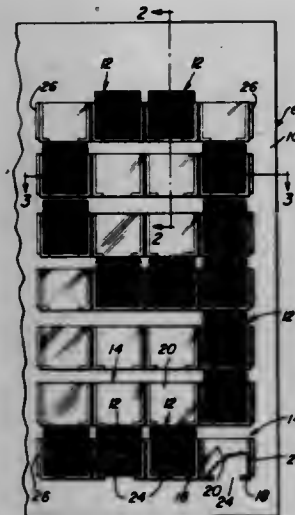


The method involves representing on the nylon binder covered head the outlines of areas of coverage of each swatch utilizing a geometric break-down of a circle; selectively fastening and removing swatches from their appointed positions on the model; and selectively rolling, curling and brushing an individual swatch and combinations of swatches when in position on the model to demonstrate the relationship of the hair attached to such swatch and swatches with respect to the total hair style.

**3,458,944**  
**CHANGEABLE SIGN CONSTRUCTION**  
Luis A. Jimenez, 1315 Magoffin Ave.,  
El Paso, Tex. 79905  
Filed May 12, 1967, Ser. No. 638,112  
Int. Cl. G09f 7/02

U.S. Cl. 40—28

4 Claims

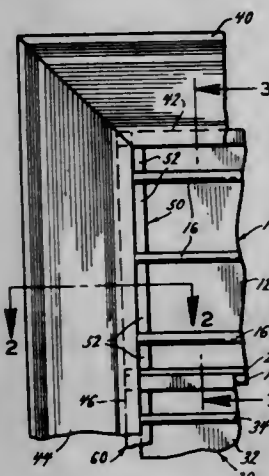


A sign, with or without a source of illumination, for filling stations, food markets and business establishments. It obviates the need to store a huge reserve of lettered and numbered sign building components and saves time and labor by providing a backing panel with distributive rows of pockets. This checker-board-style multiple pocket effect enables the user to place blank inserts in predetermined pockets, to outline or delineate letters and numerals (indicia generally speaking) and make up an on-the-spot message-conveying sign.

**3,458,945**  
**DISPLAY SIGN**  
Lindell N. Edwards, St. Louis, Mo., assignor to Commander Board International, Inc., St. Louis, Mo., a corporation of Missouri  
Filed May 11, 1967, Ser. No. 637,825  
Int. Cl. G09f 7/02

U.S. Cl. 40—140

8 Claims



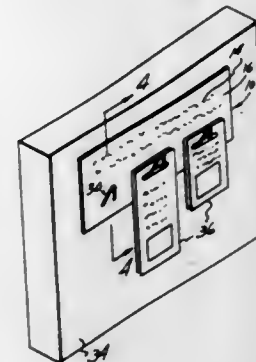
A panel has formed on its surface a series of longitudinal beaded protuberances to form channels into

which indicia bearing elements may be inserted. The upper and lower edges of the panel are formed channels into which indicia bearing elements may be inserted. The upper and lower edges of the panel are formed with cooperating interlocking means engaging the edge of a similar next adjacent panel whereby a plurality of such panels may be secured together to form an extended indicia holding member.

**3,458,946**  
**DISPLAY UNIT**  
Tull C. Lasswell, Clarkston, Mich.  
(230 Pawnee Path, Lake Orion, Mich. 48035)  
Filed Nov. 3, 1966, Ser. No. 591,890  
Int. Cl. G09f 3/18; A47f 5/00

U.S. Cl. 40—19.5

12 Claims

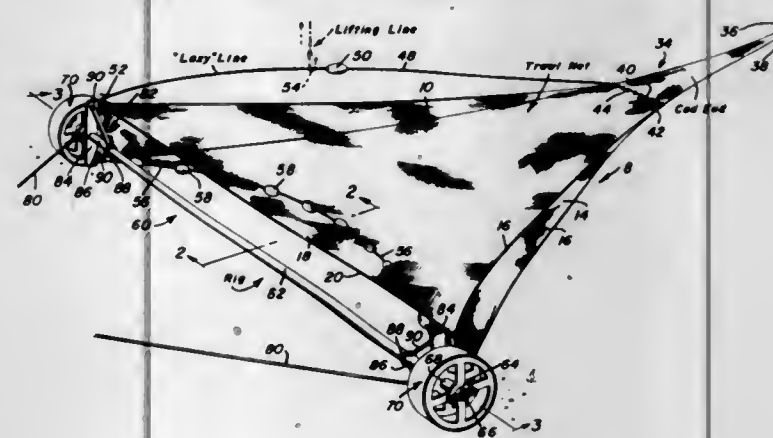


Display units made of a sheet of stiff paper, canvas, cardboard, plastic or the like, having an adhesive coating on one side for removable attachment to a supporting surface and provided with hangers in the form of clips or hooks having a portion projecting from the outer surface of the sheet and another portion disposed between the back of the sheet and the supporting surface. The hangers or clasps are preferably made of a continuous strip of wire.

**3,458,947**  
**COMBINATION SHRIMP TRAWL AND ROLLING RIG**  
John J. Ross, 2304 Dantzler St.,  
Moss Point, Miss. 39563  
Filed Feb. 15, 1968, Ser. No. 705,753  
Int. Cl. A01k 73/08, 73/02

U.S. Cl. 43—9

10 Claims

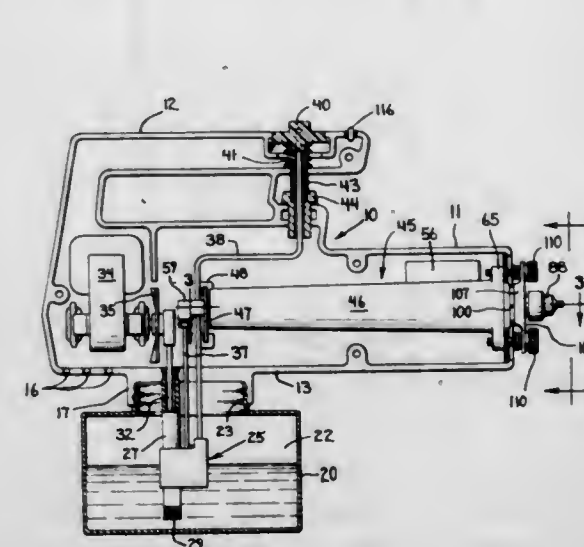


A shrimp trawl net is provided at its open mouth end with a shaft spanning the same substantially midway between the upper and lower edges thereof. The shaft is provided at each end with a wheel and inwardly of each wheel a spreader plate is provided for connection to the net.

**3,458,948**  
**APPARATUS FOR PRODUCING AN AEROSOL**  
Russell R. Curtis, Indianapolis, and Albert L. Schlensker and James E. Jung, Noblesville, Ind., assignors to Curtis Dyna-Products Corporation, Westfield, Ind., a corporation of Ohio  
Filed July 7, 1967, Ser. No. 651,926  
Int. Cl. A01m 7/00, 1/20, 1/00

U.S. Cl. 43—129

7 Claims

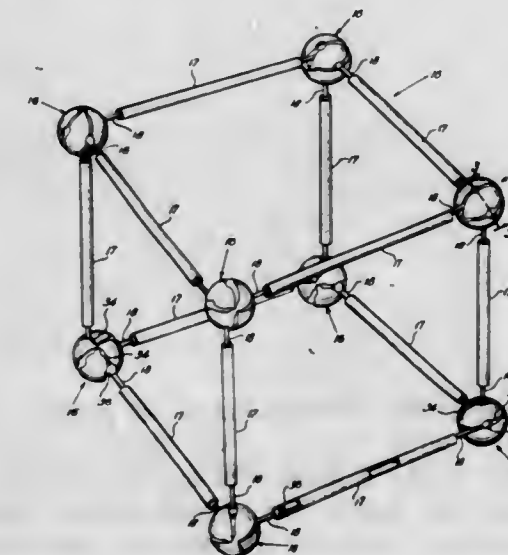


A fog producing apparatus of the portable type having a heat exchanger, having excellent thermal efficiency, which is readily disassembled for cleaning without dismantling the fog producing apparatus.

**3,458,949**  
**CONSTRUCTION SET**  
George G. Young, 5906 N. Waterbury Road,  
Des Moines, Iowa 50312  
Filed May 21, 1965, Ser. No. 457,558  
Int. Cl. A63h 33/08, 33/04

U.S. Cl. 46—16

4 Claims



The construction set includes a terminal unit of a spherical shape comprised of a pair of like interlocking members and having a plurality of circumferential grooves in its peripheral surface. The side walls of each groove, intermediate the ends of the groove, have transversely opposite cavities which form a ball receiving socket. Each connecting unit has a stem portion with ball members at the ends thereof. With a ball member frictionally received in a socket the stem portion is swivable through an angular distance of about 180 degrees within said groove from one side of the socket to the other side.

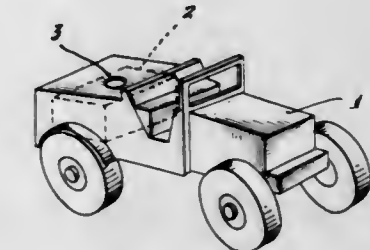
**3,458,950**  
**SOUND CONTROLLED TOYS HAVING A TIME DELAY MOTOR CIRCUIT**  
Patrick M. Tomaro, Maplewood, N.J., assignor to Remco Industries, Inc., Harrison, N.J., a corporation of New Jersey

Filed Apr. 3, 1968, Ser. No. 718,409

Int. Cl. A63h 33/26

U.S. Cl. 46—243

7 Claims

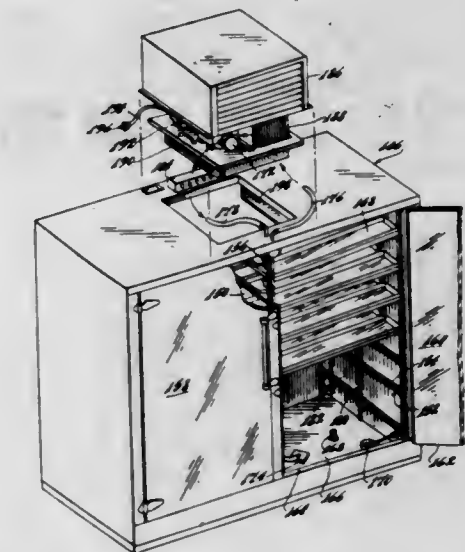


Motor actuated toys are provided which are controlled by sound waves. A time-delay circuit prevents responsiveness to sound for a pre-determined period after motor action ceases. This prevents undesired, extrinsic noises, such as those caused by the stopping of the motion of the toy, from actuating the sound responsive circuit.

**3,458,951**  
**HYDROCULTURE GRASS UNIT**  
Ivan Z. Martin, R.D. 1, Lebanon, Pa. 17042  
Filed Mar. 31, 1967, Ser. No. 630,785  
Int. Cl. A01g 31/02; B05b 1/26

U.S. Cl. 47—1.2

5 Claims



A self-contained, automatically controlled system and apparatus for growing grass without soil including a growing chamber in which temperature, humidity, light, ventilation and irrigation are carefully controlled to maintain optimum conditions for the rapid growth of fresh green grasses completely independent from changes in climate, weather or season of the year.

**3,458,952**  
**METHOD OF THINNING PLANTS**  
Jay Tschudy, Jr., Shawnee Mission, Kans., assignor to Precision Agricultural Machinery Company, Phoenix, Ariz., a corporation of Arizona  
Division of application Ser. No. 636,068, May 4, 1967, now Patent No. 3,402,507. Continuation-in-part of application Ser. No. 518,131, Jan. 3, 1966. This application Apr. 26, 1968, Ser. No. 737,248  
Int. Cl. A01b 41/04, 63/24

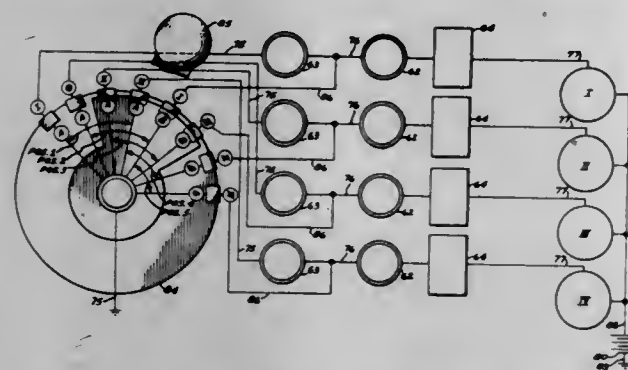
U.S. Cl. 47—1.43

2 Claims

A plant thinning method particularly directed to se-



lectively and automatically thinning and removing certain longitudinally spaced plants along a plant row to



give desired growth room between the plants operated by sensing elements contacting the plants in the row.

3,458,953

## METHOD OF TREATING SOIL

Samuel F. Moses, 15259 Borda Road, La Mirada, Calif. 90638, Oscar L. Scherr, deceased, late of La Mirada, Calif., by Pearl B. Scherr, executrix, 14731 Calpella, La Mirada, Calif. 90638  
No Drawing. Continuation-in-part of application Ser. No. 116,258, June 21, 1961. This application Mar. 24, 1965, Ser. No. 444,508

Int. Cl. A01n 7/02; A01g 25/00

U.S. Cl. 47-58

4 Claims

A method for treating soil to improve the water penetration, absorption, and retention properties thereof by adding to the soil an aqueous solution of an ethoxylated trimethyl heptanol.

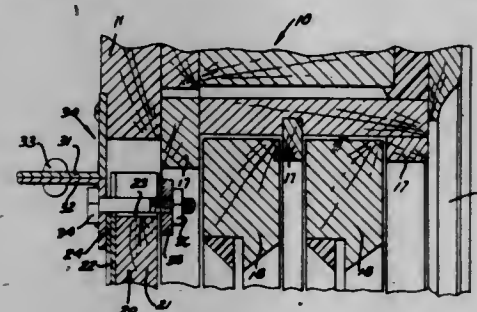
3,458,954

## SAFETY WINDOW COVERING STRUCTURE

Charles J. Roos, 1832 Isabella Ave., Muskegon, Mich. 49441  
Filed Dec. 27, 1966, Ser. No. 605,033  
Int. Cl. E05b 65/04; E05c 7/02

U.S. Cl. 49-62

7 Claims



An opaque sheet-like member having a highly reflective exterior surface adapted to mate with and completely cover a window. An inwardly extending flange is provided about the periphery of the window for supporting the sheet-like member in superimposed relationship with respect thereto. The sheet-like member is affixed over the window by fastening it to the flange with screws or like members. The structure, preferably, is sealed to prevent gases in the atmosphere from entering the building. The reflective covering functions to reflect heat radiation such as might be caused by a nuclear explosion or the like.

3,458,955

## DOOR CONSTRUCTION

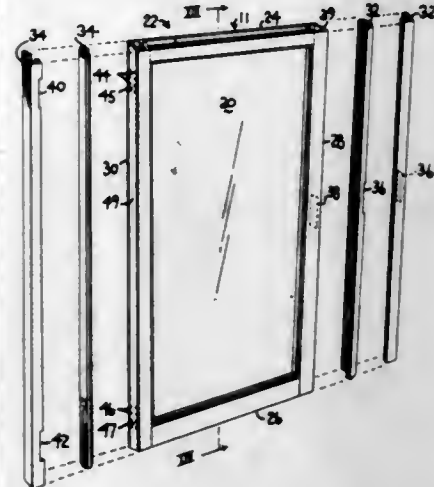
Marvin V. Brooks, Kokomo, Ind., assignor to PPG Industries, Inc., a corporation of Pennsylvania  
Filed May 1, 1967, Ser. No. 635,156  
Int. Cl. E05d 7/02

U.S. Cl. 49-382

10 Claims

A tubular door that includes a door frame construction with vertical stiles having removable edge moldings. The

vertical stiles are constructed to provide a basic non-handed door leaf. The removable edge moldings are constructed to be reversible or replaceable with functionally similar edge moldings. The structure of the stile members



of the basic door leaf and the structure of the removable edge moldings are cooperatively interrelated to permit providing a stock, non-handed door unit that will fulfill all normal door requirements, including those of hand, swing and desired mode of attachment.

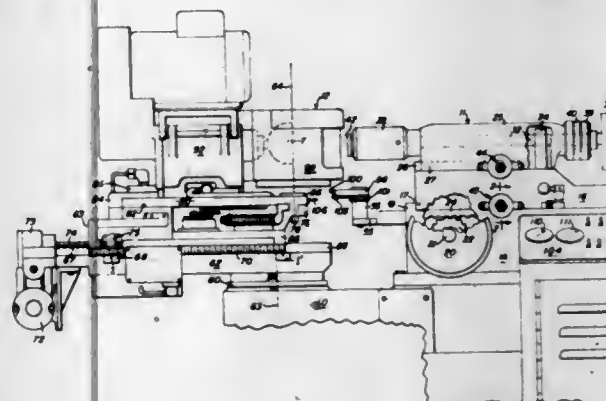
3,458,956

## MANUAL-AUTOMATIC LENS GENERATOR

Jack M. Suddarth and Joe D. Stith, Muskogee, Okla., assignors to Coburn Manufacturing Company, Inc., Muskogee, Okla., a corporation of Oklahoma  
Filed Oct. 14, 1965, Ser. No. 495,827  
Int. Cl. B24b 9/14

U.S. Cl. 51-33

8 Claims



A lens generator having means to position the lens holding chuck with respect to the abrading cup by providing a disc having a fixed relationship with the edge of the abrading cup and a lug having a fixed relationship with the chucking member for orienting the chuck with the lens blank and having automatic and manual means to account for the values determined as a result of said orientation.

3,458,957

## DISC GRINDER

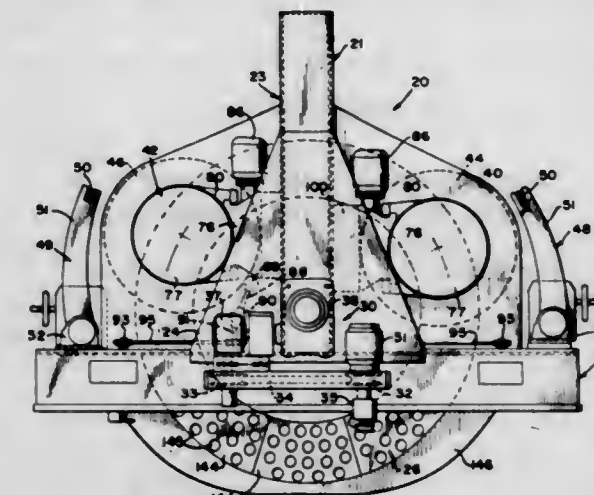
Elman R. Dunn, Roscoe, and Verne L. Loofboro, Rockton, Ill., assignors, by mesne assignments, to Landis Tool Company, Waynesboro, Pa., a corporation of Delaware  
Filed Nov. 19, 1965, Ser. No. 508,678  
Int. Cl. B24b 5/00

U.S. Cl. 51-118

22 Claims

This disclosure has to do with a disc grinder of the type which includes two sets of grinding discs arranged on opposite sides of a path of movement of a work

carrier for simultaneously grinding opposite ends or surfaces of workpieces carried by the work carrier. In order to facilitate the mounting of the work carrier and the grinding discs in a balanced condition, the grinder has a T-shaped frame including a front section and a transverse section with the sets of grinding discs being mounted on the transverse section on opposite sides thereof. Each grinding disc is mounted on the transverse section in a



manner wherein the tilting and swiveling movement thereof are correlated and accomplished by means of a single setting operation. The carrier is suspended by means of an overhead mount carried by the transverse frame section and said mount is vertically adjustable. In addition, the work carrier is mounted on the spindle for radial movement relative to the spindle to provide clearance for the performing of operations on the abrasive disc units, such as dressing operations.

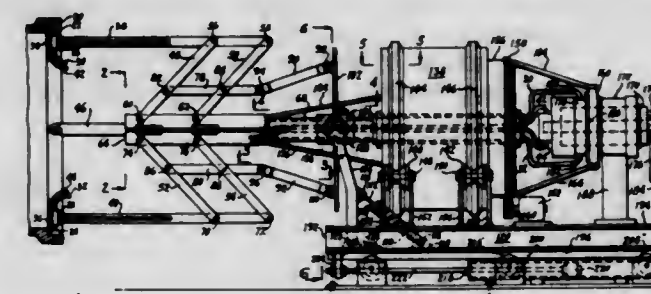
3,458,958

## APPARATUS FOR HONING FLANGES IN CAST CONCRETE PIPE

Howard N. Douglas, Chico, Calif.  
(550 Vandenberg Circle, Roseville, Calif. 95678)  
Filed Oct. 17, 1966, Ser. No. 587,044  
Int. Cl. B24b 9/02; B28d 1/18

U.S. Cl. 51-119

15 Claims



A concrete pipe internal flange honing apparatus for grinding the flange which joins one pipe to another. The pipe is clamped in a stationary position and the grinding wheels are revolved about a center while simultaneously being rotated upon their own axes.

3,458,959

## APPARATUS AND METHOD FOR EDGE FINISHING CONTACT LENSES

Jacques Urbach, North Hollywood, Calif. (% Urocon, Inc., 6205 Santa Monica Blvd., Los Angeles, Calif. 90038)

Filed Oct. 24, 1965, Ser. No. 504,926

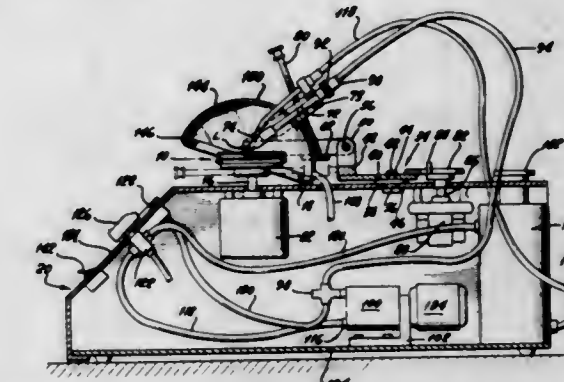
Int. Cl. B24b 7/00, 9/00, 5/00

U.S. Cl. 51-124

11 Claims

A contact lens L (FIG. 3) has its edge finished by polishing operations performed by the aid of a rotating disc 10. The lens is mounted upon a traverse mechanism.

One part 34 (FIGS. 1 and 2) of the mechanism is reciprocated by a drive pin 84. Another part 54 (FIG. 1) of the traverse mechanism adjustably mounts a holder for the lens L. The holder is carried by a bracket part 73 (FIG. 3). The bracket part 73 is movable to adjust the angle of



the holder. For this purpose, the bracket part 73 is angularly adjusted about an axis defined by pins 63 and 64. The axis is tangent to the edge of the lens at the region of contact with the disc. A screw 76 (FIG. 4) serves as a stop, limiting downward movement of the traverse mechanism part 54.

3,458,960

## PRESSURE APPLYING APPARATUS

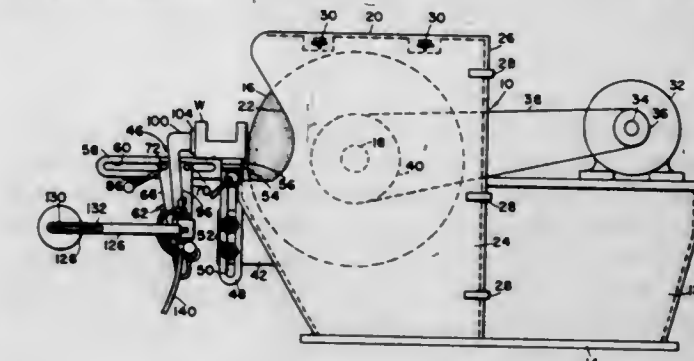
Peter C. Dooley, Jr., Lewiston, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

Filed Apr. 28, 1967, Ser. No. 634,558

Int. Cl. B24b 47/02, 7/00, 9/00

U.S. Cl. 51-215

9 Claims



A pressure applying apparatus for exerting a grinding force on workpieces to rapidly remove metal or the like therefrom. The apparatus includes a work rest upon which workpieces of different sizes and configuration are placed and a pressure applying means to press the workpiece against a grinding wheel or the like.

3,458,961

## GRINDING TOOLS

Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a company of France

Filed Sept. 7, 1966, Ser. No. 577,761

Claims priority, application France, Sept. 13, 1965, 31,209

Int. Cl. B24b 9/02

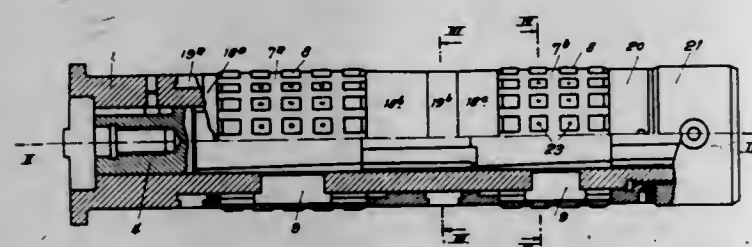
U.S. Cl. 51-338

4 Claims

A tool for grinding or honing the inside of a bore or series of axially spaced bores having axially spaced split rings to which abrasive means are mounted and which may be separately and precisely adjusted as to cutting diameter. The extensible rings are each split longitudinally and encircle a sleeve having radially extending slots and a thrust member is positioned in each slot with a roller at each of its ends to positively position it within the slot. The rollers can be replaced by others of different diameters to longitudinally displace



the corresponding thrust member with respect to a tapered expansion surface bearing against the inner surface of that thrust member to thereby precisely adjust the outside

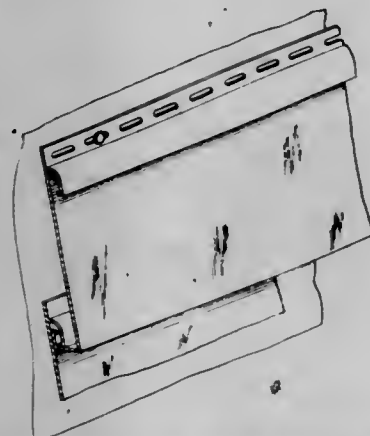


diameter of the portion of the split ring axially outwardly of the member and thus the cutting diameter of the abrasive means.

3,458,962

## VINYL SIDING BRACKET

James R. Kendall, Clayton, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
Filed Dec. 2, 1966, Ser. No. 598,699  
Int. Cl. E04c 2/10, 2/46; E04b 2/72  
U.S. Cl. 52—309 5 Claims

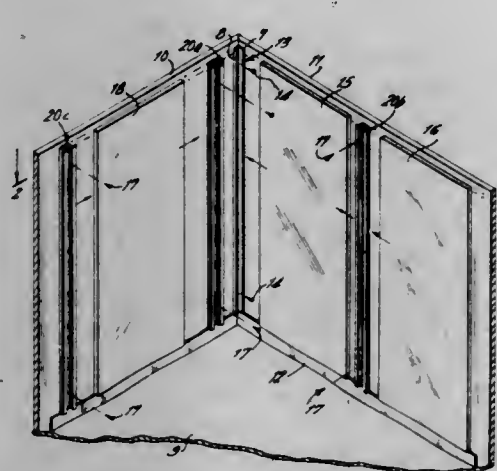


Overlapping and interlocking siding panels are described which require only a single row of fastening means for securing the panels to a support. The siding panels have a longitudinal fastening flange which in cross section defines a convex surface that is disposed in the same direction as the front surface of the siding panel. The siding panels produce a bevel appearance when installed.

3,458,963

## MODULAR DECORATIVE WALL CONSTRUCTION WITH CORNER BRACKET

Louis E. Klein, Long Beach, N.Y., assignor to Parkline Corporation, New York, N.Y., a corporation of New York  
Filed Dec. 15, 1966, Ser. No. 602,056  
Int. Cl. E04f 19/02, 13/08; E04b 2/76  
U.S. Cl. 52—288 2 Claims



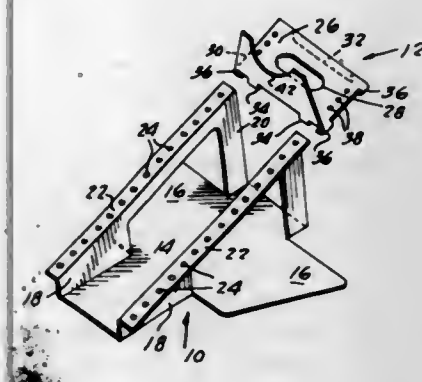
The invention is a modular decorative wall construction, particularly suitable for use in elevator cabs. A series of vertical brackets is provided, each having a right

angle U-shaped channel with two outwardly extending flanges and two inwardly extending guides. The brackets are attached to the walls of the cab and the two flanges on each bracket secure the side edges of two adjacent wall panels. Flexible strips of material are contained within the guides of each bracket for decorative purposes. At each corner of the cab a single bracket unit serves to secure two perpendicular wall panels. In one embodiment of the invention an additional clip is used at each corner together with one of the basic wall brackets. In the second illustrative embodiment of the invention a symmetrically designed bracket unit is used for this purpose.

3,458,964

## ADJUSTABLE SCREED CRADLE

Charles M. Gulliams, 404 Ward St., Paducah, Ky. 42001  
Filed Nov. 24, 1967, Ser. No. 685,367  
Int. Cl. E04f 13/06; E04c 5/16; F161 3/08  
U.S. Cl. 52—365 3 Claims

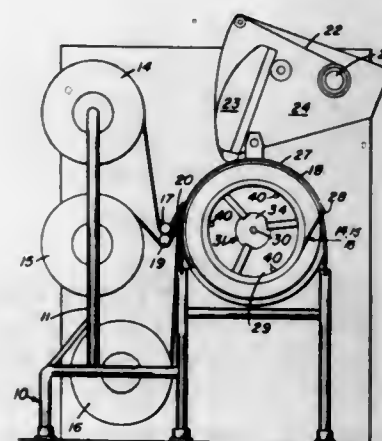


A screed cradle comprising: a flat base plate; spaced, parallel rails inclined to said plate and supported thereon; a carriage slidable on said rails and extending therebetween, said carriage having means to support a screed parallel to said base plate while said carriage is on said rails.

3,458,965

## PACKAGING OF WEB MATERIAL

Anthony L. Shuffrey and Anthony J. Iles, London, England, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Filed Jan. 4, 1967, Ser. No. 607,278  
Claims priority, application Great Britain, Feb. 24, 1966, 8,101/66  
Int. Cl. B65b 9/02, 51/02, 63/04  
U.S. Cl. 53—21 3 Claims



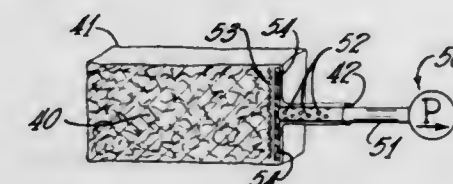
A method and apparatus for continuously packaging a web of material between two webs of packaging material so that the packaged web will not cockle when the

package is wound in a coil. The webs of packaging material with the web to be packaged therebetween are confined to an arcuate path while applying a sealant to the longitudinal edges of the two webs of packaging material and the packaged web is then coiled in the same direction of curvature as said arcuate path.

3,458,966

## METHOD OF PACKAGING COMPRESSIBLE MATERIAL

Sidney G. Dunbar, Huntingdon, Pa., and William B. Hullhorst, Granville, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware  
Filed Mar. 24, 1966, Ser. No. 537,125  
Int. Cl. B65b 63/02, 1/26, 13/20  
U.S. Cl. 53—24 3 Claims

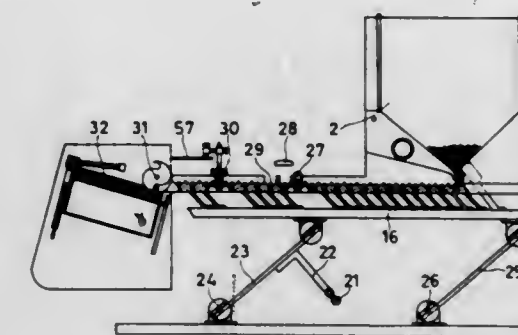


Method and apparatus for packaging open cell compressible materials in integrated mat form having backing thereon which interferes with free air flow between layers of mats in which a stack of mats or a coiled up mat is placed in a bag. Air communication is provided from adjacent each of the resulting layers to an opening in the bag. Air is removed from each layer and the enclosure via the air communication passages and the bag opening allowing ambient air pressure exterior of the bag to compress all of the layers and to compress each of the layers evenly. The bag is then restrained against expansion.

3,458,967

## APPARATUS FOR CHECKING OF IMPURITIES

Arrigo Ziche, Vicenza, Italy, assignor to Brevetti C.E.A. S.p.A., Vicenza, Italy, a corporation of Italy  
Filed Feb. 18, 1966, Ser. No. 528,444  
Claims priority, application Italy, Mar. 9, 1965, 5,153/65  
Int. Cl. B65b 57/00  
U.S. Cl. 53—54 13 Claims



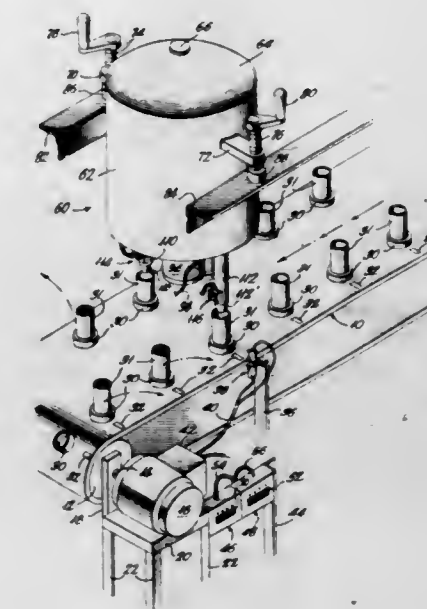
An apparatus for checking impurities in phials or other transparent tubular members is combined with a device for scoring the phials and has a cabinet which is desk-like in shape. The apparatus includes at least some of the following devices: a feeding device with an inclined surface for the phials; a stepped conveyor device with push members moving the phials one step for each working cycle of the apparatus; a rotary roller which rotates the phials to cause suspension of any possible impurities in liquids contained in the phials; a checking station, the

rotary roller being located in a position close to the checking station; the checking station includes a device for illuminating the phials and a lens to facilitate their viewing by an operator; a device for discharging phials rejected by the operator from the stepped conveyor; the aforesaid scoring device for necks of phials and a packing device located at the end of the stepped container.

3,458,968

## DISPENSING AND FEED MECHANISM

Lester Gregory, Jr., Yellville, Ark. 72687  
Filed Nov. 16, 1966, Ser. No. 594,876  
Int. Cl. B65b 57/20; B65g 43/08; B67b 3/26  
U.S. Cl. 53—55 11 Claims

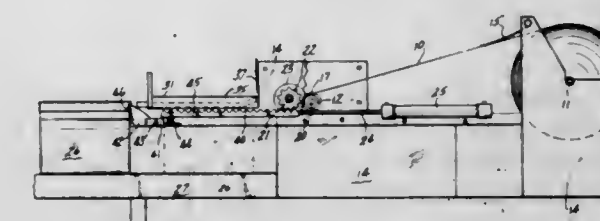


An endless belt conveyor is provided for supporting and feeding containers to be filled by a dispensing means. A control circuit is arranged to alternately energize separate drive means of the conveyor and of the dispensing means through a switch controlled by a counter means. This switch is further controlled by a magnetic sensitive switch which is operated by magnetic means embedded in the belt conveyor. Time delay means are included in the circuit to delay the starting and stopping of the belt.

3,458,969

## CLOSING DEVICE

Doyle R. Hudson, Le Comte, La., assignor to Olinkraft, Inc., a corporation of Delaware  
Filed Mar. 30, 1967, Ser. No. 627,040  
Int. Cl. B65b 61/18, 61/00  
U.S. Cl. 53—137 4 Claims



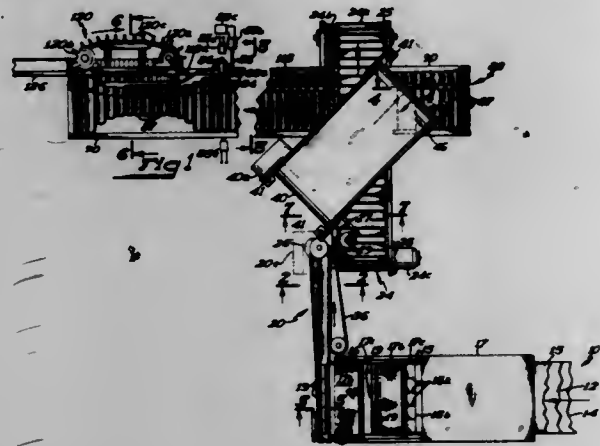
The present specification teaches a device for rapidly and automatically closing bags having a predetermined quantity of material contained therein and simultaneously feeding and applying a reinforcing tape to the closed mouth of said bag. The applied reinforcing tape may then be automatically formed into a carrying handle for the filled, closed bag.



3,458,970

## DOUGH PACKING APPARATUS

Francis R. Reid, James E. Draper, and Selwyn Jones, Minneapolis, Minn., assignors to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware  
Filed Oct. 24, 1966, Ser. No. 588,843  
Int. Cl. B65b 35/44, 57/12, 63/04  
U.S. Cl. 53—159



An apparatus for loading rolled up cylinders of dough into cans. It includes a pair of vertically disposed obliquely related conveyors. The upper conveyor travels at an appropriate speed to roll the dough cylinders when placed on the lower conveyor from one edge of the lower conveyor to the other edge at which point each roll is free to fall onto a series of loading spoons mounted on a third conveyor in side-by-side relationship. At one point in the third conveyor, the spoons are tipped to slide the dough rolls into the cans aligned with the ends of the spoons.

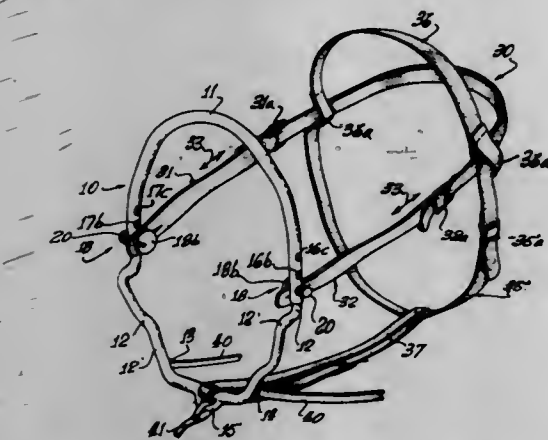
## ERRATUM

For Class 53—219 see:  
Patent No. 3,458,975

3,458,971

## HORSE TRAINING DEVICE

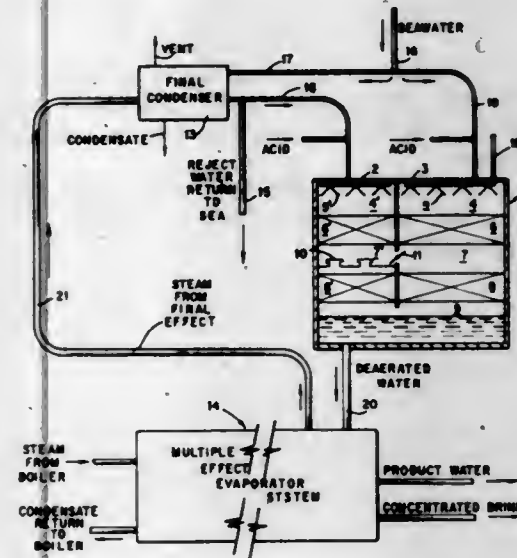
Albert I. Stern and Donald C. Murray, Sun Valley, Calif., assignors to Albert I. Stern, Sun Valley, Calif.  
Filed Dec. 15, 1966, Ser. No. 601,971  
Int. Cl. B68b 1/04, 1/08  
U.S. Cl. 54—6



1. In a bitless bridle, the combination comprising a supporting head gear including cheek straps, a rigid noseband pivotally mounted to the lower ends of said cheek straps for controlled rotation to positions intermediate a normal rest position and a full pressure applying position in response to operating means manipulation, said rigid noseband defining a nose engaging portion above the pivotal mounting and a chin engaging portion below the pivotal mounting, said chin engaging the portion having an irregular shape such that said portion comes in direct contact with the horse's chin when said bridle is in said intermediate and full pressure positions, said chin engaging portion including operating means.

3,458,972  
METHOD OF DEAERATING SEA WATER

Ravinder K. Sood, Knoxville, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission  
Filed Sept. 11, 1968, Ser. No. 758,931  
Int. Cl. B01d 19/00, 47/06

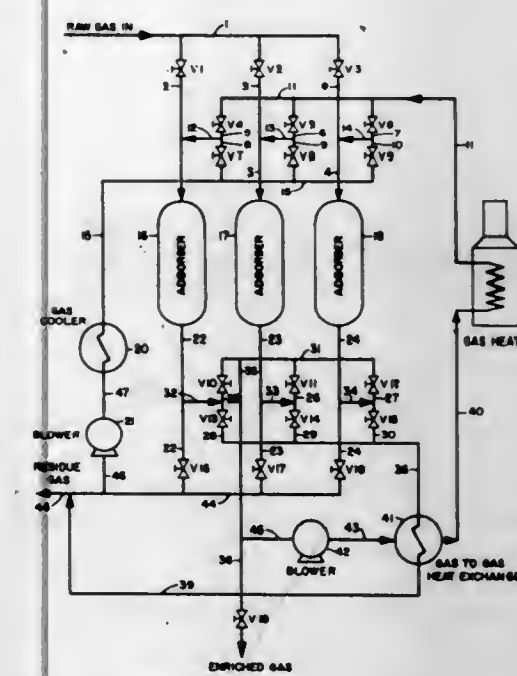


In this method of removing dissolved gases from sea water, two adjacent deaeration chambers are provided both of which are maintained at subatmospheric pressures. Sea water heated in the final condenser of an evaporator system is introduced into a first chamber where a portion of it flashes to vapor, providing an atmosphere which facilitates the removal of dissolved gases. Cold sea water is introduced into the second chamber, wherein it is contacted with steam from the first chamber. Deaerated waters from both chambers are collected in a common sump and removed.

3,458,973

## METHOD AND APPARATUS FOR COMPONENT CONCENTRATION IN THE VAPOR PHASE

John R. Spencer, Walton D. Greathouse, and James H. Cheek, Houston, Tex., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware  
Filed Dec. 9, 1966, Ser. No. 600,498  
Int. Cl. B01d 53/02, 53/14  
U.S. Cl. 55—62



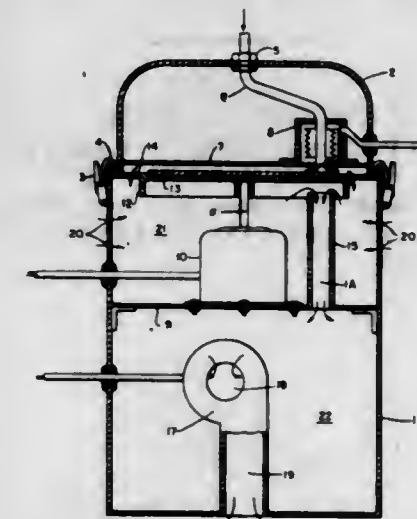
A cyclical method and apparatus for separating intermediate molecular weight hydrocarbon gases (ethane and ethylene) from primarily methane gas are disclosed. The feed stream of methane, ethane and ethylene gas is flowed through a sorbent bed where ethane and ethylene are adsorbed to a point of saturation. The saturated bed is then desorbed of ethane and ethylene by heating it in a closed heating circuit. As gas pressure in the heating circuit increases, part of the gas therein is bled from the circuit yielding a gas product enriched in ethane and ethylene. At the end of the heating or desorption step the heated bed is cooled by a stream of cool gas, before being returned to the ethane-ethylene sorption step. A continuous operation is maintained by cycling three or more beds through the sorption, heating and cooling phases.

ethylene) from primarily methane gas are disclosed. The feed stream of methane, ethane and ethylene gas is flowed through a sorbent bed where ethane and ethylene are adsorbed to a point of saturation. The saturated bed is then desorbed of ethane and ethylene by heating it in a closed heating circuit. As gas pressure in the heating circuit increases, part of the gas therein is bled from the circuit yielding a gas product enriched in ethane and ethylene. At the end of the heating or desorption step the heated bed is cooled by a stream of cool gas, before being returned to the ethane-ethylene sorption step. A continuous operation is maintained by cycling three or more beds through the sorption, heating and cooling phases.

3,458,974

## CONTINUOUS THERMAL PRECIPITATOR

Clyde Orr, Jr., Atlanta, and Warren P. Hendrix, Lawrenceville, Ga., assignors to Georgia Tech Research Institute, Georgia Institute of Technology, Atlanta, Ga., a corporation of Georgia  
Filed Oct. 13, 1965, Ser. No. 495,430  
Int. Cl. B01d 53/22, 59/16  
U.S. Cl. 55—209

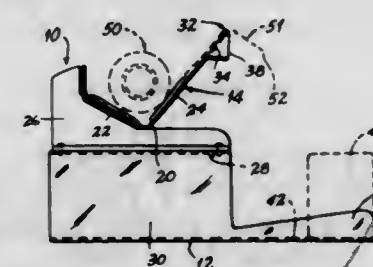


A mechanism for collecting and sampling particulate matter from a gas stream comprising a housing containing a rotating circular collecting surface, a heated gas stream impinging on said surface and cooling means for the said surface.

3,458,975

## FILM DISPENSING APPARATUS FOR WRAPPING GLASSES

William J. Burke, Ladue, Mo., assignor to Roll-O-Sheets, Inc., St. Louis, Mo., a corporation of Missouri  
Filed Oct. 10, 1966, Ser. No. 585,520  
Int. Cl. B65b 11/02, 45/00; B26f 3/02  
U.S. Cl. 53—219



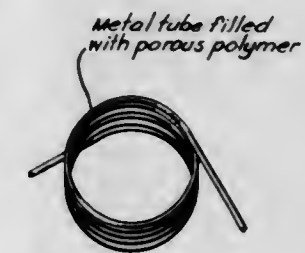
An apparatus for dispensing sheets of plastic film to glasses to be wrapped. The dispenser is provided with a dispenser trough receiving a roll of film and having a piercing means to separate the web into the sheets. The trough is supported above a work base having guide

means to set apart a glass centering and positioning area to receive sheets of film with indicia at standard intervals to provide a means for registering the sheet upon the glass to be wrapped.

3,458,976

## ARTICLE OF MANUFACTURE FOR MAKING CHROMATOGRAPHIC SEPARATIONS

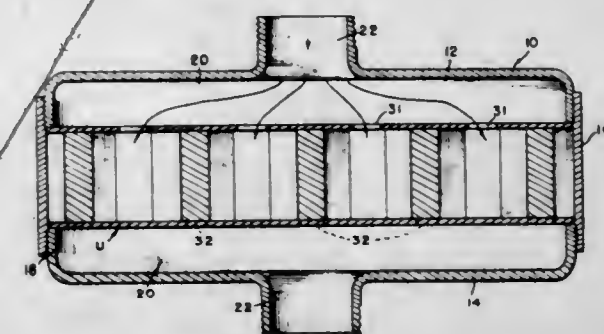
Oscar LeRoy Hollis, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Continuation-in-part of application Ser. No. 460,331, June 1, 1965. This application Oct. 30, 1967, Ser. No. 678,923  
Int. Cl. B01d 15/08  
U.S. Cl. 55—386



The invention concerns an article of manufacture comprising a tube containing a bed of an insoluble cross-linked finely divided microporous polymer consisting essentially of a divinyl aromatic polymer, which article is useful in an arrangement of apparatus for making chromatographic separations of compounds from one another.

3,458,977  
FILTERS

Ralph L. Young and Kingsley E. Humbert, Jr., Gastonia, N.C., assignors to Wix Corporation, Gastonia, N.C., a corporation of North Carolina  
Continuation-in-part of application Ser. No. 846,745, Oct. 15, 1959. This application May 19, 1964, Ser. No. 377,157  
Int. Cl. B01d 46/02  
U.S. Cl. 55—490



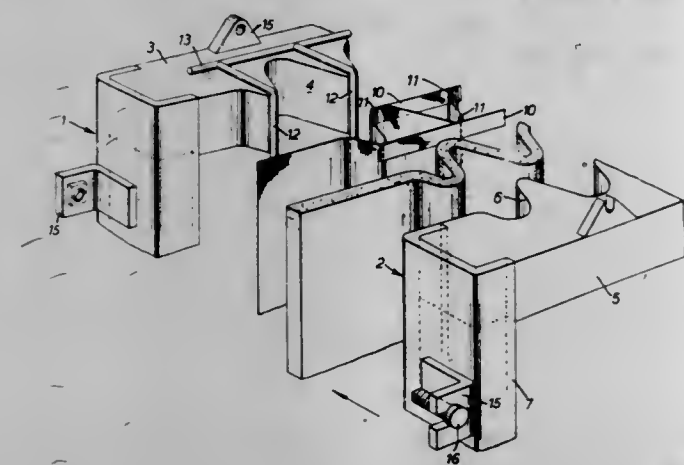
2. The method of making a filter comprising providing a pair of separate flat end wall portions comprising sheets of filter paper material and having flat inner faces, providing holes in each of said end wall portions, providing a continuous integral one-piece sheet of filter paper material which is fluid pervious, folding said sheet of filter paper material to provide a plurality of V-shaped pleats therein including alternate edges which are substantially straight and disposed in spaced parallel relationship to one another, placing said pleated sheet of filter paper material between said end wall portions with the first alternate pleat edges in contact with the flat inner surface of one of said end wall portions and bonding the alternate edges thereto and the remaining intervening alternate pleat edges in contact with the flat inner surface of the other end wall portion and bonding the intervening alternate edges thereto, to define a plurality of separate parallel cells, and with



the holes in one end wall portion being in communication with alternate ones of said cells and the holes in the other end wall portion being in communication with intervening alternate cells.

### 3,458,978 NON-PLANAR FILTER AND SUPPORTING MEANS

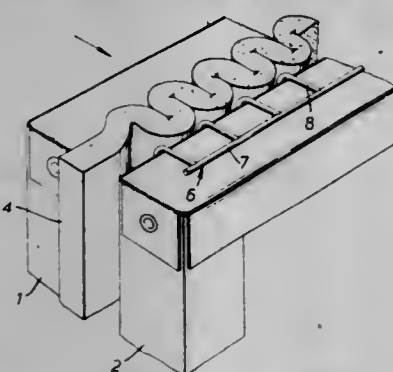
Maurice Davis, West Croydon, England, assignor to Davis Industrial Equipment Company Limited  
Filed Sept. 12, 1967, Ser. No. 667,261  
Int. Cl. B01d 29/06  
U.S. Cl. 55-499 2 Claims



A filter comprising a filter element and shaping means having complementary undulating surfaces engaging opposite faces of the filter element to constrain the filter element to an undulating configuration.

### 3,458,979 FILTERS

Maurice Davis, West Croydon, England, assignor to Davis Industrial Equipment Company Limited  
Filed Sept. 12, 1967, Ser. No. 667,263  
Int. Cl. B01d 25/00  
U.S. Cl. 55-499 2 Claims



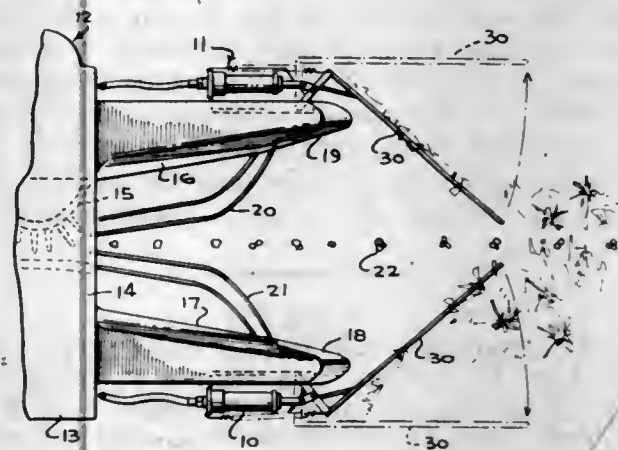
A filter element comprising a sheet of filter medium and tie means holding the sheet in corrugated form, the tie means comprising a plurality of ties each of which passes through spaced apart apertures in the sheet and is enlarged at its ends adjacent the outermost of said apertures, the length of the tie between its end enlargements being less than the dimension between said outermost apertures.

### 3,458,980 EXTRACTING UNIT FOR WEEDS, GRASS AND THE LIKE

James F. Lee, Rte. 4, Box 119, Darlington, S.C. 29532  
Filed Jan. 24, 1967, Ser. No. 611,348  
Int. Cl. A01d 45/18  
U.S. Cl. 56-28 10 Claims

A vegetation extracting unit for a picking machine comprising a support means mounted on the machine, a vege-

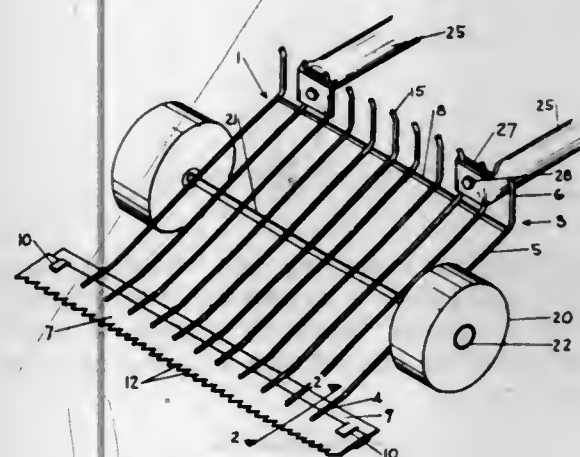
tation engaging means pivotally mounted on the support means for movement in a horizontal plane, means for biasing the engaging means laterally away from the path of the picking mechanism of the machine, in an inoperative



position, and means for moving the vegetation engaging means toward the path of the picking mechanism, to a predetermined operative position ahead of the picking mechanism and adjacent the row of planted crops to be picked.

### 3,458,981 WEEDING TOOL

Joseph P. Banner, 2550 N. Venice Place, Tucson, Ariz. 85716  
Filed Sept. 30, 1966, Ser. No. 583,229  
Int. Cl. A01d 55/00; A01b 1/00  
U.S. Cl. 56-229 4 Claims



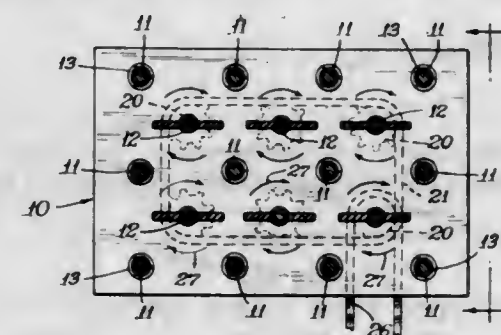
A manual weeding tool of the scraper type having a frame of a number of parallel spaced apart elements aligned in the direction of use and supporting a handle and a cutting blade at the front edge mounted perpendicular to the frame elements. The frame is supported on wheels and is formed in an angular configuration to provide a controlled cutting action as it is used. As the tool is moved into growth, weeds are severed and gathered on the frame while dirt and the like fall through the frame openings.

### 3,458,982 FRUIT PICKING SPINDLE AND ARRANGEMENT THEREFOR

Fred D. Lasswell, Jr., 205 Brorein St., Tampa, Fla. 33606  
Filed Dec. 1, 1966, Ser. No. 598,374  
Int. Cl. A01g 19/00  
U.S. Cl. 56-328 5 Claims

A fruit harvester in which there is included a plurality of picking spindles for penetrating the outer surface of a tree defined by the ends of the tree branches so that the

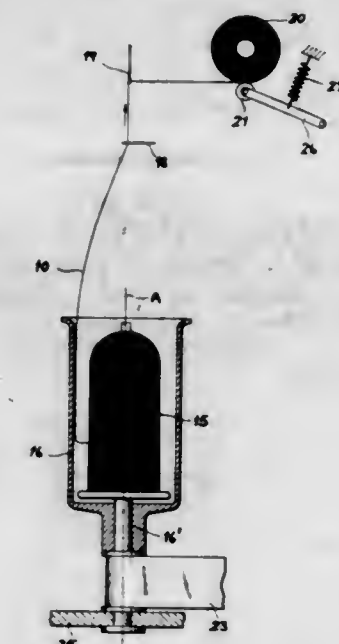
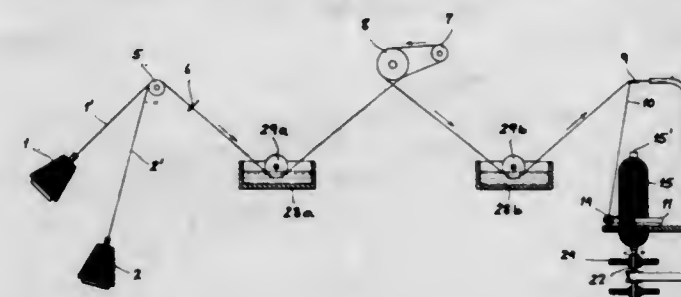
spindles are in the proximity of the fruit growing on the tree. Certain of the spindles are rotating and are provided with fins to engage the fruit and cause it to spin loose.



Certain of the other spindles are finless. It is the particular alternating rows of finned spindles and finless spindles that forms the subject of this invention.

### 3,458,983 PROCESS AND APPARATUS FOR TWISTING THREADS

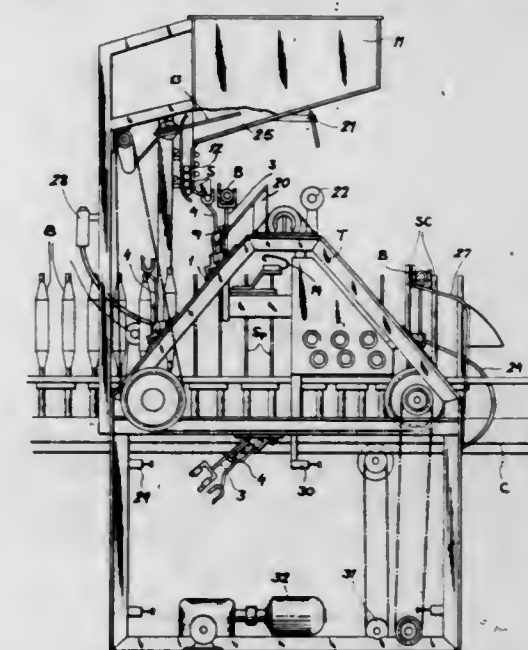
Edmund Hamel, Romanshorn, Thurgau, Switzerland, assignor to Carl Hamel Spinn- und Zwirnereimaschinen AG, Arbou, Thurgau, Switzerland, a corporation of Switzerland  
Filed Feb. 14, 1968, Ser. No. 705,360  
Claims priority, application Germany, Feb. 16, 1967, H 61,863  
Int. Cl. D01h 13/30, 13/12  
U.S. Cl. 57-35 9 Claims



In a system in which threads are twined by a two-stage twisting process, the high-speed up-twisting in the second stage is performed with threads wetted in the first stage to a moisture content of 10-200%, preferably 15-50%, based on the weight of the dry threads, the wet yarn adhering in the second stage to the inner peripheral surface of a bell or sleeve spacedly surrounding the bobbin to minimize ballooning.

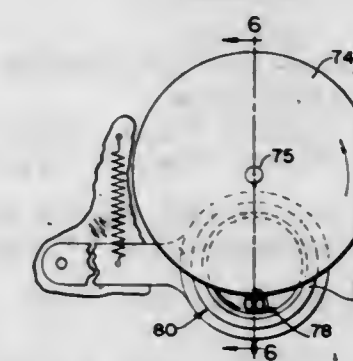
3,458,984  
BOBBIN-HANDLING MECHANISM  
Milko Dimitrov Dimitrov, Sofia, Bulgaria, assignor to DSO "Tejko I Obshto Mashinostroene," Sofia, Bulgaria, a State Economic Association of Bulgaria  
Filed Aug. 25, 1967, Ser. No. 663,258  
Claims priority, application Bulgaria, Aug. 29, 1966, I-1,059  
Int. Cl. D01h 9/10 14 Claims

U.S. Cl. 57-53



In a machine for the building of bobbins on spool cores carried by a bank of horizontally moving upright spindles, full bobbins are removed and new cores are placed on the spindles by a mechanism which comprises a series of units each including a donning fork and a doffing fork which are tiltable about horizontal axes, the mechanism including a triangular frame along whose ascending side the doffing forks move in recumbent position and pick up respective bobbins, each doffing fork being erected on reaching the apex of the triangle, while on the descending side the previously erected donning forks loaded with fresh cores are placed in recumbent position to deposit each core on an empty spindle.

3,458,985  
FALSE TWIST SPINDLE ASSEMBLY  
Hans H. Richter, Cranston, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts  
Filed Nov. 9, 1967, Ser. No. 681,764  
Int. Cl. D01h 7/92, 7/46, 13/00  
U.S. Cl. 57-77.45 9 Claims



A high speed spindle apparatus in which the spindle is held in engagement with a driving unit by the inner race of an air bearing unit which encircles the spindle.



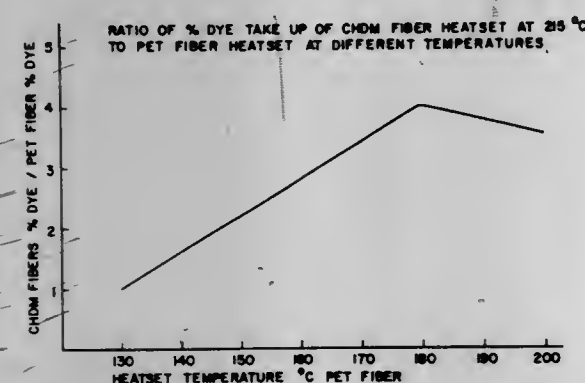
3,458,986

## COMPOSITE YARN

Louie J. Allison and Richard F. Dyer, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Filed Apr. 12, 1968, Ser. No. 720,858  
Int. Cl. D02g 3/22

U.S. Cl. 57—140

10 Claims



This invention relates to composite carpet yarns comprising at least two different types of polyester fiber. This invention further relates to a method of treating poly(ethylene terephthalate) fiber to improve the resilience and crush resistance thereof and to lower the affinity of the fiber for disperse dyes.

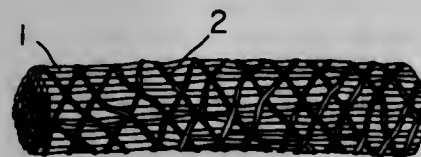
3,458,987

## JET BUNDLE YARN

Goro Ozawa, Kenzo Kosaka, Tadashi Kataoka, Toshio Horikawa, Koyoshi Adachi, Hideo Tanaka, and Hiroshi Kitagawa, Nagoya-shi, and Akira Aoki, Inazawa-shi, Japan, assignors to Mitsubishi Rayon Company Limited, Tokyo, Japan, a company of Japan  
Filed Aug. 14, 1967, Ser. No. 660,300  
Claims priority, application Japan, Dec. 29, 1966, 42/527; Feb. 8, 1967, 42/7,723; Feb. 13, 1967, 42/8,782; May 16, 1967, 42/30,582  
Int. Cl. D02g 3/02

U.S. Cl. 57—140

10 Claims



A jet bundle yarn is composed of core portions having a relative alignment of staple fibers to that of the feed material and a circumferential portion composed mainly of continuous net-like structure composed of staple fibers fixed to each other at their crossing portions and at their ends. Some modified configurations of jet bundle yarns are disclosed.

3,458,988

## NOVELTY LOOP YARN AND PROCESS THEREFOR

Preston F. Marshall, Walpole, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts  
Original application July 13, 1967, Ser. No. 653,237.  
Divided and this application Apr. 24, 1968, Ser. No. 740,014  
Int. Cl. D02g 3/36

U.S. Cl. 57—144

2 Claims

A whirling body of fluid such as air is created by admitting air under pressure into a generally cylindrical vortex tube. At least three strands of yarn are drawn into the tube by the air-stream at different speeds, each strand having a linear velocity at least twice the velocity of the next fastest strand. The two or more faster strands are

thereby falsely-wrapped around the slowest strand in a variety of novel configurations. Since there is no true



twisting of one strand around another, loop and boucle yarns are made in an inexpensive and expeditious manner.

3,458,989

## RAYON TIRE CORD FINISH

Samuel James O'Brien, Dunellen, and William Julius van Loo, Jr., Middlesex, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
No Drawing. Filed Feb. 18, 1965, Ser. No. 433,792  
Int. Cl. D02g 3/36, 3/40

U.S. Cl. 57—153

11 Claims

Method for binding rayon tire cord to obtain good adhesion and rot resistance of the cord which comprises wet fixing a catalyst-containing hardenable aminoplast resin onto viscose rayon tire cord and thereafter vulcanizing the thus treated tire cord to rubber.

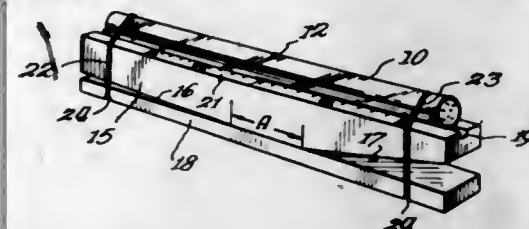
3,458,990

## SHORT INTERVAL TIMER

George Russey Frost, Champaign, Ill., assignor to University of Illinois Foundation, Urbana, Ill., a corporation of Illinois  
Filed Mar. 15, 1967, Ser. No. 623,351  
Int. Cl. G04f 1/06

U.S. Cl. 58—144

7 Claims



Disclosed is a simple short interval timer based on displacement of a gas bubble in a liquid filled tube. The timer includes means to instantly stop movement of the bubble when the time interval ends, regardless of the length of the interval within the limits of the timer.

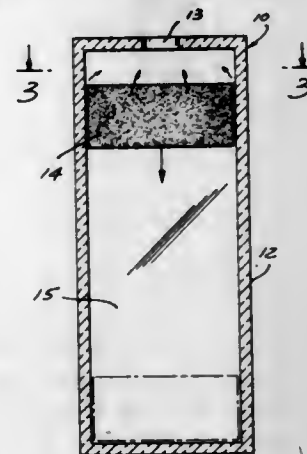
3,458,991

## DASHPOT TIMER HAVING A COATED PISTON

David S. Breed, 57 Hoagland Ave., Rockaway, N.J. 07866  
Filed Dec. 1, 1967, Ser. No. 687,207  
Int. Cl. G04f 1/08

U.S. Cl. 58—144

8 Claims



A timing mechanism of the dashpot type wherein a cylindrical piston travels in a cylinder at a controlled rate,

the piston having a coating of polymeric material on the cylindrical surface adjacent the interior wall of the cylinder to insure a consistent rate of descent of the piston within the cylinder.

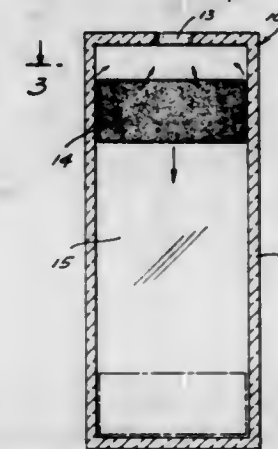
3,458,992

## DASHPOT TIMER HAVING A COATED METALLIC PISTON

David S. Breed, 57 Hoagland Ave., Rockaway, N.J. 07866  
Filed Dec. 1, 1967, Ser. No. 693,686  
Int. Cl. G04f 1/08

U.S. Cl. 58—144

10 Claims



A timing mechanism of the dashpot type wherein a cylindrical metallic piston travels in a cylinder at a controlled rate, the piston having a coating of polymeric material on the cylindrical surface adjacent the interior wall of the cylinder to insure a consistent rate of descent of the piston within the cylinder.

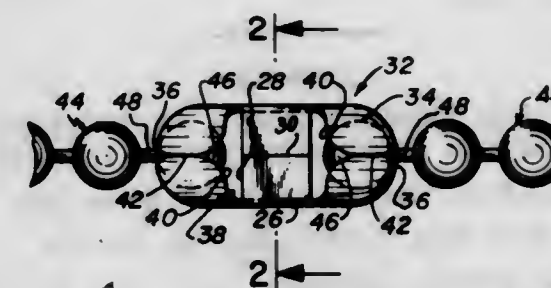
3,458,993

## BALL CHAIN CONNECTOR ELEMENT

Oscar Greene, 115 E. 86th St., New York, N.Y. 10028  
Filed Oct. 17, 1967, Ser. No. 675,950  
Int. Cl. B21l 13/00; F16g 11/14

U.S. Cl. 59—35

7 Claims



A ball chain connector having a tubular body with a central aperture sized for passage of the end ball of a ball chain therethrough, an aperture at each end of the connector body, and a slit connecting each end aperture to said central aperture for the insertion of a chain and ball into each end of the tubular body. A bendable tongue is formed integrally with one longitudinal edge of the central aperture, the tongue being normally in an upstanding position to clear the central aperture for insertion of the chain end balls therein, and being depressible after insertion of said balls, to a blocking position, in which it extends across the central aperture and prevents the inserted balls from being accidentally released therethrough.

865 O.G.—2

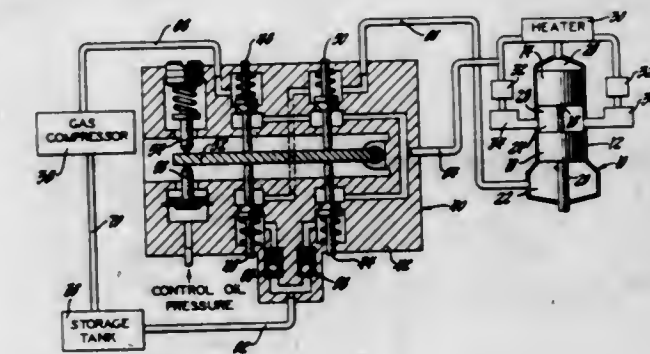
3,458,994

## HOT GAS ENGINE WITH IMPROVED GAS PRESSURE CONTROL

Francis E. Heffner, Troy, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Dec. 19, 1967, Ser. No. 691,808  
Int. Cl. F02g 1/06, 1/04

U.S. Cl. 60—24

6 Claims



A hot gas engine includes pressure control means for varying the pressure in a plurality of enclosed gas containing spaces which vary in pressure in an out of phase relationship. The control means provide for filling the spaces from a storage tank without permitting bypassing of gas between the spaces. In addition, reduction of pressure by returning gas to the storage tank is provided with simultaneous bypassing of gas between the spaces to reduce power. Check valves used in the fill lines to prevent bypassing during filling are placed between the fill valves and the storage tank to prevent their being subject to engine pressure variations except during filling.

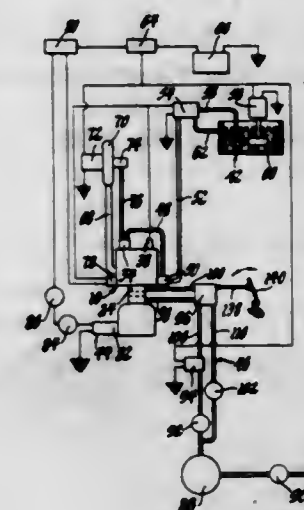
3,458,995

## HOT GAS ENGINE CONTROL SYSTEM

Francis E. Heffner, Troy, and Roy H. Brandes, Utica, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Dec. 21, 1967, Ser. No. 692,494  
Int. Cl. F02g 1/04, 1/06

U.S. Cl. 60—24

13 Claims



A control system for a closed cycle hot gas engine particularly adapted for vehicle installation and including a manually adjustable system for variably controlling the pressure of the engine working gas to provide for changes in engine torque between idle and full output. The system further includes a combustion system actuated through conventional ignition and start switches and an automatic starting system for starting the engine when the proper working gas temperature has been reached.



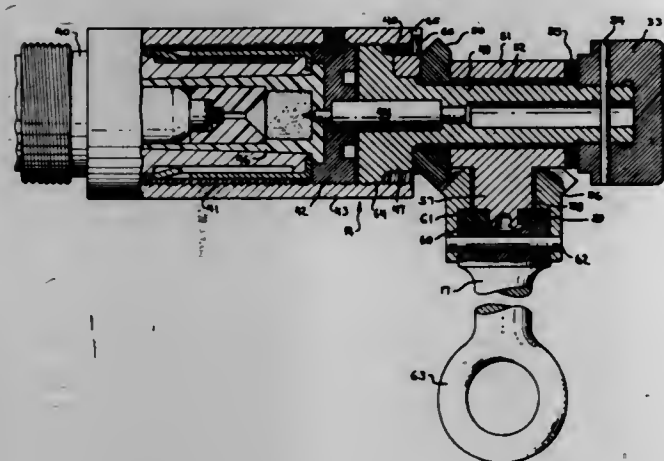
3,458,996

**TOOL AND EQUIPMENT TO CONNECT A LINE ONTO A HIGH VOLTAGE LINE**

James Lenhart Mixon, Jr., Harrisburg, and Frederick William Wahl, Middletown, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Original application Oct. 29, 1964, Ser. No. 407,510, now Patent No. 3,349,167, dated Oct. 24, 1967. Divided and this application Feb. 23, 1967, Ser. No. 618,187

Int. Cl. F01b 29/08; B23p 19/04; B25c 1/14  
U.S. Cl. 60—26.1 9 Claims



An explosively-operated power unit has a movable pin for penetrating an end of a cartridge means and gear means operatively connected to the pin for moving the pin into and out of engagement with the end of the cartridge means. The explosively-operated power unit is also provided with a beveled opening in a sleeve surrounding a beveled section of a tubular means which prevents the tubular means from leaving the sleeve means upon fracturing of a flange means adjacent the beveled section on the tubular means.

3,458,997

**SUPPORTS FOR FUEL BURNERS**

Peter Joseph Clark, Barrowford, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

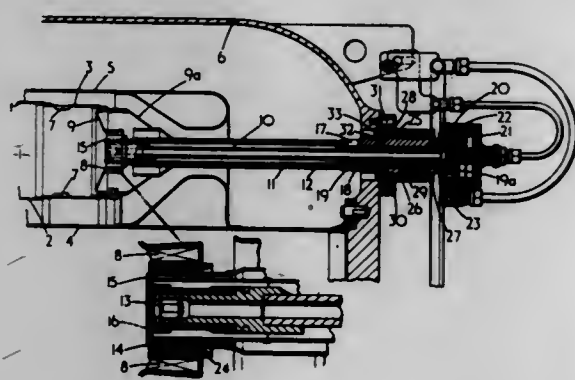
Filed Aug. 17, 1967, Ser. No. 661,268

Claims priority, application Great Britain, Aug. 18, 1966, 37,035/66

Int. Cl. F02g 1/00

U.S. Cl. 60—39.74

2 Claims



A gas turbine engine burner for gas or liquid fuel has an inner passage for liquid fuel surrounded by an annular passage for gas, the burner being mounted in the engine by part-spherical bearings, that at the downstream end being mounted to permit of lengthwise movement of the burner end in the engine to accommodate expansion.

3,458,998

**DUAL-MODE POWER STEERING SYSTEM**

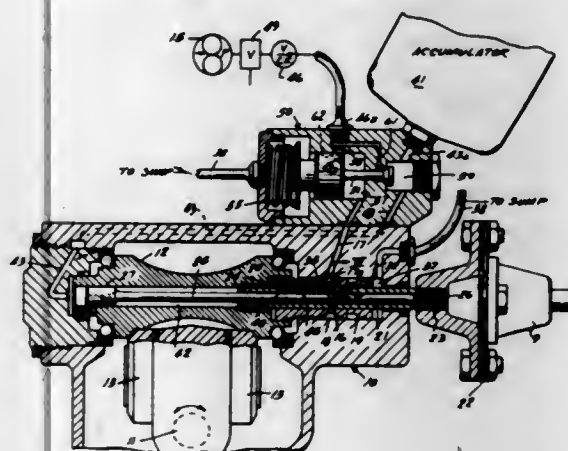
Arthur E. Bishop, 5516 Westwood Lane, Birmingham, Mich. 48009

Filed July 18, 1967, Ser. No. 654,204

Int. Cl. F15b 1/02, 13/042

U.S. Cl. 60—51

12 Claims



A system is provided in which an open-center, four-way valve is employed for the actuation of a power steering system for automotive vehicles. Over control of the open-center, four-way control valve occasioned by engine failure or a peak power steering demand condition causes the opening of an accumulator reservoir of oil under high pressure. This reserve supply of oil under high pressure serves to operate the steering gear for a period of time in an engine-fail situation and, similarly, operates to provide peak power in high steering load situations. The accumulator is isolated from the steering circuit except under the circumstances above described and is recharged in various ways, in accordance with the invention. By providing a separate high pressure reservoir system, ordinary power steering may be accomplished by means of a relatively low pressure and hence inexpensive, power steering pump which may, further, if desired, comprise the standard lubricating oil pump of the modern automotive engine. Alternatively, a conventional power steering pump may be employed with special controls to provide recharging the accumulator over a period of time between peak power uses.

3,458,999

**HYDRAULIC CIRCUIT FOR A SELF-CHANGING FOUR-SPEED HYDROSTATIC TRANSMISSION**

Smilj Reis, Viale Campania 29, Milan, Italy

Filed Dec. 7, 1967, Ser. No. 688,716

Claims priority, application Italy, Dec. 9, 1966, 30,911/66; Dec. 22, 1966, 31,455/66; Jan. 9, 1967, 11,278/67; Jan. 18, 1967, 11,605/67; July 7, 1967, 18,166/67

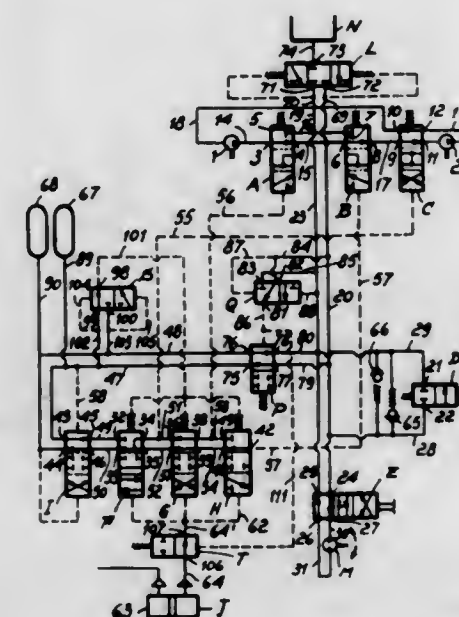
Int. Cl. F15b 13/09, 1/02; F16h 39/48

U.S. Cl. 60—52

25 Claims

The present invention relates to a hydraulic circuit for a self-changing four-speed hydrostatic transmissions. Two unequal fixed displacement pumps driven together by a common shaft and connected in parallel to a delivery line, will deliver a total flow in said delivery line, equal to the sum of the single deliveries of each of said pumps. If one of said pumps is shortcircuited, the flow in said delivery line will be that of the other pump. If the pumps are interconnected in series so that the delivery of one pump feeds the suction of the other pump and the delivery line is branched out from the connecting line

between the pumps, the flow in said delivery line will be the difference of the single deliveries of said pumps. Hence, four different deliveries may be obtained from two unequal constant delivery pumps driven together by



a common shaft, if properly connected in series and parallel and shortcircuited each at a time. Feeding a hydraulic motor with such four different deliveries, a four-speed hydrostatic transmission may be obtained.

3,459,000

**DUAL-NETWORK HYDRAULIC SYSTEM AND VALVE ARRANGEMENT FOR CONTROLLING SAME**

Heinrich Oberthür, Offenbach-Rumpenheim, Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik KG, Frankfurt am Main, Germany, a corporation of Germany

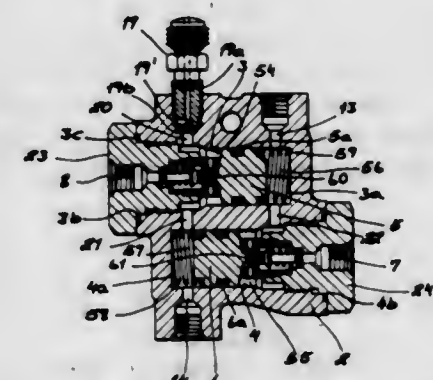
Filed July 11, 1967, Ser. No. 652,475

Claims priority, application Germany, July 5, 1966, T 31,521

Int. Cl. F15b 7/00, 3/00

U.S. Cl. 60—54.5

10 Claims



Hydraulic brake installation comprising a pair of fluid networks each having a master cylinder, a respective wheel-brake cylinder and conduits interconnecting the master and wheel cylinders; and a pressure-equalizing valve interconnecting said networks and provided with a mechanism responsive to concurrent actuation of both master cylinders for equalizing the fluid pressure in the networks but maintaining fluid separating therebetween, and effective when only one master cylinder is actuated to pressurize only the respective brake network.

3,459,001

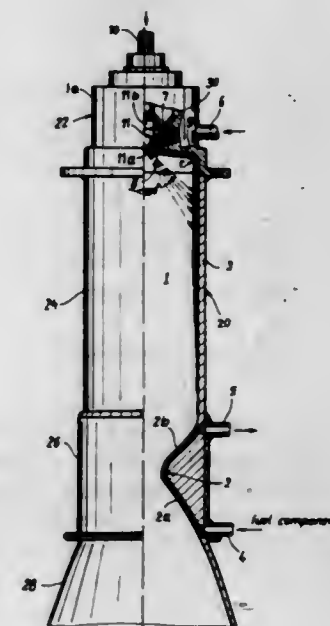
**ROCKET PROPELLANT INJECTION AND COOLING DEVICE AND METHOD**

German Munding, Bad Friedrichshall-Kochendorf, Germany, assignor to Bolkow Gesellschaft mit beschränkter Haftung, Ollbrunn, near Munich, Germany  
Continuation of application Ser. No. 449,477, Apr. 20, 1965. This application June 16, 1967, Ser. No. 646,737  
Claims priority, application Germany, Apr. 22, 1964, B 76,453

Int. Cl. F02k 9/02

U.S. Cl. 60—258

6 Claims



A method of operating a combustion chamber using propellant components which interact hypergolically comprises introducing an oxygen carrier propellant component into the combustion chamber from a closed end in a manner to cause it to form into a cooling layer against the combustion chamber wall which extends completely along the length of the combustion chamber in a direction toward the nozzle discharge end thereof. A liquid propellant component in liquid form is introduced centrally into the closed end of the combustion chamber and directed in a direction toward the nozzle discharge end and at an angle and a force to cause the fuel to be directed as droplets onto the oxygen carrier without penetrating the layer so as to flow along with the carrier along the combustion chamber wall as combustion progresses. The apparatus for carrying out the method includes a central opening for a fuel nozzle which is oriented to discharge an atomized spray of liquid fuel at a cone angle of less than 100°. The combustion chamber length is from approximately 0.8 to 1.0 meter.

3,459,002

**METHOD FOR THE SUBTERRANEAN STORAGE AND WITHDRAWAL OF A LIQUID**

Henri Clamens, Pau, France, assignor to Societe Nationale des Petroles d'Aquitaine, Paris, France

Filed Oct. 11, 1966, Ser. No. 585,958

Claims priority, application France, Oct. 13, 1965, 34,759

Int. Cl. B65g 5/00; E21f 17/16

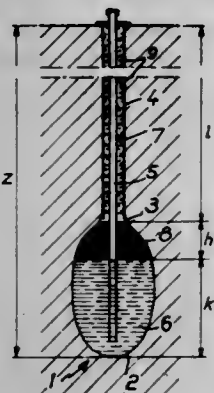
U.S. Cl. 61—5

6 Claims

Tubing connects the summit of the cavity formed in a saline formation to the surface, and a column of withdrawal tubes is disposed coaxially within the tubing and descends to a short distance from the bottom of the cavity. The cavity is partially filled with liquid to be stored by the annular space between the tubing and the column of tubes and there is disposed above the stored liquid, a



cushion of liquefied gas in equilibrium with the vapor phase above it, sent through the annular space between the tubing and the column of tubes. The depth of the cavity, the height of the liquid stored in the cavity, and the height



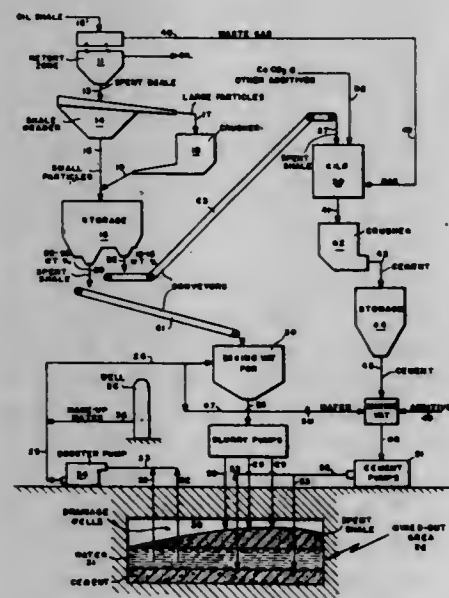
of the cushion of liquefied gas, is selected in such a way that at the moment of withdrawal practically all the liquid is evacuated from the cavity when all of the liquefied gas is vaporized.

3,459,003

**DISPOSAL OF WASTE SPENT SHALE**

Billie D. O'Neal, Houston, Tex., assignor to Esso Research and Engineering Company  
Filed Nov. 21, 1967, Ser. No. 684,752  
Int. Cl. E21f 15/08; E02d 15/02, 31/10  
U.S. Cl. 61—35

8 Claims



Waste spent shale resulting from gas combustion retorting operations is formed into an aqueous slurry and pumped into a mined-out area to deposit said waste spent slurry therein, a portion of the waste spent slurry being converted to cement which is pumped into the deposited waste spent shale to fill voids in and compact the deposited waste spent shale.

3,459,004

**WHARF WITH A SHOCK-ABSORBING DEVICE**

Emilio Morini, Milan, Italy, assignor to Società Applicazioni Gomma Antivibranti "SAGA" S.p.A., Milan, Italy  
Filed Jan. 10, 1968, Ser. No. 696,775  
Claims priority, application Italy, Apr. 27, 1967, 15,413-A/67

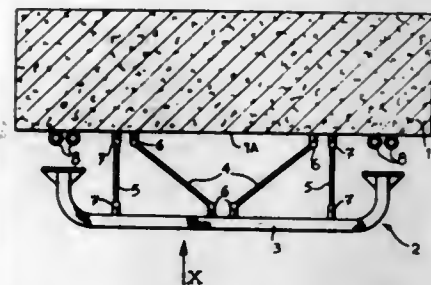
Int. Cl. E02b 3/22; B60r 19/06

U.S. Cl. 61—48

6 Claims

A rigid beam is suspended in a horizontal position parallel to a flank of the wharf by resilient suspension means which comprise an array of telescopic shock ab-

sorber. The arrangement of the shock absorbers is such that they converge by pairs towards the beams or the wharf or both. There are provided both absorbers with



their axes inclined to said flank in vertical planes and absorbers with their axes inclined to said flank in horizontal planes.

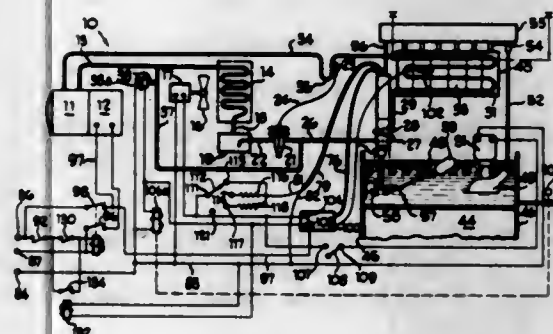
3,459,005

**SELECTIVE CONTROL FOR AN ICE MAKER**

Svend E. Sorensen, York, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois  
Filed Nov. 22, 1967, Ser. No. 685,005  
Int. Cl. F25c 1/06

U.S. Cl. 62—138

13 Claims



An apparatus for making chips or blocks of ice having a selectively variable control for regulating the size of ice chips, wherein during the freezing cycle of the apparatus ice is made in the control tube and the rate of ice formation is varied by a heater which supplies heat thereto. When the ice formed in the control tube blocks the tube, water backs up therein and causes an increase in pressure which triggers a harvest cycle during which the ice blocks are released into a suitable container. When the harvest cycle is completed, a temperature sensitive device switches the apparatus back into the ice freezing cycle.

3,459,006

**COOLING APPARATUS FOR AUTOMOTIVE VEHICLES**

Karl Hoyer, Leinfelden, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany  
Filed Sept. 28, 1967, Ser. No. 671,480  
Claims priority, application Germany, Oct. 10, 1966, B 89,275

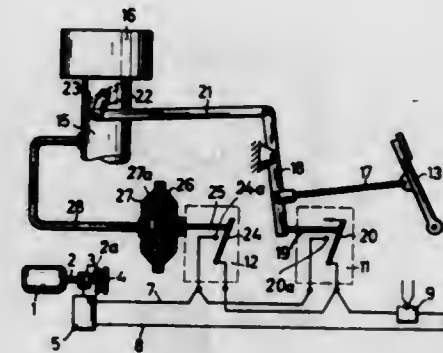
Int. Cl. B60h 3/04; F25b 49/00

U.S. Cl. 62—209

9 Claims

The compressor of an air conditioning apparatus for automotive vehicles receives motion through a magnetic clutch which can be energized in response to closing of an adjustable thermostatic switch in series with a first auxiliary switch which is closed when the gas pedal is moved from starting position. A second auxiliary switch is connected in parallel with the first auxiliary switch and closes when the pressure in the suction pipe of the engine

drops below a predetermined value. The first auxiliary switch insures that the compressor cannot be driven when the engine is idling, and the second auxiliary switch insures that the compressor can be driven when the gas pedal is in starting position but the vehicle is in motion when the engine is coasting, e.g., because the vehicle travels downhill at which time the pressure in the suction



pipe drops below the aforementioned predetermined value. The connection between the pedal and the first auxiliary switch includes a link train and the connection between the second auxiliary switch and the suction pipe includes a diaphragm one side of which is under atmospheric pressure and the other side of which is under the same pressure as that in the suction pipe.

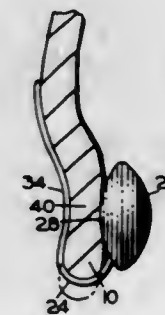
3,459,007

**EARRING WITH MEANS FOR LIGHTLY GRIPPING THE LOBE, INCLUDING MEANS TO FRICTIONALLY CONTACT THE EAR REAR WALL**

Blanche E. Whitley, 1218 NW. 26th, Portland, Oreg. 97210  
Filed Aug. 31, 1965, Ser. No. 483,937  
Int. Cl. A44c 7/00

U.S. Cl. 63—14

1 Claim



An earring clip has a U-shaped socket portion one side of which supports an ornament, the other side having an inwardly curved portion leading into an outwardly curved portion which leads into an inwardly curved upper end portion. The contour of the clip is such that the clip when fitted on the ear is disposed diagonally thereof with the socket portion bottom being located closely adjacent the juncture of the ear lobe with the head and with the inwardly and outwardly curved portions of the clip lying in contoured relation against the rear surface of the lobe and ear wall.

3,459,008

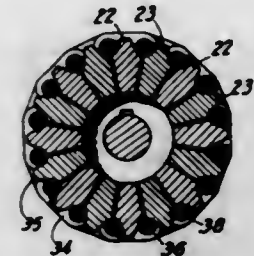
**CHAIN COUPLING**

Joseph J. Boyd, 96 Elder St., Fairburn, Ga. 30213  
Filed Nov. 2, 1967, Ser. No. 680,113  
Int. Cl. F16d 3/54

U.S. Cl. 64—19

7 Claims

A chain coupling for connecting together a driving and a driven shaft. The coupling includes a first sprocket connected to the driving shaft and having alternate ones of



teeth positioned in the spaces of the opposite sprocket, and a single strand roller chain positioned about the teeth of both sprockets, thereby holding the sprockets in their engaged position.

**ERRATUM**

For Class 66—50 see:  
Patent No. 3,460,160

3,459,009

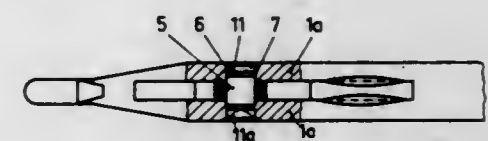
**LATCH NEEDLE FOR KNITTING MACHINES**

Wolfgang Wiederhut and Rudolf Ströhlein, Ebingen, Germany, assignors to Theodor Groz & Sohne & Ernst Beckett Nadelfabrik Commandit-Gesellschaft, Ebingen, Germany, a corporation of Germany  
Filed Apr. 21, 1967, Ser. No. 632,770  
Claims priority, application Germany, June 21, 1966, G 47,220; Jan. 5, 1967, G 48,935

Int. Cl. D04b 35/04, 35/06; B21g 1/06

U.S. Cl. 66—122

1 Claim



A latch needle having a smooth countersunk pivot pin, and shaft sides connected with the pivot pin by means of a mutually engaging annular groove and annular bead, wherein two flat end faces of the pivot pin are upset by means of press tools having conical ends.

3,459,010

**PNEUMATIC CLEANING DEVICE FOR CENTRO-SYMMETRICAL TEXTILE MACHINES**

Hans Ferri, Uster, Switzerland, assignor to Luwa AG, a corporation of Switzerland  
Filed Aug. 7, 1967, Ser. No. 658,911  
Claims priority, application Switzerland, Aug. 10, 1966, 11,534/66

Int. Cl. D04b 35/32; A471 5/38

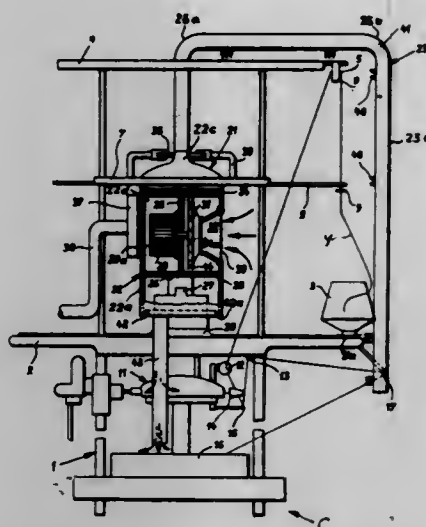
U.S. Cl. 66—168

8 Claims

A pneumatic cleaning device for substantially centro-symmetrical textile machines having a substantially vertical axis, in particular for the cleaning of the creel of a circular knitting machine. The inventive pneumatic cleaning device embodies a blower means having a pressure side and a suction side. A blower arm means which is rotatable about a substantially vertical axis is provided at the pressure side of the aforementioned blower means. Such blower arm means is equipped with blower nozzle means. Further, an air filter means is operably connected at the region of the suction side of the blower means. Also, a housing is mounted for rotation about the vertical axis of the textile machine, said housing being rigidly



connected for rotation with said blower arm means. Additionally, such housing possesses an air inlet opening which is limited in the circumferential direction thereof and said air inlet opening faces towards the blower arm means, with said air filter means covering said air inlet



opening. The inventive pneumatic cleaning device further includes means for delivering a portion of the air conveyed by said blower means to a load or consumer which is spatially separated from the aforementioned blower arm means.

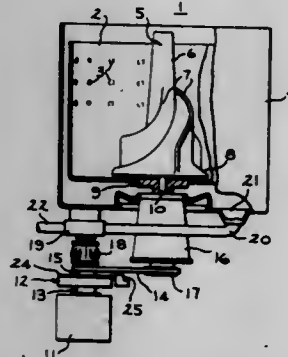
#### 3,459,011 COMPENSATED CONTROL FOR ELECTRO-MAGNETIC CLUTCH

Robert M. Fey, Louisville, and Thomas W. Williams, Valley Station, Ky., assignors to General Electric Company, a corporation of New York

Filed Nov. 14, 1967, Ser. No. 682,781  
Int. Cl. D06f 33/00, 29/00

U.S. Cl. 68—12

7 Claims



A washing machine has an electromagnetic clutch with a semiconductor control means controlling the power to the clutch coil in response to a generated signal representative of the speed of the clutch output member. The signal generating means and the semiconductor control means are interconnected by amplifier circuit means and a capacitor is connected in a negative feedback relationship between the generating means and the amplifier circuit means.

#### 3,459,012 WOOL TOP DYE SYSTEM

Lionel U. Renaud and Rene G. Gauthier, Woonsocket, R.I., assignors to Dye House Products, Inc., Woonsocket, R.I., a corporation of Rhode Island

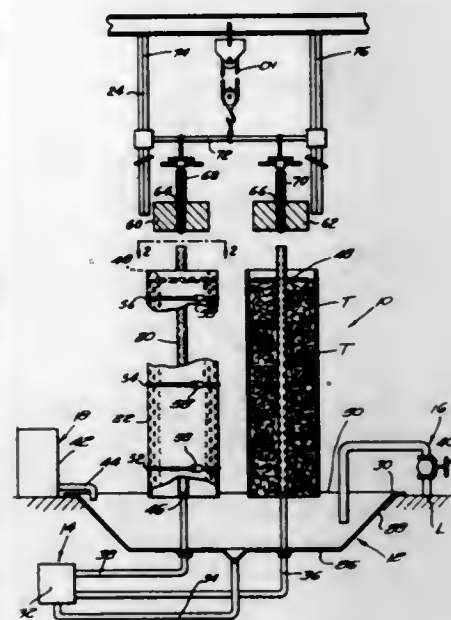
Filed July 6, 1964, Ser. No. 380,268  
Int. Cl. D06f 17/02

U.S. Cl. 68—187

1 Claim

1. A wool top dye system comprising a vat adapted to hold a limited supply of hot liquid colorant, at least one spindle vertically supported in said vat, said vat being located below floor level and having its upper edge flush with floor level, means connecting the vat to a pump and

the pump to each spindle for circulating liquid colorant, each spindle being of tubular, perforated construction and adapted to receive a plurality of wool tops thereon, means supporting the wool tops over the plane of floor level, a jacket shell comprising a thin sheet of perforated metal, preformed to generally cylindrical shape with overlapping longitudinal edge portions, means encircling said shell and operable to compress the shell about wool tops received therein, cover means receivable within said shell,



about said spindle and over the wool tops to limit the flow of liquid colorant above the wool tops, said spindle being detachably connected in said vat so as to be removable upon completion of dyeing whereby the dyed wool tops can be removed at floor level, imperforate tubular means engageable over said spindle above the wool tops to enclose the spindle perforations therein, and means applying pressure to the wool tops through said cover.

#### 3,459,013 WOOL TOP DYEING APPARATUS

Lionel U. Renaud, Woonsocket, R.I., assignor to Dye House Products, Inc., Woonsocket, R.I., a corporation of Rhode Island

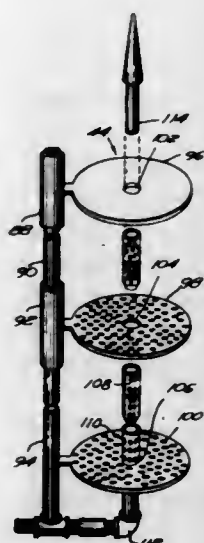
Filed July 6, 1964, Ser. No. 380,555

The portion of the term of the patent subsequent to Aug. 5, 1984, has been disclaimed

Int. Cl. D06p 1/22

U.S. Cl. 68—187

11 Claims



1. A wool top dye apparatus comprising a vat for holding a supply of dye solution, at least one wool top holding shell jacket mounted in said vat, said vat having a dye feed conduit extending into each said shell jacket, a bottom disk supported in each said shell jacket at the bottom

thereof, a top disk supported in each shell jacket at the top thereof, at least certain of said disks being hollow, having perforations directed toward the interior of the respective shell jacket and being connected to said conduit so as to receive dye solution therefrom and feed the same into any wool top supported between the top and bottom disks, said shell jacket having a pair of semi-cylindrical sections hingedly connected together, one of said sections being rigidly supported in said vat.

#### 3,459,014

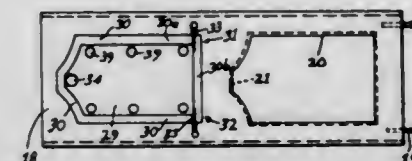
##### FOLDING DIE GUIDE MEANS

Melvin J. Berning, Cincinnati, Ohio, assignor to The Louis G. Freeman Company, Cincinnati, Ohio, a corporation of Ohio

Filed Mar. 18, 1968, Ser. No. 713,789  
Int. Cl. C14b 1/00

U.S. Cl. 69—1

7 Claims



Guide means for insuring the sequential folding of the adjacent edges of a workpiece, the guide means being in the form of resilient fingers which are adapted to engage and initiate the infolding of selected edges of the workpiece in advance of the adjoining edges of the workpiece.

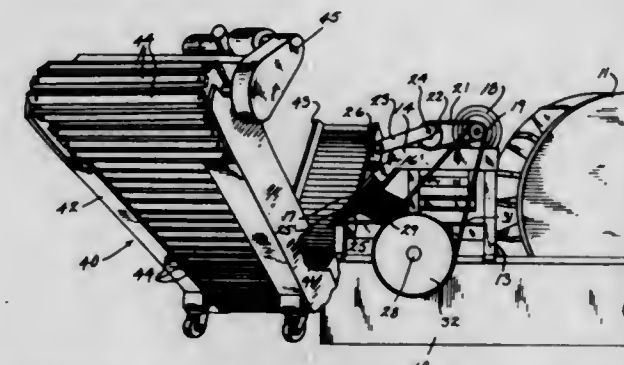
#### 3,459,015

APPARATUS FOR REMOVING HIDES FROM VATS  
Forrest L. Wooten, Oak Creek, Wis., assignor to Albert Trostel & Sons Co., Milwaukee, Wis., a corporation of Wisconsin

Filed Sept. 13, 1967, Ser. No. 667,553  
Int. Cl. C14c 15/00; B65g 47/00

U.S. Cl. 69—32

14 Claims



To remove hides from tannery vats containing chemical hide-treating solutions there is provided a mechanical hide unloader having a power-driven revolving rake with tines thereon adapted to continuously pick up treated hides and lift them from the vat, there being a synchronized oscillating rake thereabove having tines positioned to pass between said revolving rake tines to remove the hides therefrom, said hides being deposited on a conveyor or the like adjacent the vat.

#### 3,459,016

##### COMBINATION LOCK MECHANISM FOR LUGGAGE LATCHES AND THE LIKE

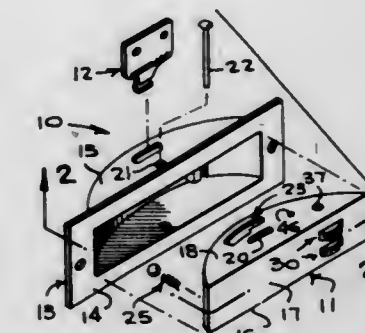
Wallace E. Atkinson, Petersburg, Va., assignor to Long Manufacturing Company, Inc., Petersburg, Va., a corporation of Virginia

Filed May 31, 1967, Ser. No. 642,571  
Int. Cl. E05b 37/02, 37/00

U.S. Cl. 70—312

12 Claims

A combination lock mechanism for luggage latches and the like, which includes a pair of circular dial wheels



formations which couple with their associated dial wheels at any of a plurality of relative angular positions at their outer limit positions and which free the dial wheels for relative angular adjustment to new combination positions at inwardly spaced axial positions of the spindle members.

#### 3,459,017

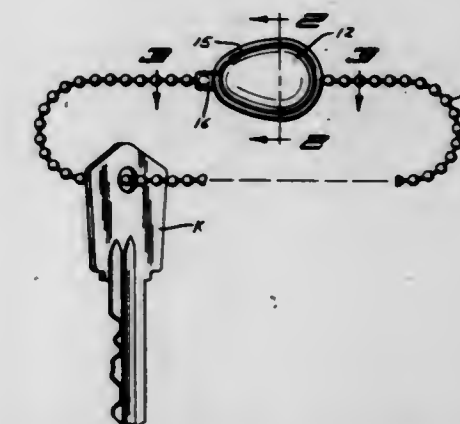
##### KEY RETAINER

John W. Sivertsen, 5321 35th Ave. S., Minneapolis, Minn. 55417

Filed Feb. 23, 1968, Ser. No. 707,528  
Int. Cl. A44b 15/00

U.S. Cl. 70—457

4 Claims



A flexible chain or the like to be strung through the eyes of keys or similar items to hold them in collection, there being a ring of elastic material connected to at least one end of the chain and which is deformable to permit passage thereof through said eyes to add keys to or remove them from the chain and a block of rigid material having groove means for receiving the ring in distended condition to prevent deformation thereof.

#### 3,459,018

##### METHOD OF AND APPARATUS FOR BENDING BARS

Neil S. Miller, Glasgow, Scotland, assignor to The University Court of the University of Glasgow, Glasgow, Scotland, a British corporate body

Filed Feb. 4, 1966, Ser. No. 525,021

Int. Cl. B21b 37/14, 37/00; B30b 15/26

U.S. Cl. 72—7

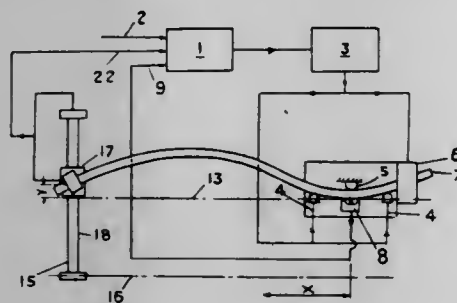
9 Claims

A method and apparatus for bending a bar to a desired profile. The bar passes through a bending device which applies a transverse force thereto; said bending device



being operable to bend the bar, or to correct a previous bend if necessary, in response to previously stored infor-

workpiece. More particularly the present invention relates to a device for shaping and controlling processes for



mation concerning the radius of curvature and the X and Y coordinates of the bent portion of the bar.

3,459,019

# METHOD OF AND APPARATUS FOR ROLLING FLAT STRIP

Morris Denor Stone, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania

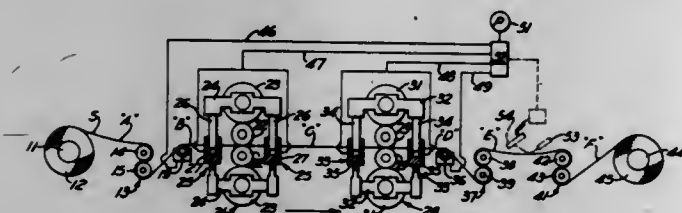
Filed Sept. 1, 1966, Ser. No. 576,700

Claims priority, application Great Britain, Sept. 13, 1965, 39,052/65

Int. Cl. B21b 37/04, 37/06

U.S. Cl. 72—12

7 Claims



The present invention relates to a method of and apparatus for producing flat metallic strip or sheets, and more particularly, to the production of such characterized material incident to a rolling operation. The method disclosed includes the steps of forming a tension zone after the strip leaves the mill followed by a non-tension zone, in which zone the degree of flatness is ascertained and after which the tension in the tension zone is varied in addition to varying the contour of the rolls to control the tension influence during rolling.

3,459,020

# PLATE-BENDING ROLL FOR STEEL PLATES AND THE LIKE

Toshimitsu Morita, Neyagawa-shi, Masuo Taki, Ashiya-shi, Maomi Kaneda, Suita-shi, and Sakae Kohno, Inno-shima-shi, Japan, assignors to Hitachi Zosen Kabushiki Kaisha (Hitachi Ship-building & Engineering Co. Ltd.), Osaka-shi, Japan, a corporation of Japan

Filed Feb. 1, 1965, Ser. No. 429,362

Int. Cl. B21j 7/26; B21d 5/14, 9/10

U.S. Cl. 72—22

3 Claims

The present invention relates to a plate-bending roll for steel plates and the like hereinafter referred to as the

the purpose of automatically manufacturing cylindrical or tubular bodies of a cross-sectional shape composed of more than two continuous arcs.

3,459,021

# APPARATUS FOR DEEP DRAWING SOLID PLASTIC MATERIALS

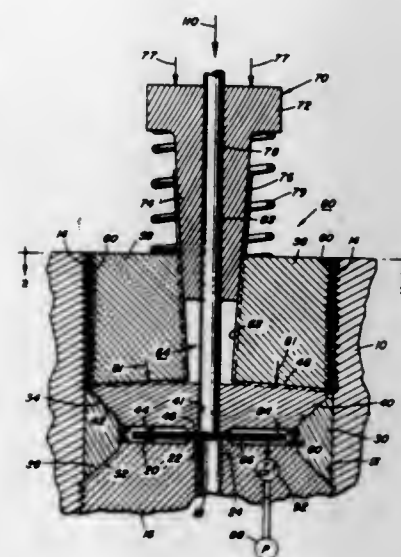
Francis Joseph Fuchs, Jr., Princeton Junction, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 9, 1966, Ser. No. 578,279

Int. Cl. B21d 22/10, 25/18, 22/20

U.S. Cl. 72—60

12 Claims



Deep drawing apparatus including structure defining a pressure chamber for applying pressure to a blank, a removable plug for sealing the pressure chamber, mechanical locking apparatus including a plurality of radially displaceable, slidingly interlocked segments for securing the plug against pressurized fluid received within the pressure chamber, and means advanceable through the pressure chamber for drawing the blank into the draw die. Also disclosed is a breech or bore locking mechanism including a plurality of radially disposed, slidingly interlocked segments radially displaceable to and from a securely locked position by the quick and simple axial displacement of a tapered ram.

3,459,022

# ROLLER-EQUIPPED STRAIGHTENING MACHINE

Franz Josef Hagemann, Erkelenz, Rhineland, Germany, assignor to Maschinen- und Bohrgerate-Fabrik Alfred Wirth & Co., Erkelenz, Rhineland, Germany, a company of Germany

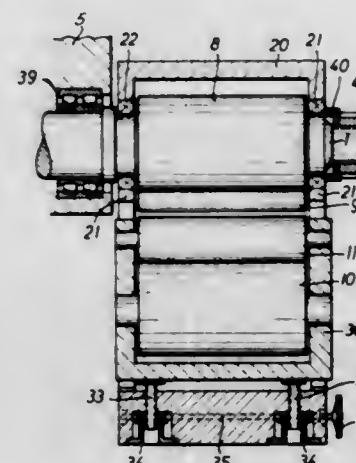
Filed Dec. 22, 1966, Ser. No. 604,004

Claims priority, application Germany, Dec. 29, 1965, M 67,836

Int. Cl. B21d 1/02

U.S. Cl. 72—163

4 Claims



A machine for straightening material in which straightening axle journals are arranged in staggered relationship to each other in an overhung fashion and with each axle having a free end adapted to receive an exchangeable straightening roller thereby allowing an alteration of the roller distribution. Moreover, additional work rollers are capable of being carried by the free ends of the axle journals with such rollers being the original straightening rollers or support rollers exchanged therefor.

3,459,023

# ROLLING MILL

James Richard Adair, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania

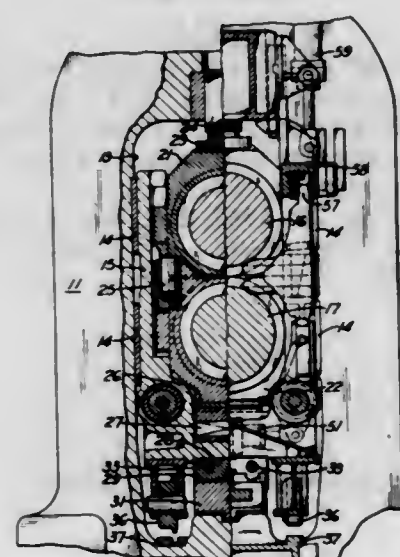
Filed Mar. 28, 1967, Ser. No. 626,457

Claims priority, application Great Britain, Apr. 5, 1966, 15,186/66

Int. Cl. B21b 31/08, 39/20

U.S. Cl. 72—238

7 Claims



The present disclosure relates to an improvement in a rolling mill and, particularly, to a mill construction allowing quick removal from and insertion into the mill of the rolls thereof, together with a novel construction for mounting and adjusting the guides thereof.

3,459,024

# MULTI-HOLE WIRE-DRAWING MACHINE AND A METHOD OF THREADING UP THE SAME

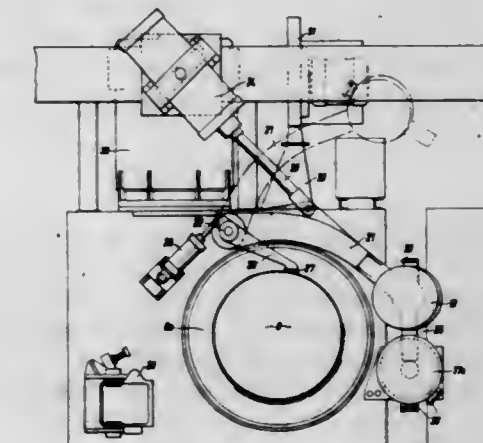
Samuel Hugh Richards, Crook, England, assignor to Marshall Richards Machine Company Limited, Crook, England, a British company

Filed July 13, 1966, Ser. No. 564,846

Claims priority, application Great Britain, July 20, 1965, 30,734/65

Int. Cl. B21c 1/10

6 Claims



A multi-hole wire-drawing machine having in alignment a plurality of wire drawing dies, a plurality of rotatable drawing blocks interposed between the drawing dies and a plurality of guide and dancer pulleys associated with certain drawing blocks for controlling the rate of rotation thereof. A clamping arm is provided for each drawing block having a dancer and guide pulley associated therewith to facilitate threading-up the machine and so that the wire can be threaded onto the guide and dancer pulleys by winding three or more turns of wire on the corresponding drawing block and retaining all but the first two turns onto the block with the clamping arm while removing and reversing the first two turns and placing loops thereof onto the guide and dancer pulleys.

3,459,025

# STRETCHING FIXTURE WITH QUADRILATERAL LINKAGE CONTROL OF STRETCH HEAD MOVEMENTS

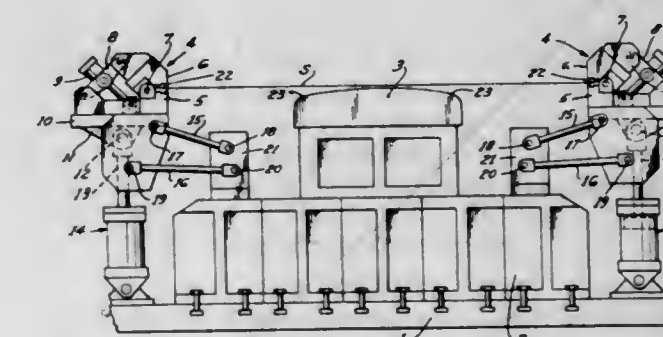
Cyril John Bath, Chagrin Falls, Ohio, assignor to The Cyril Bath Company, Cleveland, Ohio, a corporation of Ohio

Filed Dec. 7, 1967, Ser. No. 688,794

Int. Cl. B21d 11/02; B21j 9/18

U.S. Cl. 72—296

10 Claims



The stretching fixture of this invention is used in stretching sheet metal stock in one dimension by means of stretch heads which are caused to grip two opposite margins of a sheet of stock and then are moved in predetermined paths such that they stretch the sheet in said dimension and wrap it about the convex forming face of a male die. The path of each head is predetermined by



a plurality of identical quadrilateral linkages which are shown as aligned with each other transversely of the tensioning dimension with their pivots at their corresponding apices coaxial. Each linkage has its pivotal axis at its inboard end in fixed position relative to the die and its pivotal axis at its outboard end in fixed position relative to the head. Each link is of fixed length.

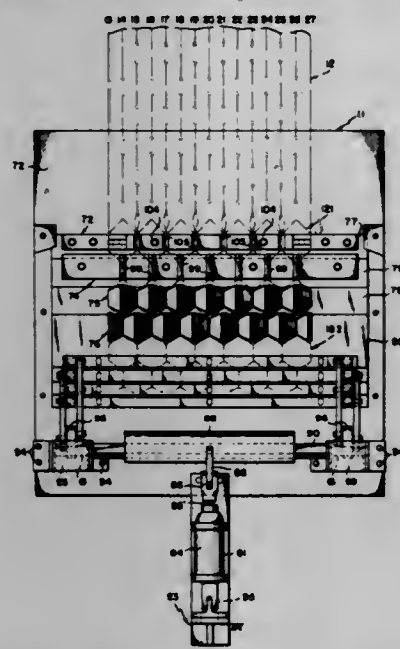
The specific improvement is that, as to each quadrilateral linkage of the same head, at least one link is of a different length than the link opposite it, whereby the associated head is caused to rock relative to its starting or loading position about axes parallel to said pivotal axes as it is moved along its predetermined path. The axes of each quadrilateral linkage, therefore, define either a trapezoid or a trapezium, as distinguished from a parallelogram.

3,459,026

# **APPARATUS FOR FORMING A CELLULAR CORE PANEL**

John W. Allen, Flossmoor, Ill., and Wesley R. Hachler, Highland, Ind., assignors to Stanray Corporation, Chicago, Ill., a corporation of Delaware  
Filed July 28, 1967, Ser. No. 656,781  
Int. Cl. B21d 43/28, 31/02; B21k 27/06  
U.S. Cl. 72—324

8 Claims



A mechanical vertically operated press with top and bottom dies designed to operate progressively in a series of steps on a metal sheet having a plurality of lines of slits so as to form said sheet into an integral cellular core panel. Lines of blades in the dies initially fold the sheet in the unslit portions of each slit line as cooperating lines of punches enter and expand the slits in each line. Lines of wedges in the top die subsequently force the folded and expanded portions of the sheet into lines of squeeze members to complete the folds and to finally form the cells. Cooperating mechanical linkage arrangements on each of the dies interconnect the lines of blades, punches, wedges and squeeze members so that these elements are urged closer together in the direction of the lines of slits during the forming operation.

3,459,027

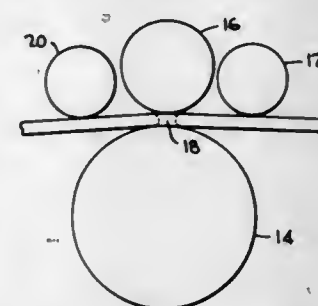
# **METHOD FOR LEVELLING SHEET STOCK**

Raymond G. Brownstein, 300 Fountain Ave., Ellwood City, Pa. 16117  
Filed Sept. 28, 1967, Ser. No. 671,265  
Int. Cl. B21b 1/38; B21d 1/02, 3/02  
U.S. Cl. 72—366

10 Claims

A method for levelling sheet stock by passing the stock once through a pair of parallel rollers and bending the stock as it emerges from the rollers. The pressure applied by the rollers and the amount of bending are de-

termined by the characteristics of the metal being levelled and the stress created by the pressure and bending is



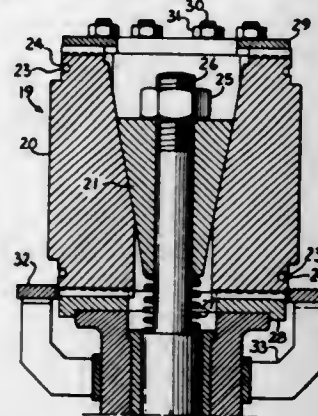
within the plastic limit of the stock. The method causes the fibers of the metal to orient and become aligned in the direction of travel of the stock.

3,459,028

# **METHOD AND APPARATUS FOR MAKING A SIDE WALL FOR A PRISMATIC CONTAINER**

Leonardus Arnoldus Nicolaas Blyvoet, Bloemendaal, Netherlands, assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware  
Filed Oct. 7, 1966, Ser. No. 585,110  
Claims priority, application Great Britain, Oct. 8, 1965, 42,860/65  
Int. Cl. B21d 31/04, 51/26  
U.S. Cl. 72—393

6 Claims



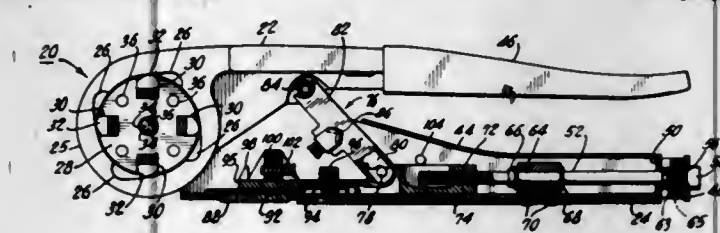
A method and apparatus for forming prismatic shipping containers is disclosed in which radially expandable die segments are used to engage a cylindrical blank of sheet material along both straight axial side edges and convex connecting end edges of the flat prismatic side surfaces to be thus formed.

3,459,029

# **ADJUSTABLE CRIMPING TOOL**

Seymour Rosenfeld, Monsey, N.Y., and Ronald W. Schwab, West Orange, and Paul A. Haucke, Rahway, N.J., assignors to Buchanan Electric Products Corporation, Union, N.J.  
Filed Feb. 28, 1967, Ser. No. 619,242  
Int. Cl. B21d 31/00, 41/00; B21j 7/16  
U.S. Cl. 72—402

17 Claims



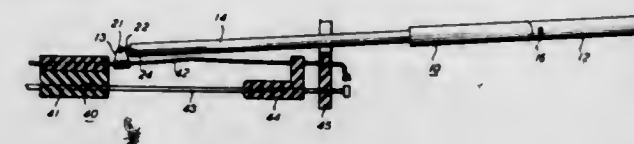
The crimping tool is adjustable by means of a micrometer-type of mechanism to adjust the depth of crimp. In one embodiment the tool is infinitely adjustable, and in another embodiment it is adjustable in steps. Improved accuracy in determining depth of crimp is obtained by a combination ratchet and stop mechanism.

3,459,030

# **TOOL FOR ADJUSTING RELAY CONTACTS**

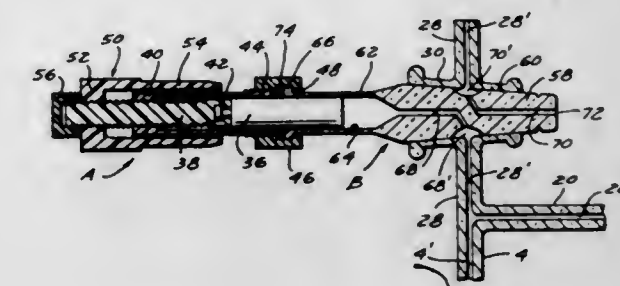
Raymond K. Wilson, Hartford, Conn., assignor to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York  
Filed Jan. 2, 1968, Ser. No. 695,162  
Int. Cl. B25b 9/00; B21d 7/02  
U.S. Cl. 72—452

8 Claims



An adjusting tool is disclosed wherein a rotating gripping member deforms a contact spring in response to sliding movement of a cam member. Rotation of the cam member, in turn, is induced by rotating the cam member against a handle.

fluid communication with the manometer when the substitute plug is inserted into the stopcock socket, thereby



to provide for accurate and invariant calibrating volume changes.

3,459,033

# **CRYOGENIC CONTAMINATION MEASURING APPARATUS**

Robert W. Stuart, Wakefield, Mass., assignor, by mesne assignments, to 500 Incorporated, Cambridge, Mass., a corporation of Delaware  
Filed Nov. 9, 1965, Ser. No. 506,999  
Int. Cl. G01n 25/14  
U.S. Cl. 73—25

4 Claims

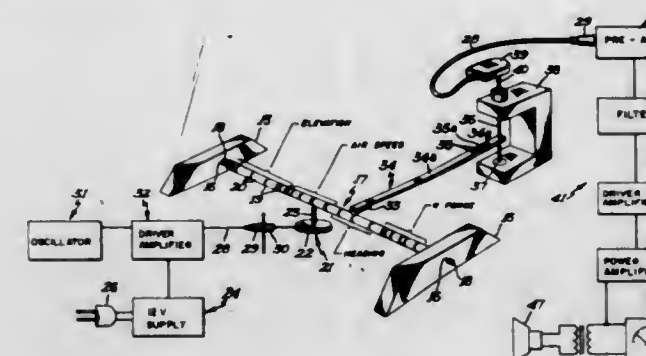


3,459,031

# **FLIGHT RECORDER CALIBRATOR**

Ronald C. Davis, 3909 E. 78th St., Minneapolis, Minn. 55420  
Filed Jan. 11, 1968, Ser. No. 697,156  
Int. Cl. G01c 25/00  
U.S. Cl. 73—1

8 Claims



A device for calibrating a flight data recorder comprising a housing adapted to be positioned within the flight data recorder and replacing the magazine for the recorder tape storage cassette of the flight recorder. A commutator mounted for floating movement on the housing and having a plurality of surface portions, each portion being formed of one of two different materials which have an ultrasonic transmission differential of approximately two to one. A transducer engaging the commutator and being connected to a source of high frequency electrical current to be energized thereby and to produce an ultrasonic impulse which is conveyed to the commutator and to the stylus arm of the flight recorder. A receiver connected with the flight recorder stylus arm for receiving ultrasonic impulses therefrom and converting the ultrasonic impulses into electrical impulses. Circuit means connected to the receiver and receiving electrical impulses therefrom, and including indicator means converting the electrical impulses into an audible and/or visual signal.

3,459,032

# **MANOMETER CALIBRATING DEVICE AND METHODS**

Masatoshi Yamaguchi, Frederick D. Howard, and Harlan K. Pratt, Davis, Calif., assignors to Roger Gilmont Instruments, Inc., Great Neck, N.Y., a corporation of New York  
Filed July 6, 1967, Ser. No. 651,488  
Int. Cl. G01l 27/00  
U.S. Cl. 73—4

18 Claims

An assembly of a syringe and a specially designed substitute stopcock plug is used to replace the normal stopcock plug in a manometer, the syringe being placed in

# **APPARATUS FOR MEASURING THE MOISTURE CONTENT OF A GASEOUS SUBSTANCE IN A HIGH TEMPERATURE CHAMBER**

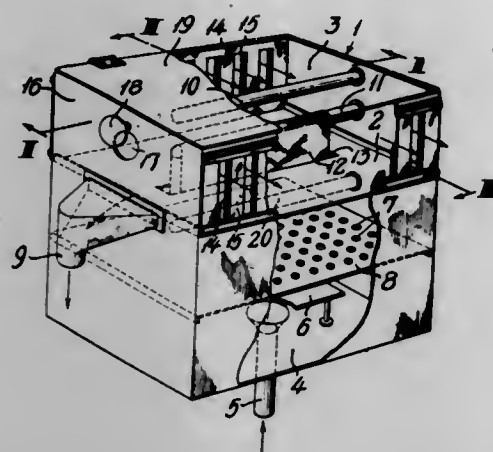
Hisayuki Kawaguchi, Kyoto-fu, Japan, assignor to Kabushiki Kaisha Ichikin Kogyosha, Kusatsu-shi, Shiga-ken, Japan  
Filed May 6, 1968, Ser. No. 726,698  
Claims priority, application Japan, Nov. 1, 1967, 42/69,830  
Int. Cl. G01n 31/06  
U.S. Cl. 73—29

8 Claims

A casing having a water reservoir continuously sup-

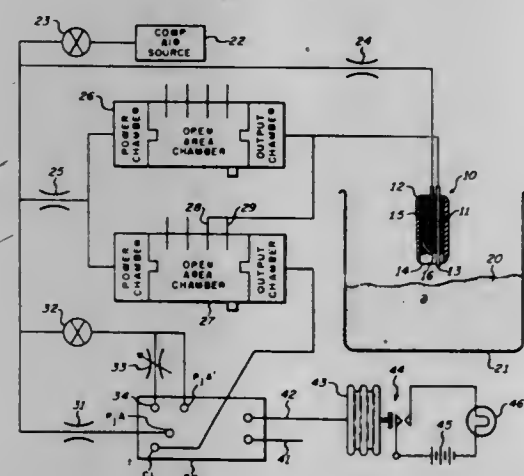


plied with water and wet and dry bulb thermometers in a measuring chamber of the casing which is supplied per end with a source of pressure air to supply air downwardly into the barhole, and outlet means communicate



with a sample of a gas surrounding the casing whose moisture content is to be measured.

**3,459,035**  
**FLUIDIC LOOSE SOLIDS AND GRANULAR MATERIAL LEVEL SENSING APPARATUS**  
Wayne P. Russon, American Fork, Utah, assignor to Sperry Rand Corporation, a corporation of Delaware  
Filed Dec. 27, 1967, Ser. No. 693,946  
Int. Cl. G01b 13/08  
U.S. Cl. 73—37.5 6 Claims

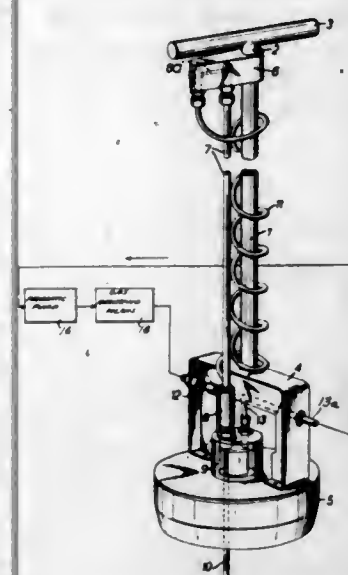


Fluidic apparatus for detecting the level of a material stored in a container that is particularly suitable for use with loose solids and granular material.

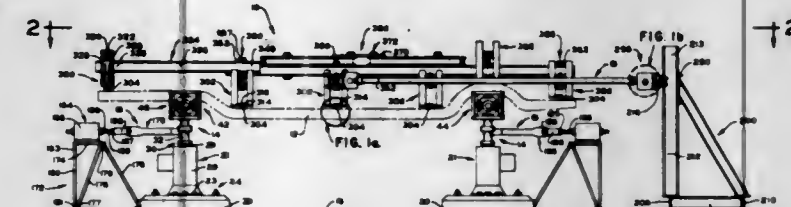
**3,459,036**  
**GAS SAMPLING PROBES USED WITH APPARATUS FOR DETECTING WATER LEAKS**  
Peter Powell, Henley-on-Thames, England, assignor to The Water Research Association  
Filed Sept. 21, 1967, Ser. No. 669,574  
Claims priority, application Great Britain, Sept. 28, 1966, 43,266/66  
Int. Cl. G01m 3/08 10 Claims

A gas sampling probe for detecting water leaks in an underground conduit or the like, including a guide member supporting at its lower end a cap for sealing the mouth of a barhole. A hollow probe mounted for longitudinal sliding movement in the cap is connected at its up-

wardly into the barhole, and outlet means communicate with the upper region of the zone beneath the cap to withdraw the gas from the barhole for analysis.

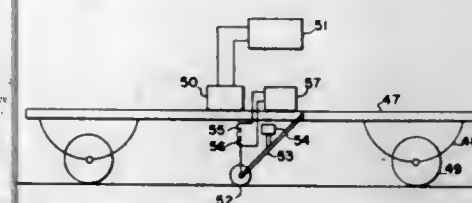


**3,459,037**  
**DYNAMIC ROAD SIMULATOR**  
James W. Holzman, Grosse Ile, Mich., assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia  
Filed Nov. 14, 1966, Ser. No. 594,072  
Int. Cl. G01n 29/00  
U.S. Cl. 73—71.7 17 Claims



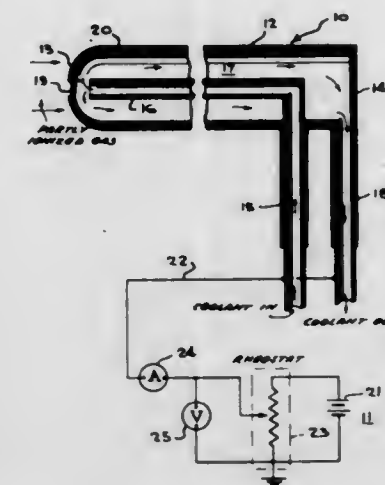
A vehicular test frame apparatus is provided which closely simulates loading imparted by actual driving conditions. This testing apparatus applies vertical, torsional and inertia loading to the frame under test in a closely controlled manner so as to actually simulate the load which would be applied to a vehicular frame traversing a particularized road having known surface characteristics such as curvature, rise and fall and bumps.

**3,459,038**  
**APPARATUS FOR TESTING ROAD SURFACES AND METHOD**  
Gilbert Swift, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware  
Original application Jan. 29, 1965, Ser. No. 428,956, now Patent No. 3,353,404, dated Nov. 21, 1967. Divided and this application Sept. 11, 1967, Ser. No. 698,072  
Int. Cl. E01c 23/00  
U.S. Cl. 73—146 20 Claims



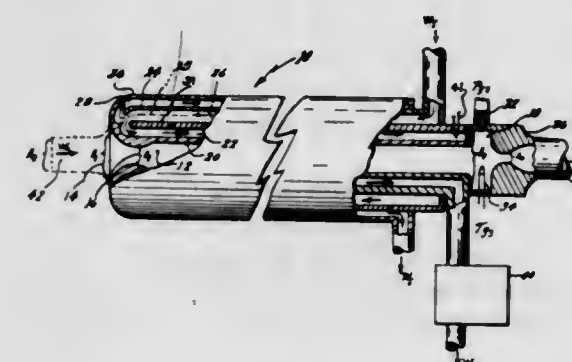
A contact wheel is moved over a surface, the vertical movement due to roughness being electrically sensed, then rectified, and then integrated to form an indicia of the roughness. The horizontal movement of the wheel is also electrically sensed and a ratio taken of the horizontal and vertical movement signals.

**3,459,039**  
**METHOD AND DEVICE FOR DETERMINING PROPERTIES OF AN IONIZED GAS**  
Jerry Grey, 61 Adams Drive, Princeton, N.J. 08540  
Filed June 23, 1966, Ser. No. 559,850  
Int. Cl. G01k 17/00  
U.S. Cl. 73—190 22 Claims



A probe for diagnosing properties of a partly or fully ionized gas generally including electrically conducting means insertable in an ionized gaseous environment, means for cooling the electrically conductive means and means for electrically insulating the electrically conductive means from the ionized gaseous environment with the exception of a selected area thereof.

**3,459,040**  
**ENTHALPY SENSOR**  
Carl R. Halbach, Canoga Park, Calif., assignor to the United States of America as represented by the Secretary of the Air Force  
Filed Nov. 23, 1966, Ser. No. 596,738  
Int. Cl. G01k 17/10  
U.S. Cl. 73—190 1 Claim

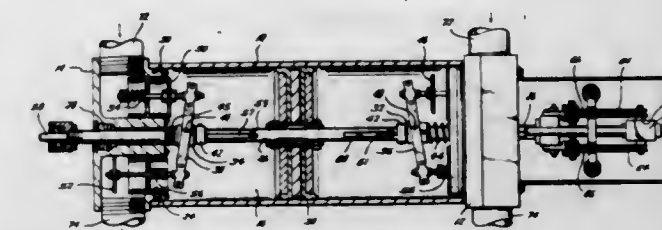


An enthalpy sensor including a cylindrically shaped duct with a plenum chamber and metering nozzle at one end, a split flow coolant chamber surrounding the duct and measuring devices including one thermocouple and a pressure tap in the plenum chamber and one thermocouple in the coolant flow stream with a flow meter in the coolant flow system.

**3,459,041**  
**FLUID METERING APPARATUS**  
Ralph W. Hippen, 1520 Welch St., Houston, Tex. 77006  
Filed Dec. 19, 1966, Ser. No. 602,792  
Int. Cl. G01f 3/16 7 Claims

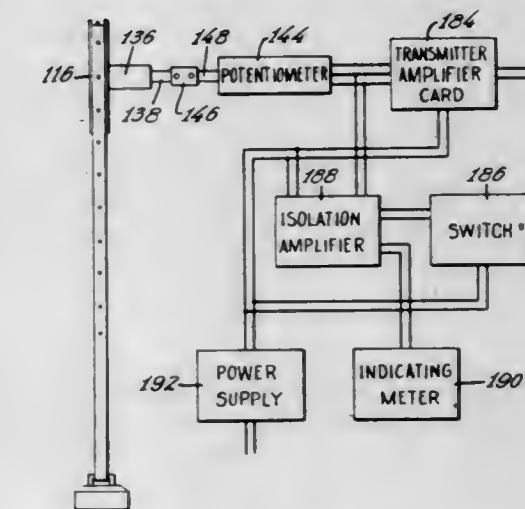
A fluid meter of the piston and cylinder type having an inlet and an outlet valve at each end and including

means for actuating the valves to cause all of the valves to close momentarily at the time of the reversal of the



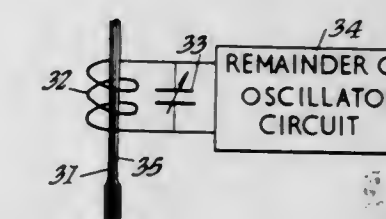
movement of the piston to increase the accuracy of measurement of the fluid passing through the meter.

**3,459,042**  
**FLOAT OPERATED LIQUID LEVEL TRANSMITTER**  
William R. Brown, St. Paul, Minn., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Delaware  
Filed May 23, 1967, Ser. No. 640,726  
Int. Cl. G01f 23/06  
U.S. Cl. 73—313 5 Claims



A float operated time impulse transmitter has a float operated motion to voltage transducer which actuates a multiturn potentiometer connected to plug-in circuit boards, one of which is a DC power supply and another being a voltage to time impulse converter.

**3,459,043**  
**METHOD AND APPARATUS FOR MEASURING TEMPERATURE**  
Robert Eric Young, 12 Whitnash Road, Leamington Spa, Warwickshire, England  
Filed July 5, 1966, Ser. No. 562,570  
Int. Cl. G01k 5/18; G01i 9/08  
U.S. Cl. 73—362 8 Claims



Where a temperature is indicated by a column of liquid, as in a mercury-in-glass thermometer, this column of

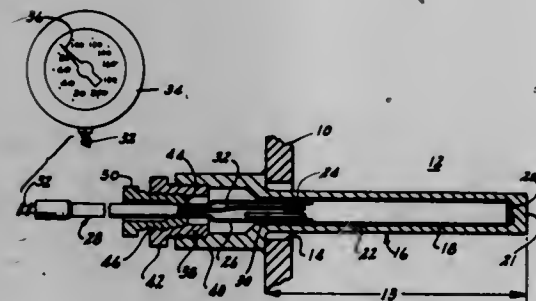


liquid is arranged to effect the inductance of a coil included in the circuit of a self-sustaining oscillator circuit so that the frequency, or the change in frequency, is a measure of the temperature.

**3,459,044**  
**BULB LOCKING MECHANISM**  
Herbert J. Zurstadt, 1231 Berkshire,  
Grosse Pointe Park, Mich. 48236  
Filed Mar. 1, 1967, Ser. No. 619,839  
Int. Cl. G01k 5/02

U.S. Cl. 73-368

5 Claims



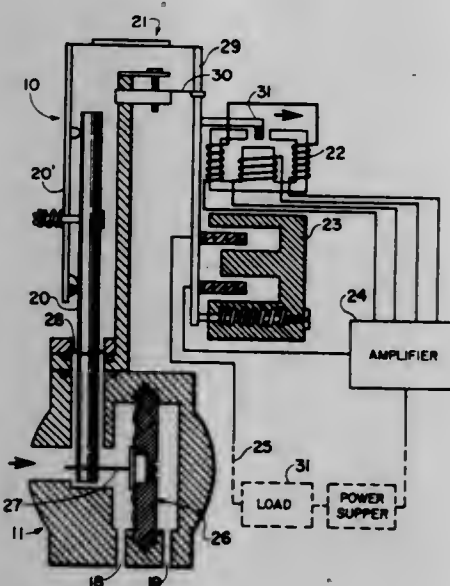
A remote thermometer having a charged bulb disposed within a well. The well is provided to isolate the fluid system under test from the ambient atmosphere. The well is projected into a large steam pipe or liquid tank, and the thermal bulb may then be inserted into the well to sense the steam or liquid temperature. The bulb can be removed or replaced at any time without disturbing the well or otherwise allowing the steam to escape into the ambient atmosphere.

**3,459,045**  
**INSTRUMENT SYSTEM RANGEABILITY DEVICE**  
Philip H. Sanford, Walpole, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts

Filed Nov. 9, 1967, Ser. No. 681,714  
Int. Cl. G01l 9/00

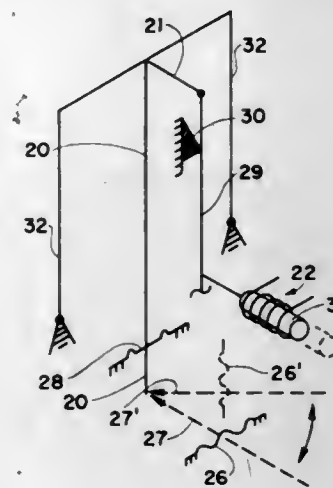
U.S. Cl. 73-398

9 Claims



A differential pressure transmitter has a top assembly and a bottom assembly rotatably adjustable with respect to each other about a vertical axis. A force bar extends into both of the assemblies along a vertical axis and is pivotally mounted in the top assembly for movement in

a single plane with respect to the pivot. A differential pressure responsive diaphragm unit within the bottom assembly is connected to the force bar, and an electrical

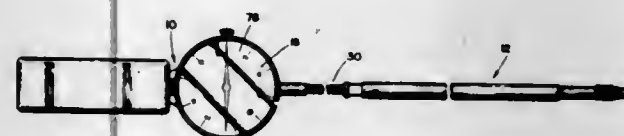


output device including an electrical displacement detector and feedback mechanism is connected to the force bar in the top assembly.

**3,459,046**  
**DIRECT READING PRESSURE GAGE**  
Harvey L. Pastan, Brookline, Mass., assignor to Microdot, Inc., Cambridge, Mass., a corporation of California  
Filed Aug. 2, 1967, Ser. No. 657,909  
The portion of the term of the patent subsequent to Oct. 31, 1984, has been disclaimed  
Int. Cl. G01l 7/08

U.S. Cl. 73-406

8 Claims

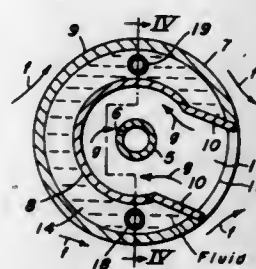


A direct reading pressure gage with an elongated frame having a diaphragm coupler at one end and an elongatable chamber at the other connected by a capillary tube. A mechanical displacement gage responds to the change in chamber length to indicate the pressure applied to the diaphragm.

**3,459,047**  
**GAS SAMPLING PROBE**  
Ladislaus Walter Sumansky, Library, Pa., assignor to the United States Steel Corporation, a corporation of Delaware  
Filed June 21, 1967, Ser. No. 647,851  
Int. Cl. G01n 1/22

U.S. Cl. 73-421.5

2 Claims



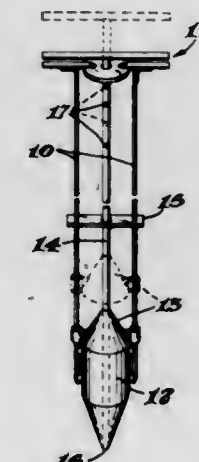
A gas sampling probe comprising an elongated tube with gas intake openings along one side thereof, said tube being partially surrounded by an elongated sheath. When the probe is inserted in the gas main from which samples are to be taken, the openings in the elongated tube face

generally upstream, and the sheath stands in front of these openings, protecting them from direct exposure to the gas stream. The sheath may be either heated or cooled, depending on the type of gas and conditions in which the probe is used.

**3,459,048**  
**SAMPLER FOR VISCOUS MATERIAL**  
Robyn D. Bicknell, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Filed June 5, 1967, Ser. No. 643,625  
Int. Cl. G01n 1/10

U.S. Cl. 73-425.4

2 Claims

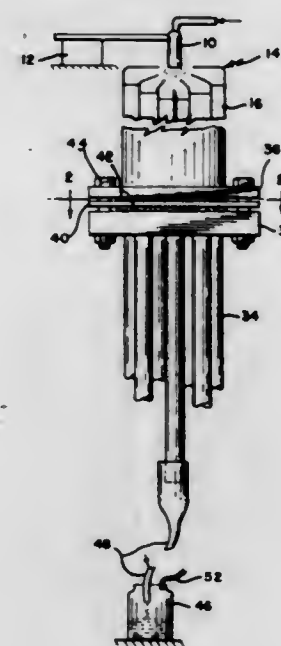


A sampler for highly viscous materials which comprises: a cone shaped receiver cup; at least two parallel spaced apart support rods forming a handle at one end and securely fastened to the cup at the other ends; a cone shaped cover slidably engaged to the support rods and mating with the cup, and a guide rod securely attached to the cover to raise and lower it.

**3,459,049**  
**SPRAY PATTERN MEASUREMENT**  
Henry E. Kamps, Sharonville, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force  
Filed Dec. 19, 1967, Ser. No. 691,888  
Int. Cl. G01n 33/00

U.S. Cl. 73-432

5 Claims



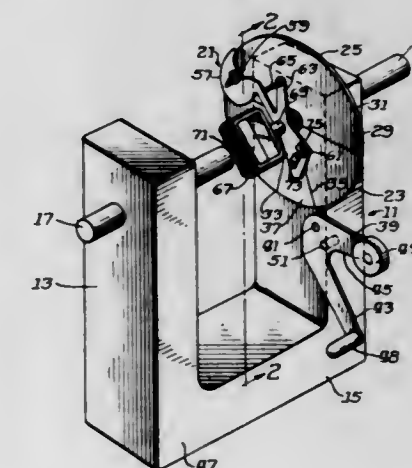
A pattern separator in the form of flow dividing partitions is placed in planned spaced proximity to a nozzle

or spray head and the fluid emerging from the nozzle is collected, identified with the orifices in the several nozzle areas, and lead off to a series of individual measuring devices identified also with the several spray head areas. Accommodation is made in the design of the pattern separator for the angle of spray emergence.

**3,459,050**  
**METER BLADE BALANCING MEANS USING PIVOTED WEIGHTS**  
Phillip E. Uterhart, Park Ridge, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois  
Filed July 21, 1966, Ser. No. 566,969  
Int. Cl. G01m 1/00, 1/02

U.S. Cl. 73-480

1 Claim

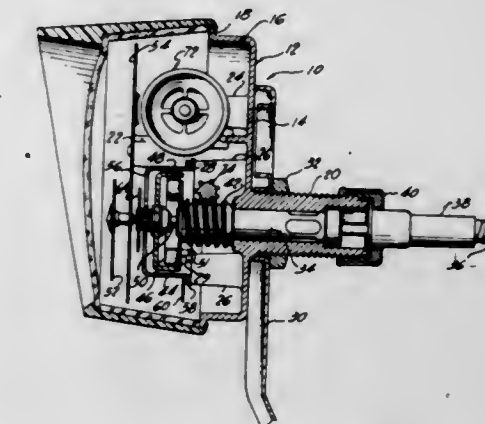


A meter blade balancing system in which a meter assembly with a blade is statically balanced by attaching to the counterweight portion of the blade two small weights having integrally formed plug formations by which the weights can be staked to the blade after adjustment of the assembly into balanced condition using a fixture described.

**3,459,051**  
**SPEEDOMETER**  
Patrick L. Powell, Franklin Park, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia  
Filed May 5, 1967, Ser. No. 636,329  
Int. Cl. G01p 3/22

U.S. Cl. 73-498

5 Claims



A speedometer having a hair spring secured at one end to an indicator shaft and at the other end to a field cup which is manually rotatable to adjust the rest position of the hair spring.



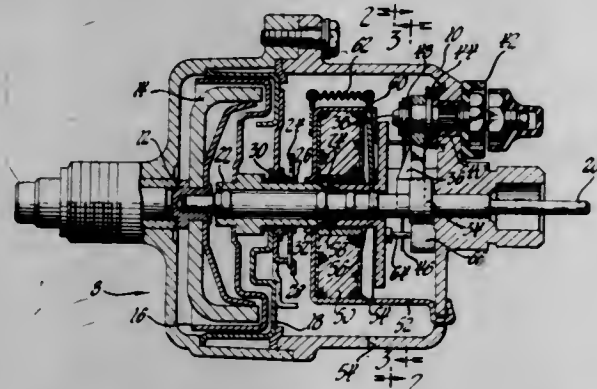
### 3,459,052 CRUISE CONTROL SYSTEM AND ERROR DETECTOR THEREFOR

Richard W. Bemmann, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 27, 1966, Ser. No. 582,447  
Int. Cl. G01p 7/00

U.S. Cl. 73—506

8 Claims



A cruise control system for a motor vehicle is disclosed which permits lockup at a prevailing vehicle speed and generation of a speed error signal in response to any deviations in vehicle speed subsequent to lockup. The speed error signal is generated by a speed transducer which includes a pair of contacts, one of which is oscillated through a predetermined arc corresponding to a fixed speed range. The other contact is normally located in a fixed position midway in said range but is adapted to be coupled to an element positionable in accordance with the prevailing speed of the vehicle in response to energization of a solenoid so that subsequent changes in the speed of the vehicle cause the other contact to engage the oscillating contact for a greater or lesser portion of the oscillating cycle to develop the speed error signal. Control circuitry is provided for energizing the solenoid and for permitting the vehicle operator to automatically accelerate or decelerate the vehicle to a new cruising speed.

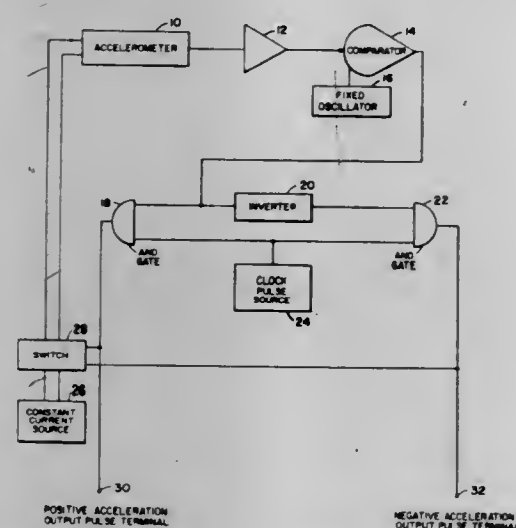
### 3,459,053 ANALOG ACCELEROMETER HAVING A DIGITAL OUTPUT SIGNAL

Brooks H. Grimme and Herbert R. McCarley, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army

Filed June 2, 1966, Ser. No. 554,895  
Int. Cl. G01p 15/08

U.S. Cl. 73—517

2 Claims



A device for causing a constant rebalance force, the polarity of which is dependent on the direction of acceleration, to be applied to an accelerometer. The D-C voltage output of an accelerometer indicative of acceleration is converted to a square wave and used to key AND

gates so that they allow clock pulses to pass therethrough and cause a constant current of a particular polarity to be switched into the accelerometer rebalance network.

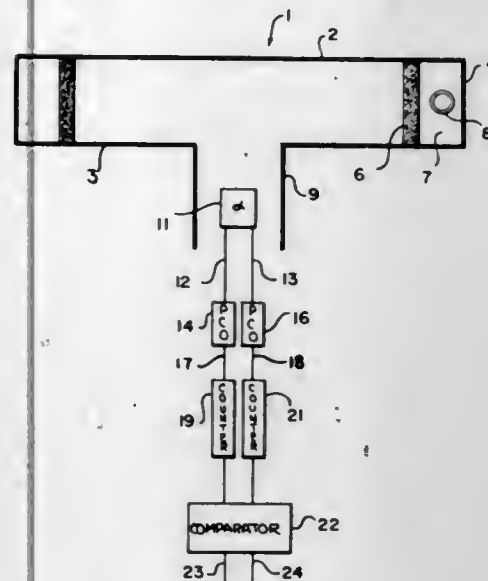
### 3,459,054 VORTEX READOUT SYSTEM

Edwin M. Dexter, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland

Filed Oct. 22, 1965, Ser. No. 500,977  
Int. Cl. G01p 15/00; F15c 1/14

U.S. Cl. 73—505

11 Claims



A rate of turn sensor for a vortex device which employs an angle of attack meter disposed to detect rotational flow in the egress orifice of the vortex chamber and produce two analog fluid pressure signals which vary differentially as a function of the rate and direction of rotation of fluid in the egress passage. A pair of pressure controlled oscillators are responsive to the pressure signals to produce respective pulse trains having frequencies which vary as a function of the analog signals. The pulse trains are counted by respective fluid counters, the difference in counts of the two counters being sensed as an integrated function of the rotational rate of fluid in the vortex device egress orifice.

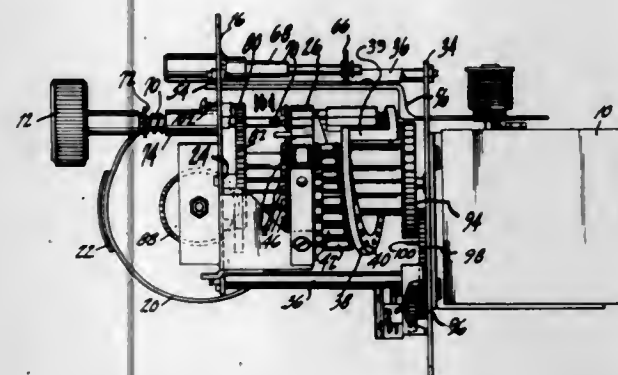
### 3,459,055 PRESET UHF TUNING MECHANISM

Edward J. Sperber, Indianapolis, Ind., assignor to RCA Corporation, a corporation of Delaware

Filed Jan. 21, 1966, Ser. No. 522,297  
Int. Cl. F16h 35/18

U.S. Cl. 74—10.6

8 Claims



A tuning mechanism for a UHF tuner includes a cam member which carries a plurality of adjustable control

elements which may be preset to a particular channel adapted to engage said splined portion and the hub of tuning position. The cam member may be rotated to bring the the tips of the control elements against a tuner actuating member which controls the movement of the tuner shaft.

### 3,459,056

#### CONSTANT TORQUE TRANSMISSION

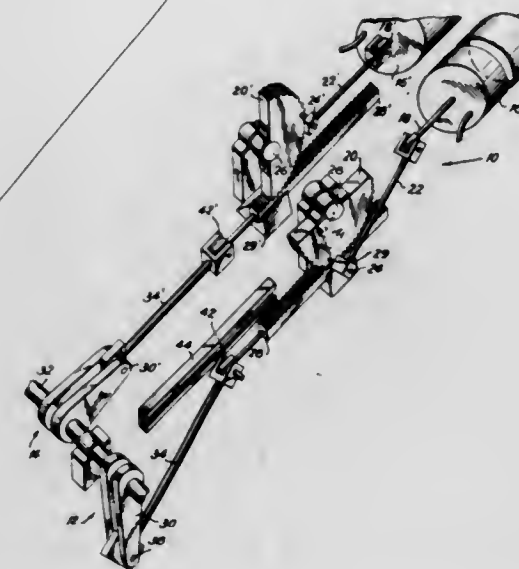
Wendell H. Lea, Englewood, N.J.  
(% Seamen's Unit, Rincon Annex, San Francisco, Calif.)

Filed Dec. 15, 1966, Ser. No. 602,003

Int. Cl. F16h 19/04, 19/08

U.S. Cl. 74—32

13 Claims



A mechanism for converting constant reciprocal motion to or from constant torque rotary motion. This mechanism is typically made up of two separate but identical mechanical linkage units which work in parallel but 90° out of phase from one another in connection with a common rotary shaft. Each unit comprises two serially coupled transmission means. Each transmission means is designed to transmit a force F with a resultant force  $F \sin \theta$ . This mechanism results in equal constant forces being applied reciprocally to the serially coupled transmission means resulting in a constant torque on the rotary shaft, and vice versa.

### 3,459,057

#### DEVICE FOR CONTROLLING THE DISPLACEMENT OF A MOVING ELEMENT

Francis Bonneric, Fleury-les-Aubrais, France, assignor to Service d'Exploitation Industrielle des Tabacs et des Allumettes, Paris, France, a French public establishment

Filed Mar. 14, 1967, Ser. No. 623,069

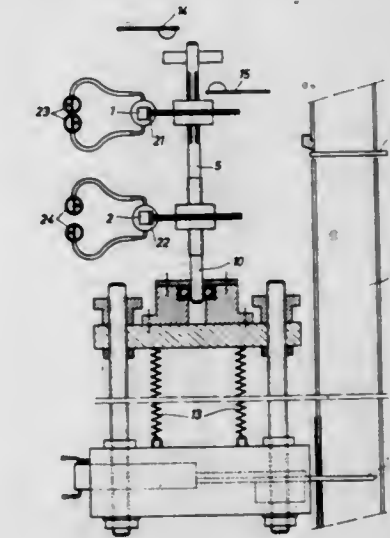
Claims priority, application France, Mar. 15, 1966, 53,395

Int. Cl. F16h 27/02, 29/02, 29/20

U.S. Cl. 74—89.15

4 Claims

Device for controlling the displacement of a moving element of the type comprising a shaft which is movable in translation and provided with a threaded portion and a splined portion and two plates mounted in fixed parallel planes in such a manner as to be capable of rotating about the axis of said shaft, the hub of one of said plates being



tion, and two independent means being provided for driving said plates in rotation.

### 3,459,058 VALVE OPERATOR

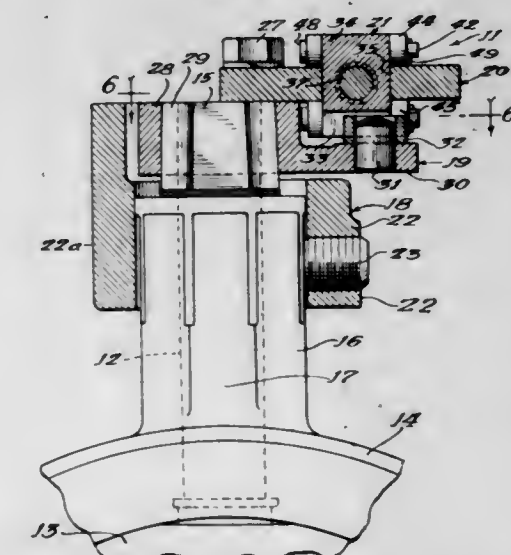
Donald G. Fawkes, Aurora, Ill., assignor to Henry Pratt Company, a corporation of Illinois

Filed July 14, 1967, Ser. No. 653,389

Int. Cl. F16h 29/20

U.S. Cl. 74—89.15

10 Claims



A valve operator mounted on a valve body having an end of a valve shaft projecting outwardly therefrom. The operator includes a guide plate fixedly carried by the valve body, a lever connected to the valve shaft, and means movably carried by the guide plate for operating the lever to rotate the valve shaft.

### 3,459,059 LATERAL-ACTUATION DEVICE, MORE PARTICULARLY ADAPTABLE TO ELECTRIC SWITCHES OR THE LIKE

Bernard Jean Olliviero, Les Clayes-sous-Bois, France, assignor to La Telemecanique Electrique, Nanterre, Hauts-de-Seine, France, a joint-stock company of France

Filed Feb. 23, 1968, Ser. No. 707,550

Claims priority, application France, Mar. 3, 1967, 97,459

Int. Cl. F16h 21/44, 25/18; H01h 13/66

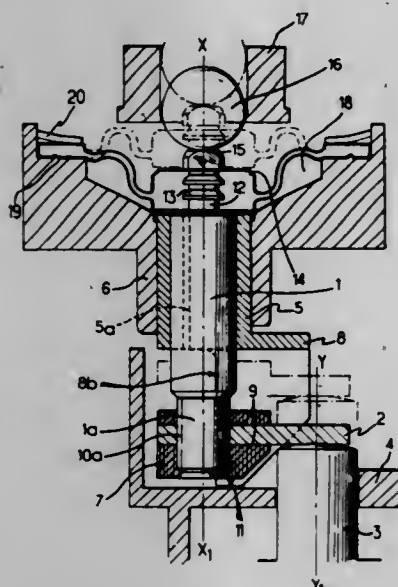
U.S. Cl. 74—110

5 Claims

A mechanical lateral-actuation device for an electric switch wherein an actuating rod which receives a move-



ment of translation from a control member transmits said movement to a second rod, laterally displaced parallel



therewith and controlling the switch, by means of a transfer-guide device reducing the rocking couple on said actuating rod.

3,459,060

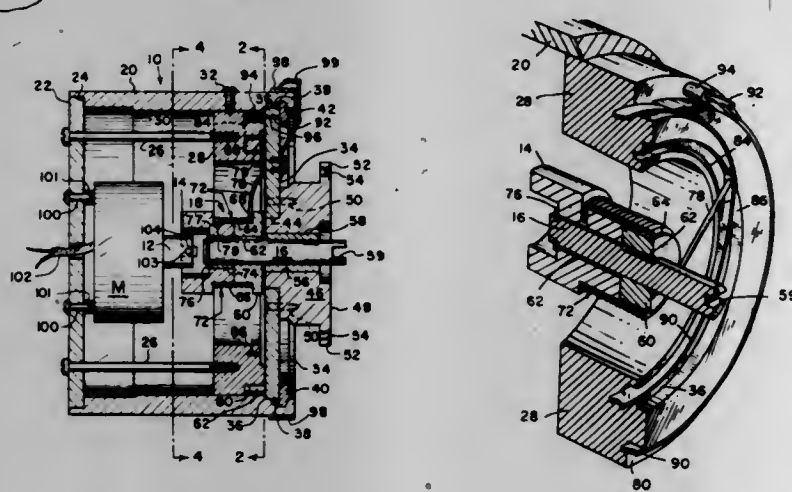
### VARIABLE SPEED TRANSMISSION WITH INTERMITTENT OUTPUT

Charles R. Struck and Donald R. Anderson, Santa Barbara, Calif., assignors to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan  
Continuation-in-part of application Ser. No. 526,190, Feb. 9, 1966. This application Nov. 27, 1967, Ser. No. 691,097

Int. Cl. F16d 13/00

U.S. Cl. 74-125.5

21 Claims



A variable speed step-down transmission including a rotary driving member, an axially aligned rotary driven member axially adjacent the driving member, both members presenting clutching surfaces of the same diameter and a helical clutch spring spanning the two members and surrounding both of the clutching surfaces. One end of the spring is secured to the driving member for joint rotation. The other end projects outwardly of the coils of the spring such that when it is urged inwardly the coils are contracted slightly to bind against both clutching surfaces and connect the two rotary members for joint rotation. A cam follower member formed integrally with the other end of the spring or otherwise rotates with the spring. A cam member surrounds the spring and is movable into the path of travel of the cam follower

member as the spring rotates in selectively adjustable angular portions of each revolution of the spring to drivingly connect and disconnect the driving member and the driven member.

3,459,061

### VARIABLE DIAMETER PULLEY CONSTRUCTION

Philip Barnish, Leeds, and Rober B. Baert, Sowerby, near Halifax, England, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

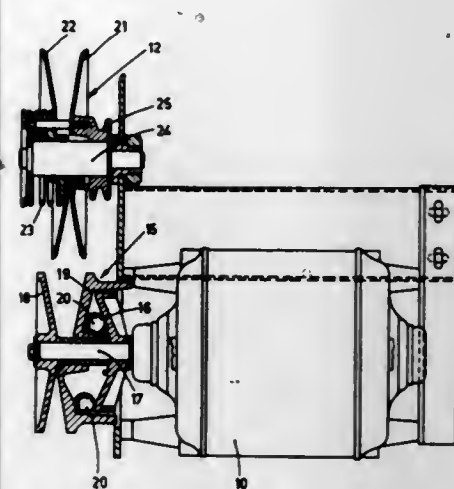
Filed Aug. 30, 1967, Ser. No. 664,538

Claims priority, application Great Britain, Aug. 31, 1966, 38,894/66

Int. Cl. F16h 55/56

U.S. Cl. 74-230.17

4 Claims



A pulley construction, having a fixed ball abutment member and a ball operated and axially movable pulley flange member. The pulley diameter can thus be varied and will depend upon the speed of rotation of the driving shaft.

3,459,062

### POWER BOOST MECHANISM

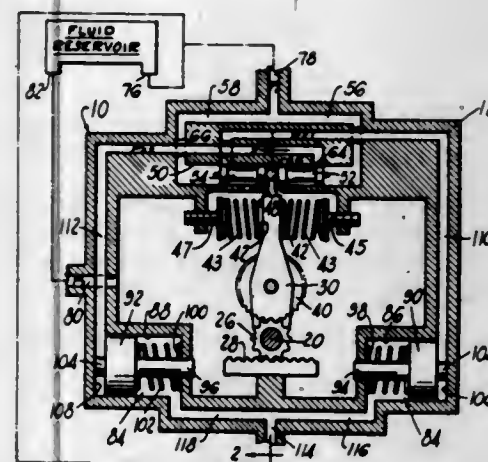
James R. Goerke and Dale W. Franz, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware

Filed Feb. 16, 1968, Ser. No. 706,011

Int. Cl. F16h 35/00; F15b 13/16

U.S. Cl. 74-388

8 Claims



A power boost mechanism having transmission of input torque to output torque by means of auxiliary gearing, said gearing mounted in a freely mounted housing, which housing is caused to rotate by the applied torque. The rotation is restrained within limits by opposing springs, when the limits are surpassed, the rotation of the housing

causes a power assist system to aid the output shaft, thus providing a power boost when the torque levels reach a certain point.

3,459,063

### COLLAPSIBLE STEERING COLUMN ASSEMBLY

Akio Numazawa, Toyota, Japan, assignor to Toyota Jidosha Kogyo Kabushiki Kaisha, Toyota, Aichi Prefecture, Japan, a corporation of Japan

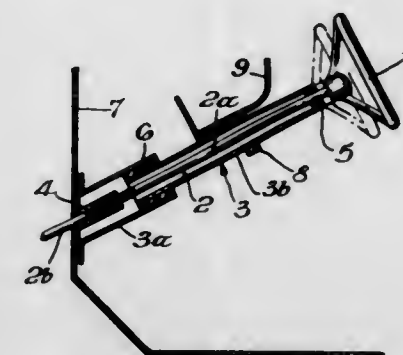
Filed Aug. 30, 1967, Ser. No. 664,491

Claims priority, application Japan, Sept. 3, 1966, 41/58,318; Dec. 6, 1966, 41/79,932, 41/79,933

Int. Cl. B62d 1/18

U.S. Cl. 74-492

4 Claims



A collapsible column of the type used on motor vehicles is arranged to telescope upon impact thereby eliminating chest injuries to a driver involved in an accident. The upper and lower ends of the column are of different diameters allowing one to fit within the other. At a point where the ends overlap, an annular elastic frictional resistance energy absorbing block means is interposed. This means retains the upper and lower ends in a fixed position in normal use, but upon impact absorbs the frictional resistance energy thereof while allowing the ends of the column to telescope within each other.

3,459,064

### LOCKING ARRANGEMENT FOR PHOTOGRAPHIC APPARATUS

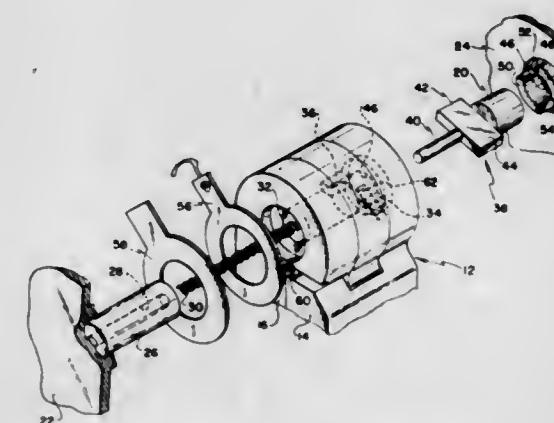
George W. O'Gara, Greece, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Oct. 30, 1967, Ser. No. 678,981

Int. Cl. G05g 5/08

U.S. Cl. 74-527

5 Claims



The invention relates to a locking arrangement in which a keying element having integral lug members engages recessed openings provided in a handle rotatably supported on the body of photographic apparatus. The keying element is spring biased in one direction, and in

locked position, the lug members are adapted to engage raised stop elements provided on the apparatus body. Upon depressing a button integral with the keying element, the lug members are disengaged, and the handle may then be moved to the succeeding locked position.

3,459,065

### PARKING BRAKE ACTUATOR AND CONTROL MECHANISM

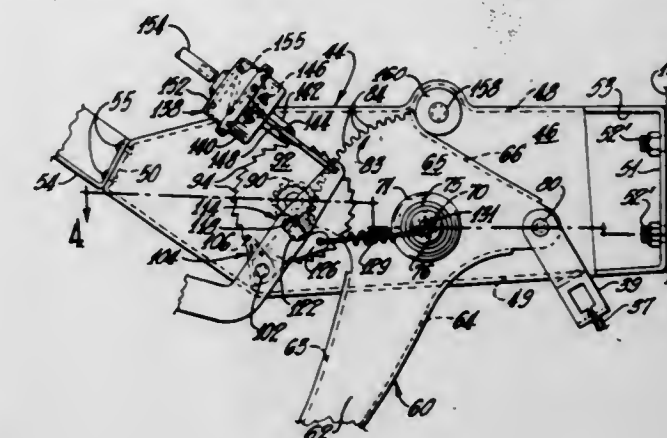
Norman N. Fender, Erie, Mich., assignor, by mesne assignments, to Universal American Corporation, New York, N.Y., a corporation of Delaware (formerly Robtre Manufacturing Corporation)

Filed Sept. 25, 1967, Ser. No. 670,062

Int. Cl. G05g 5/06, 1/14; B60t 17/00

U.S. Cl. 74-529

8 Claims



This invention relates to parking brake actuator and control mechanism wherein a foot-operated or manually operated brake actuator is held in brake-setting position by pawl or detent means engageable with a rotatable ratchet member wherein a motion multiplying arrangement between the actuator and ratchet member is effective to transmit movement of the brake actuator to the rotatable ratchet member whereby the parking brakes may be held securely in a set position substantially eliminating cable "back-off" and the pawl means easily manipulated to effect release of the actuator and the parking brakes.

3,459,066

### ADJUSTABLE CAMS

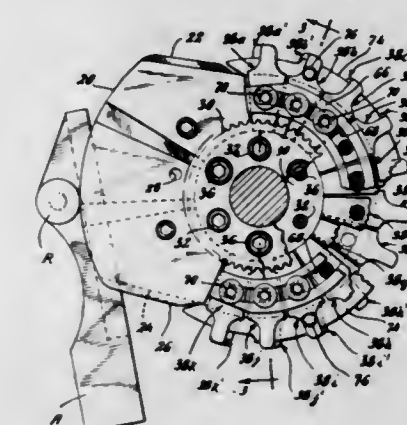
Frank C. Holmes, Trumbull, Conn., assignor to The U.S. Baird Corporation, Stratford, Conn., a corporation of Connecticut

Filed Sept. 7, 1967, Ser. No. 666,062

Int. Cl. F16h 53/00

U.S. Cl. 74-568

8 Claims



An adjustable cam for use in spring making machinery producing coil springs having non-circular body sections.



The cam includes a plurality of segmented camming members positioned in pairs about the periphery of the cam, the two members of each pair being adjustable relative to each other and to other pairs.

3,459,067

# DRIVE UNIT ARRANGEMENT IN AUTOMOTIVE VEHICLES

Karl Wilfert, Gerlingen-Waldstadt, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

Filed Oct. 6, 1966, Ser. No. 584,739

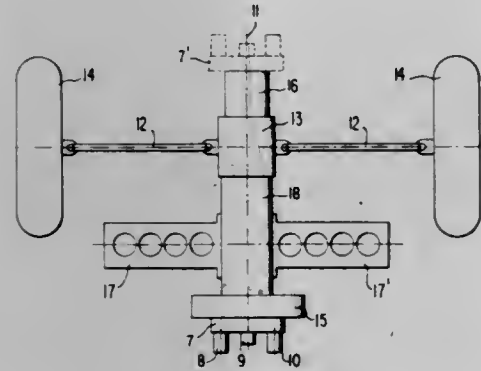
Claims priority, application Germany, Oct. 6, 1965,

D 48,364, D 48,365

Int. Cl. F16h 37/06

U.S. Cl. 74—661

18 Claims



The automotive internal combustion engine has an output shaft angularly intersecting the central longitudinal vertical plane of the vehicle to provide a space saving arrangement wherein the weight is balanced with respect to the central plane.

3,459,068

# TILTING DRIVE FOR METALLURGICAL VESSELS SUCH AS STEEL MILL CONVERTERS

Karlheinz Mähringer, Duisburg-Hamborn, and Karlheinz Langlitz, Mulheim (Ruhr), Germany, assignors to Demag Aktiengesellschaft, Duisburg, Germany

Filed May 24, 1968, Ser. No. 731,853

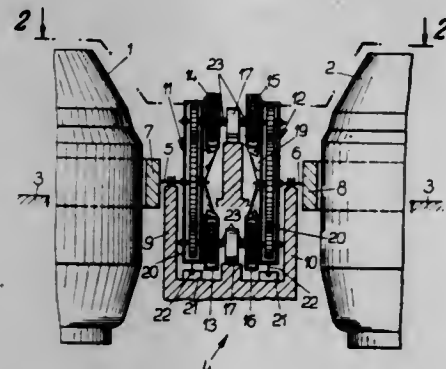
Claims priority, application Germany, May 27, 1967,

D 53,185

Int. Cl. F16h 37/06

U.S. Cl. 74—665

10 Claims



A pair of steel mill converters are positioned in laterally adjacent spaced relation for tilting about respective pivot axes which are coaxial with each other and unconnected to each other. Each pivot has a respective main gear secured thereto outboard of a respective pivot bearing. Each main gear is enclosed within a respective gear housing which is restrained against rotation but displaceable to accommodate tilting of the respective pivot. Plural gear as-

semblies are provided for each converter, the gear assemblies being arranged in pairs which are opposite each other, with one gear assembly of each pair being respective to each converter main gear. Two relatively small power electric motors are provided for each pair of gear assemblies, and coupling means are provided whereby either one or both motors of each pair of motors may be connected to either one or both of the associated gear assemblies.

3,459,069

# DRIVE TRANSMISSION FOR MACHINE TOOLS

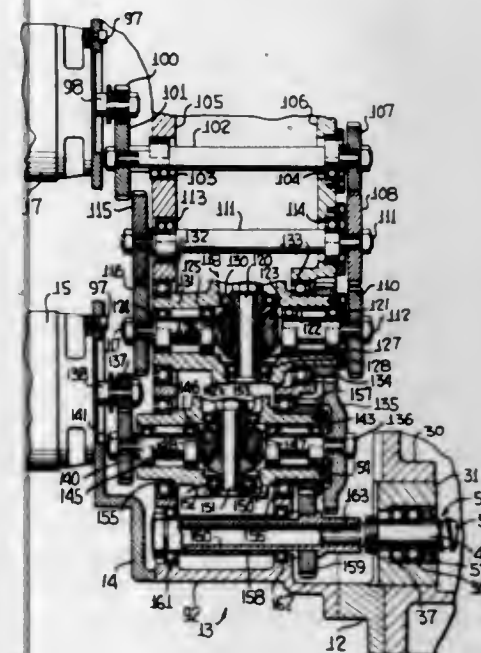
Robert R. Grover, Westport, N.H., assignor to Kingsbury Machine Tool Corporation, Keene, N.H., a corporation of Delaware

Filed May 19, 1967, Ser. No. 639,884

Int. Cl. F16h 37/06, 57/10; B23b 39/10

U.S. Cl. 74—675

9 Claims



This disclosure relates to a drive transmission for a feed slide of a machine. The feed slide is moved longitudinally along a lead screw through a recirculating ball screw nut, and a stopping device is provided to prevent over-travel of the feed slide at the end of the lead screw. The lead screw is adapted for selective rapid or fine feed from corresponding rapid or fine feed motors, through dual drive means. Range gears are provided to determine a fine feed ratio, and change gears are also provided to effect minor ratio changes within the fine feed range. Adjustable limit switches are also provided, associated with the movement of the feed slide along the lead screw, to selectively actuate rapid and fine feed motors, and their corresponding brakes, as desired, in order to utilize desired gearing of the dual drive means.

3,459,070

# WHEEL DRIVE MECHANISM

John W. Holdeman, Auburn, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed July 3, 1967, Ser. No. 650,949

Int. Cl. F16h 37/06, 35/00

U.S. Cl. 74—705

10 Claims

A planetary transmission mounted within a wheel and connected to drive the wheel including first and second gear sets having a drive shaft extending through said gear sets and connected to drive a sun gear element, the ele-

ments of the first and second gear sets being permitted a semi-floating or self-aligning movement, a common

3,459,072

# EPICYCLIC GEARING

James Forrest Shannon, Bowdon, England, assignor to Associated Electrical Industries Limited, London, England, a British company

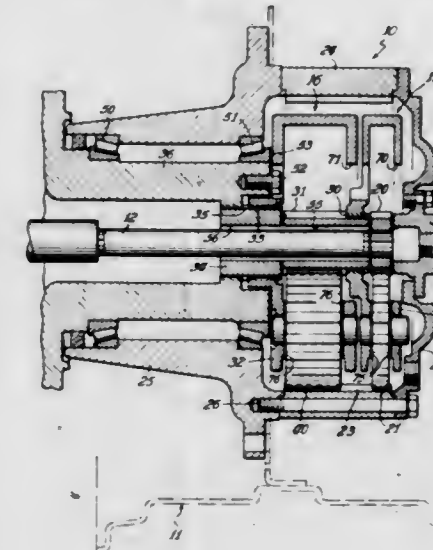
Filed Nov. 13, 1967, Ser. No. 682,175

Claims priority, application Great Britain, Nov. 16, 1966, 51,425/66

Int. Cl. F16h 1/28, 57/00

U.S. Cl. 74—801

5 Claims



ring gear for said first and second gear sets the ring gear being drivingly connected to the vehicle wheel.

3,459,071

# TRANSMISSION CONTROL

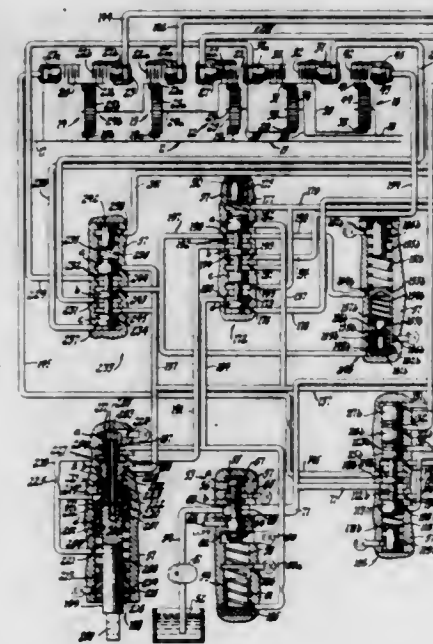
Robert H. Schaefer, Westfield, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 5, 1968, Ser. No. 702,942

Int. Cl. F16h 57/10

U.S. Cl. 74—758

23 Claims



Helical gearing having the annulus resiliently supported by an annular corrugated bellows and with means for resisting axial thrust of the annulus.

3,459,073

# ROCK BIT ASSEMBLY AND BIT INSERT ASSEMBLY PROCESS

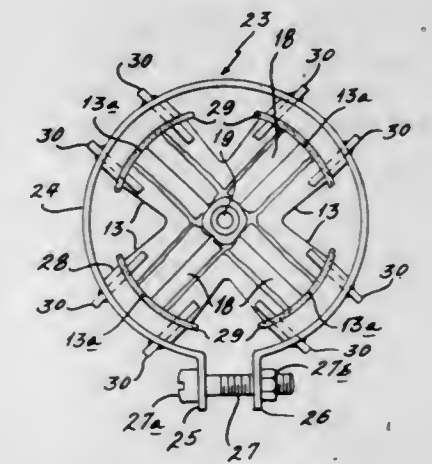
Robert E. Conover, Colorado Springs, Colo., assignor to The Timken Roller Bearing Company, Canton, Ohio, a corporation of Ohio

Filed June 12, 1967, Ser. No. 645,137

Int. Cl. B21k 5/02

U.S. Cl. 76—108

10 Claims



A control system for a power transmission having a range unit, a splitter unit and a reverse unit is disclosed in which the engagement of one or more of the friction devices, of the splitter unit and reverse unit, is controlled by a variable pressure reducing valve to permit the transmission to be engaged, under load, without the use of a fluid coupling or torque converter. Also, the control has shift valves connected in series such that engagement of a high ratio in the range unit by one shift valve automatically disconnects system pressure from the shift valves which control lower ratios in the range unit.

A rock bit insert assembly in which the inserts are secured in the slots of the body of the bit by a brazing alloy composition that relieves brazing stresses, and in which the assembly of the inserts in the bit body is achieved by an improved process that avoids loss of brazing alloy, distributes the brazing alloy in a uniform manner, and substantially eliminates the need for adding additional alloy.



3,459,074

**METHOD AND APPARATUS FOR THE PERFORATION OF EDGES OF PAPER STACKS**

Ernst Pfaffle, Neuffen, Wurttemberg, Germany, assignor to Hans Sickinger Co., West Bloomfield Township, Mich., a corporation of Michigan

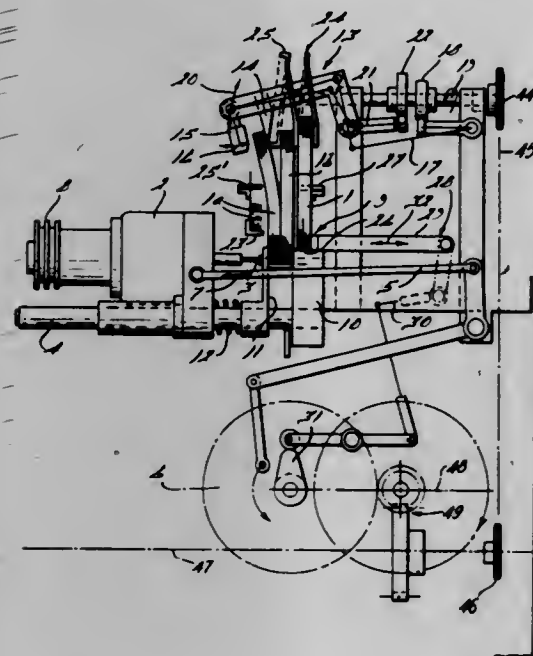
Filed Sept. 30, 1966, Ser. No. 583,333

Claims priority, application Germany, Oct. 7, 1965, S 99,975

Int. Cl. B23b 39/18; B27c 3/04

U.S. Cl. 77—22

13 Claims



Vertical paper stacks are dropped into a drill position on an elongated base wide enough to support two stacks. The lower edges of the stacks are clamped and drills enter the first stack which is backed up by the second stack. The first stack is then lifted, advanced and removed transversely to the direction of advance, while the next stack to be used as a drill backing is advanced and permitted to drop onto the base.

**ERRATUM**

For Class 81—3 see:  
Patent No. 3,458,893

3,459,075

**OPENING DEVICE FOR POP-TOP CAN**

Harry E. Henderson, Rte. 1, Box 342, Piney Point, Palmetto, Fla. 33561

Filed Oct. 23, 1967, Ser. No. 677,155

Int. Cl. B67b 7/40, 7/00

U.S. Cl. 81—3.34

10 Claims



An opening device for a pop-top can including an extended lower arm portion with specially arranged prongs at the free end thereof for grasping the ring of the can, and accurately defined elbow and upper arm portions arranged to rest against the top and the lip of the can to permit the seal and ring of the can to be removed upwardly by the said lower arm portion.

3,459,076

**AUTOMATIC LATHE**

Pierre Kummer, Rue des pres 20, Tramelan, Bern, Switzerland

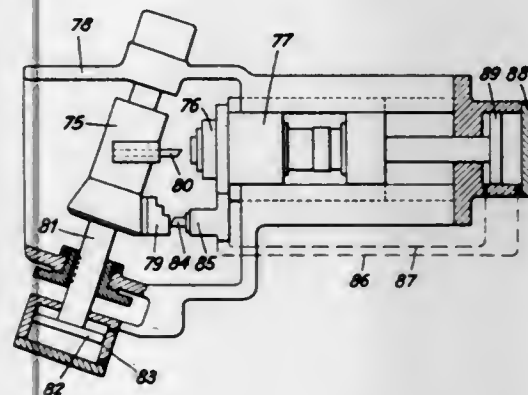
Filed Mar. 21, 1966, Ser. No. 535,905

Claims priority, application Switzerland, Mar. 31, 1965, 4,416/65

Int. Cl. B23b 3/28, 13/00

U.S. Cl. 82—14

17 Claims



A novel automatic lathe is disclosed, said lathe comprising, in combination, a head-stock, a work spindle rotatably mounted at the head-stock and a block turret rotatably mounted at both of its ends and indexable about its axis of rotation. The axis of rotation of the block turret encloses an angle with a plane containing the axis of rotation of the work spindle which is at least 45° and at a maximum 90°. Tool means are carried by the block turret and means are provided cooperating with the block turret for enabling the tool means to be displaced in a direction lengthwise of the axis of rotation of the block turret.

3,459,077

**TOOL POSTS**

Ivan Malcolm Ward, Bulkington, near Nuneaton, England, assignor to Geo. H. Wilson (Shilton) Limited, Bedworth, Nuneaton, England, a British company

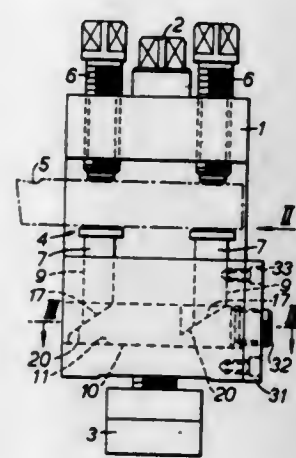
Filed May 22, 1967, Ser. No. 640,293

Claims priority, application Great Britain, Feb. 10, 1967, 6,497/67

Int. Cl. B23b 29/00

U.S. Cl. 82—37

2 Claims



A tool post is disclosed for holding the shank of a tool between clamping screws on one side thereof and abutment pins on the opposite side thereof. The abutment pins are axially adjustable and the ends of the abutment pins opposite the ends contacting the tool shank are inclined. Inclined faces on an axially adjustable actuating

pin cooperate with the inclined ends of the abutment pins to impart axial movement thereto for finally setting the position of the tool in the tool post prior to firmly clamping the tool with the clamping screws.

3,459,078

**SLITTING AND SCORING APPARATUS**

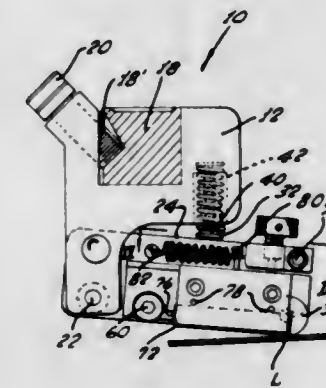
James A. Black, 13700 Sparta NW., Kent City, Mich. 49330

Filed Nov. 17, 1966, Ser. No. 595,099

Int. Cl. B26d 3/08, 7/06

U.S. Cl. 83—8

2 Claims



Sheet slitting and/or scoring apparatus capable of variable control depth cutting of sheets, even if not coplanar, having a cutting means biased toward the surface of a sheet to be cut, limited in cutting depth by a surface follower using the sheet surface as a reference, and adjustable between the cutting means and follower to control depth of cutting even though biased toward the sheet being cut.

3,459,079

**INDEXING MACHINE**

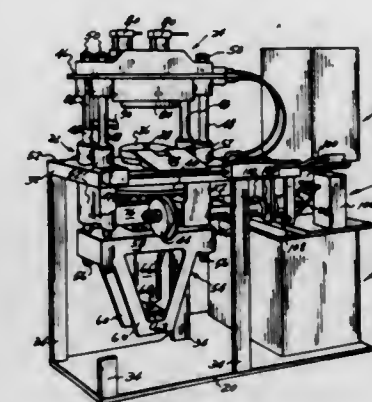
William J. De Gain, Detroit, Mich., assignor, by mesne assignments, to Koppy Tool Corporation, Ferndale, Mich., a corporation of Michigan

Filed Sept. 31, 1966, Ser. No. 581,133

Int. Cl. B26d 5/20, 5/38

U.S. Cl. 83—69

25 Claims



A machine tool comprising multiple work stations provided with a rotatable workpiece support having an indexing drive mechanism for the rotatable workpiece support and tools mounted around said rotatable workpiece support adapted to be brought into contact with the workpieces in timed sequence the provision of a common rotational input drive having a clutch-brake to alternately connect and disconnect the input from the tooling and from the indexing drive mechanism at timed rotational intervals.

3,459,080

**ROTARY STRIPPING UNIT**

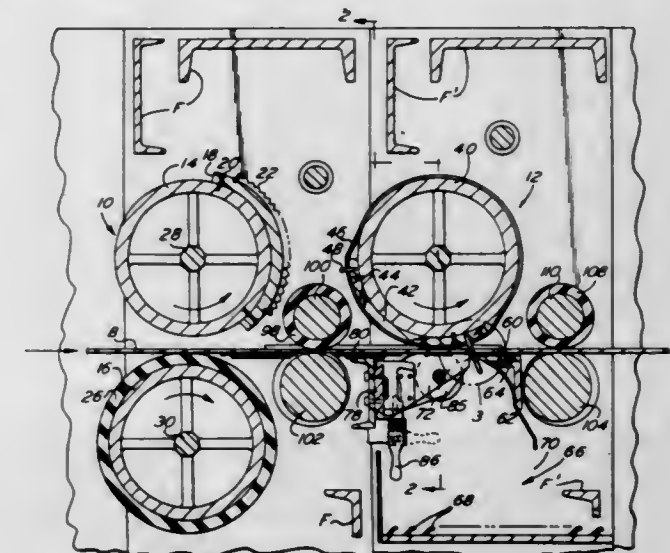
Walter J. Goettsch, Kenilworth, Ill., assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware

Filed Dec. 12, 1966, Ser. No. 601,041

Int. Cl. B26d 7/18

U.S. Cl. 83—98

17 Claims



A rotary stripping unit in line with a die cutting unit for performing continuous operations on paperboard. Each unit is mounted in a separate, easily separable frame and the units are operated at the same speed. After dies have cut the blanks, stripping pins and a stripping blade cooperate to remove cutouts and trim from the blanks.

3,459,081

**DIE PUNCH AND SLUG EJECTOR**

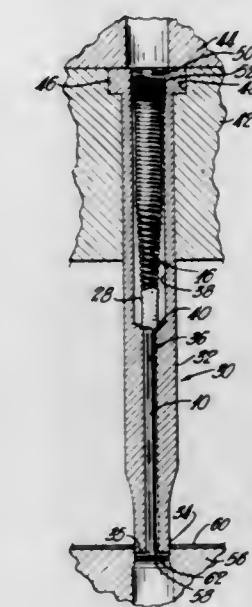
Wirth W. Kanode, 129 Sherbrook Road, Mansfield, Ohio 44904

Filed July 13, 1966, Ser. No. 564,915

Int. Cl. B26d 7/06

U.S. Cl. 83—140

3 Claims



The disclosure embraces a slug ejector arrangement for a die punch comprising an ejector pin reciprocable in a bore in the punch, the ejector pin being anchored or soldered to an end region of a biasing spring, the biasing spring having a close coiled region which may be cut to length to suit a particular die punch.



3,459,082

**CROP DISPOSAL DEVICE**

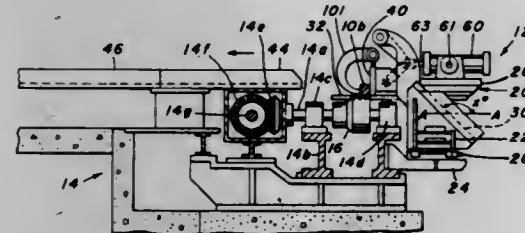
Eugene E. Smith, East Gary, and Robert H. Cannon, Gary, Ind., assignors to United States Steel Corporation, a corporation of Delaware

Filed Sept. 19, 1967, Ser. No. 668,858

Int. Cl. B26d 7/06, 1/14; B23d 19/00

U.S. Cl. 83—153

17 Claims



This invention relates to apparatus for cutting elongated members into a first portion having a predetermined length and a crop or scrap portion and, more particularly, to a crop disposal device for such apparatus. This crop disposal device has a frame, a table movable on the frame from a first position adjacent the conveying means to a second position away from the conveying means, and supporting means on the table to prevent the crop portion from falling between and from the rollers. The supporting means also supports the crop portion when the table moves from the first position to the second position. The supporting means may release the crop portion or alternatively kickoff. Means are movable on the table from a starting position when the table is in the second position to a remote position where it moves the crop portion from the supporting means and clear of the conveying means.

3,459,083

**HOT WIRE CUTTING MACHINE**

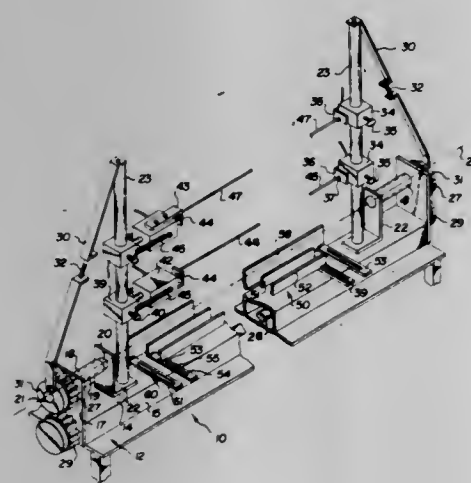
William M. Bennis, 4720 Fairlawn Drive, Burnaby, British Columbia, Canada

Filed Feb. 27, 1967, Ser. No. 618,585

Int. Cl. B26d 7/10

U.S. Cl. 83—171

5 Claims



A machine having a base on which a pair of widely spaced arms are pivotally mounted for unitary swinging movement. Slides are mounted on the arms for adjustment lengthwise thereof, and heatable cutting wires extend between the slides. The arms are operated to swing the hot wires through an arc to cut through a plastic foam block supported on the base.

3,459,084

**PUNCH-TAPE AND SIGNAL MECHANISM**

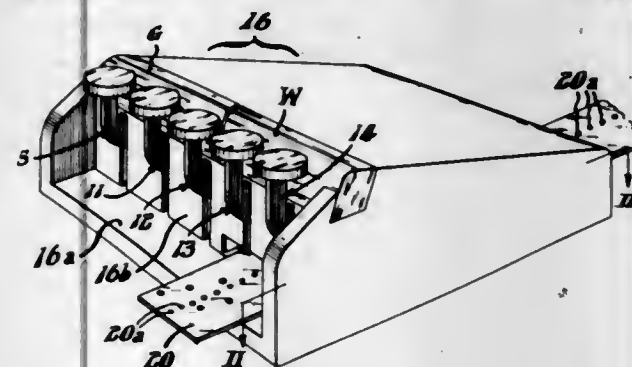
Hubert J. Schlafly, Fort Lee, N.J., assignor to TelePro Industries Incorporated, Cherry Hill, N.J., a corporation of New Jersey

Original application Dec. 9, 1964, Ser. No. 417,190, now Patent No. 3,299,534, dated Jan. 24, 1967. Divided and this application Oct. 6, 1966, Ser. No. 584,701

Int. Cl. B26d 5/30

U.S. Cl. 83—213

5 Claims



A data recorder including a plurality of fingertip-operated levers adapted to actuate means for punching and advancing paper tape through the recorder and also for generating electrical signals.

3,459,085

**MACHINE FOR MANUFACTURING LENS MOLDS FOR EYEGLASSES**

Sadao Takubo, 4155-4 Tadanoumi-cho, Takehara, Hiroshima Prefecture, Japan

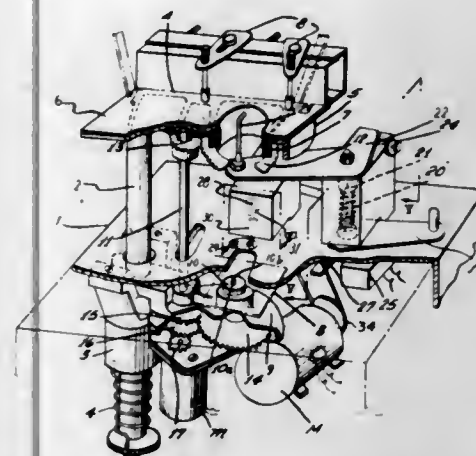
Filed Nov. 16, 1966, Ser. No. 594,877

Claims priority, application Japan, Jan. 27, 1966, 41/4,854

Int. Cl. B26d 7/06; B43l 13/00

U.S. Cl. 83—410

2 Claims



A machine for manufacturing molds for eyeglass lenses comprising two separate rotatable mounts for holding an eyeglass frame on one and a mold blank on the other for synchronous rotation with each other, a follower urged against an edge of the eyeglass frame, and a cutting head for cutting the mold blank to conform to a contour of the eyeglass frame in a single rotation of the rotatable mounts.

3,459,086

**SELF-SHARPENING SLITTER**

George E. Reeder, Jr., Newark, Del., assignor to Beloit Eastern Corporation, Downingtown, Pa., a corporation of Delaware

Continuation-in-part of application Ser. No. 584,734, Oct. 6, 1966. This application Oct. 21, 1966, Ser. No. 588,476

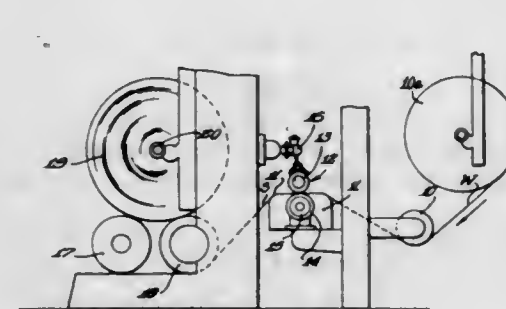
Int. Cl. B26d 7/06, 4/26

U.S. Cl. 83—425

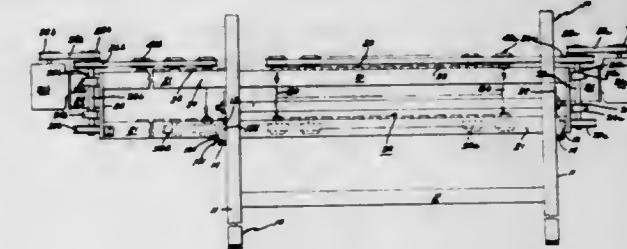
15 Claims

A slitting mechanism for slitting a travelling web including a slitter band and a slitter blade having overlapping

slitting edges in point contact with one another. The peripheral outer surface of the band is provided with a hardened outer layer so that the point contact will remain substantially at the outer periphery of the band for a large part of its wearing life.



respect to the passing goods in the event of a failure of one or more of the cutting members then in active position.



3,459,087

**SHEAR GAGE**

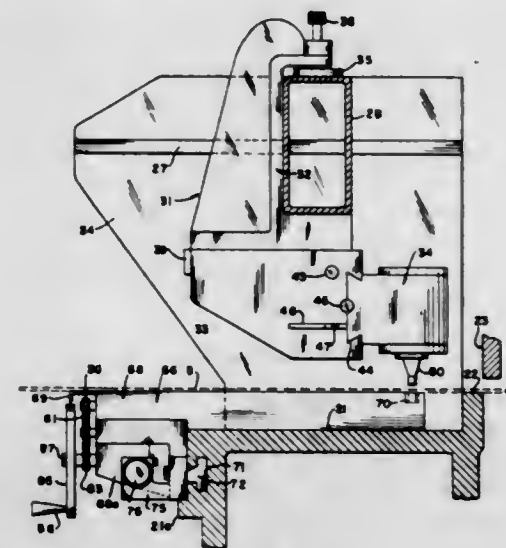
Ralph H. Weisner, Greensboro, N.C., assignor to Wysong & Miles Company, Greensboro, N.C.

Filed Dec. 20, 1967, Ser. No. 692,111

Int. Cl. B26d 7/02

U.S. Cl. 83—451

12 Claims



A gage for accurately positioning pre-punched stock on the bed of a shear with respect to the knife. The gage consists of a support bar mounted above the bed, carriers supported by the bar, and projectable and retractable gage pins depending from the carriers for passage through pre-punched holes in the stock into apertured gage blocks positioned on the bed. The support bar, carriers and gage blocks are adjustable transversely of the bed and toward and away from the knife to properly locate the gage blocks and pins.

3,459,088

**SLITTER MECHANISM**

Bruce W. Brunson, Grand Rapids, and Ronald D. Bos, Jenison, Mich., assignors to Werner Machinery Company, Grand Rapids, Mich., a corporation of Michigan

Filed June 6, 1966, Ser. No. 555,568

Int. Cl. B26d 7/28, 5/08

U.S. Cl. 83—522

20 Claims

A slitter mechanism for making continuous elongated cuts in baked goods or the like traveling along a conveyor band employing a series of vertically oriented rotating wires as cutting members. The wires are mounted in a carriage which is slidable with respect to the framework

3,459,089

**CUTTING BLOCK COMPOSITIONS CONTAINING TRANS-1,4 POLYMERS OF ISOPRENE**

Roy Clark, Sarnia, Ontario, Canada, assignor to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate and politic

No Drawing. Filed Jan. 23, 1967, Ser. No. 610,820

Claims priority, application Canada, Feb. 16, 1966, 952,363

Int. Cl. C08f 29/08; B26d 7/20

U.S. Cl. 83—568

9 Claims

A thermoplastic the composition comprising a blend of a major proportion by weight of total polymer of a synthetic crystalline trans-1,4 polymer of isoprene, with a minor proportion by weight of total polymer of a compatible polymer of an olefin together with 30-150 parts by weight per 100 parts by weight total polymer of a filler having an average particle size less than 45 microns. The composition may be used as the blade-facing portion of the cutting block.

3,459,090

**CLICKING DIE FOR CUTTING SHEET MATERIALS AND METHOD OF MAKING SAID DIE**

Thomas B. Prew, Coppenhall, Stafford, England, assignor to Stafford Tool and Die Company Limited, Stafford, England

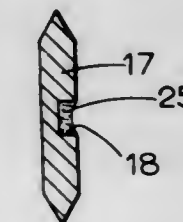
Filed Aug. 22, 1966, Ser. No. 574,112

Claims priority, application Great Britain, Aug. 31, 1965, 37,185/65

Int. Cl. B26f 1/46; B26d 1/00

U.S. Cl. 83—652

2 Claims



A clicking die formed from a steel strip with at least one cutting edge having a groove machined therein so as to extend inwardly from one plane side face of the strip with its inner end aligned with the cutting edge, the groove containing adhesive and receiving a former with a plan identical in shape to that of the pattern to which a work-piece is to be cut, the outer edge of the former engaging the inner end of the groove and the adhesive serving to secure the former and strip together.



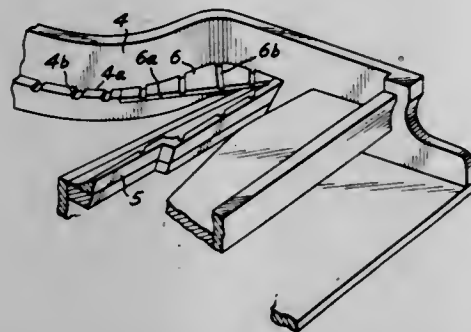
**3,459,091**  
**ARRANGEMENT FOR FITTING A SOUNDING BOARD ASSEMBLY IN A PIANO**  
 Hanzo Taguchi, Hamamatsu-shi, Japan, assignor to Nippon Gakki Seizo Kabushiki, Kaisha, Hamamatsu-shi, Shizuoka-ken, Japan

Filed Dec. 19, 1966, Ser. No. 602,610  
 Claims priority, application Japan, Dec. 23, 1965, 40/79,456

Int. Cl. G10c 3/06

U.S. Cl. 84—192

6 Claims



An arrangement for fitting a sounding board in a piano comprising a rim for supporting the sounding board, the rim having a cutout into which is installed a rim plate which is limited to the treble portion of the piano and which has an upper surface which is flush with the upper surface of the rim. The rim plate is preferably made out of special woods such as maple, birch or hickory.

**3,459,092**  
**VIOLIN STRING TUNING AND TENSIONING PEG**

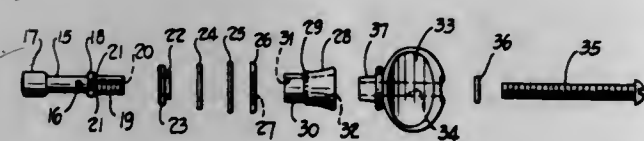
Josephus B. Thompson, Covington, Ohio, assignor to Grover Musical Products, Incorporated, Cleveland, Ohio, a corporation of Ohio

Filed Dec. 6, 1967, Ser. No. 688,496

Int. Cl. G10d 3/14

U.S. Cl. 84—305

1 Claim



A violin string tuning and tensioning peg having opposed, freely tiltable and self-aligning pressure discs.

**3,459,093**  
**DRUMHEAD**

Tomehichi Nishiura and Niyoshi Murayama, Tokyo, Japan, assignors, by mesne assignments, to Nippon Gakki Co., Ltd., Shizuoka, Japan

Filed Oct. 24, 1966, Ser. No. 588,806

Claims priority, application Japan, Nov. 1, 1965, 40/88,496

Int. Cl. G01d 13/02

U.S. Cl. 84—411

4 Claims



A drumhead comprising a sheet clamping frame including a sheet receiving ring having a generally U-shaped cross section and a sheet retaining ring fitted in a channel of the receiving ring, and a vibratile sheet having its peripheral edge bent along the inside of said channel of the receiving ring and held by the retaining ring fitting therewith. The retaining ring is adapted to be pressed downward by a counter hoop when the drumhead is mounted on a drum body.

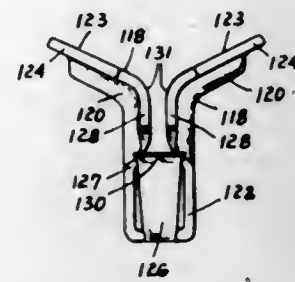
Robert J. Holton, Rocky River, Ohio, assignor to Timmerman Products, Inc., Cleveland, Ohio, a corporation of Ohio

**3,459,094**  
**FASTENERS**  
 Original application Jan. 13, 1965, Ser. No. 425,124, now Patent No. 3,303,542, dated Feb. 14, 1967. Divided and this application May 31, 1966, Ser. No. 554,069

Int. Cl. F16b 19/00

U.S. Cl. 85—5

12 Claims



A fastener for insertion in an opening in a support member. The fastener comprises a generally vertically oriented loop-like body portion, a pair of tab portions projecting upwardly from the body portion, fulcrum areas disposed adjacent the juncture of the body portion with the tab portions and resilient legs extending upwardly from the body portion and disposed transversely thereof. Upon pivotal movement of the tab portions relative to one another, the body portion is deformed into locking engagement with the support member.

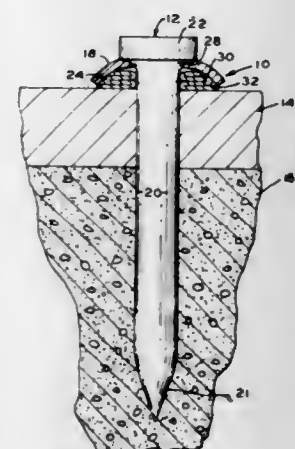
**3,459,095**  
**FASTENING STRUCTURE**  
 Yung Shing Hsu, Milwaukee, and John P. Luciano, Jr., Gresham, Oreg., assignors to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon

Filed Sept. 28, 1967, Ser. No. 671,311

Int. Cl. F16b 15/00, 43/00

U.S. Cl. 85—10

9 Claims



A fastening structure includes a washering system 10 serving both to prevent overdriving of a pin 12 and to compensate for underdriving of the pin so that a plate 14 is firmly held against a base 16. The washering system includes an initially flat metal washer 18 having a hole 19 fitting closely on a shank 20 of the pin and positioned between a head 22 of the pin and a collapsible metal

sleeve or eyelet 24. When the pin is driven by a powder actuated tool 26, a filleted portion 28 of the pin is forced into hole 19 in the washer to cup the washer downwardly and to compress in a pleated or accordian-like manner an initially cylindrical sleeve portion 30 of the eyelet 24. If the pin is underdriven, the sleeve portion 30 is only partially compressed as shown in FIG. 2 but holds the plate 14 tightly against the base 16. If the pin is fully driven or overdriven, the sleeve portion 30 is fully compressed against flange 32 thereof as shown in FIG. 3 and is substantially completely enclosed in the cupped washer 18.

**3,459,096**  
**SPRING CLIP**

Leslie Parkin, Bobbers Mill, England, assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed Sept. 15, 1967, Ser. No. 667,968

Claims priority, application Great Britain, Oct. 5, 1966, 44,502/66

Int. Cl. F16b 19/00, 21/00

U.S. Cl. 85—8.8

1 Claim



The U-shaped spring clip for assembly with a headed stud comprises a base and an arm connected thereto by a resilient bight portion. The base is provided with releasable latching means engageable with the arm to hold it in a position wherein it is under tension by the resilient bight portion.

**3,459,097**  
**FASTENER HAVING RESILIENT RELEASE MEANS**  
 Henricus Cornelis Adrianus van der Put, and Johannes Petrus Sinjou, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

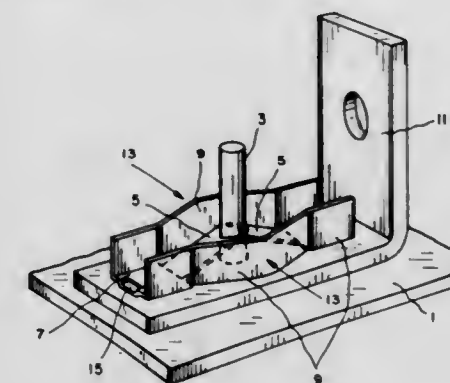
Filed Mar. 27, 1967, Ser. No. 626,046

Claims priority, application Netherlands, Mar. 25, 1966, 6603919

Int. Cl. F16b 17/00

U.S. Cl. 85—36

2 Claims



This disclosure relates to a fastener having resilient tongue elements which bindingly engage a pin or shaft member. The fastener is adapted to be readily detached from the pin or shaft member by inwardly depressing a pair of resilient metal strips which cause the tongue elements to separate and thereby release the member. The fastener can then be removed by withdrawal from the pin or shaft member.

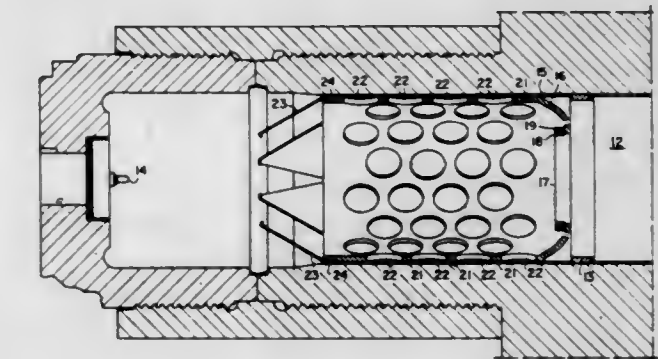
**3,459,098**  
**WEAPON**  
 Daniel J. Donnelly, Levittown, Pa., assignor to the United States of America as represented by the Secretary of the Army

Filed June 24, 1968, Ser. No. 739,471

Int. Cl. F41f 1/00

U.S. Cl. 89—1

4 Claims



A projectile, positioned in the gun bore of an armored vehicle turret weapon, has a weakened forward portion of a cartridge case strongly attached thereto. Upon ignition of propellant in the case and a predetermined amount of barrel traversement by the projectile and cartridge case, the case will become dismembered from the projectile and be expelled out the barrel muzzle following the launched projectile.

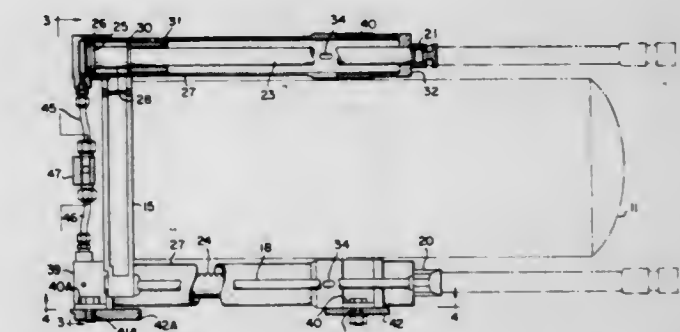
**3,459,099**  
**EJECTION APPARATUS**  
 Charles J. Litz, Jr., Levittown, and Lennord L. Pitney, Chalfont, Pa., assignors to the United States of America as represented by the Secretary of the Army

Filed June 11, 1968, Ser. No. 736,131

Int. Cl. F41f 5/02

U.S. Cl. 89—1.5

4 Claims



An aircraft having means for upwardly ejecting a bomb or weapon therefrom to facilitate low level drop maneuvers. A propellant charge is generated to evenly distribute pressure gas below a pair of horizontally spaced piston arrangements, the cylinders of which each contain an aluminum snubber to absorb residual energy in a balanced braking manner.

**3,459,100**  
**MECHANISM FOR LOCKING A MISSILE RETAINER TO A LAUNCHING APPARATUS**  
 Franz Pfister, Hochstadt, Germany, assignor to Bolkow Gesellschaft mit beschränkter Haftung, Ottobrunn, Germany

Filed Apr. 25, 1968, Ser. No. 724,118

Claims priority, application Germany, May 24, 1967, B 92,689

Int. Cl. F41f 3/04

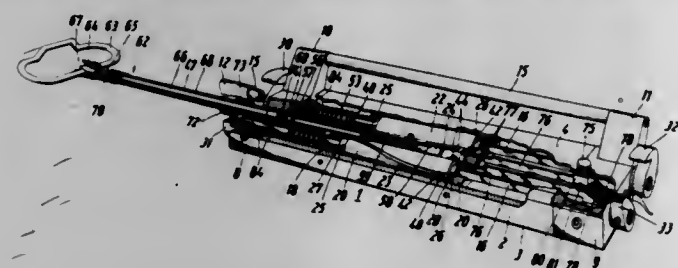
U.S. Cl. 89—1.8

18 Claims

Mechanism for locking a missile retainer to a launching apparatus includes a missile retainer arranged to hold



at least one jet-propelled missile and having first and second abutments spaced longitudinally thereof and formed with locking surfaces. Launching apparatus includes two pairs of claws spaced apart longitudinally thereof a distance equal to the spacing of the abutments on the retainer. The claws are mounted on torsionally elastic pivots and adjusting means are operable to pivot the claws between open and locking positions, with an accumulator being operative at least temporarily on the adjusting means to move the claws initially to an intermediate position in which one pair of claws forms



a stop engageable with an abutment with the other pair of claws aligned with a second abutment, to align the container on the launching apparatus. The adjusting means is thereupon operable to move both pairs of claws into locking engagement with the container. Releasable latch means hold the adjustment means in a first position in which said claws have been moved to an intermediate position, and the adjustment means is manually operable to disengage said releasable latch means. The adjustment means further includes means for engaging an electrical connector element on the launching apparatus with a mating electrical connector element on the retainer.

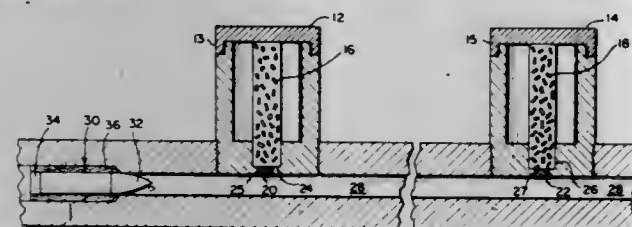
### 3,459,101 HIGH VELOCITY WEAPON

John J. Scanlon, Jr., Monroe, Conn., and Joseph B. Quinlan, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Army

Filed Nov. 9, 1967, Ser. No. 681,691  
Int. Cl. F41c 21/00; F41f 1/00

U.S. Cl. 89—8

4 Claims



A weapon including a chamber mounted on a gun barrel and containing a caseless charge of propellant therein which partially extends into the path of an oncoming projectile to be ignited thereby.

### 3,459,102 MISSILE LOADING APPARATUS

Carroll D. Phillips, Weston, and Clifton F. Orchard, Marblehead, Mass., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware

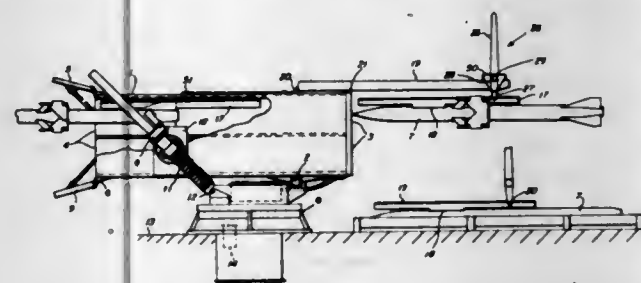
Filed Nov. 13, 1967, Ser. No. 682,000  
Int. Cl. F41f 3/04, 9/00

U.S. Cl. 89—1,805

7 Claims

A missile loading apparatus comprising a launch chamber rotatable through an elevation angle and having one end open to receive a missile therein. A guide rail is affixed to each missile prior to loading, the rail being insertable with the missile into the chamber. A lever secured to the open end of the chamber and projecting a distance therefrom has its projecting end formed in the shape of a para-

bolic taper to compensate for vertical deflections. Grasping means coupling the projected end of the lever engages the guide rail when the open end of the chamber is de-



pressed, and translates the engaged guide rail opposite the chamber when the chamber is horizontal. The oppositely disposed missile is then inserted into the chamber.

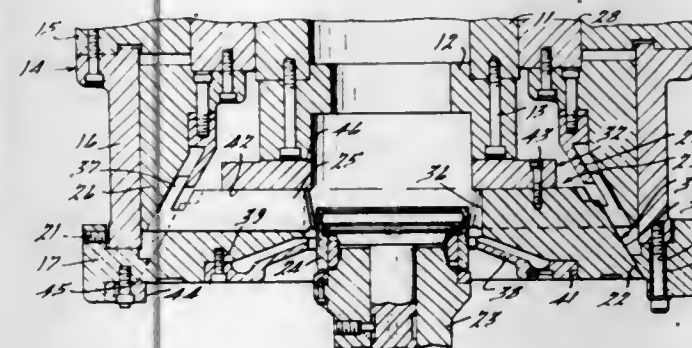
### 3,459,103 TOOL GUIDE FOR GEAR FORMING MACHINE

Edward S. Birch, Harper Woods, Mich., assignor to Michigan Tool Company, Detroit, Mich., a corporation of Michigan

Filed Oct. 20, 1967, Ser. No. 676,839  
Int. Cl. B23f 9/04, 9/06

U.S. Cl. 90—10

3 Claims



A tool guide for a gear forming machine having an axially reciprocable workpiece and radially reciprocable gear forming teeth. The guide comprises a ring with a single conical locating surface and radial slots for the tools. An annular top plate fits over this ring.

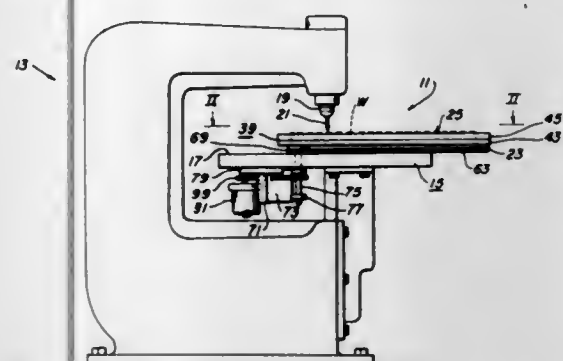
### 3,459,104 ROUTER ATTACHMENT APPARATUS

Joe T. Parsons, Sr., 1200 W. Hale, Osceola, Ark. 72370

Filed Dec. 27, 1967, Ser. No. 693,823  
Int. Cl. B23c 1/16, 1/18; B27c 5/00

U.S. Cl. 90—13

10 Claims



Attachment means for attachment on a heavy-duty production type router machine or similar machine having a work table and vertically operable cutter bit carrying spindle means. The attachment means being especially useful for broadwise cutting generally flat workpieces of material. The attachment apparatus being adapted to be set up for making piercing cut inside cut-outs, inlet routing, top-edge routing, or contour edge routing. A flat workpiece-supporting body having a pre-patterned

guideway is adapted to be moved along a guide pin roller projecting above the work table of the router machine. The guide pin roller and router cutter being in vertical coaxial alignment. The invention provides a semi-automatically operative feed means for guidingly, drivingly, shiftably moving a workpiece horizontally under the router cutter head for cutting a desired cut or contour broadwise in a workpiece.

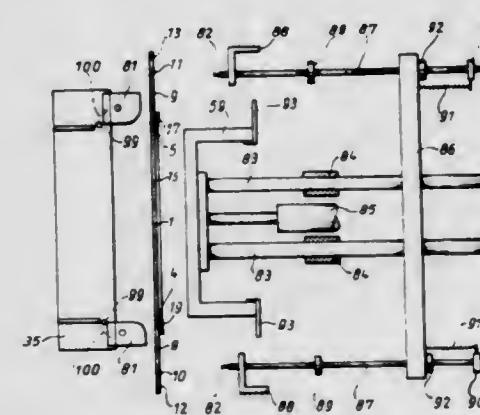
### 3,459,105 METHOD AND APPARATUS FOR PRODUCING GLUED FOLDED BOXES

Wilhelm Waldbauer, Stuttgart-Lederberg, Germany, assignor to Fit Container A.G., a corporation of Switzerland

Filed June 26, 1967, Ser. No. 648,841  
Claims priority, application Switzerland, July 20, 1966, 10,538/66; Apr. 27, 1967, 5,999/67  
Int. Cl. B31b 1/44, 1/62; B05c 3/00

U.S. Cl. 93—51

16 Claims



A method and an apparatus for forming the bottom part or cover part of a folded box by means of a plunger which presses a precut blank, the edge portions of which are coated with a liquid adhesive, into a female mold, and wherein means are provided for preventing the marginal strips of the blank which are coated with adhesive from coming in contact with the plunger when the blank is being pressed into and retracted from the mold.

### 3,459,106 HIGHWAY MARKING COMPOSITIONS AND METHOD

Alfred R. Johnson, Reading, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

No Drawing. Filed Nov. 12, 1965, Ser. No. 507,534  
Int. Cl. E01f 9/04

U.S. Cl. 94—1.5

11 Claims

A novel method for marking highways and more particularly for marking asphalt highways with a paint which can be readily and permanently converted to a dark or black color thereby avoiding subsequent confusion by motorists. The paint contains as a film-forming binder material a resin which is thermally degradable in the presence of an inorganic catalyst which is incorporated in the paint.

### 3,459,107 MEANS FOR SIMULATING THE ROUGH ON A GOLF COURSE

Robert I. Anderson, Spring Lake, and Donald E. Bayne, Muskegon, Mich., assignors to Brunswick Corporation, a corporation of Delaware

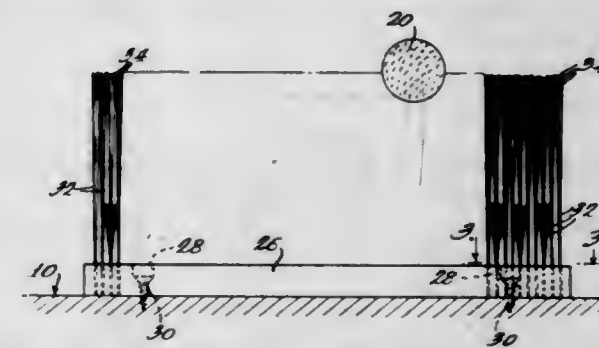
Filed Oct. 24, 1966, Ser. No. 588,919  
Int. Cl. E01c 7/00; A63b 69/36

U.S. Cl. 94—7

8 Claims

A mat for simulating the rough on a golf course including a backing having an upper surface from which a plu-

rality of bristles project, the bristles having their lengths varied over a substantial range and their dimension trans-



verse to the direction of elongation being varied over a substantial range.

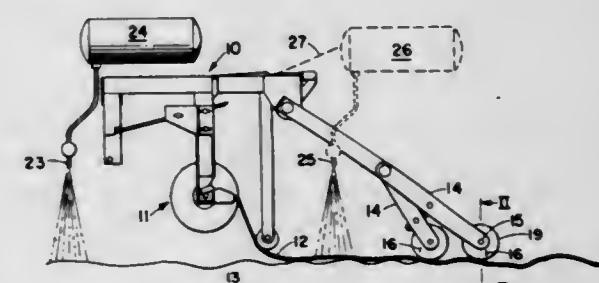
### 3,459,108 APPARATUS AND METHOD FOR FABRICATING STRUCTURES IN CONTACT WITH THE EARTH'S SURFACE

William J. Patterson, Dallas, Tex., assignor to LTV Aerospace Corporation, Dallas, Tex., a corporation of Delaware

Filed June 30, 1967, Ser. No. 650,401  
Int. Cl. E01c 19/23, 19/12

U.S. Cl. 94—22

3 Claims



A roller assembly for forcing a pliable mat of fibrous material coated with an initially liquid bonding agent into intimate contact with a portion of the earth's surface so that the mat, when rigid, conforms exactly to the earth's surface, with the roller assembly including a plurality of narrow rollers, each having a central aperture much larger than the axle on which the rollers are mounted.

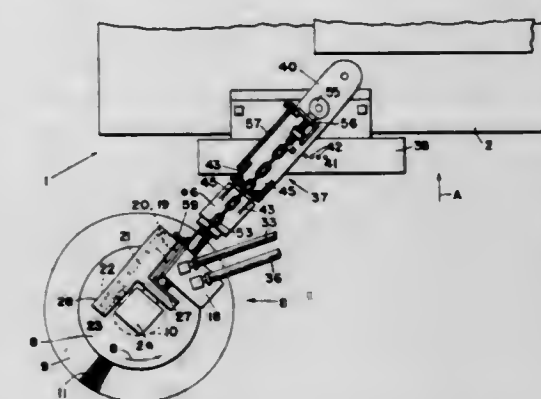
### 3,459,109 APPARATUS AND METHODS FOR FORMING A FLUSH JOINT BETWEEN ADJACENT PAVING MATS

Paul T. Ingleright, Saginaw, Mich., assignor to Frank Strausberg & Son Co., Saginaw, Mich., a corporation of Michigan

Filed May 4, 1967, Ser. No. 636,135  
Int. Cl. E01c 21/00; E01h 1/02

U.S. Cl. 94—39

10 Claims

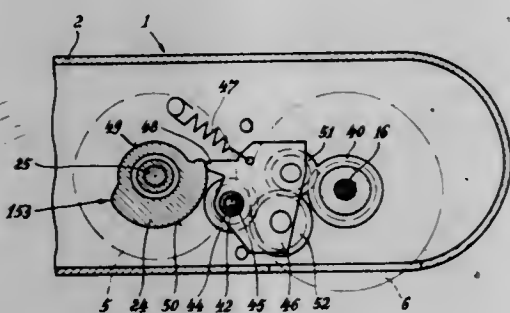


Apparatus and methods for forming a flush joint between two adjacent and sequentially deposited layers of pavement having an overlap therebetween, comprising a



rotatable brush assembly movable longitudinally of the overlap and having a stiff bristle brush for abrading the overlap and a flexible bristle brush for sweeping the abrading material laterally across the surface of the second deposited layer of pavement.

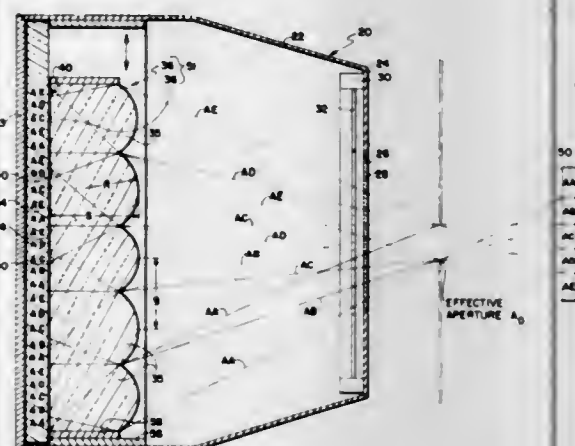
**3,459,110**  
**PHOTOGRAPHIC CAMERA WITH ONLY ONE CARTRIDGE CHAMBER**  
Friedrich Papke and Horst Golombek, Braunschweig, Germany, assignors to Voigtlander, A.G., Braunschweig, Germany  
Filed June 9, 1967, Ser. No. 644,992  
Claims priority, application Germany, June 18, 1966, V 31,297  
Int. Cl. G03b 19/04  
U.S. Cl. 95—31 15 Claims



A photographic camera wherein the camera housing is provided with only one cartridge chamber to receive a cartridge of film which is to be exposed. This film is preferably coiled within the cartridge without being supported by a rotary spool. The camera housing has, spaced from the only cartridge chamber thereof, a film-receiving chamber to receive exposed film, and the film is rewound back into the cartridge from the film-receiving chamber. For this purpose a film-moving rotary sprocket is situated in the camera housing between the above chambers thereof for advancing the film from the cartridge chamber to the film-receiving chamber after each frame is exposed and for then rewinding the film back into the cartridge. A manually operable rotary means is accessible to the operator for actuating the camera, and a transmission means coacts with this manually operable rotary means and the film-moving sprocket to drive the latter in response to rotation of the manually operable rotary means. This latter means is limited to only one direction of rotation, and the transmission means has an advance position to drive the sprocket in a direction which will advance film from the cartridge to the film-receiving chamber and a rewinding position to return the film from the film-receiving chamber back into the cartridge. A cam means which is driven by the manually operable rotary means coacts with the transmission means to hold the latter in its advance position during turning of this cam means through a first angular increment and to hold the transmission means in its rewinding position during a second angular increment of turning of the cam means. A counter structure is connected with the cam means to turn therewith so as to indicate to the operator the number of film frames which are exposed during the first angular increment of turning of the cam means and so as to indicate that film rewinding operations are taking place during the second angular increment of turning of the cam means. The housing of the camera is provided with a closure capable of opening and closing the camera housing and a releasable lock structure coacts with the closure to releasably maintain the latter in its closed position. A second rotary cam means is driven from the manually operable rotary means and forms a coaxial

unit with the first cam means, and this second cam means coacts with the releasable lock means to prevent displacement thereof to its release position during rewinding of film while automatically placing the lock means in its release position at the end of the rewinding operations.

**3,459,111**  
**IMAGE DISSECTION CAMERA**  
Dexter P. Cooper, Jr., Lexington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware  
Filed June 20, 1966, Ser. No. 558,994  
Int. Cl. G03b 19/18  
U.S. Cl. 95—36 15 Claims

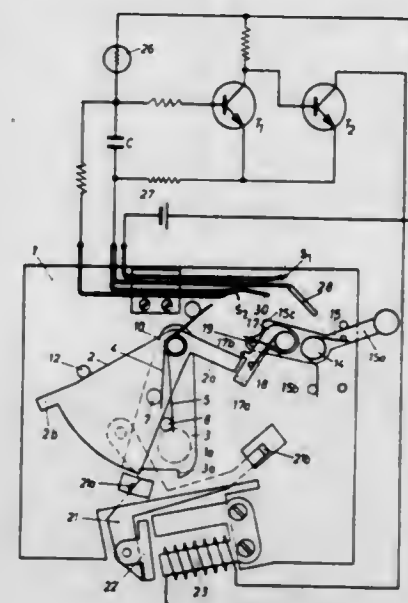


An image dissection camera employing a lenticular lens plate and, in its image plane, an opaque mask having small apertures which represent the images formed by the individual lenticules of a common effective aperture located a finite distance in front of the lenticular lens plate. A photosensitive recording material is located adjacent to the image plane of the lenticular plate. Relative motion between the lenticular lens plate and the photosensitive material at an acute angle with respect to the rows of apertures allows recording a series of dissected images of the scene the camera is aimed at. A separate objective lens is not required.

**3,459,112**  
**SELF-WINDING PHOTOGRAPHIC SHUTTER WITH AN ELECTRONIC TIMING DEVICE**  
Franz W. R. Stapp, Calmbach, Black Forest, and Reinhold Bott, Hofen, Germany, assignors to Prontor-Werk Alfred Gauthier, G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany  
Filed Dec. 23, 1966, Ser. No. 604,444  
Claims priority, application Germany, Dec. 24, 1965, P 38,432  
Int. Cl. G03b 9/26 9 Claims

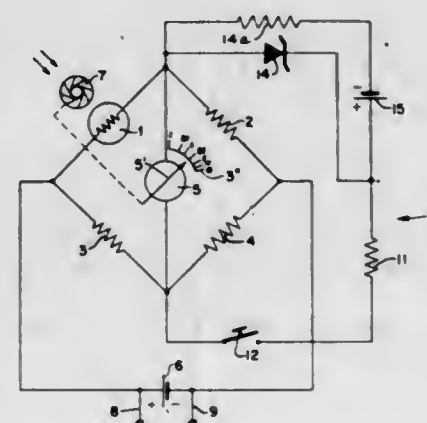
A self-winding photographic shutter having a shutter blade system which is influenceable during the exposure run-off by an electronic timing device having an electromagnet and an armature. The armature is caused to make contact with the electromagnet and the timing device is switched on as a function of the actuation of a winding and release lever. The photographic shutter has an over-pull pawl serving to transfer the shutter blade system into a wound position. The over-pull pawl is linked and biased into engagement with the winding and release lever. A driver is provided which is movable with the shutter blade system and causes the armature, mounted on an armature lever, to contact the electromagnet during the winding process. This action also transfers a formed portion of the armature lever, acting as an open time lock, into a locked position. After the wound position has been reached, the

driver is held in a fixed position against the armature lever so that the over-pull pawl is enabled to move rela-



tive to the winding and release lever against the effect of the over-pull spring, until the shutter blade system is released.

**3,459,113**  
**BATTERY TESTING CIRCUIT FOR A SELF-BALANCING BRIDGE**  
Fritz Falkenburg, Erlangen, Bavaria, Germany, assignor to P. Gossen & Co. G.m.b.H., Erlangen, Bavaria, Germany  
Filed Feb. 17, 1966, Ser. No. 528,205  
Claims priority, application Germany, Feb. 20, 1965, G 42,895; Mar. 6, 1965, G 43,019  
Int. Cl. G03b 9/07 8 Claims

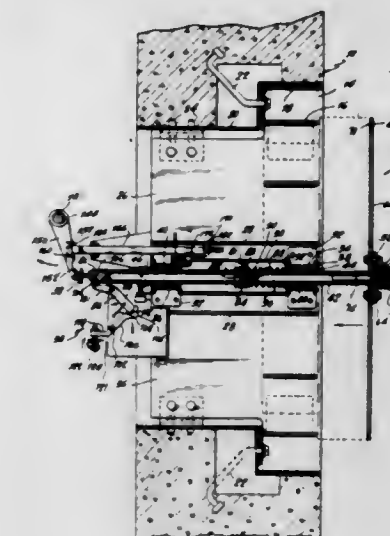


A reference voltage is optionally applied to a fixed resistance branch of a self-balancing bridge and causes a constant deflection in the zero indicator of the bridge. The zero indicator has no directing torque so that the deflection depends on voltage condition of the balancing voltage source. The reference voltage may be supplied by an additional constant voltage source or derived directly from the bridge voltage source by the aid of a voltage sensitive element.

**3,459,114**  
**BLAST VALVE**  
David Bacchini, 8502 10th Ave., Brooklyn, N.Y. 11228  
Filed June 15, 1964, Ser. No. 374,980  
Int. Cl. F23i 17/00 10 Claims

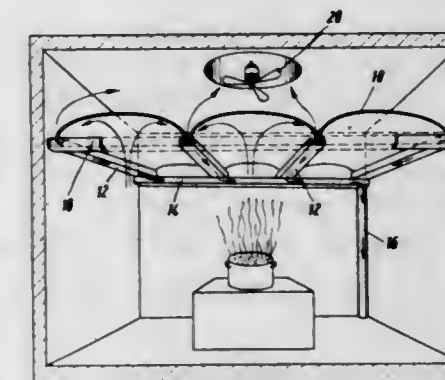
1. A blast valve comprising an outer tube, a housing in said tube, a shaft slidably mounted in said housing,

a closure plate slidably mounted on said shaft, resilient means normally urging said closure plate outwardly away from said tube, spring means for urging said shaft inwardly of said housing to press said closure plate against said tube, trigger means engaging said shaft for selectively preventing inward longitudinal movement of



said shaft, release latch means engaging said trigger means for holding and selectively releasing said trigger means, cam means for actuating said release latch means, lever means engagable with said shaft for resetting said shaft, and valve latching means connected to said lever means for latching said shaft and hence said closure plate in a closed position after actuation.

**3,459,115**  
**DROPPED CEILING CONSTRUCTION WITH CONDENSATE DISPOSAL MEANS**  
Paul Gutermuth, Jahnstrasse 10, Langenselbold, near Hanau, Germany  
Filed Feb. 28, 1968, Ser. No. 708,861  
Claims priority, application Germany, Mar. 30, 1967, G 49,701  
Int. Cl. F23j 11/00; A47j 36/38; F24f 7/04  
U.S. Cl. 98—43 5 Claims



A group of U-shaped troughs are located to span a room, and upwardly arched sheets of material, having a lower condensing surface, have their edges set into the troughs in such a manner that their lower parts are upwardly from the bottom of the troughs and the side edges are spaced from the sides of the troughs and from adjacent upwardly arched sheets, so that steam, which may contain substances suspended therein, will condense out and liquid and such substances will drip off into the trough, with air and uncondensed moisture being removed from above the arched sheets, and to prevent condensation on the full ceiling of the room.

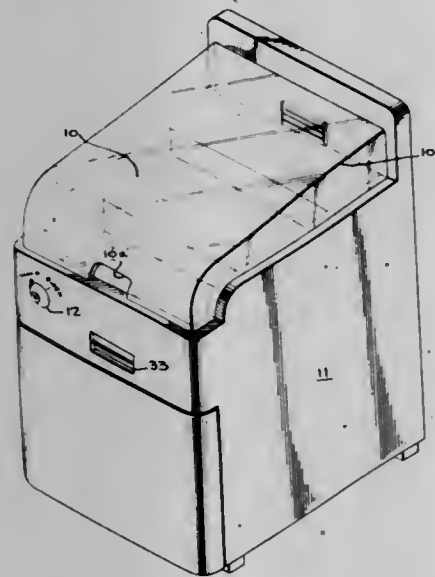


3,459,116

**APPARATUS FOR CONTROLLING THE RIPENING OF BANANAS**

Gerald F. McDonnell, 222 Deckbar, Apt. 141, New Orleans, La. 70121

Filed Feb. 1, 1965, Ser. No. 429,233

Int. Cl. A23b 7/04; A23l 3/36; A47f 3/04  
U.S. Cl. 99—239 11 Claims

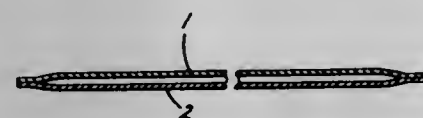
Apparatus for selective and controlled ripening of bananas at supermarkets and the like comprising a compartmented storage container which resembles a supermarket refrigerator unit in which there are at least two compartments each separately regulated by suitable temperature control means, wherein the bananas can be separated into at least two groups, one of which may be displayed for sale and both of which groups may be controlled either to "RIPEN" the bananas or to "HOLD" the bananas from further ripening by controlling the temperature in the compartments typically at 57° Fahrenheit in the "HOLD" condition and about 71° Fahrenheit in the "RIPEN" condition.

3,459,117

**COVER FOR TREATING FRESH RED MEAT WITH CARBON MONOXIDE**

Walter T. Koch, Havertown, and Frank E. Carevic, West Chester, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

Filed July 21, 1967, Ser. No. 655,184

Int. Cl. A23b 1/00; A23l 3/34; B65d 85/70  
U.S. Cl. 99—254 5 Claims

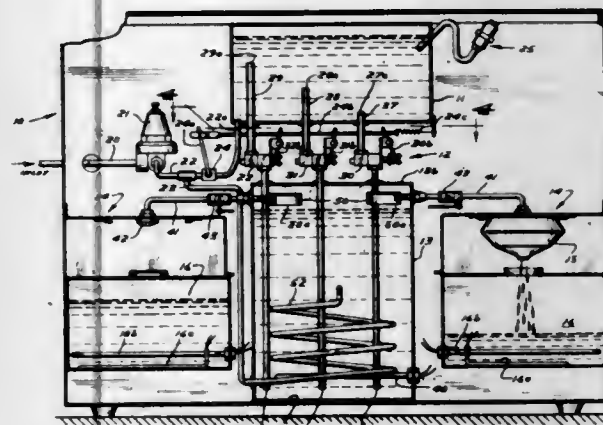
For treating fresh red meat with carbon monoxide to produce a slow oxidizing carboxymyoglobin color, a supply of carbon monoxide is sealed between a pair of flexible films which are substantially carbon monoxide impermeable when dry and one of which becomes carbon monoxide permeable when wet whereby the gas is released through the last mentioned film so as to contact the meat when said film is placed in contact with the meat.

3,459,118

**AUTOMATIC URN COFFEEMAKER**  
Leonard P. Hausam, Minneapolis, Minn., assignor to Charter Design and Manufacturing Co., Minneapolis, Minn., a corporation of Minnesota  
Filed Jan. 11, 1968, Ser. No. 697,227  
Int. Cl. A47j 31/40

U.S. Cl. 99—291

8 Claims



This invention relates to an automatic coffeemaker arranged for brewing various predetermined amounts of coffee and includes a first tank having a plurality of outlet conduits at different levels within the tank for delivering water to the lower portions of a pre-heating tank which pre-heating tank is provided with a pre-heat means therein to force a like amount of water upwardly from the pre-heating tank out of receiving conduit for delivery of now heated water to a coffee confining basket where the same will be sprayed over the coffee. Control means are provided in the conduits to select a proper conduit which will provide a predetermined volume of water to the pre-heating tank.

3,459,119

**MOBILE COMPRESSING DEVICE FOR COMPRESSING STACKED MATERIAL IN CONJUNCTION WITH BUNDLING THE MATERIAL BY MEANS OF STRAPPING OR THE LIKE**

Sven Anders Hilding Wiklund, Stockholm, Sweden, assignor to Ab. Nordstroms Linbanor, Stockholm, Sweden, a joint-stock company of Sweden

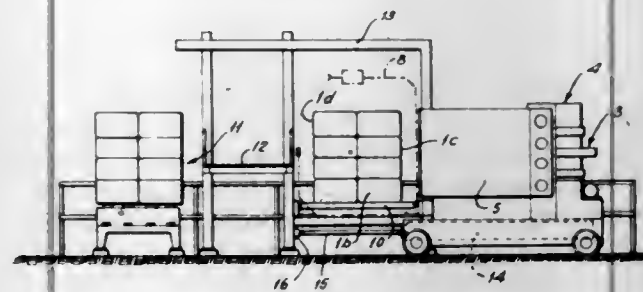
Filed Feb. 13, 1967, Ser. No. 615,759

Claims priority, application Sweden, Feb. 14, 1966, 1,886/66

Int. Cl. B65b 13/20, 13/04

U.S. Cl. 100—7

2 Claims



A compressing device for orientatable compression of stacked material in conjunction with or prior to bundling the material by means of strapping or the like at a strapping station or the like, said compressing device being adapted to advance and retract in relation to said stack, which is placed on an orienting table preferably at said strapping station and adapted to be oriented in a position of said compressing device adjacent to said stack by means of at least two perpendicularly opposed horizontally movable compressing or orienting means adapted to en-

gage said stack, and oriented in two or more perpendicularly opposite directions for the purpose of orienting said stack prior to said strapping in said strapping station.

3,459,120

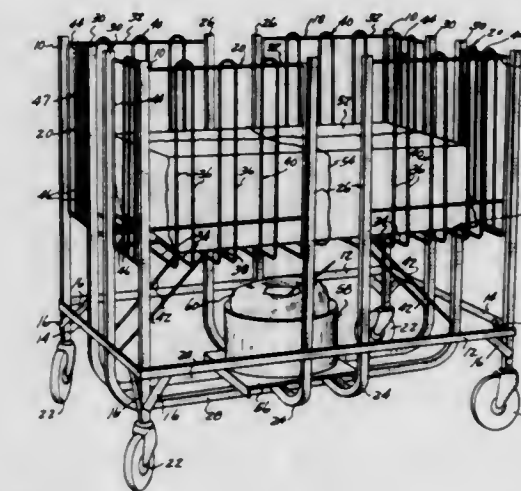
**RACK FOR BINDING BUNDLES**  
Fredrick F. Brunette, 22804 Brookdale, Farmington, Mich. 48024

Filed May 15, 1967, Ser. No. 638,216

Int. Cl. B65b 13/02

U.S. Cl. 100—34

10 Claims



A four sided, open topped container is supported by a frame above a base. A continuous, open ended, narrow opening extends down the mid-section of each of the container sides and extends in the container bottom to a common intersection in the middle of the bottom. A ball of twine, supported on the base, and below the common intersection provides a strand for encircling a stack of collapsed carboard boxes confined within the container in two perpendicular directions without manipulating the stack.

3,459,121

**SLURRY FEEDER**

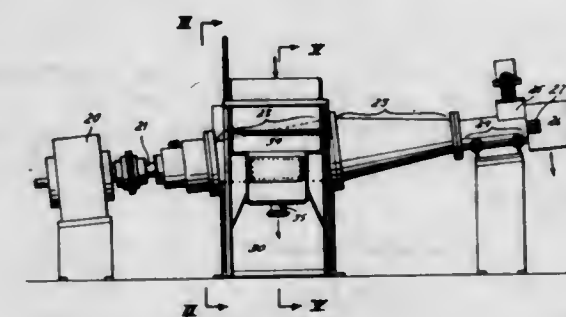
Paul H. Rossiter, Paoli, Pa., assignor to Welding Engineers, Inc., Norristown, Pa., a corporation of Delaware

Filed Mar. 14, 1966, Ser. No. 534,029

Int. Cl. B30b 9/12, 9/14, 9/18

U.S. Cl. 100—117

15 Claims



An apparatus is provided wherein a liquid containing buoyant solids is fed into a tank-type container, the buoyant solids tending to rise to the liquid level of the container, wherein a worm advances solids from the vicinity of the liquid level toward a squeezing section, wherein liquid is squeezed from the solids. The solids are then extruded, with pressure being applied to compact the solids. A novel feeding means is provided, wherein liquid and solids are delivered to the container from a point above the liquid level in the container, passing across an angularly disposed straining member. The container is

constructed to contain a predetermined liquid volume at all times, such that liquid passes downwardly through the container, around a separator member and upwardly over a weir of predetermined height and then to discharge.

3,459,122

**APPARATUS FOR THE CONTINUOUS EXTRACTION OF MOISTURE FROM SUSPENDED MATTER**

Eduard Pastoors, Essen, and Rudolf Saller, Cologne-Mungersdorf, Germany, assignors to Firma Albert Klein K.G., Niederfischbach (Sieg), Germany, a corporation of Germany

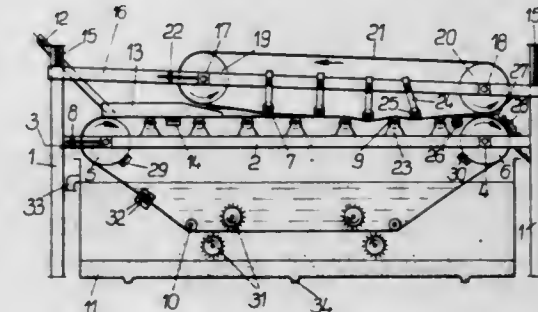
Filed May 9, 1966, Ser. No. 559,026

Claims priority, application Germany, May 8, 1965, K 56,065

Int. Cl. B30b 9/24

U.S. Cl. 100—118

5 Claims



An apparatus for extracting moisture from slurries and the like having a pair of flexible moving belts which engage one another and press the slurry between them.

3,459,123

**FRUIT PRESS**

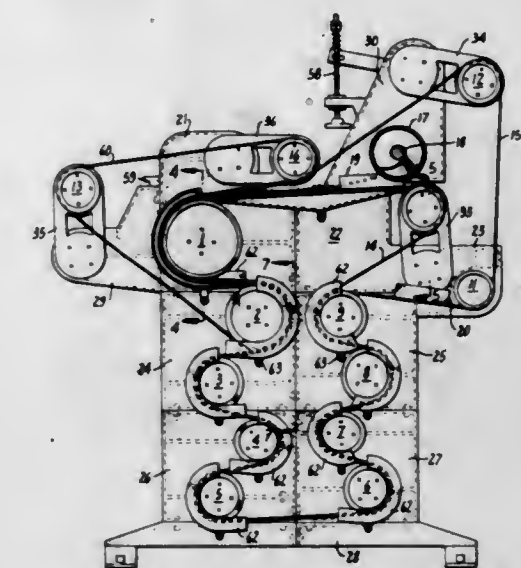
Robert H. Begiebing, Monterey, Calif., assignor to American Sugar Company, Salinas, Calif., a corporation of New Jersey

Filed Sept. 15, 1966, Ser. No. 579,696

Int. Cl. B30b 9/24, 5/04

U.S. Cl. 100—118

2 Claims



This application discloses a serpentine fruit press having cantilever rollers for mounting the serpentine belts, a modular frame which permits presses of different size to be made from the same component units, a support and drive arrangement in which the working elements are shielded behind a single upright frame, and feed and discharge means for moving material to and from the space between the belts in a direction lateral to the direction of belt movement.



3,459,124

## PAPER MACHINERY

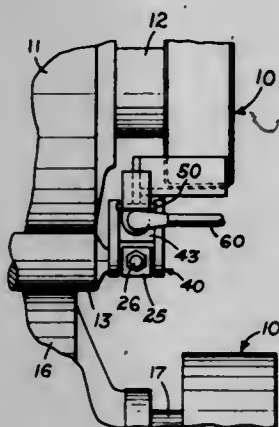
Willard C. Notbohm, Watertown, N.Y., assignor to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio

Filed Oct. 20, 1966, Ser. No. 588,041

Int. Cl. B30b 15/16, 3/04

U.S. Cl. 100—170

4 Claims



A press section has two spaced rolls with a smaller intermediate roll therebetween, and each end of the intermediate roll is connected to a piston rod of a hydraulic cylinder which is supported by a track for axial movement normal to a plane defined by the axes of the spaced rolls. Pressure sensing gauges are connected to each cylinder to indicate the lateral forces acting on the intermediate roll, and each hydraulic cylinder is movable on its track for laterally positioning the intermediate roll according to the pressure sensed within the cylinders.

3,459,125

## SCREEN PRINTING MACHINE

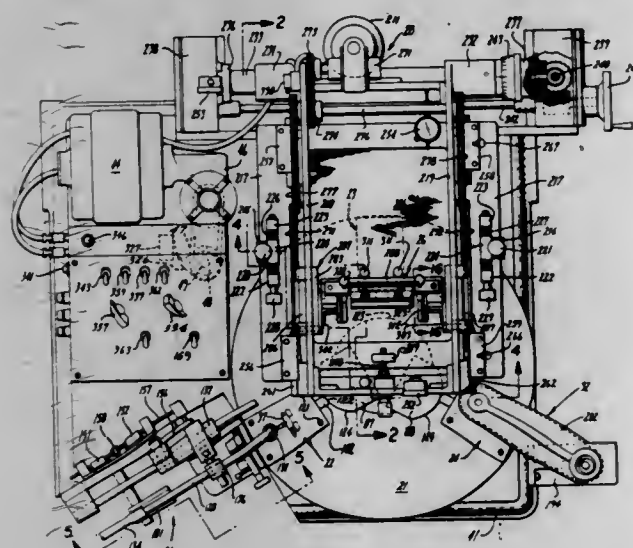
Charles F. Forslund, 3510 Rubin Drive, Oakland, Calif. 94602

Filed May 2, 1966, Ser. No. 546,841

Int. Cl. B41f 15/26; B41l 21/02

U.S. Cl. 101—35

9 Claims



A machine for imprinting boards, such as ceramic wafers with a squeegee moving over a printing screen. A turntable is formed with circumferentially spaced board receiving, board printing and board delivery stations, and a motor drive mechanism intermittently advances the turntable so that during each rest period the boards on the turntable are located at the several stations. During each rest period, a locking mechanism registers one of the boards at the printing station with the printing screen; pick up means place a new board on the turntable at the receiving station; and an ejector at the delivery station removes the board printed during the preceding rest

period. A motor for driving the squeegee is energized during the rest period to move the squeegee over the printing screen and thereby imprint the board at the printing station.

3,459,126

## CONTROL DEVICES EMPLOYING MAGNETOSTRICTIVE MATERIALS

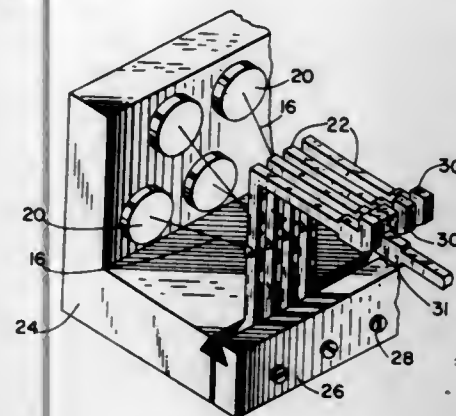
Alexander Nyman, Dover, Mass., assignor, by mesne assignments, to Mohawk Data Science Corporation, East Herkimer, N.Y., a corporation of New York

Filed Mar. 21, 1966, Ser. No. 536,035

Int. Cl. B41j 29/48; H01h 47/00

U.S. Cl. 101—93

13 Claims



A magnetostrictive actuating mechanism utilizes a disk-shaped element including two layers of magnetostrictive material, each layer having a different coefficient of magnetostrictive expansion. The disk is prestressed into convex curvature and when a magnetic field is applied it is magnetostrictively transferred through a planar state to a concave state where it remains against the prestress bias until the field is removed, at which time it snaps back to its convex shape. The actuator is adapted for use in operating print hammers.

3,459,127

## METHODS OF CORRECTING TYPING ERRORS

Victor Barouh, 935 Plum Tree Road, Westbury, N.Y. 11590

Filed Feb. 8, 1967, Ser. No. 614,615

Int. Cl. B41m 5/00; B41n 3/00; B41l 47/02

U.S. Cl. 101—463

2 Claims

A method of correcting a mistyped hectographic unit, the unit including a master sheet, a carrier sheet, and a copy sheet. Hectographic means are provided on one face of the carrier sheet facing the master sheet and carbon transfer material is disposed on the other face of the carrier sheet facing the copy sheet. The method is carried out by using a first correction sheet having a pressure-transferable pigmented coating thereon and a second correction sheet having a pressure-transferable lacquer thereon, and by suitably placing the correction sheets to correct any errors.

3,459,128

## EMULSION LACQUER CONTAINING ALKYL/PHENOL RESIN FOR THE AFTER-TREATMENT OF DEVELOPED PLANOGRAPHIC PRINTING PLATES

Fritz Erdmann, Wiesbaden-Schierstein, and Fritz Uhlig, Wiesbaden-Biebrich, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany

No Drawing. Filed Nov. 4, 1966, Ser. No. 591,993

Claims priority, application Germany, Nov. 9, 1965, K 57,608

Int. Cl. C08g 37/18; B41n 3/00

U.S. Cl. 101—466

10 Claims

This invention relates to an emulsion lacquer composition for reinforcing the image on a lithographic printing

plate, the dispersing phase comprising water and a soluble thickener, and the dispersed phase comprising a volatile-water-immiscible solvent and a phenol-formaldehyde resin derived from a phenol having at least one substituent containing at least two carbon atoms.

3,459,129

## SMOKE AMMUNITION CONTAINING LIQUID SMOKE PRODUCER AND AN ABSORPTION ACTIVE POWDER

Rune V. Akhagen, Eskilstuna, Sweden, assignor to Forsvarets Fabriksverk, Stockholm, Sweden, a corporation of Sweden

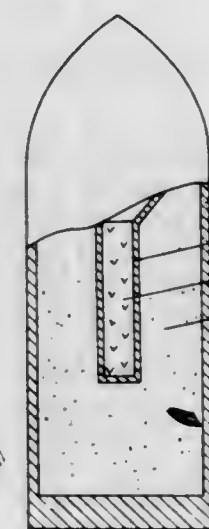
Filed July 5, 1967, Ser. No. 651,114

Claims priority, application Sweden, July 13, 1966, 9,572/66

Int. Cl. F42b 13/44

U.S. Cl. 102—90

1 Claim



Smoke ammunition containing a smoke composition, the main part of which is a liquid smoke producer, preferably titanium tetrachloride, 5–15% of weight of the composition consists of a well dried powder of synthetic calcium silicate, the pulverization degree of which corresponds to an adsorbing area of at least 50 m<sup>2</sup>/g. The smoke composition brings about a spreading of the smoke over a larger area and facilitates the use of liquid smoke producers in spin stabilized shells.

3,459,130

## LIQUID DISPLACEMENT PUMPS

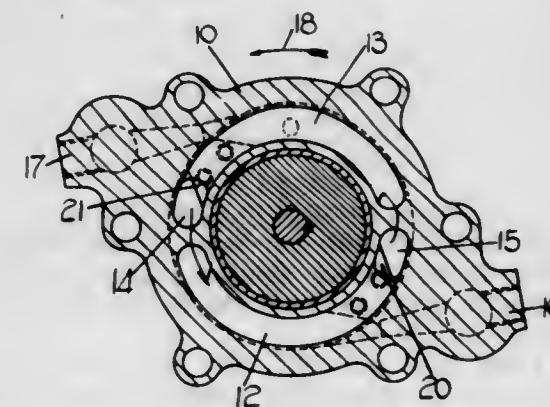
Robert Thomas John Skinner, Kenilworth, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company

Filed Feb. 28, 1967, Ser. No. 619,351

Int. Cl. F04b 13/02; F04d 1/00

U.S. Cl. 103—2

1 Claim



A liquid displacement pump has a body, a rotor in a cavity in the body, a recess in the wall of the cavity be-

tween an inlet and an outlet, and an abutment adjacent to the outlet end of the recess being shaped so that the direction of flow at this end of the recess is in the substantially tangential direction of the outlet.

3,459,131

## HYDRAULIC THROTTLE ADVANCE

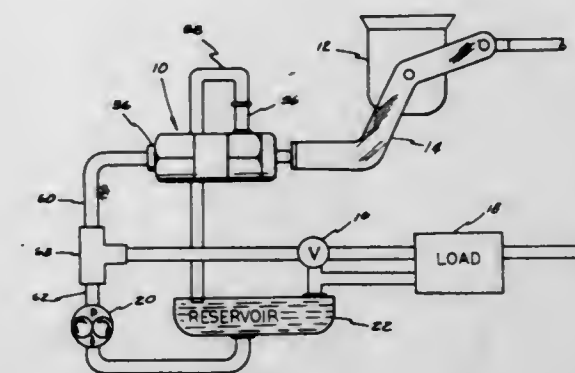
Oaklan R. Senf, Muskegon, Mich., assignor to Continental Motors Corporation, Muskegon, Mich., a corporation of Virginia

Filed July 26, 1967, Ser. No. 656,096

Int. Cl. F04b 49/04; F04d 15/00; F15b 13/02

U.S. Cl. 103—17

8 Claims



A hydraulic actuator using a flow-by principle wherein a plunger member floats in a non-fluid tight bore that communicates with a high pressure source and a separate rod member is spring biased toward the plunger and axially aligned therewith so that increases in pressure will produce regulated movement of the rod.

3,459,132

## INDUCTION PUMP

Ernst Meyer, Roderstrasse 12, Offenbach am Main, Germany

Filed Jan. 19, 1968, Ser. No. 699,067

Claims priority, application Germany, Jan. 28, 1967, M 72,579

Int. Cl. F04b 17/04

U.S. Cl. 103—53

11 Claims



There is disclosed an induction pump for pumping a large volume of a flowable medium within a wide range of pressure and temperature. The pump comprises an open-ended cylinder one end portion of which constitutes a suction conduit and the other a pressure conduit. A magnetizable hollow plunger is guided with clearance within the cylinder and is also guided with clearance upon an open-ended pipe extending into the plunger from either the suction conduit or the pressure conduit secured to the respective conduit. Due to such mounting and guidance the cylinder and the plunger can compensate within a wide range for deformation thereof as may be caused by temperature changes, insufficient alignment of the components of the pump during assembly thereof, etc. The pumping action is obtained by reciprocating the plunger within the cylinder by variations of a magnetic field inductively applied to the plunger.

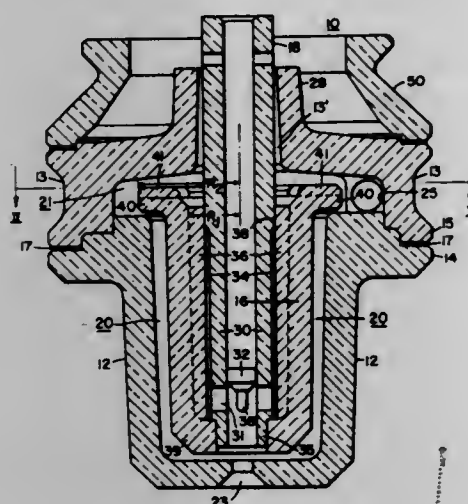


### 3,459,133 CONTROLLABLE FLOW PUMP

Paul H. Scheffler, Lima, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 23, 1967, Ser. No. 610,935  
Int. Cl. F04d 3/00

U.S. Cl. 103—88



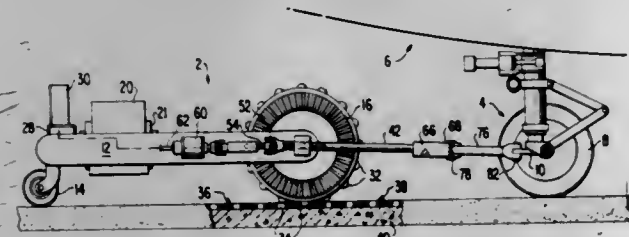
A ceramic pump for pumping molten metal comprising a first or flow control stage, a second or discharge stage and a diffusing section. The pump includes further an elongated ceramic rotor in the first (flow control) stage with an impeller portion extending into the second (discharge) stage. The input to the first stage is arranged to be disposed in fluid communication with a source of molten metal, such as a melting furnace. With rotation of the pump, the molten metal is directed through the first stage and into the second stage where the molten metal is linearly directed to the diffusing section by a volute collector for return to the furnace or to another vessel. Precise control of the flow rate is obtained by control of the length and the rotational speed of the first stage rotor in accordance with the classical expression describing the parabolic surface of revolution for solid body rotation about a vertical axis.

### 3,459,134 RACK RAIL AIRCRAFT MOVING LOCOMOTIVE

Wilson C. Shephard, 3040 Virginia Beach Blvd., Norfolk, Va. 23509

Filed July 24, 1967, Ser. No. 655,620  
Int. Cl. B61b 13/02; B61c 13/02, 11/04

U.S. Cl. 104—1 12 Claims



A jumbo aircraft mover has a roller provided with lugs. In the ground or pavement along which the wheel rolls there is provided a series of sockets in the upper plane of the ground or pavement along the path to be followed by the roller. The roller is driven by a suitable source of power, preferably through reduction gears, so as to apply high torque. A chassis for the roller is coupled through lengthwise-adjustable arms to the landing gear of the aircraft. As the roller rolls along the path, the lugs engage in the sockets in the ground so as to prevent slippage. The ground sockets are arranged in a path to effect de-

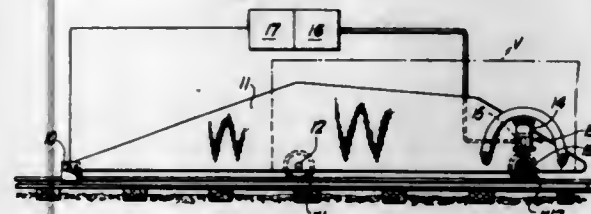
sired steering of the aircraft; additional steering of the aircraft may be accomplished by transverse adjustment of linkage which connect the chassis to the aircraft.

### 3,459,135 RAILWAY TRACK JACKING DEVICES

John K. Stewart, Dorval, Quebec, Canada, assignor to Canada Iron Foundries Limited, Montreal, Quebec, Canada

Filed July 25, 1966, Ser. No. 567,636  
Claims priority, application Great Britain, July 28, 1965, 32,328/65

Int. Cl. E01b 29/04, 29/16, 27/17  
U.S. Cl. 104—7 3 Claims



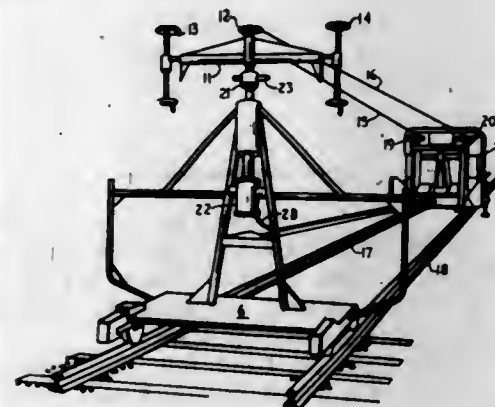
The invention is concerned with a track lifting jack capable of constantly bearing the weight of the track through a magnetic clamp for a track surfacing operation regardless of whether large or small lifts are required, the flux density available at the magnetic clamp being controlled as a function of the loading on the jack.

### 3,459,136 AUTOMATIC CONTROL FOR TRACK SURFACING MACHINES

Colin St. John, Chatswood, New South Wales, Australia, assignor to Conquip Limited, Auburn, New South Wales, Australia, a corporation of New South Wales

Filed May 8, 1967, Ser. No. 636,949  
Claims priority, application Australia, May 12, 1966, 5,458/66

Int. Cl. E01b 33/00  
U.S. Cl. 104—7 13 Claims



The provision of a control unit for automatically controlling the amount of lift applied to railway and the like tracks during the surfacing thereof by means of a rail-mounted track lifting and tamping unit.

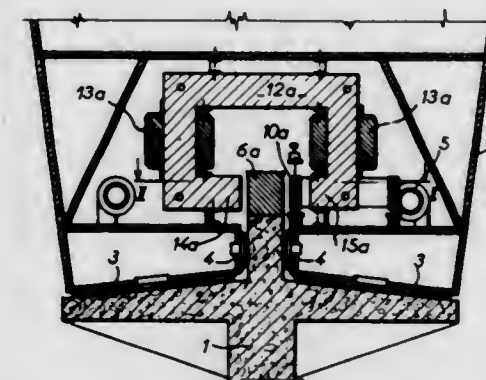
### 3,459,137 VEHICLE DRIVING SYSTEM

Jean Henri Bertin, Neuilly-sur-Seine, Hauts-de-Seine, and Benjamin Jean Marcel Salmon, Suresnes, Hauts-de-Seine, France, assignors to Bertin & Cie, Plaisir, France, a company of France

Filed Mar. 27, 1967, Ser. No. 626,018  
Claims priority, application France, Mar. 29, 1966, 55,475

Int. Cl. B61b 13/00  
U.S. Cl. 104—148 9 Claims  
An arrangement for propelling vehicles along a track by means of cooperating magnetic elements facing each

other on the vehicle and on the track. The magnetic elements on the vehicle are carried by a driven wheel or

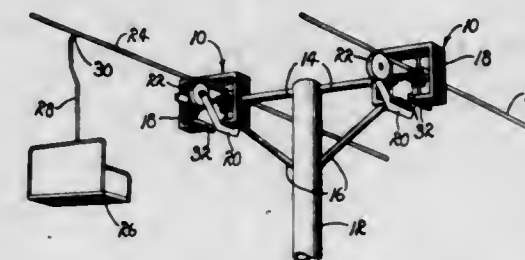


chain so that fresh elements are constantly brought into magnetic engagement with further elements on the rail to ensure permanent progression of the vehicle.

### 3,459,138 SAFETY DEVICE FOR SKI LIFT CABLE

Earl D. Grieve, El Portal, Calif., assignor of one-half to Ronald D. Hibbsman, Yosemite National Park, Calif.

Filed June 1, 1967, Ser. No. 642,878  
Int. Cl. B61b 7/10  
U.S. Cl. 104—173 9 Claims

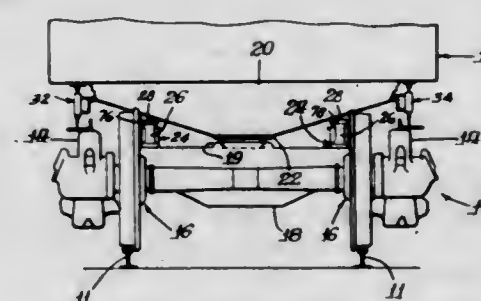


Safety device for ski lift cables and the like including a pair of spiders having spokes to which support elements are pivoted, passage of chair lift hanger rods attached to the cable engaging the elements in sequence and imparting rotation to the spiders for moving a pair of the elements out of cable supporting relation and simultaneously camming a trailing pair of elements into such relation, thereby continuously supporting a dislodged cable during movement thereof and accommodating passage of the hanger rods between the spiders.

### 3,459,139 RAILWAY CAR AND TRUCK ROLL STABILIZER

Robert B. Love, Park Forest, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey

Filed Mar. 23, 1967, Ser. No. 625,458  
Int. Cl. B61f 5/02, 5/14; F16c 17/00  
U.S. Cl. 105—199 10 Claims



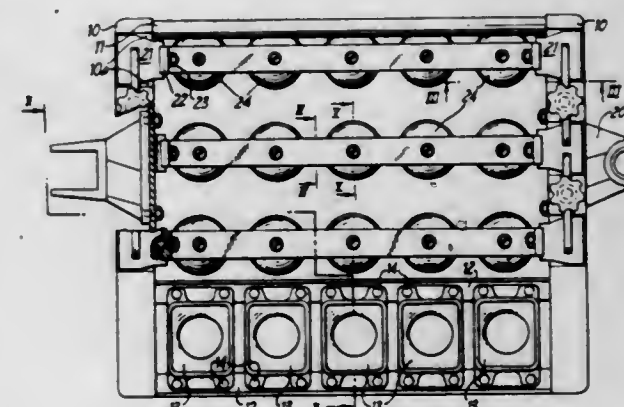
In a railway vehicle having a car body supported on at least two car trucks including spaced side frames and side bearings, a push-pull type cylinder is connected on both sides of the vehicle between each side frame and the car body. The push-pull cylinders are responsive to

lateral rocking of the car body relative to the car truck, and are hydraulically connected to other hydraulic cylinders that actuate wedges between the side bearings of the vehicle. The hydraulic lines are so arranged that relative rocking motions at one side of the vehicle will cause a wedge to be moved between the side bearings on the other side of the vehicle, thereby inhibiting rocking of the car body.

### 3,459,140 DOUGH-MOULDING MACHINES

Edward Stanley Gaskell, Highbury, Milton Grove, Orrell Mount, Wigan, Lancashire, England

Filed Sept. 20, 1967, Ser. No. 669,019  
Int. Cl. A21c 11/00  
U.S. Cl. 107—9 4 Claims

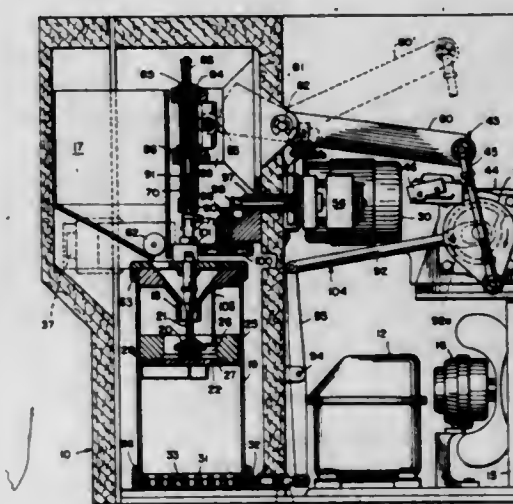


A dough moulding machine having a frame comprising a plurality of mould carrying bars. The mould carrying bars are of hollow closed geometric shape in cross-section and the moulds comprise cups closely fitted to the bars.

### 3,459,141 APPARATUS AND METHOD FOR THE CONTINUOUS PRODUCTION OF SHAPED-DOUGH PIECES

O'Dell F. Kell, Phoenix, Ariz., assignor, by mesne assignments, to American Potato Company, a corporation

Filed Jan. 25, 1967, Ser. No. 611,658  
Int. Cl. A21c 11/18  
U.S. Cl. 107—14 18 Claims



An apparatus and method for producing shaped-dough pieces such as are used for making French fry type potatoes by mixing water with a dry mix. A measured amount of the dry mix is introduced through a funnel into an extrusion chamber and deflected by a cone-shaped deflector onto a rotating distributing disc which is being flooded with cold water. The water wets the particles, which are discharged by centrifugal force from the distributing disc



and then mixed by rotating blades to provide a homogeneous fluid suspension. A reciprocating piston compresses the mix and then retracts to allow another charge to be introduced and mixed. The length of the extrusion chamber is such that by the time a particular charge reaches the end thereof the mixture has thickened to develop a dough suitable for extruding. With each downward stroke of the piston the lowermost charge in the extrusion chamber is extruded through dies to provide shaped-dough pieces suitable for cooking.

3,459,142

**BAG STITCHING MACHINE**

Harold Bernard Berg, 1110 Welcome Circle,

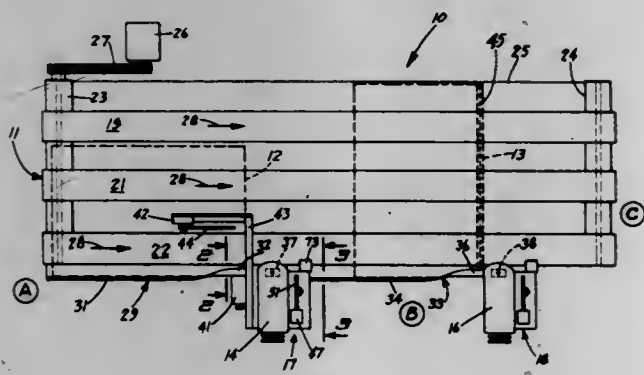
Minneapolis, Minn. 55422

Filed Aug. 21, 1967, Ser. No. 661,887

Int. Cl. D05b 13/00, 65/00

U.S. Cl. 112-10

11 Claims



A machine for sewing bags having a plurality of moving endless belts for carrying unstitched bags under the sewing heads of a pair of spaced sewing machines. The bags move along a linear guide which aligns the bags with the sewing heads of the machines and folds over the side and one end of the bag as it moves under the sewing heads whereby a double thickness is sewed. An automatic thread cutting device located near the trailing sides of each sewing machine severs the thread connecting spaced bags moving on the endless belts. Each thread cutting device has a knife holding support located below the thread. The support has a removable side wall which permits the replacement of the knife and a longitudinally upwardly open recess which protects the knife as well as protects the operator of the machine from the knife. An impact resilient block mounted on the outside of the support is engaged by an arm which moves toward the knife forcing the thread into engagement with the knife. The arm is connected to a solenoid which is operable to move the arm against a force of a spring toward the knife. A light sensitive control is used to energize the solenoid when the space between adjacent bags is in alignment with the cutting knife. At this time the arm swings downwardly carrying the thread connecting the bags into engagement with the knife.

3,459,143

**TUFTING MACHINE PATTERN VARIATION DEVICE**

Ronald Ellison, John Pritchard, and Norman Pickles, Blackburn, England, assignors to Ellison Tufting Machinery Limited, Blackburn, England

Filed Nov. 22, 1965, Ser. No. 508,978

Claims priority, application Great Britain, Nov. 30, 1964, 48,545/64

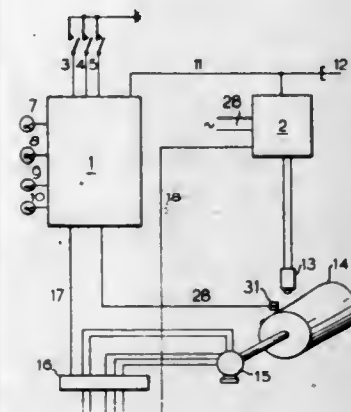
Int. Cl. D05c 15/26, 3/00

U.S. Cl. 112-79

11 Claims

A textile tufting machine incorporating means for reversing the effect which signals from a rotating pattern element have on a pile loop height control means, means

for reversing the direction of rotation of the pattern element itself, and selectively programmed means (such as a multi-level stepping switch controlled by a punched



card) for controlling both of the aforementioned reversing means, so that a single pattern element may be used to provide a wide variety of differing patterns.

3,459,144

**AUTOMATIC EMBROIDERY SYSTEM**

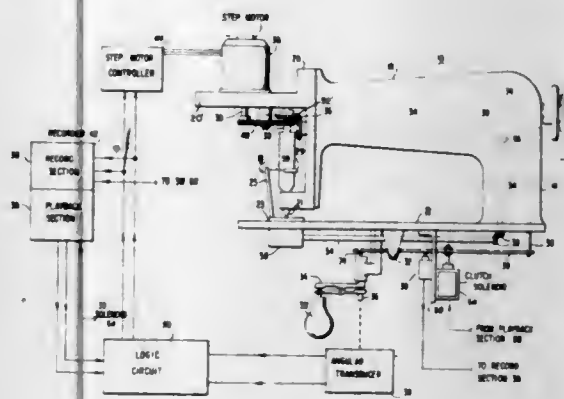
Willard A. Ramsey, Greenville, and Charles E. Bolding, Liberty, S.C., assignors to Her Majesty Industries, Inc., Mauldin, S.C., a corporation of South Carolina

Filed Dec. 27, 1966, Ser. No. 605,067

Int. Cl. D05b 23/00; D05c 3/02, 7/04

U.S. Cl. 112-121.11

13 Claims



A system for recording the motions of a hand crank of a hand-operated embroidery machine as a skilled operator sews a figure and subsequently reproducing this motion on any desired number of similar machines simultaneously with a single unskilled operator in attendance. The recording which may be for example a magnetic tape permits the automatic operation of an embroidery machine for making any abstract figure including writing depending upon the design produced initially by the skilled operator.

3,459,145

**SELF-PROGRAMMED AUTOMATIC EMBROIDERY SYSTEM**

Willard A. Ramsey, Greenville, and Charles E. Bolding, Liberty, S.C., assignors to Her Majesty Industries, Inc., Mauldin, S.C., a corporation of South Carolina

Filed Dec. 27, 1966, Ser. No. 605,066

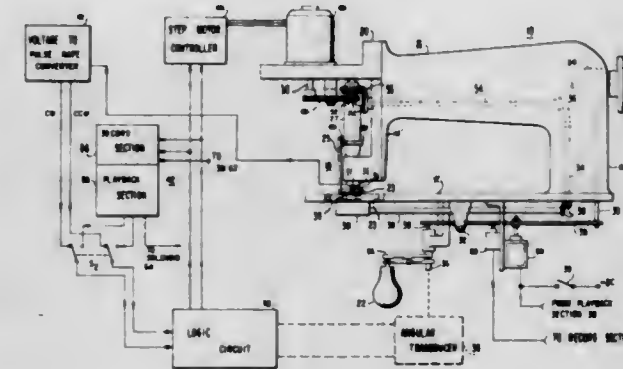
Int. Cl. D05b 23/00; D05c 3/02

U.S. Cl. 112-121.11

10 Claims

An automatic system utilizing a Cornely-type of embroidery sewing machine including means to detect the edge of a workpiece or a heavy line drawn thereon and stitch around the edge of the workpiece or along the heavy line drawing exclusive of any external control. A photo-

sensitive read head is located in the vicinity of the sewing head including a reciprocating needle. The read head is adapted to rotate around the needle axis corresponding to the direction of feed so that as the direction of feeding changes, the read head is rotated accordingly. The



output of the read head is converted into a pulse signal which is fed to an electrical step motor which drives a workpiece orientation feed guide means in a step-by-step manner either in a clockwise or counterclockwise direction, as required, to maintain the read head in its proper position to read the edge of the workpiece.

3,459,146

**HYDROFOIL WATERCRAFT**

William C. Prior, 348 N. Cleveland,

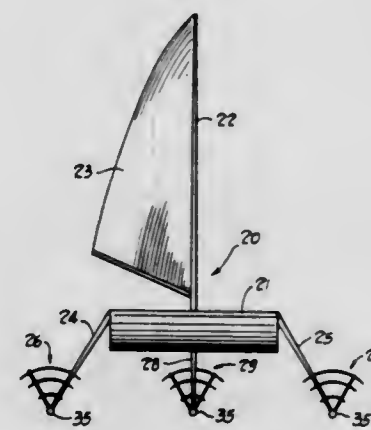
Chagrin Falls, Ohio 44022

Filed May 19, 1967, Ser. No. 639,904

Int. Cl. B63b 1/28

U.S. Cl. 114-66.5

16 Claims



In a hydrofoil watercraft, a balanced, self-correcting hydrofoil assembly including a foil element and structure mounting the foil element for free pivotal movement so that the element can seek and maintain an angle of incidence which produces the designed lift to drag ratio of the assembly, and/or so that the foil element can seek the dihedral angle which is most efficient to support and stabilize the craft.

3,459,147

**SPEED SHOES**

Louis Fletcher Ismay, Altamont, N.Y. (Box 96, Lansingburgh, Troy, N.Y. 12182)

Filed June 27, 1966, Ser. No. 561,679

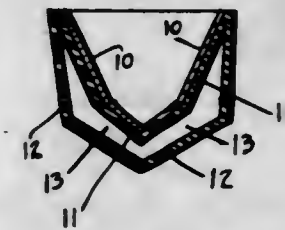
Int. Cl. B63b 43/10

U.S. Cl. 114-67

3 Claims

Impacts that can be softened by cushioning have the overall intensity of their forces correspondingly diminished. This invention covers so-called "speed shoes," these being either pneumatic or hydraulic impact cushioning apparatus to soften the impact of water against a boat,

travelling through water, said apparatus being in the nature of a bag-like enclosure covering the front, bottom



and sides of a boat, its purpose being to reduce the forces of water impacts against a boat and in this way increase the forward speed of said boat.

3,459,148

**TANKSHIP FOR LIQUEFIED GASES**

Hans Proglar and Wilhelm Samaga, Trostberg, Hermann Ehms, Munich-Solln, and Rudolf Eickemeyer, Munich, Germany, assignors to Linde Aktiengesellschaft, Hohlriegelskreuth, Germany, a corporation of Germany

Filed Aug. 29, 1967, Ser. No. 664,066

L 54,440

Int. Cl. B63b 25/14, 3/26

U.S. Cl. 114-74

21 Claims



A tankship for the transportation of liquefied gas whose hull forms a hold provided with a floor and contains a plurality of tanks for the liquefied gas mounted on the floor in respective compartments within the hold and thermally insulated therefrom while having a lower wall spaced above said floor and a continuous sheet-metal skin disposed intermediate each tank and the hull, the skin being composed of plates welded in fluid-tight relationship together along their peripheries and accommodating expansion and contraction. The floor of the hull and the tank are provided with mating parallel arrays of shear-rail assemblies supporting said tank in weight-transmitting relationship with the hull while thermally insulating the tank therefrom.

3,459,149

**PREFABRICATED SAIL KIT**

Ronald J. Hallmark, Signal Hill, Calif. (P.O. Box 3525, Long Beach, Calif. 90803)

Filed Sept. 5, 1967, Ser. No. 665,627

Int. Cl. B63h 9/06

U.S. Cl. 114-103

5 Claims

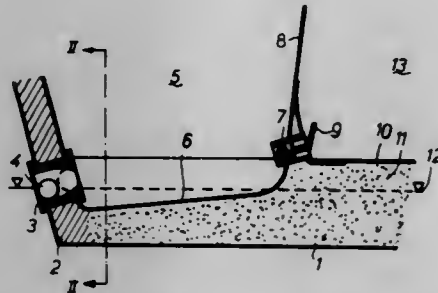


A prefabricated sail kit having a plurality of cloth panels that collectively define the configuration of a finished sail. The proximate edges of the panels are over-



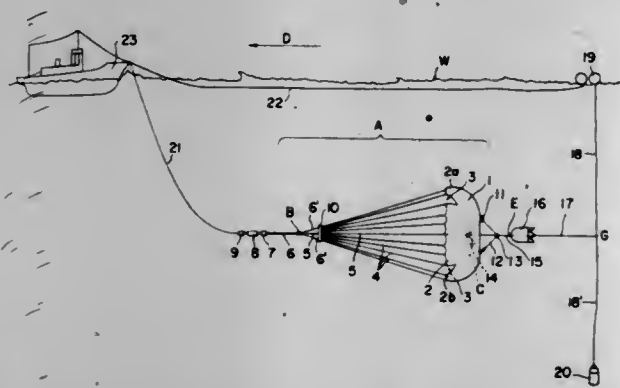
lapped and temporarily adhered together. The aforedescribed prefabricated sail is then rolled up for shipment. The customer unrolls the sail and stitches the overlapped portions of the panels together one at a time, the adhesive maintaining alignment.

**3,459,150**  
**OPEN BOAT**  
Peder Lunde, Jr., Frederik Stangs gate 12,  
Oslo, Norway  
Filed Dec. 6, 1967, Ser. No. 688,539  
Claims priority, application Norway, Dec. 10, 1966,  
165,945  
Int. Cl. B63b 35/72  
U.S. Cl. 114—183 3 Claims



The invention provides for an open boat, the internal bottom of which lying above the surface of the water, when the boat is in unladen condition, whereby at least one self-bailing opening is provided in the transom wall. Preferably the self-bailing opening lies below the level of the internal bottom, with channels leading to the self-bailing opening. The self-bailing opening may be placed in such a height that the outlet is in the surface of the water when the boat is unladen and at rest, whereby the opening is fitted with a non-return valve.

**3,459,151**  
**SEA ANCHOR**  
Takeshi Chiba, Kawasaki-shi, Japan, assignor to Fujikura Parachute Company, Ltd., Tokyo, Japan, a corporation of Japan  
Filed Feb. 13, 1968, Ser. No. 705,085  
Claims priority, application Japan, Apr. 6, 1967, 42/21,550; May 22, 1967, 42/32,061; May 29, 1967, 42/33,653; May 16, 1967 (utility model), 42/40,297; Dec. 30, 1967, 42/84,812  
Int. Cl. B63b 21/48  
U.S. Cl. 114—209 8 Claims



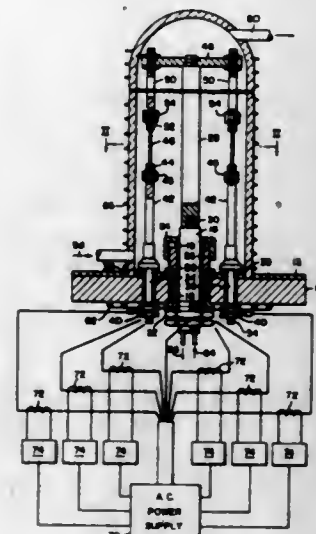
A sea anchor consisting of a canopy of modified cross shape, suspension lines, a separator of said suspension lines, a center cord, floats and weights on the canopy hem, connectings such as a webbing, shackles and a swivel, and a holding pack, and being characterized in that the sea anchor is easy and reliable in handling, launching, deploying, retrieving and repacking, and that the deployed sea

anchor body is kept stably in the optimum deploying state.

## ERRATUM

For Class 116—133 sec:  
Patent No. 3,459,262

**3,459,152**  
**APPARATUS FOR EPITAXIALLY PRODUCING A LAYER ON A SUBSTRATE**  
Lilburn H. Garrison, Ligonier, and William E. Winter, Murrysville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Aug. 28, 1964, Ser. No. 392,734  
Int. Cl. B05c 11/00  
U.S. Cl. 118—5 4 Claims

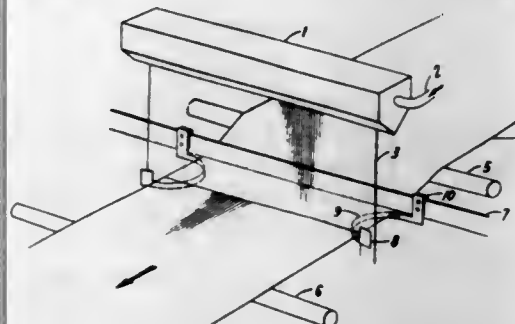


Apparatus for growing epitaxial layers of semiconductor material on a single crystal substrate includes a means for connecting each substrate into a separate electrical circuit. Each circuit includes a means for monitoring the current flowing in the circuit. The power supplied to the electrical circuit is constantly adjusted automatically in response to the current sensing means thereby preventing the substrate and its epitaxial growth from exceeding a predetermined maximum temperature and keeping the substrate within a predetermined temperature range.

## ERRATUM

For Class 118—63 sec:  
Patent No. 3,459,891

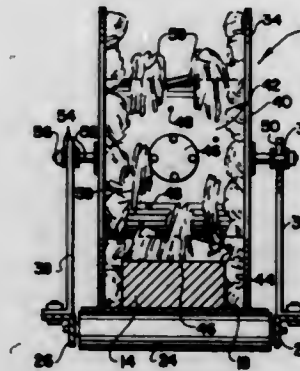
**3,459,153**  
**APPARATUS FOR PREVENTION OF EDGE BEAD ON CURTAIN COATED SUBSTRATES**  
Joe F. Alitz, Wilmington, Del., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware  
Filed Dec. 29, 1966, Ser. No. 605,636  
Int. Cl. B05c 5/00, 11/04  
U.S. Cl. 118—102 6 Claims



Apparatus for preventing edge bead formation on substrates including scraping means placed adjacent the edges

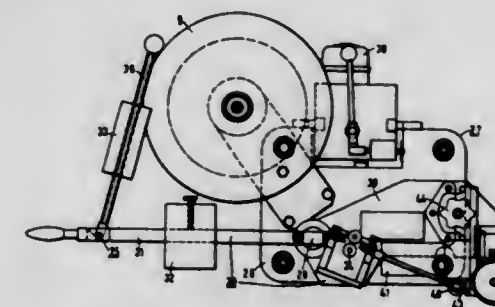
of the substrate just downstream from a curtain of coating material falling from a coating head. The curtain of material is wider than the substrate. The blade is supported by a curved flexible member which also serves to support the edge of the substrate.

**3,459,154**  
**APPARATUS FOR PRODUCING MOTTLED BRICK**  
James R. Murray, Lakewood, Colo., assignor to Lakewood Brick and Tile Company, Lakewood, Colo., a corporation of Colorado  
Filed Jan. 14, 1966, Ser. No. 520,685  
Int. Cl. B05c 11/02  
U.S. Cl. 118—102 6 Claims



An apparatus for applying powdered coloring agents to a wet ribbon of clay includes a conveyor for the ribbon and an applicator for the coloring agents spaced from and disposed transverse to the conveyors. The applicator is spool-shaped and powder-distributing means on the inner surface of the flanges and outer surface of the connecting cylinder. The cylinder is perforated and is adapted to contain the coloring agent. In normal operation, rotation of the applicator releases coloring agents into the distributing means which applies the same to three sides of the moving wet clay ribbon.

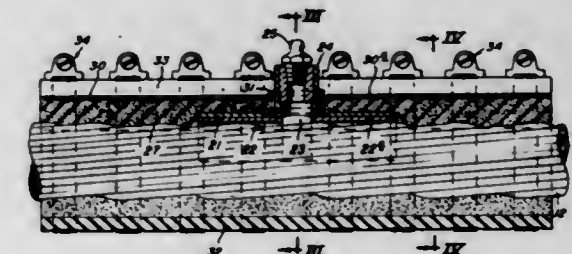
**3,459,155**  
**APPARATUS FOR APPLYING FUSIBLE MATERIALS, PARTICULARLY SOLDERS, TO SURFACES**  
Wolfgang Roessner, Nuremberg, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany  
Filed Apr. 28, 1967, Ser. No. 634,763  
Claims priority, application Germany, Apr. 29, 1966, S 103,490  
Int. Cl. B05c 1/00  
U.S. Cl. 118—202 4 Claims



Apparatus for applying fusible material to a surface includes a friction roller mounted for movement in direction toward the surface to which the material is to be applied, and means for adjusting the pressure of the friction roller against the surface to which the material is to be applied.

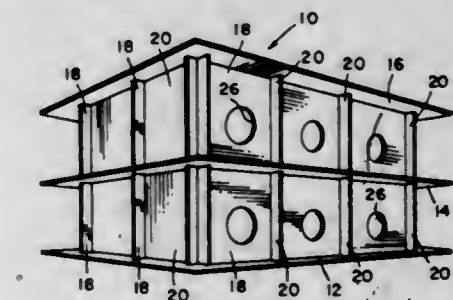
3,459,156

**DEVICE FOR IMPREGNATING WIRE ROPE**  
John W. Harter, Rocky River, Ohio, assignor to United States Steel Corporation, a corporation of Delaware  
Filed Mar. 1, 1967, Ser. No. 619,718  
Int. Cl. B05c 3/12; F16a 13/22; H02g 15/20  
U.S. Cl. 118—405 5 Claims



A device for impregnating a wire rope. Intended particularly for injecting a sealing material to prevent water from traveling through the interstices of the rope. The device includes a shield, a foam rubber sleeve and a hose surrounding the shield. The shield carries a stem through which liquid is injected.

**3,459,157**  
**BIRDHOUSE KIT**  
Robert M. Mayes, P.O. Box 2299,  
West Lafayette, Ind. 47906  
Filed Feb. 27, 1967, Ser. No. 618,867  
Int. Cl. A01k 31/00  
U.S. Cl. 119—23 6 Claims



A kit for fabricating a birdhouse comprising a plurality of longitudinal and transverse wall sections, a top panel, a base panel and four corner bolts for holding the top panel against the top edges of the wall sections and the base panel against the bottom edges of the wall sections. Each of the wall sections, which are all of equal height, is provided with slots for receivably engaging the adjoining wall section whereby the assembled house is divided into a plurality of individual cubicles. Access openings are provided in at least one of the wall sections.

**3,459,158**  
**PENDANT TOY FOR ANIMALS**  
Earl F. Mitchell, Jr., 2420 Hyperion Ave.,  
Los Angeles, Calif. 90027  
Filed Feb. 9, 1967, Ser. No. 614,948  
Int. Cl. A01k 15/00  
U.S. Cl. 119—29 4 Claims

A ball or other object of a size to be grasped by the teeth of a dog, cat or other animal is attached to the lower end of a rod, and the upper end of the rod is pendantly supported by a flexible line. When the ball and



rod are thus pendantly supported above the ground at a suitable height, the animal may jump into the air to grab

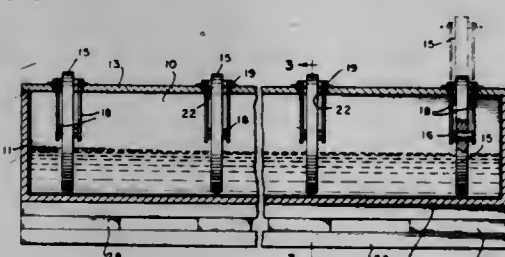


the ball in its teeth, and the rod prevents accidental winding of the flexible line around the animal's head or throat.

**3,459,159**  
**LIQUID FEEDER**  
Weldon Reed, 205 W. Manana,  
Clovis, N. Mex. 88101  
Filed May 5, 1967, Ser. No. 636,358  
Int. Cl. A01k 7/00

U.S. Cl. 119—51

1 Claim

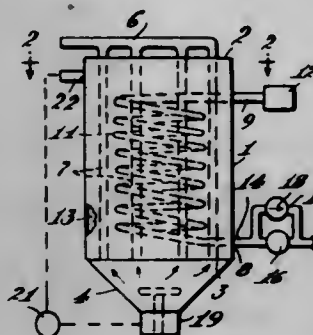


A liquid feeder primarily for cattle includes a low-height, enclosed liquid container with one or more rotatable discs which dip into the feed and carry it to their upper periphery projecting through slots in the top of the container as cattle lick the discs to cause rotation.

**3,459,160**  
**VAPOR GENERATOR**  
Richard E. Rice, Arlington, Mass., assignor to Comstock & Wescott, Inc., Cambridge, Mass., a corporation of Massachusetts  
Filed July 31, 1967, Ser. No. 657,337  
Int. Cl. F22b 1/02; F24b 7/00

U.S. Cl. 122—32

6 Claims



Apparatus comprising a boiler and a heater with space therebetween, heat-storage material in the space, means responsive to the temperature of the material for con-

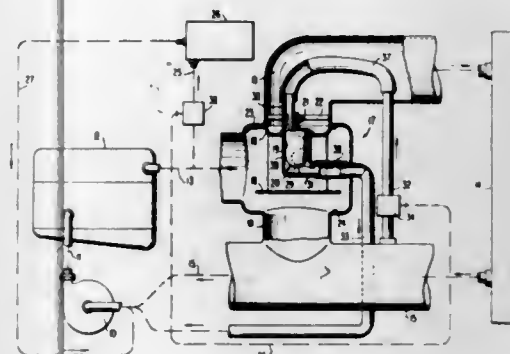
trolling the heater and means responsive to the pressure in the boiler for controlling the supply of liquid to the boiler, said means operating independently of each other.

**3,459,161**  
**INSTALLATION FOR CONTROLLING THE COOLING MEDIUM TEMPERATURE TO A PREDETERMINED DESIRED VALUE WITH AN INTERNAL COMBUSTION ENGINE**

Erwin Kölle, Sindelfingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart Unterturkheim, Germany  
Filed Nov. 30, 1967, Ser. No. 686,980  
Claims priority, application Germany, Dec. 3, 1966, D 51,703  
Int. Cl. F01p 7/16

U.S. Cl. 123—41.1

25 Claims

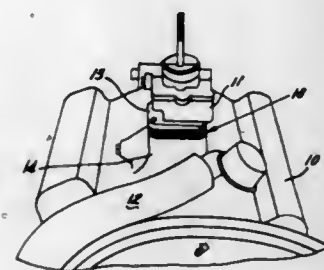


A control installation for controlling the cooling medium temperature to a predetermined desired value in an internal combustion engine in which the heated cooling medium is automatically controlled by a valve controlling the flow through a by-pass line below the opening temperature of the valve and through a heat-exchanger above the opening temperature of the valve; and in which the valve is additionally subjected to a control effect by a heat carrier reflecting the need for an increased output by the heater device and directly acting on the temperature-sensing part of the valve to change the desired value.

**3,459,162**  
**FUEL MIXER HEATERS FOR INTERNAL COMBUSTION ENGINES**  
Vincent H. Burwinkle, 827 5th Ave. SE., Cedar Rapids, Iowa 52403, and Raymond D. Elmore, 4411 Lee NE., Cedar Rapids, Iowa 52402  
Filed June 2, 1967, Ser. No. 643,181  
Int. Cl. F02m 29/04, 31/18

U.S. Cl. 123—122

4 Claims



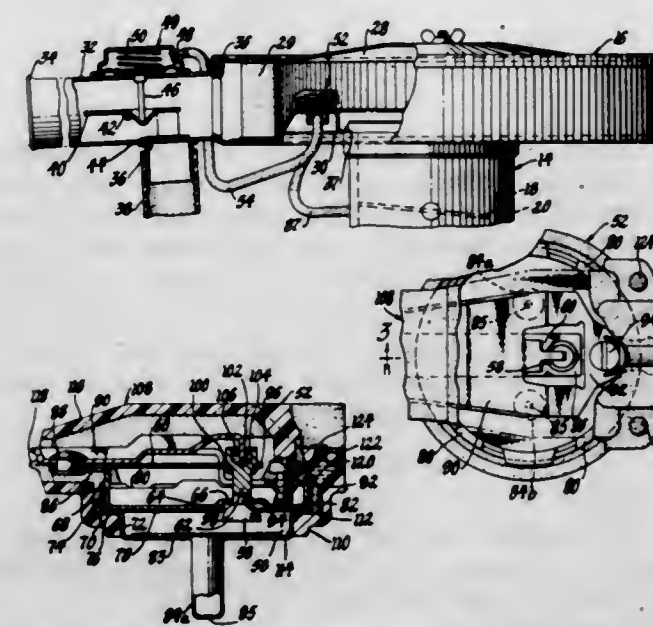
A mixer-heater for improving vaporization of the intake mixture of an internal combustion engine, consisting of three stacked aluminum plates positioned across the intake passageway between the carburetor outlet and inlet end of the manifold, the plates having registered small openings therethrough for breaking up the drop-

lets of gasoline and a tortuous channel in the middle plate passing among the openings for introducing heat to the plates and thus the mixture.

**3,459,163**  
**THERMOSTATIC CONTROL**  
Donald B. Lewis, Lapeer, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Aug. 22, 1968, Ser. No. 754,554  
Int. Cl. F02m 35/04

U.S. Cl. 123—122

4 Claims

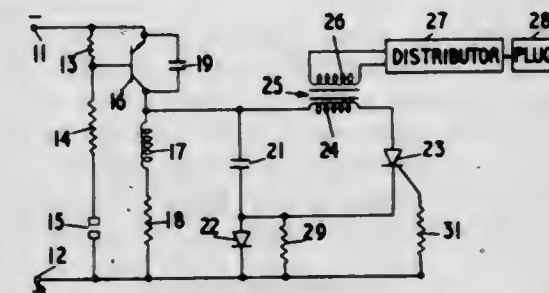


A damped valve member operated by a protected, adjustable bimetallic strip, contained in a sheet metal body which is further protected by a plastic casing, controls the vacuum signals delivered to a vacuum motor for positioning a valve which governs the temperature of the induction air flow delivered through an air cleaner and silencer assembly to an internal combustion engine.

**3,459,164**  
**SPARK IGNITION SYSTEMS**  
Brian Gilbert, Sutton Coldfield, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England  
Original application Mar. 9, 1966, Ser. No. 533,000. Divided and this application Mar. 8, 1968, Ser. No. 711,751  
Claims priority, application Great Britain, Mar. 11, 1965, 10,330/65  
Int. Cl. F02p 1/00; H05b 37/02, 41/36

U.S. Cl. 123—148

8 Claims



1. A spark ignition system for an internal combustion engine comprising in combination:

- (a) a D.C. source;
- (b) a series circuit connected across said D.C. source and including switch means which is turned on and off in timed relationship to the engine and an inductor in which energy is stored when the switch means is closed;
- (c) a capacitor;
- (d) a discharge circuit connected across said capacitor and including the anode cathode path of a controlled

rectifier and spark producing means which produces a spark when the capacitor discharges through said switch controlled rectifier;

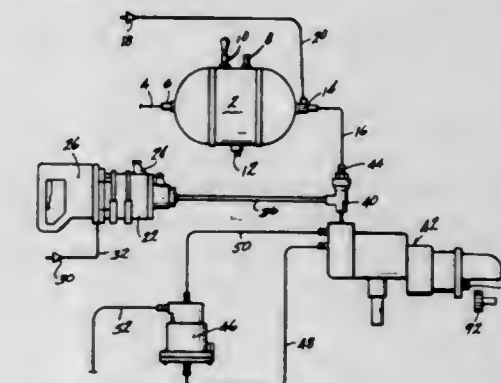
(e) a charging circuit coupling said capacitor and said inductor, said charging circuit transferring energy from said inductor to said capacitor when said switch means opens whereby said capacitor charges and then commences to discharge through said charging circuit; and

(f) a diode in said charging circuit having its anode and cathode connected respectively to the cathode and gate of the controlled rectifier, the voltage across said diode when said capacitor discharges turning said controlled rectifier on whereby said capacitor discharges through said discharge circuit to produce a spark whilst said switch means is still open.

**3,459,165**  
**DIESEL ENGINE STARTER**  
Donald E. Bender, Herrin, James Kaytor, West Frankfort, and Lowell L. Russell, Herrin, Ill., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia  
Filed Aug. 22, 1967, Ser. No. 662,421  
Int. Cl. F02n 7/08, 13/00

U.S. Cl. 123—179

9 Claims



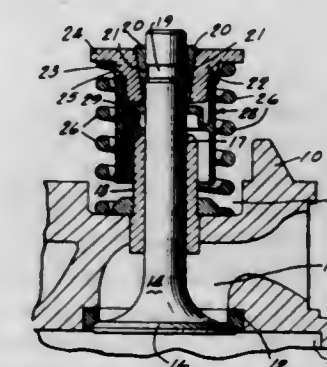
A starting system for engines wherein an air reservoir of compressed air is provided as well as a cartridge receiving chamber adapted to receive a gas generating cartridge. Both the reservoir and cartridge receiving chambers are connected to a vane motor which drives a drive assembly having a starter gear adapted to engage a suitable gear connected to the engine. Either the compressed air in the reservoir or the hot gases generated by the cartridge can drive the vane motor.

**3,459,166**  
**VALVE SPRING RETAINER AND VALVE STEM OIL SHIELD ASSEMBLY AND METHOD OF ASSEMBLY**

Stanley H. Updike, Mentor, and William A. Michaels, Warrensville Heights, Ohio, assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio  
Filed Aug. 18, 1967, Ser. No. 661,606  
Int. Cl. F01l 3/16; F16k 41/10

U.S. Cl. 123—188

8 Claims



A valve stem oil shield and seal bonded to a portion of the outer circumferential surface of a valve spring re-



tainer by induction heating. The shield has an interior radial lip which sealingly engages the valve stem and is radially flexible but axially semi-rigid.

3,459,167

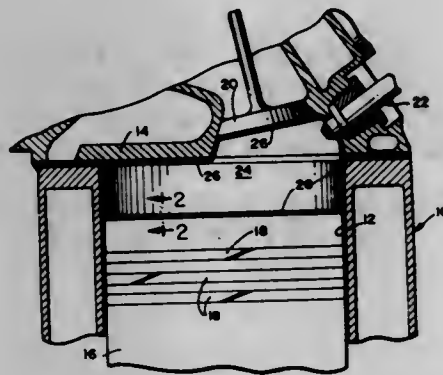
## INTERNAL COMBUSTION ENGINE

Southwick W. Briggs, 6420 Western Ave., and Howard W. Gilbert, 6818 Brookville Road, both of Chevy Chase, Md. 20015

Continuation-in-part of abandoned application Ser. No. 673,732, Oct. 9, 1967, which is a continuation-in-part of abandoned application Ser. No. 511,690, Dec. 6, 1965. This application Jan. 22, 1968, Ser. No. 699,568 Int. Cl. F02b 77/02, 23/00

U.S. Cl. 123—191

12 Claims



An internal combustion engine having the walls defining the combustion chamber coated by materials which are highly reflective to infrared radiation, and also define a thermal barrier to greatly increase the efficiency of such engine. The coating material comprises cuprous oxides or gold preferably applied by spraying or electrodeposition on the surfaces of the combustion chamber.

3,459,168

## BALL-PITCHING MACHINE WITH FORCED AIR ASSIST

Norman R. Bruce, 5140 Dobrot Way,

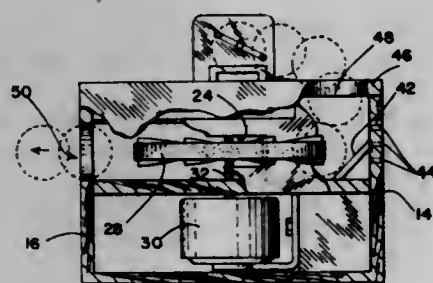
Central Point, Oreg. 97502

Filed Dec. 8, 1965, Ser. No. 512,380

Int. Cl. A63b 69/40, 65/12

U.S. Cl. 124—11

5 Claims



An improved ball-pitching machine is provided for use, for example, in baseball batting practice. The machine includes a barrel in which a stream of air is created to project the balls through the muzzle end thereof; and the machine also includes a pair of wheels having their annular surfaces extending into the barrel from opposite sides thereof, to assist in impelling the balls along the barrel, and also to impart various trajectory characteristics to the ball. Inserts may be placed between the wheel and its peripheral band to impart a random rotary motion to the projected ball in order to obtain the various trajectory characteristics.

3,459,169  
CHAIN SAW FOR CUTTING VERY HARD MATERIALS AND HAVING PLUNGE CUTTING MEANS

John V. McNulty, Norwich, N.Y., assignor to Northern Lumber Company, Inc., Poland, N.Y.

Filed Aug. 12, 1966, Ser. No. 572,138

Int. Cl. B28d 1/08, 1/12

U.S. Cl. 125—21

2 Claims



A chain type saw for cutting very hard materials. A motor drives a chain around a bar and a nose wheel on the free end of the bar. The chain has tooth members with very hard particles projecting therefrom and engages the nose wheel for driving it. Circular saw blades are provided on opposite sides of the nose wheel and are rotated by the nose wheel. The saw can thus be used both for plunge cutting and linear cutting of such materials such as reinforced concrete.

3,459,170

## HEAT-CLEANING OVEN AND METHOD

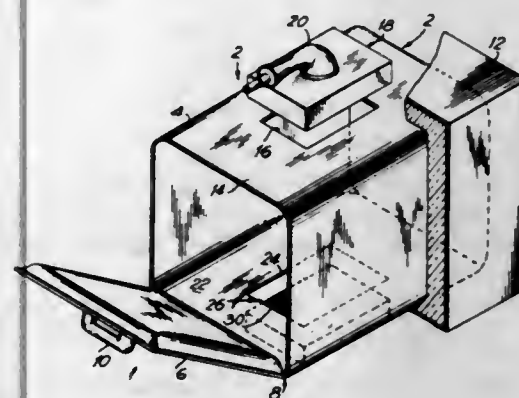
Charles W. Fromm, Teaneck, N.J., assignor to Columbia Gas Service System Corp., New York, N.Y., a corporation of Delaware

Filed Dec. 30, 1964, Ser. No. 422,362

Int. Cl. A21b 1/00; F24c 15/32

U.S. Cl. 126—21

20 Claims



Food particles and juices accumulate on the exposed surface of ovens which are used for cooking foods and form soil which adheres tightly to the surfaces. In accordance with the present invention that soil is removed by the use of infrared radiation from gas burners positioned in the oven walls. The oven walls are reflective while the soil tends to absorb the infrared radiation, particularly within the range of .8 micron to 16 microns. Hence, the soil is heated and degraded to form ash and gases without excessive heating of the oven walls.

3,459,171

## CONVERTIBLE CHARCOAL AND WOOD BURNING GRILL

Carl E. Swanson, Hermansville, Mich. 49847

Filed Dec. 27, 1967, Ser. No. 693,948

Int. Cl. F24b 3/00

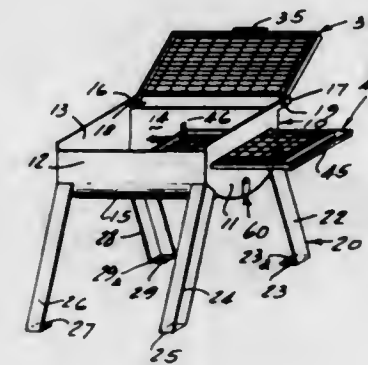
U.S. Cl. 126—25

9 Claims

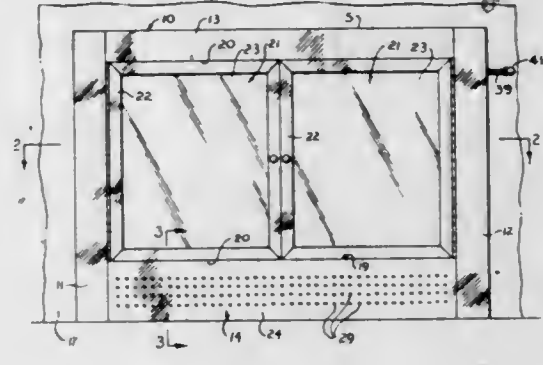
Convertibility of a heavy duty type outdoor grill from charcoal to wood burning and vice versa is made possible by the provision of a sliding lower grate which, when in position in the firebox, serves as a support means for the charcoal and which, when moved to an outer cantilevered

position, allows the use of a bulkier fuel in the firebox while simultaneously providing an adjacent work area. An upper pivotal grate may be swung through an arc of approximately 270° to allow easy access to the firebox

linkage to adjust control means. Draft air entering hollow chamber through perforated front wall of bottom frame strip continuously by-passed, through fluted passages above draft control, and diverted upwardly as wall



and grates. Handle means for the grates and vent means for the firebox are, of course, provided. In a preferred embodiment support for the grill is provided by angle irons attached at the corners of the firebox.



of air which equalizes temperature of heat-proof glass, more effectively minimize glass breakage and maintain the inner face of closure panel free of flying particles from fireplace fuel-burning unit.

3,459,172

## IGNITION MEANS FOR BURNER MEANS AND THE LIKE

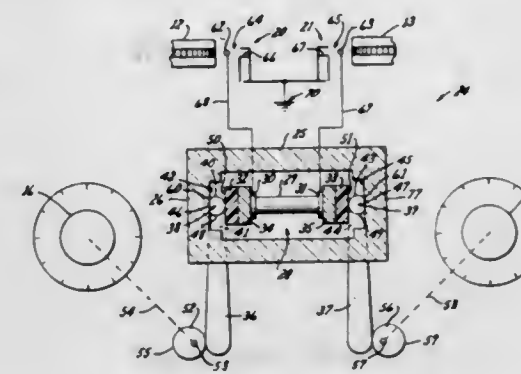
Charles D. Branson, Greensburg, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Sept. 25, 1967, Ser. No. 670,311

Int. Cl. F24c 3/10; F23q 7/12; H01j 7/30

U.S. Cl. 126—39

16 Claims



This disclosure relates to an ignition means for burner means of a cooking apparatus or the like wherein a piezoelectric crystal means is actuated each time a main selector means of the cooking apparatus is moved to an on position to direct fuel to its associated main burner means whereby the actuated ignition means will cause sparking not only at the pilot burner means associated with that particular main burner means, but also at other pilot burner means so as to tend to maintain full ignition of more than one pilot burner means of the cooking apparatus, the ignition means also being actuated when the selector means of another main burner means is turned to an on position.

3,459,173

## FIREPLACE FRONT OR SCREEN

John E. Lytle, P.O. Box 1094, Akron, Ohio 44321

Filed Dec. 13, 1967, Ser. No. 690,156

Int. Cl. F24c 15/04; F24b 1/18

U.S. Cl. 126—202

5 Claims

Fireplace front having frame attachable in fireplace opening, has closure panel means generally of a heat-proof glass. Bottom strip of frame has a draft chamber therein and adjustable, fully concealed draft control means operable by knob at top of the frame through concealed

3,459,174

## METHOD AND APPARATUS FOR COLLECTING A CLEANER URINE SPECIMEN

John W. Walker, 558 Medlock Road,

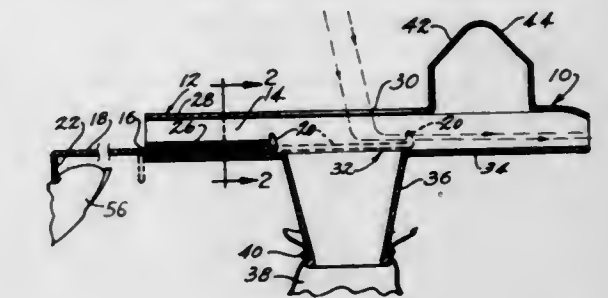
Decatur, Ga. 30030

Filed Feb. 16, 1966, Ser. No. 538,122

Int. Cl. A61b 5/10

U.S. Cl. 128—2

9 Claims



A method and apparatus for collecting a specimen of urine from a female as, for example, by a physician for test purposes, which may be done by the female herself in privacy without help through the use of the present deflector means and the guide means for the urine which can be in the form of a stainless steel passageway so located as to enable the female to deflect the initial flow and direct it into a waste collector such as a toilet or urinal, and then the urine is deflected after the initial flow into the collection container. The apparatus, which may be stainless steel, plastic or the like, is positioned, located and operated by the female herself and may include a positioning and locating speculum member to assist in separating the labia.

3,459,175

## MEDICAL DEVICE FOR CONTROL OF ENEMATA

Roscoe E. Miller, 7400 W. 88th St.,

Indianapolis, Ind. 46278

Continuation-in-part of application Ser. No. 316,695, Oct. 16, 1963. This application Apr. 8, 1966, Ser. No. 541,285

Int. Cl. A61m 3/00, 5/18, 7/00, 9/00

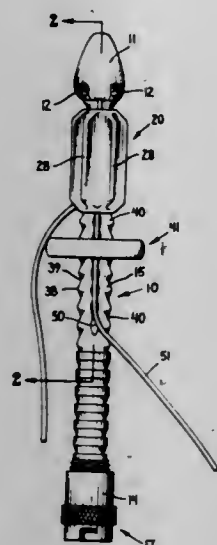
U.S. Cl. 128—2

3 Claims

A device for giving enemata including an inflatable balloon received on a pipe having an undulating outer shape.



An additional balloon may be used on the pipe at a location spaced longitudinally of the first balloon. An abut-



ment element may be provided which is mountable on said undulations and is positionable against the patient's anus for blocking flow of fluid out of the patient's bowel.

3,459,176

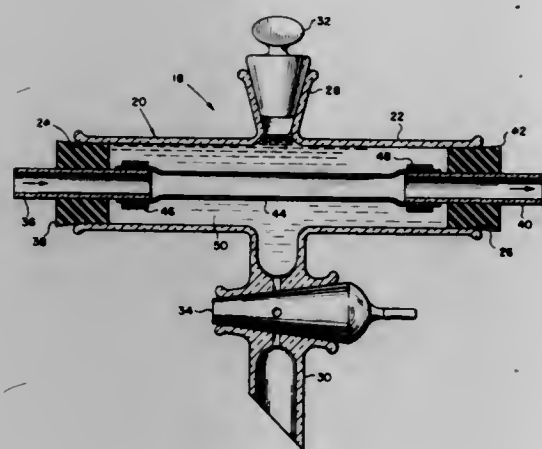
#### APPARATUS AND METHOD OF SAMPLING A DIALYZABLE COMPONENT OF BLOOD

John E. Leonard, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California  
Filed June 24, 1966, Ser. No. 560,170

Int. Cl. A61b 5/10

U.S. Cl. 128-2

5 Claims

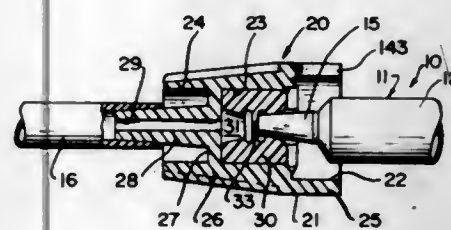


Apparatus and method for sampling a dialyzable component of a liquid flowing in a closed loop conduit, such as blood flowing in an extracorporeal loop connected to a patient, without withdrawing the liquid from the loop. The sample stream is passed over one side of a dialyzing membrane in the conduit while a discrete body of dialysate is maintained in contact with the opposite side of the membrane for a sufficient period of time until the dialysate reaches equilibrium with the dialyzable components of the sample stream whereby the dialysate will have the same concentration of the dialyzable components therein as in the flowing stream. The dialysate thus becomes a representative sample of the liquid flowing in the conduit and may be analyzed to determine the concentration of the dialyzable component therein which is an indirect measure of the concentration of the dialyzable component in the sample stream.

3,459,177  
**FLUID TRANSFER STRUCTURE**  
Fritz Deuschle, St. Augustine, Fla., assignor to Brunswick Corporation, a corporation of Delaware  
Filed Apr. 28, 1967, Ser. No. 634,722  
Int. Cl. A61b 5/10

U.S. Cl. 128-2

17 Claims



A fluid transfer structure comprising an adapter to be removably secured to the needle connector end of an apparatus such as a syringe and having a valve to be actuated by the connection to the syringe end. The adapter has a needle connector end to which the needle hub is secured whereby the needle may be maintained in a patient while a number of syringe connections are effected as for taking multiple samples.

3,459,178  
**DEVICE FOR VISUAL EXAMINATION OF THE MOUTH**

John Stuart Fleming, Niagara Falls, N.Y., assignor to Floxite Company, Inc., Niagara Falls, N.Y., a corporation of New York  
Continuation-in-part of application Ser. No. 559,806, June 23, 1966. This application July 26, 1968, Ser. No. 756,702

Int. Cl. A61b 1/06, 1/24; A47f 11/10

U.S. Cl. 128-22

6 Claims



A device for the self-examination of the mouth comprises a spherically concave mirror having a generally circular perimeter except for one side of which is cut by a transverse chord leaving a straight edge, and a light source which projects a light beam adjacent the straight edge of the mirror and through its focal point. With proper location of the mirror relative to the light source the interior of the mouth is illuminated and the user is able to observe a magnified image of his own mouth.

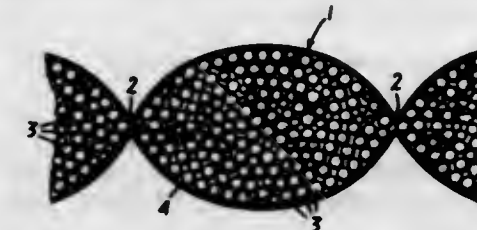
3,459,179  
**SUPPORTING PAD WITH MASSAGING MEANS**  
Irma Olesen, Birkerød, Denmark, assignor to Nordisk Droge- & Kemikalieforretning A/S, Copenhagen, Denmark

Filed Mar. 15, 1966, Ser. No. 534,316  
Claims priority, application Denmark, Apr. 6, 1965, 1,756/65

Int. Cl. A61h 15/00; A47c 27/08; A61g 7/04

U.S. Cl. 128-60  
A supporting pad is provided which is filled with plastic beads. The pad is useful for supporting elderly people, and chronically ill patients and may also be used for particular parts of the body. The free-rolling character-

istic of the bead filling causes the shape of the pad to adapt itself readily to the shape of the object being supported and to provide a massaging action during the movement of the beads.



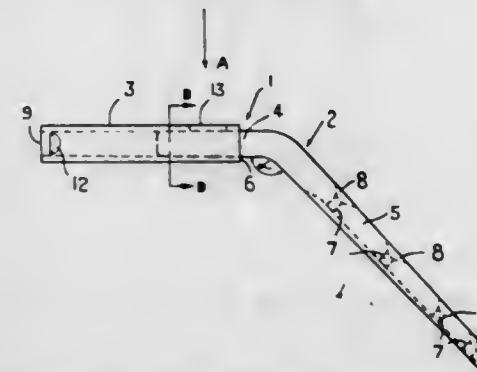
3,459,180  
**FEMORAL PINS**  
Donald S. Ross, Glasgow, Scotland, assignor of one-half to University of Strathclyde, Glasgow, Scotland, a body incorporate

Filed Sept. 3, 1965, Ser. No. 485,047

Int. Cl. A61f 5/04

U.S. Cl. 128-92

10 Claims

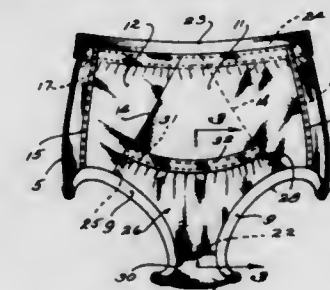


A femoral pin comprising a first member having two limbs disposed at an obtuse angle, one of said limbs being adapted to be rigidly secured to the shank of a femur and a second member constituted by a nail adapted to prevent relative rotation between the head and the shank of the femur and to one end of which the other limb of the first member is adapted to be slidably engaged and non-rotatably coupled, said nail being of tubular form and having a non-circular cross-section.

3,459,181  
**SHORTS CONSTRUCTION**  
Philip Mann, 10334 Keswick Ave., Los Angeles, Calif. 90064  
Continuation-in-part of application Ser. No. 555,888, June 7, 1966. This application May 10, 1967, Ser. No. 637,447  
Int. Cl. A61f 5/40; A41b 9/02

U.S. Cl. 128-159

10 Claims

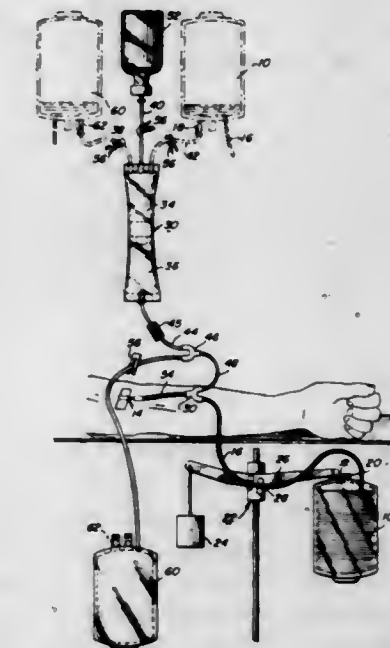


An improved brief type shorts for men adapted to be engaged about the lower front, rear and side portions of the wearer's body in close proximity thereto and having a crotch portion extending between the wearer's legs, said crotch portion having a forwardly and upwardly extending front portion to occur adjacent and overlie the wearer's organs, and an organ receiving pouch form-

3,459,182  
**BLOOD ADMINISTRATION METHOD**  
Henry Naftulin, Skokie, Ill., assignor to Michael Reese Research Foundation, a nonprofit corporation of Illinois  
Filed Aug. 8, 1966, Ser. No. 570,816  
Int. Cl. A61m 5/00

U.S. Cl. 128-214

2 Claims

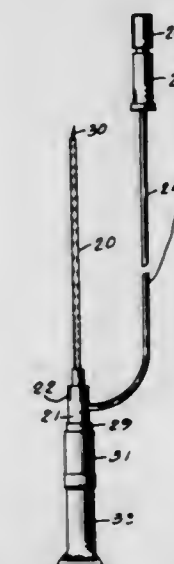


A method for collecting blood plasma. A first quantity of whole blood is withdrawn from a donor and centrifuged to separate the red cells. The red cells are administered back to the same donor through a blood flow tube. A second quantity of whole blood is withdrawn from the donor, centrifuged to separate the red cells and the red cells are thereafter administered back to the same donor through the blood flow tube. The containers containing the first quantity of blood and second quantity of blood are each connected to a different inlet of the same blood flow tube.

3,459,183  
**CATHETER PLACEMENT UNIT WITH ANESTHETIC**  
Wallace H. Ring, Karl A. Pannier, Jr., and James L. Sorenson, Salt Lake City, Utah, assignors to Le Voy's Inc., a corporation of Utah  
Filed May 20, 1966, Ser. No. 551,701  
Int. Cl. A61m 25/00; A61b 5/10, 17/34

U.S. Cl. 128-214.4

2 Claims



A catheter placement unit including a hollow needle and a flexible catheter in telescopic relationship and



movable relatively to each other, and more particularly to such a unit carrying a supply of local anesthetic for application subcutaneously prior to venipuncture, a blood sample being obtained in the same receptacle that carries the anesthetic immediately after venipuncture, and the catheter may be connected to an infusion system either before or after venipuncture.

3,459,184

**INTRAVENOUS CATHETER PLACEMENT UNIT**  
Wallace H. Ring, Salt Lake City, Utah, assignor to Le Voy's Inc., a corporation of Utah  
Filed Nov. 4, 1966, Ser. No. 592,031  
Int. Cl. A61m 5/00, 25/00  
U.S. Cl. 128—214.4

5 Claims

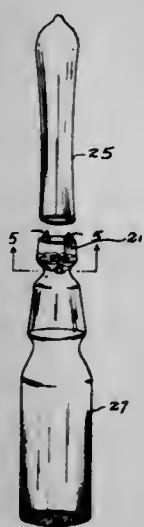


A unit for placing a catheter in a body lumen with the aid of a needle, both catheter and needle remaining in a sterile sheath until properly and completely positioned with the body lumen, whereby no sterile field of operation is necessary, and with which unit both the sheath and needle are completely removable after placement of the catheter leaving only a fitting which connects the catheter to a source of infusion remaining for attachment to the patient's body.

3,459,185

**AMPULE FOR FREEZE DRIED BIOLOGICAL MATERIAL MAINTAINED UNDER PARTIAL VACUUM CONDITIONS AND METHOD OF OBTAINING SAID BIOLOGICAL MATERIAL FROM SAID AMPULE WITHOUT CONTAMINATING THE SURROUNDING ATMOSPHERE**  
Charles E. Bender, New Paltz, and Martin C. Parkinson, Beacon, N.Y., assignors to The Virtis Company, Inc., Gardiner, N.Y., a corporation of New York  
Filed Jan. 10, 1966, Ser. No. 529,618  
Int. Cl. A61j 1/00  
U.S. Cl. 128—272

2 Claims



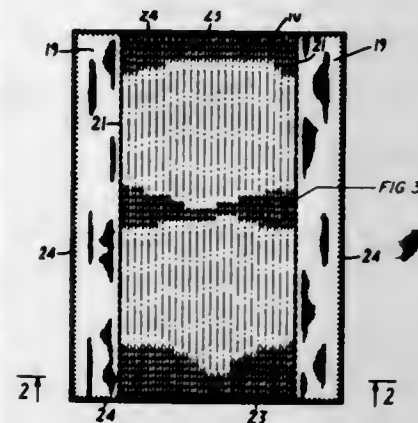
A heat sealable evacuated ampule having means to permit safe and controlled opening. A filter is retained between score means, the upper one being located for controlled opening above the filter to permit the pressure to be equalized with the intruding air being filtered. The

lower score means permits the filter to be removed and provides for access to the container contents. A desiccant and/or means to indicate the presence of moisture may be supported on the filter.

3,459,186

**DIAPER CONSTRUCTION**  
Samuel M. Schwartz, El Paso, Tex., assignor to Farah Manufacturing Company, Inc., El Paso, Tex., a corporation of Texas  
Continuation-in-part of application Ser. No. 542,519, Apr. 14, 1966. This application Apr. 11, 1967, Ser. No. 629,939  
Int. Cl. A61f 13/16  
U.S. Cl. 128—284

16 Claims

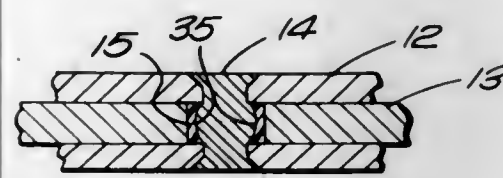


An improved diaper having two or more layers of material. The layer next to the wearer's skin is of a soft nonabsorbent material, such as polypropylene, which may be knitted, woven or tufted, and has an uneven surface with interstices and raised portions, such as ribs or tufts, thereon to form a moisture barrier and permit air to circulate around the raised portions and the wearer's skin, thereby maintaining the skin in a dry state. The underlayer consists of an absorbent material which absorbs body fluids as they pass from the upper layer through the interstices into the underlayer. The diaper may also have an intermediate layer of nonabsorbent material having smaller interstices and being disposed between the nonabsorbent upper layer and the absorbent underlayer.

3,459,187

**SURGICAL INSTRUMENT AND METHOD OF MANUFACTURE**  
Joseph Peter Pallotta, Brooklyn, N.Y., assignor to Edward Weck & Company, Inc., Long Island City, N.Y., a corporation of Delaware  
Filed Mar. 9, 1967, Ser. No. 621,850  
Int. Cl. A61b 17/28, 17/32  
U.S. Cl. 128—321

11 Claims



A self-lubricating plastic bearing sleeve is included between the pivot pin and the pivoting member in the box lock hinge of a forceps type surgical instrument; the plastic bearing being maintained in compression throughout its volume to permit rotary action substantially without backlash, coasting, or galling of metal surfaces.

3,459,188

**PARACENTESIS STYLET CATHETER**  
Martin Roberts, Pacolma, Calif., assignor, by mesne assignments, to American Hospital Supply Corporation, a corporation of Illinois  
Filed July 26, 1965, Ser. No. 474,576  
Int. Cl. A61b 17/34  
U.S. Cl. 128—347

4 Claims

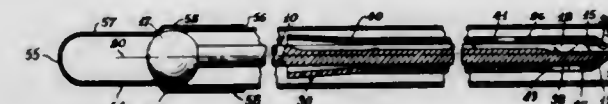


A catheter-stylet combination for puncturing a patient's abdominal wall for peritoneal dialysis. A rigid wire stylet fits within a bore of a laterally flexible plastic catheter and has a point on one end protruding from the catheter and a handle engaged on the opposite end of the catheter. The catheter has a larger internal bore than the stylet's diameter and has a series of ports through the catheter's wall extending from the one end to form a sieve portion permitting fluid to enter immediately after insertion while filtering out clots. The stylet is substantially centered within this sieve portion by inwardly extending flanges surrounding the ports so that the flexible tube and piercing element combine to form a rigid combination facilitating penetration into a body cavity while affording substantial control as to depth of penetration.

3,459,189

**TROCAR CATHETER**  
Ralph D. Alley, Loudonville, and David S. Sheridan, Argyle, N.Y., assignors, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware  
Filed July 28, 1965, Ser. No. 475,489  
Int. Cl. A61b 17/34  
U.S. Cl. 128—347

11 Claims



A trocar catheter is provided which is sterile packaged and ready for immediate use. The trocar catheter has a trocar with an abutment near its distal end which is adapted to engage an abutment extending from the internal surface of the catheter near its distal end such that the abutment on the trocar assists in placing the catheter. The trocar is suitably marked in such a way that the exact location of the catheter can be determined

by reference to the trocar. The trocar and catheter have aligned end surfaces which cooperate to provide a smooth point for penetrating the area being punctured. The proximal end of the trocar is ball shaped for providing a surface which better cooperates with the physician's hand in placing the trocar. The ball shaped end of the trocar cooperates with the package for ease in storing and removing the trocar from the package. The catheter has an X-ray opaque line and drainage openings near the distal end at least one of which openings coacts with the X-ray opaque line to indicate the location of the end of the catheter in the patient under appropriate techniques.

3,459,190

**FOUNDATION GARMENTS**  
Blanche Frischer and Robert Frischer, both of 110 E. 36th St., New York, N.Y. 10016  
Filed Sept. 13, 1966, Ser. No. 579,076  
Int. Cl. A41c 3/00  
U.S. Cl. 128—483

9 Claims

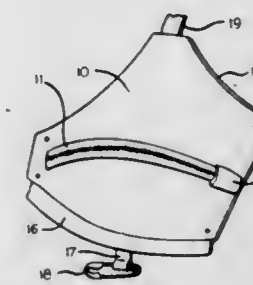


Brassieres which mold and support the bust of the female torso while at the same time provide adjustable uplift thereof.

3,459,191

**ACCESSORY FOR BRASSIERES**  
Dora A. Barg, 4573 N. 30th St., Milwaukee, Wis. 53209  
Filed July 7, 1967, Ser. No. 651,825  
Int. Cl. A41c 3/02  
U.S. Cl. 128—513

4 Claims



A device for attachment to conventional brassieres having a backing portion formed to conform to the contour of one of the breast portions of a brassiere. The front portion has a conical contour and is attached in a superimposed fashion over the back portion to form a conveying cavity. The front portion has access means such as a zipper therein for providing access to said cavity. The accessory is attached to a brassiere by superimposing the back portion over one of the breast portions of the brassiere.



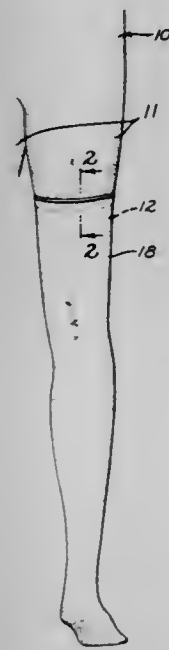
### 3,459,192 ARTICLE OF CLOTHING FOR SUPPORTING STOCKINGS

Ruby R. Thompson, 770 Busch Drive,  
Vista, Calif. 92083

Filed Oct. 10, 1966, Ser. No. 585,342  
Int. Cl. A41c 1/00

U.S. Cl. 128—535

4 Claims



An article of clothing for supporting stockings including a girdle with two depending leg portions, each leg portion having an annular lower edge, and an annular elastic band attached adjacent the edge of each leg portion and adapted to receive a stocking against an outwardly facing surface thereof and to fold upward around said edge to clamp the stocking to the leg of the wearer with the stocking extending over and covering the band. An additional annular elastic band may be attached to each leg portion above said one band to fold downward around the stocking and the upwardly folded band.

### 3,459,193 DIFFERENTIAL ACTION GIRDLE

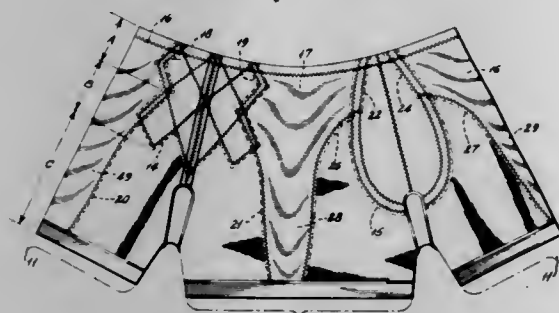
Larry L. Krieger, Emerson, N.J., assignor to International Playtex Corporation, Dover, Del., a corporation of Delaware

Continuation-in-part of application Ser. No. 482,420,  
Aug. 25, 1965. This application Nov. 10, 1965, Ser.  
No. 507,109

Int. Cl. A41c 1/02; A61f 5/37

U.S. Cl. 128—541

7 Claims



A girdle that encircles and constricts the lower torso of the wearer having its entire waistband circumference defining an area, which extends downwardly from the top margin of the girdle for a substantial distance, of material more resistant to circumferential stretch than a single thickness of the fabric used to form at least part of its side portions, and the girdle having extreme side portions of double thickness of such fabric that extend to the bottom of the girdle, and side portions adjacent

to the extreme side portions both in the front and rear of the girdle of single thickness of such fabric, which side portions extend from the bottom of the girdle upwardly for a substantial distance.

### ERRATUM

For Class 129—15 see:  
Patent No. 3,460,159

### 3,459,194

### TOBACCO PRODUCT INCORPORATING A FILTER DESIGNED TO INHIBIT THE ADVERSE EFFECT OF TOBACCO SMOKE ON ORAL UBIQUITOUS LEUCOCYTES

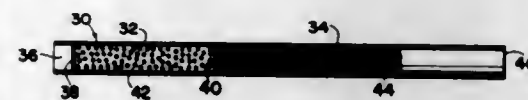
Bertram Eichel, Framingham, Mass., assignor of five percent to Alvin Isaacs, Framingham, and ten percent to H. Arto Shahrik, Lexington, Mass.

Filed May 22, 1967, Ser. No. 639,954

Int. Cl. A24d 1/08, 7/04, 13/02

U.S. Cl. 131—10

9 Claims



Novel tobacco filters comprising a filter bed of an ion exchange resin of sufficient length for inhibiting the adverse effects of tobacco smoke upon human oral leucocytes; and processes employing the same.

### 3,459,195

### REINFORCED RECONSTITUTED TOBACCO SHEET

Henri C. Silberman, Richmond, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia

No Drawing. Filed June 16, 1966, Ser. No. 557,917

Int. Cl. A24b 3/14, 13/02

U.S. Cl. 131—17

1 Claim

The present disclosure relates to a reinforced reconstituted tobacco sheet comprising a web of treated cellulose having adhered thereto from 1 to 20 parts by weight of particulate tobacco per part of said treated cellulose, said reinforced reconstituted tobacco sheet being such that when it is incorporated into a cigarette said cigarette has a static burning rate of not less than 2 millimeters per minute and not more than 5 millimeters per minute, the treated cellulose comprising oxidized cellulose.

### 3,459,196

### SMOKING PIPE

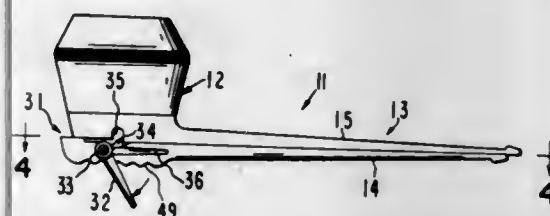
Ludwig K. Kunz, 1407 Bellingham Way,  
Sunnyvale, Calif. 94087

Filed Sept. 29, 1967, Ser. No. 671,661

Int. Cl. A24f 1/02, 1/20, 1/18

U.S. Cl. 131—199

7 Claims



A smoking pipe is disclosed with a separable stem including a locking assembly with a lever arm mounted on one stem member movable between two positions and a portion projecting therefrom engaging a recess in the other stem member with the recess aligned substantially

perpendicular to the line of separation between the two members. A pipe bowl liner is provided which is snapped into position in the bowl and retained therein and also which provides a screen for the bottom of the bowl.

### 3,459,197

### COMB-MOUNTED HAIR ANALYSIS GAUGE

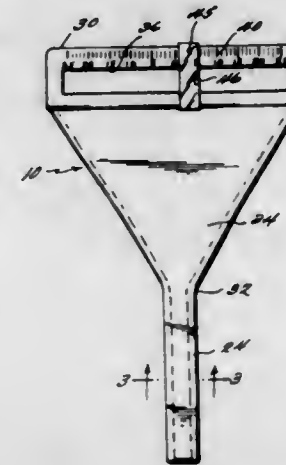
Ray Wilson, 1952 San Marco Blvd.,  
Jacksonville, Fla. 32207

Filed Dec. 18, 1967, Ser. No. 691,327

Int. Cl. A45d 24/00

U.S. Cl. 132—1

12 Claims



A comb having a laterally flexible spine has a gauge mounted thereon which includes an indicator mounted to sweep over a scale on the gauge and cam means operatively connecting the indicator and the flexing part of the comb for deflecting the indicator as the comb flexes in proportion to the resistance offered by the hair as the comb is drawn therethrough. The indicator remains deflected after the comb has been removed from the hair so a reading may be obtained from the scale.

### 3,459,198

### WAVING AND STRAIGHTENING HUMAN HAIR WITH 1,4-DIMERCAPTO-2,3-BUTANE DIOL AND SUBSTITUTED PRODUCTS THEREOF

John C. Zemlin, Reading, and Katherine A. Herrington,  
Brookline, Mass., assignors to Collaborative Research,  
Incorporated, Waltham, Mass.

No Drawing. Filed Mar. 10, 1966, Ser. No. 533,236

Int. Cl. A45d 7/04

U.S. Cl. 132—7

7 Claims

A method of treating hair is provided with the improvement comprising exposing the hair to a swelling agent and then contacting the hair with a solution of 1,4 dimercapto-2,3 butane diol or a substituted product thereof; to reduce disulfide linkages in the hair.

### 3,459,199

### TEASING AND UNSNARLING IMPLEMENT

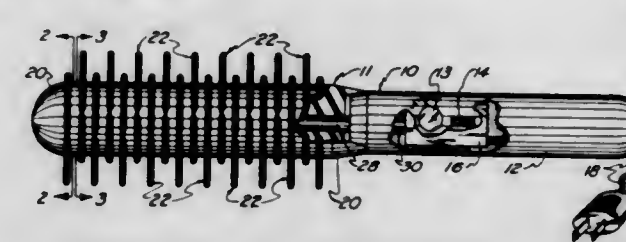
Jerry F. Connell, 1429 Chestnut St.,  
Gadsden, Ala. 35901

Filed July 13, 1966, Ser. No. 564,901

Int. Cl. A45d 24/00

U.S. Cl. 132—11

5 Claims



A teasing and unsnarling implement including a support means and a plurality of hair-engaging elements spaced from each other and extending along the support means.

Each of the hair-engaging elements comprising a plurality of spaced apart teeth parallel to each other and perpendicular to the central longitudinal axis of the support means. The teeth of one element are spaced from and aligned between the teeth of the adjacent elements. Each tooth has a smooth periphery and a tapered side or edge which slopes away from the support means. The support means is rotatably connected to a handle and a driving means is carried in the handle for rotating the support means.

### 3,459,200

### DEVICE FOR CURLING, WAVING OR SETTING HAIR

Elise Berlier Manderveld, 126 avenue Georges Bergmann,  
Ixelles, Belgium

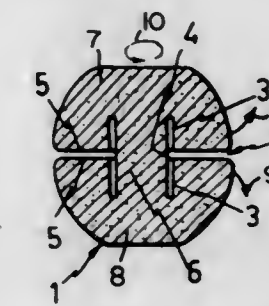
Filed July 28, 1966, Ser. No. 568,633

Claims priority, application Belgium, Aug. 4, 1965,  
16,281, Patent 667,862; Mar. 25, 1966, 25,872,  
Patent 678,507

Int. Cl. A45d 2/02, 2/10, 2/14, 2/18, 6/14

U.S. Cl. 132—43

3 Claims



A device for curling, waving or setting hair, comprising a spherical shaped body of compressible elastic material having an inwardly extending circumferential slot in which a lock of hair may be wound and secured by the resilient action of the body.

### 3,459,201

### TREATING METAL ARTICLES WITH LIQUIDS Wilhelm Wache, deceased, late of Hamburg-Fuhlsbuttel, Germany, by Helen Wache, heir, Hamburg-Fuhlsbuttel, Germany, and Bodo Busing, Hamburg-Wandsbek, Ger-

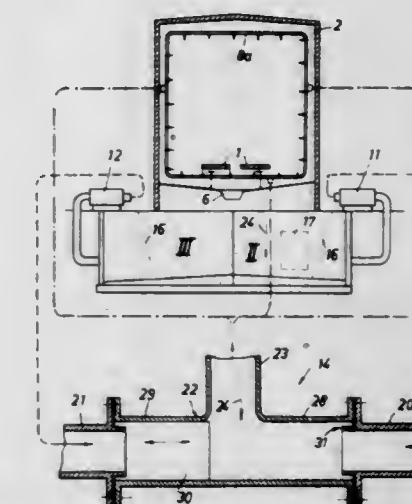
many assignors to Firma Wilhelm Wache G.m.b.H.  
Filed Jan. 31, 1967, Ser. No. 619,491

Claims priority, application Germany, Feb. 4, 1966,  
W 40,876

Int. Cl. B08b 3/04

U.S. Cl. 134—96

11 Claims



An apparatus for treating metal bodies with at least two different types of liquids in prearranged sequences, comprising: a closed treatment receptacle for said bodies; a tank for each said liquid; separate from said receptacle; at least one change over device of flow of said liquids; having one change over input pipe line and orifice for each said tank; a conduit system with a pump for each



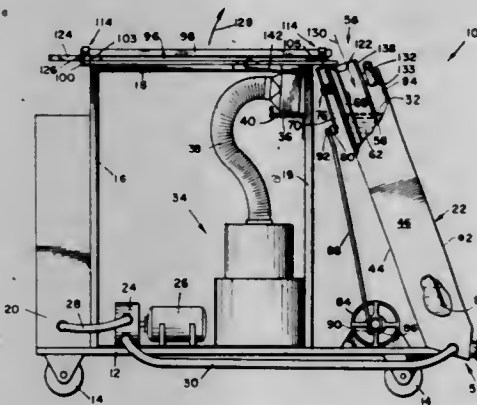
said tank, interposed between the orifice of each said change over device and said tank; said receptacle comprising a liquid flow distributor within it; said change over device having at least one change over orifice return flow connecting with said distributor; means to operate only one of said pumps at a time; means to duct the out flow from said receptacle to the storage tank in operation at the particular time; a piston freely movable within said change over device moving in response to the pressure of one of said pumps at a time.

3,459,202

**MATRIX WASHER AND DRIER**  
Charles F. Roberson, 3842 S. Olney,  
Indianapolis, Ind. 46227  
Filed Aug. 17, 1967, Ser. No. 661,445  
Int. Cl. B08b 3/04

U.S. Cl. 134-99

10 Claims



An apparatus for cleaning articles such as type matrices comprising a holder for such articles, a reservoir for containing a cleaning liquid, the holder being receivable in the reservoir so that the articles are wholly submerged in such liquid, and means for agitating the holder in such liquid. The holder may be a matrix magazine from a Linotype machine, in which case, the magazine is reciprocated in the direction of its tracks effectively to agitate the matrices individually in the liquid contained in the reservoir. In a preferred embodiment of my apparatus, means are provided for rinsing and drying the articles while they are in the reservoir.

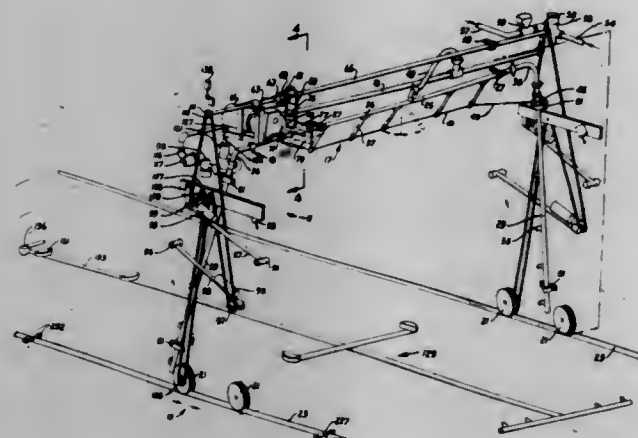
3,459,203

**VEHICLE WASHING APPARATUS**

Clarence L. Pritchard, Castro Valley, Calif., assignor to Malsbary Manufacturing Company, Oakland, Calif., a corporation of California  
Filed Feb. 16, 1966, Ser. No. 527,783  
Int. Cl. B60s 3/04; B08b 3/02, 3/18

U.S. Cl. 134-123

18 Claims



A vehicle washing apparatus having an arch movable along the vehicle to be washed, with liquid spraying

means on the arch and power means for moving the arch along the vehicle. The spray nozzles oscillate in planes parallel to the direction of movement of the arch and means is provided for biasing the oscillating nozzles so they point generally in the direction the frame is moving during about one-half of its progress along the vehicle and then point generally away from the direction the frame is moving during the rest of its travel. Means is provided for spraying more liquid onto the ends of the vehicle than onto its midportion by halting the arch at the vehicle ends while the spray nozzles are operating.

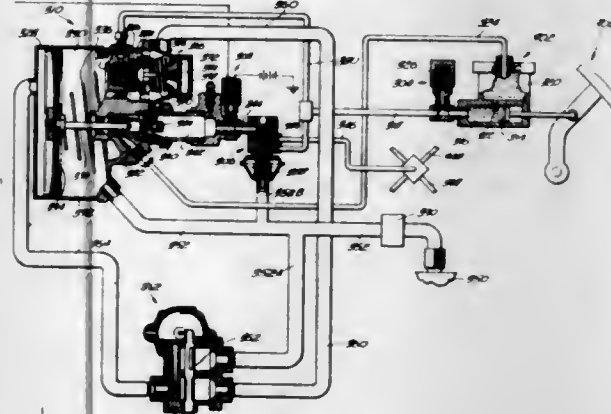
3,459,204

**ANTI-SKID DEVICE VALVES**

Frank A. Perrino, North Attleboro, Mass., assignor, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey  
Original application Nov. 2, 1964, Ser. No. 409,350, now Patent No. 3,325,226, dated June 13, 1967. Divided and this application Aug. 5, 1966, Ser. No. 594,291  
Int. Cl. B60t 8/02

U.S. Cl. 137-38

6 Claims



A rotary valve formed with axially spaced openings that selectively connect two different pressure sources to a vehicle wheel brake operating actuator cylinder in an antiskid device.

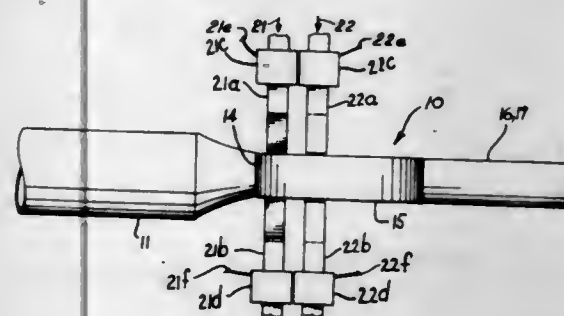
3,459,205

**MAGNETICALLY CONTROLLED FLUID AMPLIFIER**

Richard W. Ziemer, Altadena, and Mathew R. Denison, Tarzana, Calif., assignors to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California  
Filed June 28, 1965, Ser. No. 467,356  
Int. Cl. F15c 1/04, 1/08

U.S. Cl. 137-81.5

20 Claims



A proportional fluid amplifier using an electrically neutral, electrically conducting fluid such as mercury where the power stream is directed to a selected outlet channel by a non-uniform magnetic field which produces a transverse deflection of the power stream.

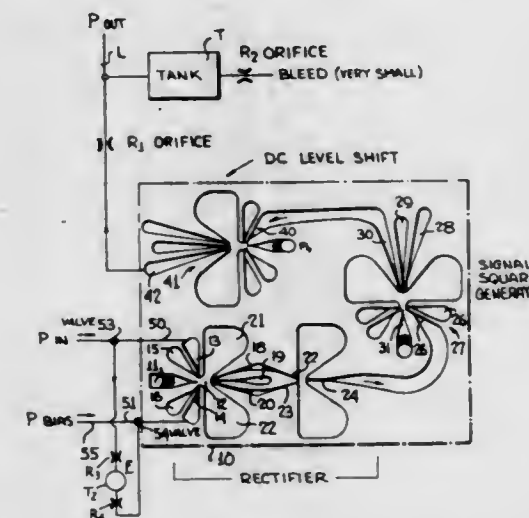
3,459,206

**STATISTICAL DEVICE**

Edwin M. Dexter, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland  
Filed Oct. 22, 1965, Ser. No. 501,970  
Int. Cl. F15c 1/08

U.S. Cl. 137-81.5

5 Claims



In accordance with the present invention, a relatively steady bias signal and a variable input signal are applied to a pure fluid rectifier. The bias signal may be manually set, or be developed in terms of a computation of an arithmetic mean from the input signal itself. The rectifier has the function of rendering both positive and negative variations of the input signal, as compared with the bias signal, of the same algebraic sign, say positive. The rectified signal is passed through a pure fluid squaring device, and the squared signal amplified by a pure fluid amplifier which has the function of setting DC level to a suitable value. The output of the pure fluid amplifier is passed through an orifice, and thence proceeds to a tank, which is the fluid analog of an electrical capacitor. The capacitor is bled through a very small bleed orifice. The first mentioned orifice and the tank operate as a time constant or low pass filter, integrating and smoothing the varying signal applied thereto. The very small bleed orifice has the effect of restricting the time averaging of the pressure in the tank to reasonably current values of time, erasing long past time readings.

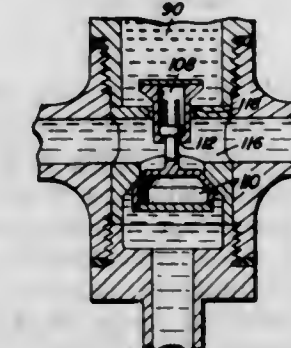
3,459,207

**FAUCET CONSTRUCTION**

Kenneth G. Bacheller, Tucson, Ariz.  
(310 Alexander Palm Road, Boca Raton, Fla. 33432)  
Filed Apr. 20, 1965, Ser. No. 449,511  
Int. Cl. F16k 11/10, 21/18

U.S. Cl. 137-119

5 Claims



A diverter valve utilized in conjunction with a faucet for selectively discharging the water either through the conventional spout or through an auxiliary line. The valve construction includes a pair of fluid outlets to the opposite sides of a fluid inlet line in conjunction with a

double-headed valve unit slidably movable between the two outlets for a selective exposure of the outlets. Valve seating surfaces are provided to each side of the point at which the fluid line communicates with the valve housing so as to cooperate with the valve in effecting a selective sealing of the outlets. One form of valve element utilized includes two valve portions movable both together and relative to each other.

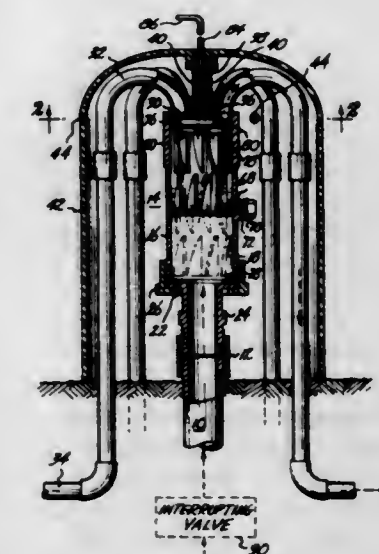
3,459,208

**CYCLING VALVE**

Claude R. Clyde, 909 W. Emerson St.,  
Seattle, Wash. 98119  
Filed Feb. 6, 1967, Ser. No. 614,265  
Int. Cl. F16k 21/00, 31/12

U.S. Cl. 137-119

5 Claims



A valve apparatus for sequentially passing fluid under pressure between a lower inlet and a series of upper outlets. A ported plunger in a chamber between the inlet and outlets is indexed by pressure pulses of the fluid supplied to said inlet.

3,459,209

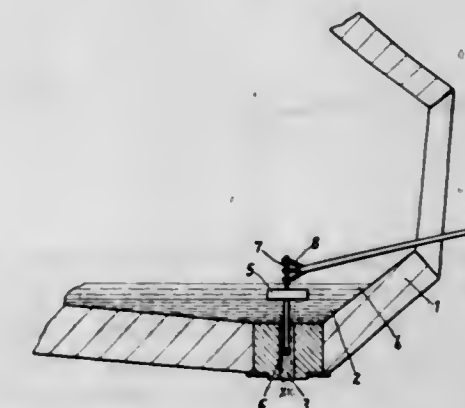
**SLAG RETAINING DEVICE FOR USE DURING TAPPING OF CONVERTERS**

Helmut Kobusch, Duisburg-Mundelheim, and Johannes Gruner and Arnold Pfeiffer, Duisburg-Huckingen, Germany, assignors to Mannesmann Aktiengesellschaft, Dusseldorf, Germany  
Filed Aug. 30, 1967, Ser. No. 664,552  
Claims priority, application Germany, Sept. 26, 1966, M 71,064

Int. Cl. F16k 1/36, 31/44; B22d 45/00

U.S. Cl. 137-172

9 Claims



A device for the separation of slag and its retention in a tapping converter which consists of a closure having



a specific gravity lower than that of the steel produced in the converter but higher than that of the slag. The closure is provided with guide means reaching into the tap hole of the converter, and a release mechanism.

3,459,210

**SIMPLIFIED BALL COCK ASSEMBLY**

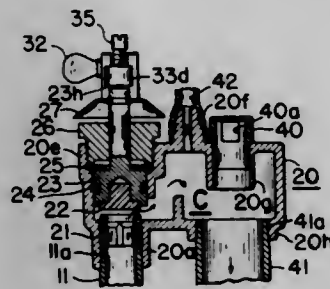
Clarence B. Hindman and James S. Junkins, Morgantown, W. Va., assignors, by mesne assignments, to Sterling Faucet Company, Pittsburgh, Pa., a corporation of Delaware

Filed May 19, 1966, Ser. No. 551,295

Int. Cl. E03c 1/10; F16k 45/02, 31/18

U.S. Cl. 137—216

4 Claims



A ball cock valve assembly is provided for regulating the water supply in a water closet tank, is mounted above the water level in the tank, and utilizes an adjustable, vertically-reciprocating and lever-actuated valve member to control water flow. An outflow chamber having an internal flow-directing construction eliminates vacuum siphoning via a constantly open downwardly projecting vent in an upper wall of the valve assembly. A reduced number of movable parts and a removable one-piece closure plug facilitate inspection and repair of the assembly.

3,459,211

**EXPANSION VALVE**

Rudibert Götzenberger, Fellbach, Germany, assignor to Ernst Flitsch, Fellbach, Germany, a firm

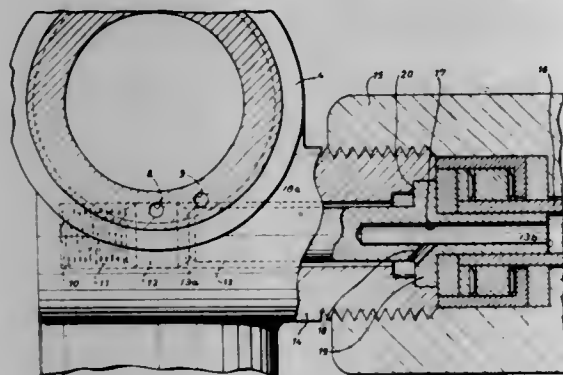
Filed Sept. 21, 1967, Ser. No. 669,506

Claims priority, application Germany, Sept. 24, 1966, F 50,281

Int. Cl. F16k 31/165

U.S. Cl. 137—270

5 Claims



An expansion valve for refrigeration and cooling systems which can be used selectively in systems with a relatively large as well as a relatively small evaporator output by being provided with a valve body having two passages respectively leading to passages that can be connected to the inlet or outlet of an evaporator. One or the other passages can be selectively closed by a plunger made effective by a simple reversal of an insert in the valve.

3,459,212

**VENTED FLUID VALVE**

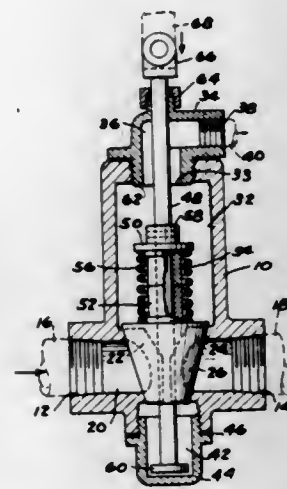
Donald C. Campion, Sr., 1312 W. Hayward Ave., Phoenix, Ariz. 85021

Filed May 15, 1967, Ser. No. 638,405

Int. Cl. F16k 23/00

U.S. Cl. 137—312

12 Claims



A vented valve having an inlet port, an outlet port and a vent port. A valve member controls these ports such that when the inlet and outlet ports are open to flow the vent port is closed and when the inlet and outlet ports are closed the vent port is open so that any leakage past the inlet port exhausts through the vent port.

3,459,213

**COATED HOLLOW PLUG VALVE**

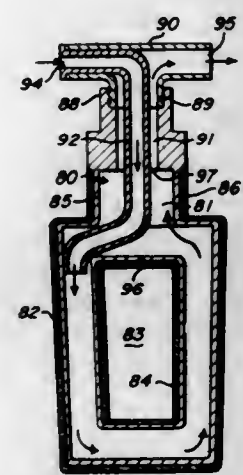
Robert C. Schenck, Jr., and Herbert C. Ferris, Dayton, Ohio, assignors to The Durlin Company, Inc., Dayton, Ohio, a corporation of New York

Filed Oct. 19, 1965, Ser. No. 497,869

Int. Cl. F16l 53/00; F16k 51/00

U.S. Cl. 137—340

8 Claims



An isostatic procedure for forming pin-hole, free coatings and parts of polytetrafluoroethylene is described, and offers the advantage of being able to form or coat symmetrical and asymmetrical parts whereby the part or coating has a low percentage of micro-voids and is essentially free of macro-voids while providing a part or coating of substantially uniform density, and dimensional stability over an extended range of temperatures. Parts or coatings are formed isostatically by placing granular molding powder in a forming member including a pressure transmitting surface, exposing the forming member to high pressure whereby pressure is uniformly transmitted through the pressure transmitting surface to compress the powder to provide a "preform." The preform is then sintered to coalesce the compressed powder into

a coherent plastic member. Various parts such as valve closure members, tubes, solid shapes and the like may be made by this process, all having the desirable characteristics noted.

3,459,214

**FLOAT CONTROLLED METERING AND SHUTOFF VALVE**

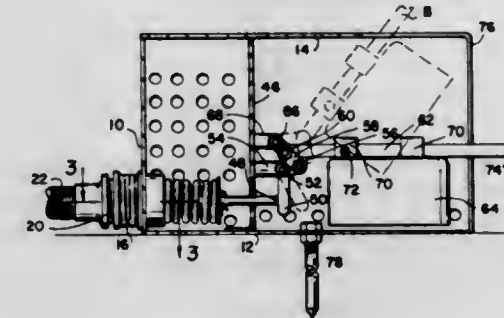
Carl F. Le Grady, 2513 E. Montecito, Phoenix, Ariz. 85016

Filed Feb. 13, 1967, Ser. No. 615,573

Int. Cl. F16k 31/26, 1/42

U.S. Cl. 137—420

13 Claims



A float controlled metering and shutoff valve, wherein a toggle mechanism, when in over center position, holds a valve member open against liquid pressure, and wherein a float is adapted to respond to a rise in liquid level of liquid passing through the valve so as to cause said toggle means to be moved away from said over center position by a pressure of liquid tending to close said valve, such that said valve is closed by liquid pressure, when said float causes said toggle mechanism to pivot and permit said valve to close under pressure of liquid passing therethrough.

3,459,215

**PRESSURE REGULATOR VALVE WITH REVERSED COIL SPRING**

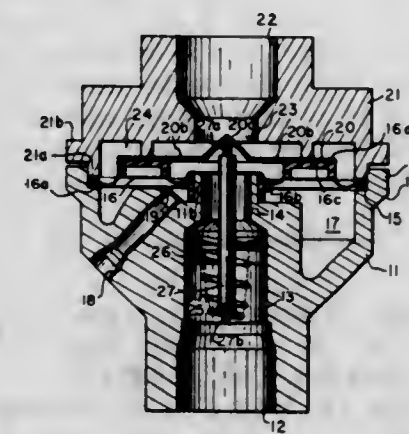
William R. Dunn, Los Angeles, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Oct. 4, 1967, Ser. No. 672,814

Int. Cl. F16k 31/365

U.S. Cl. 137—505.25

6 Claims



A pressure regulator including a diaphragm operated valve that is normally biased open by a spring. The diaphragm is positioned to respond to outlet pressure to adjust the valve's position to maintain a uniform outlet pressure and the loading spring is a conical compression spring doubly stressed by reversing or inverting its end positions, placing the free end in tension with a rod between it and the diaphragm valve.

3,459,216

**PRESSURE COMPENSATED EXHALATION VALVE**

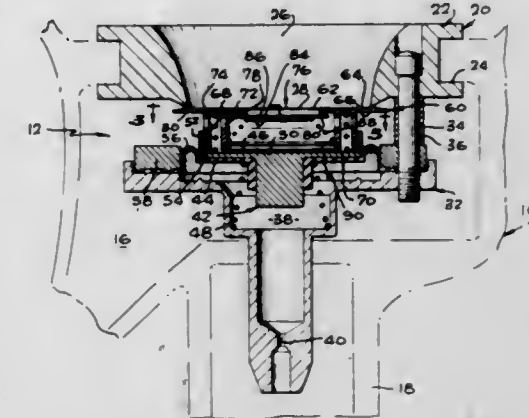
Aaron Bloom, Pasadena, Orland W. Wilcox, Sierra Madre, and Peter I. Mate, Pasadena, Calif., assignors to Sierra Engineering Company, Sierra Madre, Calif., a corporation of California

Filed June 1, 1967, Ser. No. 642,904

Int. Cl. F16k 15/14; A62b 7/14, 9/02

U.S. Cl. 137—512.1

9 Claims



A pressure compensated exhalation valve with a safety relief means which permits fluids to exhaust from the breathing mask through the valve without regard to rapid fluctuations in ambient pressure.

3,459,217

**GARTER CHECK VALVE**

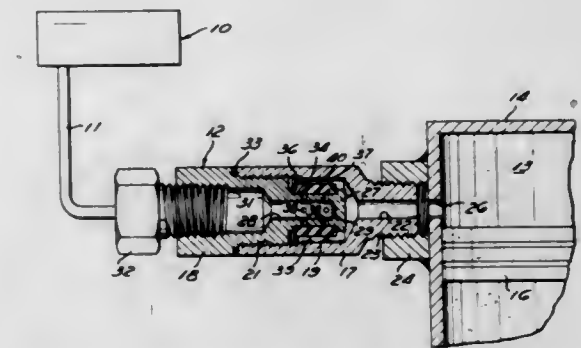
James J. Callahan, Mentor, Ohio, assignor, by mesne assignments, to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan

Filed Mar. 21, 1966, Ser. No. 535,994

Int. Cl. F16k 15/00

U.S. Cl. 137—516.15

2 Claims



A check valve comprising a tubular projection having a continuous cylindrical outer surface and a plurality of axially spaced passages in the surface, an elastic sleeve around the tubular projection sealing the surface and covering the passages to prevent fluid flow into the interior of the tubular projection. The projection is provided with opposed, radially extending faces which are spaced from but engageable with the ends of the sleeve to axially locate the sleeve on the projection and to provide unidirectional passageways from within the interior of the projection. According to another aspect of this invention, the passageways are formed by a porous tube which provides a multitude of small passages.

3,459,218

**AUDIO RELIEF VALVE**

Bidwell C. Cranage, Ferguson, Mo., assignor to Stille-Craft Manufacturers, Inc., St. Louis, Mo., a corporation of Missouri

Filed Mar. 2, 1967, Ser. No. 620,162

Int. Cl. E03b 7/07; F16k 37/00, 17/20

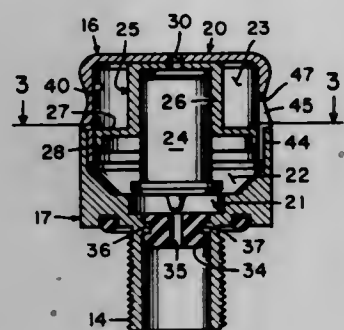
U.S. Cl. 137—557

7 Claims

A relief valve having a hollow body subdivided into an intercommunicating pressure chamber and expansion



chamber, and a whistle or resonating chamber. An inlet passage connects the pressure chamber to the pressure vessel, and an outlet passage, forming a whistle, connects the expansion chamber to the atmosphere. A plug acts as a piston within the pressure chamber and a spigot at the end of the plug closes the inlet passage under working



pressure. Excessive pressure within the pressure vessel raises the plug and discharges a controlled quantity of gas into the expansion chamber. The resulting pressure decrease returns the plug into the pressure chamber. Gas escaping to atmosphere emits an intermittent, substantially constant pitch whistle.

3,459,219

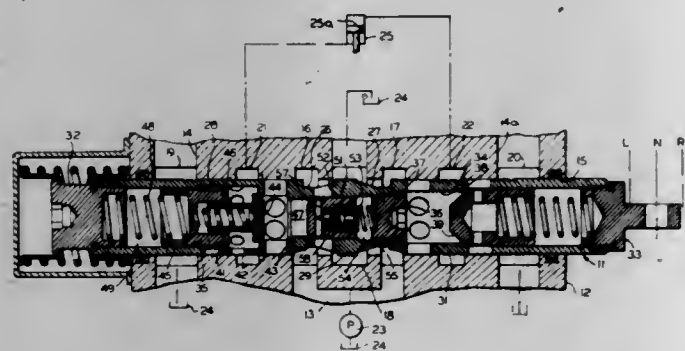
**REGENERATIVE VALVE PLUNGER**

Roland L. Genz, Portage, Mich., assignor to General Signal Corporation, a corporation of New York  
Filed Oct. 20, 1967, Ser. No. 676,759

Int. Cl. F16k 31/36, 31/12

U.S. Cl. 137-596.2

2 Claims



A regenerative valve plunger for open center hydraulic control valves. The plunger has a pair of center necks which form part of the open center path, and contains a regeneration check valve. This check valve is so designed and arranged as to prevent it from by-passing flow around the center necks when the plunger is throttling flow through the open center path.

3,459,220

**SINGLE PORT LIQUID VAPOR VALVE**

Roger J. Morse, Florham Park, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Feb. 15, 1966, Ser. No. 527,458

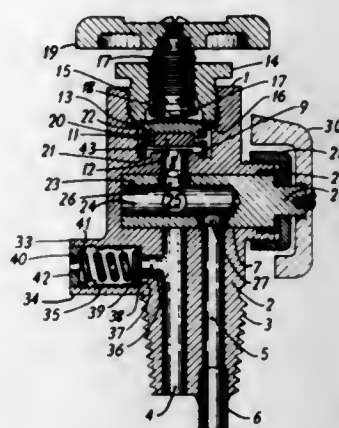
Int. Cl. F16k 11/08, 45/00

U.S. Cl. 137-605

7 Claims

A valve for controlling fluid flow from a vessel containing liquified gas and vapor under pressure comprising, in combination, a housing provided with an upper discharge port in open communication with a first chamber, a plurality of fluid inlet ducts extending through the bottom of the housing, a laterally disposed second chamber located immediately superadjacent the top of the

fluid inlet ducts and in communication therewith, a passageway for fluid flow connecting the first and second chambers, means for cutting off or permitting fluid flow between the passageway and the first chamber, and a



rotatable hollowed cock provided with side apertures so dimensioned and positioned within the second chamber that, upon rotation, the cock selectively connects the fluid inlet ducts with the fluid flow passageway.

3,459,221

**MANIFOLD VALVE ASSEMBLY**

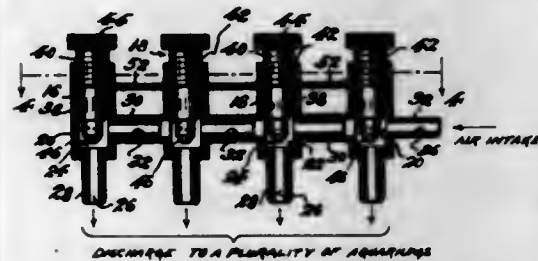
Herbert R. Axelrod, Deal, N.J., assignor to T.F.H. Publications, Inc., Jersey City, N.J., a corporation of New Jersey

Filed July 22, 1966, Ser. No. 567,184

Int. Cl. E03b 9/00; F17d 3/00

U.S. Cl. 137-608

2 Claims



A manifold valve apparatus comprising a plurality of valves, each including a valve body formed with a through vertical bore having a threaded portion at its upper extremity, a reduced-in-diameter section defining a valve seat and an exit port at the bottom end thereof. A valve stem is formed with a threaded shank for engagement with the threaded portion and has a lower end defining a poppet, or seal, for seating on the seat. Certain of the valves include a female nozzle which projects transversely of the vertical bore and a male nozzle which projects oppositely thereof and is in communication with the female nozzle. The male nozzles telescopically interfit the female nozzles of adjacent valves whereby said valves may be connected together in series to receive air from a single source and provide controlled flow at said exit ports.

3,459,222

**CONCRETE CONVEYING APPARATUS**

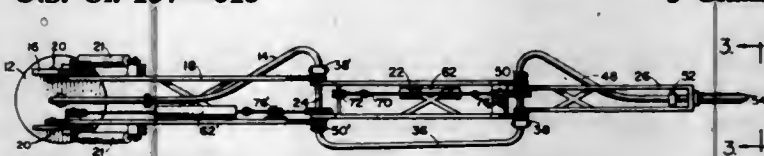
Philip W. McElroy, 648 Page St., Berkeley, Calif. 94710

Filed Sept. 16, 1966, Ser. No. 580,046

Int. Cl. B65g 53/32; F17d 1/00; F16l 27/00

U.S. Cl. 137-615

5 Claims



Concrete conveying apparatus including a generally flat base, three elongated boom sections mounted in an end to end pivotal relationship upon the base and having a

flexible hose extending from the base through the pivotal mountings of the intermediate boom sections to the outer end of the third boom section and being arranged concentrically with the pivotal axes between the boom sections.

3,459,223

**MIXING VALVE**

Ilmari Katva, Faurskov, near Gelsted, Funen, Denmark, assignor to Broen Armatur I/S, Assens, Funen, Denmark

Filed Mar. 8, 1967, Ser. No. 621,656

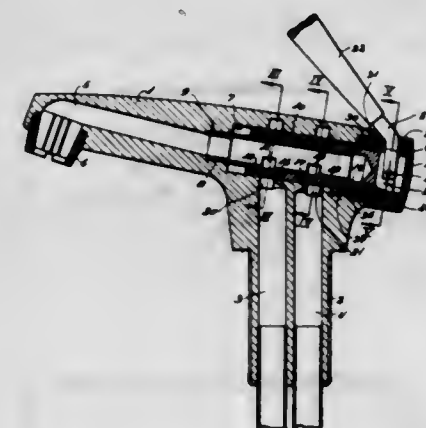
Claims priority, application Denmark, Mar. 11, 1966,

1,273/66

Int. Cl. F16k 11/18

U.S. Cl. 137-625.17

3 Claims



A mixing valve for hot and cold water, in which a cylindrical sleeve is slidably and rotatably mounted in a bore of a valve housing with two inlets and one outlet and surrounds a stationary hollow plug, the sleeve and the plug having co-operating circumferentially extending ports for controlling the total rate of flow and the mixing proportion by axial and rotational movement of the sleeve respectively, a plurality of O-rings establishing sealing zones between the sleeve and the wall of the bore.

3,459,224

**INDEXING FLUID CONTROL DEVICE**

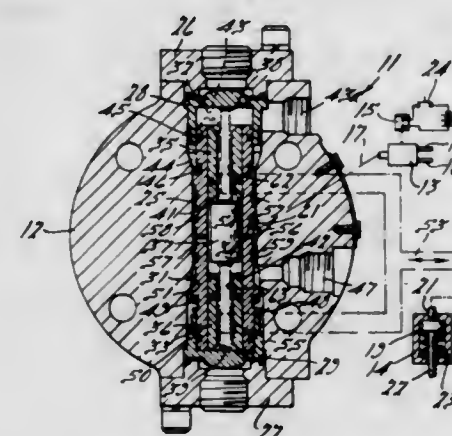
Alfred R. Weber, Livonia, Mich., assignor to Ross Operating Valve Company, Detroit, Mich., a corporation of Michigan

Filed Oct. 20, 1967, Ser. No. 676,837

Int. Cl. F16k 11/02, 11/10

U.S. Cl. 137-625.63

9 Claims



A fluid control device shiftable between two alternate positions in response to successive momentary applications of fluid pressure. Seal area differentials on a spool hold it in either extreme position without a mechanical locking mechanism, and are so arranged as to counteract each shifting force until the shifting movement begins, after which the counteracting force is released.

3,459,225

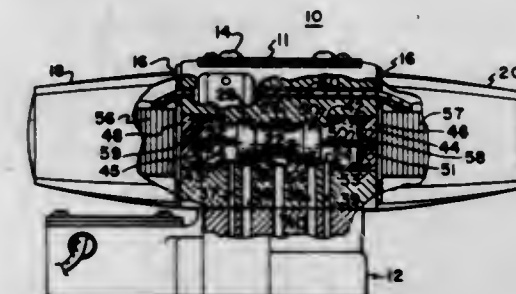
**DIRECTIONAL CONTROL VALVE**

Robert H. Smith, Warren, Mich., assignor to Sperry Rand Corporation, Troy, Mich., a corporation of Delaware  
Filed July 12, 1967, Ser. No. 652,801

Int. Cl. F16k 11/07

U.S. Cl. 137-625.65

9 Claims



An electrically actuated directional control valve having in combination a spool and single push pin for controlling communication between certain fluid conducting passages therein, the push pin which extends through the spool is slidably mounted at its opposite ends within push pin guide bores and having an enlarged center section which is adapted for both pivotal movement and radial translation relative to the spool to compensate for misalignment between the push pin and the push pin guide bores.

3,459,226

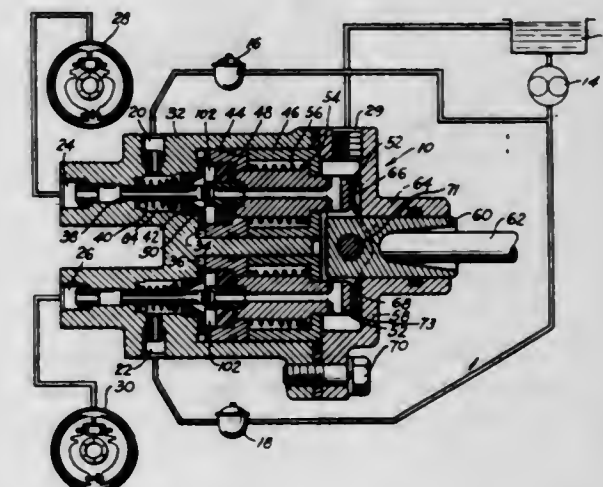
**FLUID PRESSURE CONTROL VALVE**

Harold B. Schultz, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware  
Filed Dec. 22, 1966, Ser. No. 603,851

Int. Cl. F16k 11/12; F15b 11/16, 13/14

U.S. Cl. 137-627.5

7 Claims



A fluid pressure control valve operated by an articulated link having a tubular poppet valve cooperating with an annular valve seat to control the delivery of a supply pressure to a fluid discharge port or to connect the fluid discharge port to a return port means. The tubular valve poppet is provided with a valve flange that cooperates with a ring having a face of different angle than the valve flange to insure adequate seating of the flange of the poppet on the face of the valve seat to prevent system leak down.

3,459,227

**DISTRIBUTORS FOR BRAKING APPARATUS**

Arthur W. Simmons and Jack Washbourn, London, England, assignors to Westinghouse Brake and Signal Company, Limited, London, England

Filed Nov. 2, 1965, Ser. No. 506,075

Int. Cl. F16k 11/10; B60t 15/42; B61h 13/00

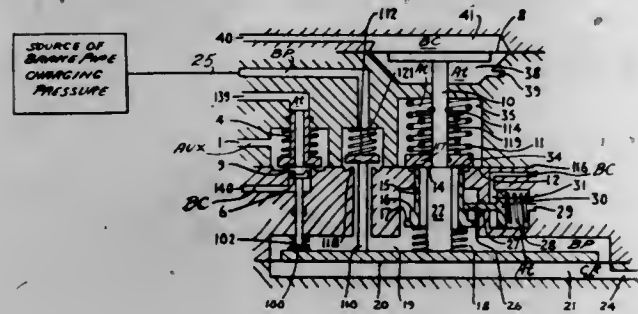
U.S. Cl. 137-627.5

6 Claims

A distributor for a fluid operable braking apparatus having a quick service valve, a brake cylinder inlet/exhaust

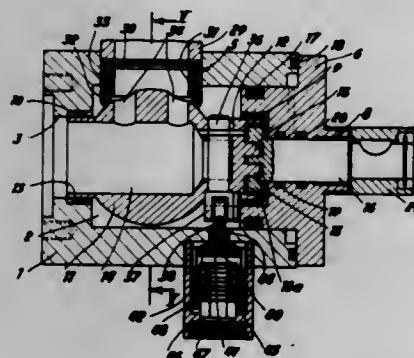


valve and a retarded brake pipe recharging valve. All valves are operated by a diaphragm of the distributor



pile. The stop face of the quick service valve, a seat of the brake cylinder inlet/exhaust valve—and possibly a seat of the recharging valve—are substantially coplanar.

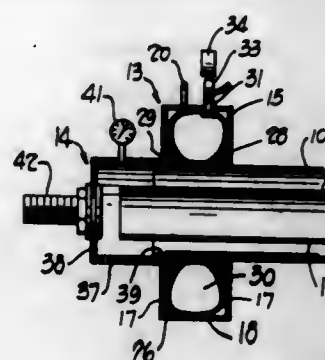
**3,459,228**  
**SEQUENTIALLY CLOSING AND OPENING ALTERNATELY SEATING FLOW CONTROLLERS**  
Guy Emile Victor Mongodin, Fresnes, and Jean Joseph Moncozet, Annecy, France, assignors to Societe Anonyme, Societe Alsacienne de Constructions Atomiques de Telecommunications et d'Electronique Alcatel, Paris, France, a corporation of France  
Filed July 26, 1967, Ser. No. 656,262  
Claims priority, application France, Aug. 1, 1966, 71,696  
Int. Cl. F16k 11/07, 31/04  
U.S. Cl. 137—627.5 6 Claims



A body type cock is described, comprising on the one hand a first aperture to which the parts to be tested for leakage can be connected, an aperture connected to a pre-exhausting pump, an aperture connected to a mass spectrometer leak detection unit, and an aperture for re-admitting air into the interior of the body, and on the other hand a spherical plug rotatable about one diametrical axis provided with an axial bore in alignment with the said first aperture and having a plurality of cylindrical ports and also having a port of rectangular section formed on the great circle situated in the median plane perpendicular to the axis of rotation of the plug, all the ports being substantially radial and leading into the aforesaid bore; the rectangular port partially preceding the first cylindrical ports in the direction of the opening of the cock.

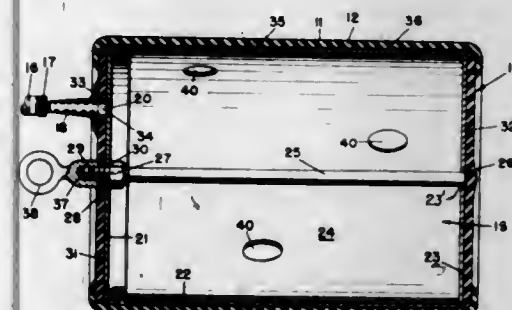
**3,459,229**  
**PRESSURE TESTING APPARATUS**  
John C. Croft, Barberton, Ohio, assignor to New England Realty Co.  
Filed June 15, 1966, Ser. No. 557,715  
Int. Cl. F16l 55/12  
U.S. Cl. 138—90 9 Claims  
Apparatus for use in the pressure testing of tubes having an annular portion including an annular expandable chamber and a flexible peripheral wall, the annular

portion being engageable around a tube to be tested and the expandable chamber being inflatable to cause the flexible wall to grip the tube, and a closed end portion



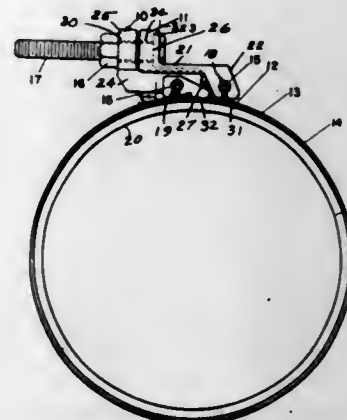
defining a cavity for sealing the end of a tube inserted through the annular portion and for retaining a pressure testing fluid or gas introduced into the tube.

**3,459,230**  
**PIPE STOPPER**  
Lester R. Smith, N. 6403 Perry, Spokane, Wash. 99207  
Filed Aug. 31, 1966, Ser. No. 576,296  
Int. Cl. F16l 55/12  
U.S. Cl. 138—93 4 Claims



A temporary stopper for pipes and which has a relatively lightweight frame of cylindrical shape having closed ends and enclosed by means of a rubber-like envelope vulcanized to said ends; there being venting means from within the cylindrical frame to admit of inflation of the envelope, and a reinforcing rod centric of the frame tying the said ends together to counteract the expansion pressures thereon; and means for admitting and exhausting air from within the frame according to manual selection.

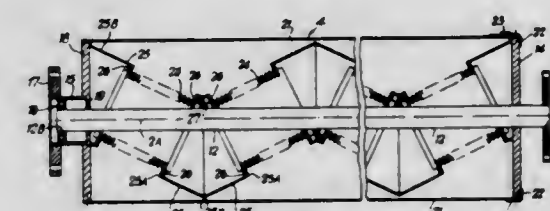
**3,459,231**  
**REPAIR CLAMP**  
Albert E. Straus, Erie, Pa., assignor to Morris Coupling and Clamp Company, Erie, Pa., a corporation of Pennsylvania  
Filed Mar. 2, 1966, Ser. No. 531,262  
Int. Cl. F16l 55/16  
U.S. Cl. 138—99 6 Claims



The clamp disclosed herein has a tensioning member and a saddle member that are attached to a pipe encircling band. The band is adapted to pull a gasket into sealing

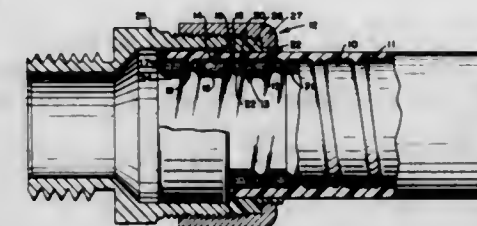
engagement with a leak in a pipe. The tensioning member and saddle member each have a keyhole shaped slot lying laterally. An end of the band is inserted in each of the keyhole shaped slots, and a pin placed into this end, so that the band is held in position. The tensioning member has a dovetail shaped member that cooperates with a similar surface on the saddle member, so that the tensioning member and saddle member are pulled toward each other in a straight path, thereby preventing bending.

**3,459,232**  
**VACUUM-TIGHT DEVICE WITH INCLINED INTERCONNECTED ANNULAR BELLOWS**  
Malcolm Frederick Parkins, Ilford, England, assignor to Vickers Limited, London, England, a British company  
Filed May 11, 1966, Ser. No. 549,234  
Int. Cl. F16l 11/12, 11/14, 51/02  
U.S. Cl. 138—103 4 Claims



This application discloses a sealing device forming a fluid-tight passageway extending between first and second members relatively rotatable about an axis passing along the passageway, the device comprising a series of end-to-end interconnected annular bellows the axis of each of which is inclined with respect to the first-mentioned axis, each end of each bellows, except the two ends at the opposite ends of the series of bellows, being joined in fluid-tight manner to an adjacent end of an adjacent bellows by annular means that maintains the axes of the adjacent bellows oppositely inclined with respect to the first-mentioned axis, said two ends that are at opposite ends of said series being respectively secured in fluid-tight manner by further annular means to said first and second members, a guide tube which with said passageway extends through said series of bellows and said annular means, the guide tube having an axis coinciding with the axis passing through the passageway and spacers between the guide tube and said annular means.

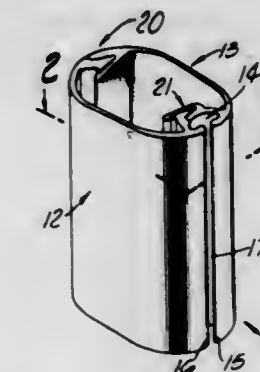
**3,459,233**  
**JACKETED STRIP-WOUND METAL HOSE**  
Charles E. Webbe, Waterbury, Conn., assignor to Anaconda American Brass Company, a corporation of Connecticut  
Filed Apr. 12, 1967, Ser. No. 630,284  
Int. Cl. F16l 11/00, 11/14  
U.S. Cl. 138—131 3 Claims



A jacketed strip-wound metal hose with a profile characterized by having its marginal edge portions interlocked with adjacent convolutions and maintained spaced by an intermediate portion which is configured to provide a continuous helical groove on the outside wall of the hose

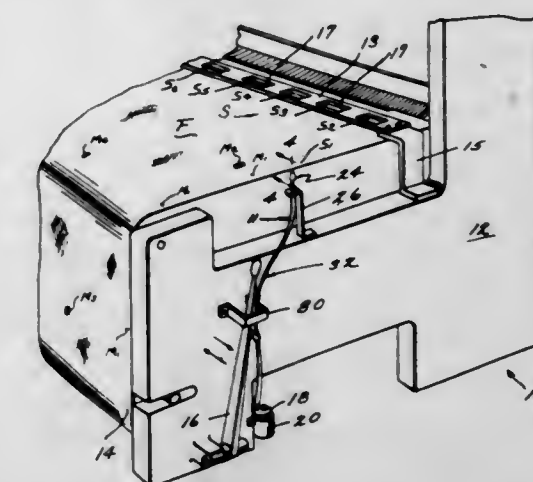
for penetration by jacket material and a continuous helical groove in the inside wall of the hose for receiving a male threaded fitting member.

**3,459,234**  
**TWO-PIECE EXTRUDED TUBULAR ASSEMBLY**  
Robert L. Richter, 806 E. Leadora, Glendora, Calif. 91740, and Jack E. Sauter, 5235 N. Citrus, Azusa, Calif. 91702  
Filed Aug. 8, 1967, Ser. No. 659,097  
Int. Cl. F16l 9/22, 9/06  
U.S. Cl. 138—165 10 Claims



A two-piece tubular assembly formed from a pair of extruded members of generally C-shape in cross-section having nesting edges one of which is generally V-shaped in cross-section and the other of which has a V-shaped tongue. The nesting surfaces of these complementally shaped lateral edge portions are serrated and positively interlock as the parts are pressed together. The parts also cooperate upon assembly to form a captive raceway for sail keepers and the like fittings commonly used on sail craft. The nesting surfaces may be coated with adhesive or a strong bonding agent.

**3,459,235**  
**MEANS FOR DETERMINING STOPS OF A LOOM OR THE LIKE**  
John V. Cauthen and Claudell Hinson, Fayetteville, and Garland M. Ledford, Greensboro, and Fujio Abe, Fayetteville, N.C., assignors to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware  
Filed June 7, 1967, Ser. No. 644,283  
Int. Cl. D03d 51/06  
U.S. Cl. 139—1 21 Claims



A system and method for evaluating the effectiveness of operation of textile apparatus such as a loom or the like, by marking a spot on the textile product being produced on the apparatus with a marking liquid or chalk each time the textile apparatus stops, the mark identifying the kind of stop, and subsequently tabulating and re-



ording the number of spots or marks for each kind of stop for the particular run. One type of apparatus used in the system for marking including a reservoir for marking liquid, a pump supplied with liquid from the reservoir, the pump in turn discharging a single shot of the marking liquid onto the product being produced by the textile apparatus through a nozzle when the textile apparatus stops. The pump is actuated by means of any member on the textile apparatus automatically movable to a predetermined position upon stoppage of the same.

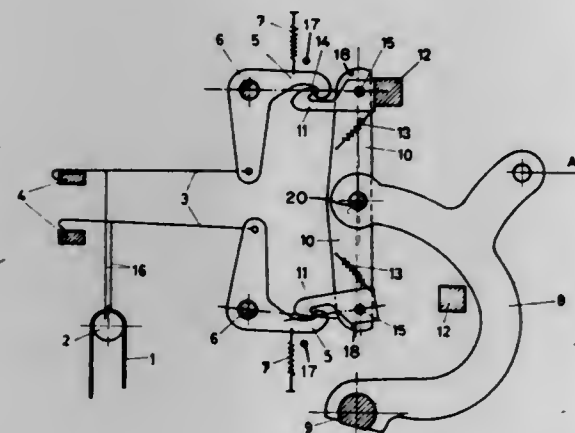
3,459,236

## DOBBY MACHINES

Marcel Favre, Faverges, France, assignor to Gebr. Staublic & Co., Horgen, Switzerland  
Filed Jan. 29, 1968, Ser. No. 701,198  
Claims priority, application Switzerland, Jan. 30, 1967, 1,319/67  
Int. Cl. D03c 1/06

U.S. Cl. 139—71

7 Claims



In order to avoid undesired disengagement of the attachment hooks on the baulk of a dobby machine from the arrester hooks or other pull members upon sudden stoppage of the machine, for example upon yarn breakage, each of the arrester hooks is spring biased toward the respective attachment hook or pull member and stops are provided on the baulk to limit pivotal movement of the attachment hooks by the springs.

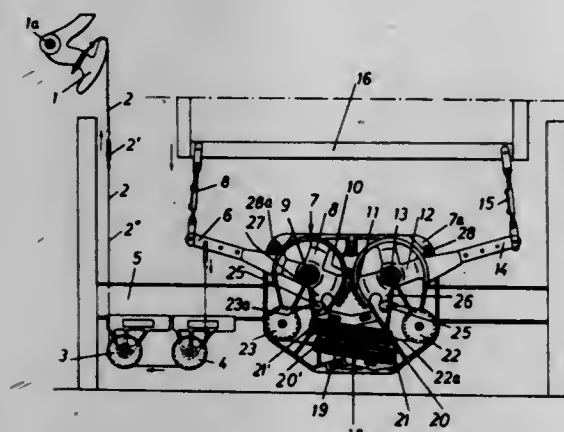
3,459,237

## HEDDLES FOR TEXTILE LOOM

Sergio Serra Xaus, Legaldad 12, Barcelona, Spain  
Filed Apr. 13, 1966, Ser. No. 542,329  
Claims priority, application Spain, Aug. 30, 1965, 316,952  
Int. Cl. D03c 9/06

U.S. Cl. 139—89

7 Claims



A shedding mechanism for a loom including a heald frame and a control member for lowering the heald

frame. The shedding mechanism includes a return mechanism for raising the heald frame and cable means for connecting the control member to the return mechanism. The return mechanism is positioned below the heald frame and is connected to the heald frame so that, after the control member is operated to actuate the heald frame in a downward stroke, the return mechanism functions to raise the heald frame after same has completed its downward stroke.

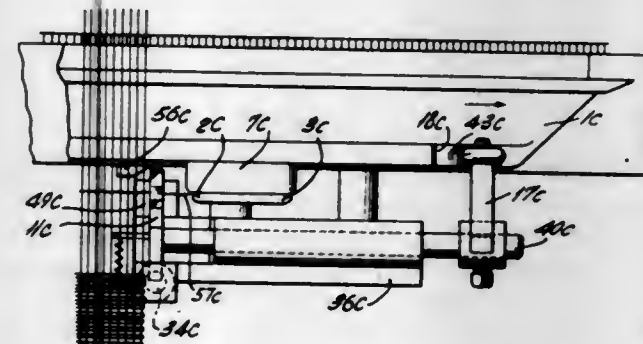
3,459,238

## GRIPPING SHUTTLE LOOM

Fritz Schilde, Manfred Richter, and Dietrich Ambrosius, Grossenhain, Saxonia, Manfred Tille, Oederan, Saxonia, Ludwig Gunther, Gunter Loos, Heinrich Mzyk, and Siegfried Miersch, Karl-Marx-Stadt, Winfried Haupt, Grossenhain, Saxonia, Wolfgang Rossel, Zabelitz, Gunter Beuchel and Gerhard Erler, Grossenhain, Saxonia, and Herbert Weder, Neugersdorf, Saxonia, Germany, assignors to VEB Webstuhlbau Grossenhain, Grossenhain, Saxonia, Germany  
Continuation of application Ser. No. 487,659, Sept. 16, 1965. This application Dec. 26, 1967, Ser. No. 693,682  
Int. Cl. D03d 47/18

U.S. Cl. 139—122

9 Claims



A gripping shuttle loom with a shed, a slay, a driven member and a shuttle track is disclosed, which comprises a gripping shuttle movable along the shuttle track and carrying a first weft retaining device while a second weft retaining device is mounted on the slay. The second weft retaining device is movable into a weft retaining position by means on the shuttle and into a weft releasing position by the driven member. The second weft retaining device includes a presser, a rod supporting the presser and movable in longitudinal direction of the rod, a spring urging the presser into engagement with the slay to retain the weft therebetween, and a locking member normally holding the presser out of engagement with the slay. The means on the shuttle are provided with a member for releasing the locking member to thereby permit the spring to bring the presser into weft retaining engagement with the slay. The second weft retaining device is located outside the shed and includes also a table adapted to be raised, and lowered by the presser.

3,459,239

## SHUTTLE GRIP AND STRAP

James S. Russell, Greer, S.C., assignor to Steel Heddle Manufacturing Company, Paris, S.C., a corporation of Pennsylvania  
Filed Jan. 17, 1968, Ser. No. 698,455  
Int. Cl. D03j 5/02, 5/06

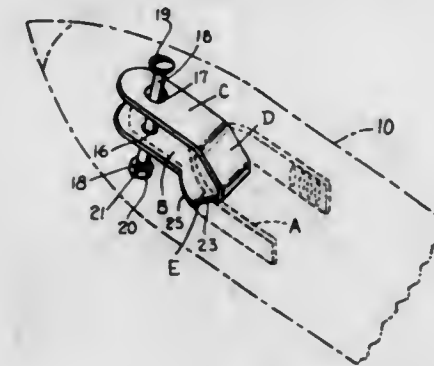
U.S. Cl. 139—207

1 Claim

A shuttle grip and strap constructed of steel wherein the bottom plate of the strap has opposed ear portions spaced entirely forwardly of a juncture of the inclined wall of the strap with the bottom plate. Each ear portion includes an enlarged bearing protuberance integral with the ear portions and with the bottom plate. Such spacing of the ear portions forwardly from the marginal portions

of the thin base of the shuttle avoids formation of hair line cracks in the marginal portions. Such cracks are caused by the present ear portions which extend rear-

wardly of the juncture overlying the marginal portions, ultimately causing failure of the shuttle body in such marginal portions.



wardly of the juncture overlying the marginal portions, ultimately causing failure of the shuttle body in such marginal portions.

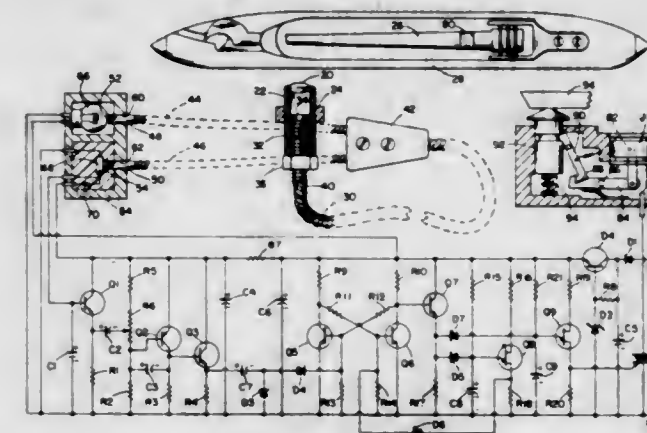
3,459,240

## FIBER OPTIC SENSING, FOR EXAMPLE, OF LOOM BOBBINS

George Duncan Erickson, Wakefield, Mass., assignor to Dolan-Jenner Industries, Inc., Melrose, Mass., a corporation of Massachusetts  
Filed Nov. 21, 1967, Ser. No. 684,743  
Int. Cl. D03d 45/10; G02b 5/14

U.S. Cl. 139—273

3 Claims



Optical reflectivity, e.g. of a bobbin in a loom shuttle, is sensed by passing light through one branch of a bifurcated fiber optic bundle, focusing it upon the object with a lens, catching the reflected light with the lens and passing it through the other branch to a photosensitive device.

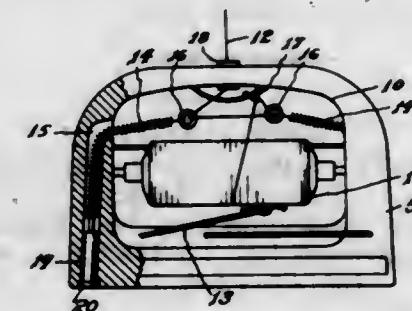
3,459,241

## STOP MOTION FOR LOOMS

Mitchell M. Rosenstein, 133 Bollvia St., Willimantic, Conn. 06226  
Filed Jan. 5, 1968, Ser. No. 695,930  
Int. Cl. D03d 51/34, 51/00

U.S. Cl. 139—371

10 Claims



A stop motion, for looms having a shuttle for the filler thread, which includes a plunger carried by the shuttle for

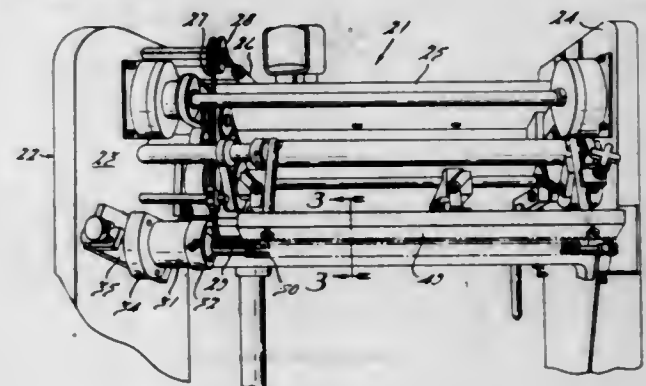
operating an electric switch and causing stoppage of the loom. Said plunger being normally held in retracted position and released to operate the switch upon the filler thread being broken or exhausted.

3,459,242  
MACHINE FOR INSERTING SPIRAL WIRE BINDERS

Armin E. Schmidt, Warren, Mich., assignor to Hans Sickinger Company, Pontiac, Mich., a corporation of Michigan  
Filed Aug. 15, 1967, Ser. No. 660,702  
Int. Cl. B21f 21/00, 45/00

U.S. Cl. 140—92.93

2 Claims



A spiral wire binding machine having stationary and movable guide roller supports for the wire and a coiling head adjustable along a path about 25° from the horizontal to adjust for different book thicknesses and coil diameters.

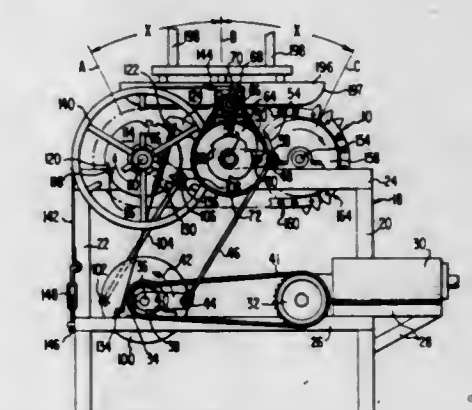
3,459,243

## FULLY AUTOMATIC CROSSLIMB ATTACHING MACHINE

Percy Dieffenbach, R.D. 1, Olyphant, Pa. 18447  
Filed July 11, 1966, Ser. No. 564,263  
Int. Cl. B21f 7/00, 15/02

U.S. Cl. 140—149

10 Claims



Automated apparatus for coupling an artificial Christmas tree crosslimb to a main tree limb section by wrapping including, initially placing the crosslimb in angular overlapping relationship to the main limb at the feed station of the intermittently moved conveyor, with wrapping occurring at a wrapping station displaced therefrom, during cessation of conveyor movement.

3,459,244

## HEAD FOR FILLING AEROSOL CONTAINERS

Pasquale R. Riccio, Salem, N.H., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut  
Filed Feb. 15, 1967, Ser. No. 616,249  
Int. Cl. B65b 31/02

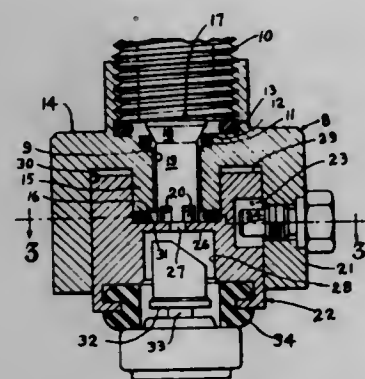
U.S. Cl. 141—20

5 Claims

A head is provided for use with machines which fill aerosol containers under pressure. A one-piece holder for the valve is extended to an open ended housing for an



adaptor unit which is moved upwardly in the housing when pushed into sealing engagement with a container. Releasable fastening means for the adaptor unit allows movement of the unit to open the valve. The adaptor



units are, relatively simple and cheap to make and one can quickly be replaced by another to accommodate different kinds of containers or standard containers with or without a valve actuating button.

#### 3,459,245 SAFETY FILLING DEVICE

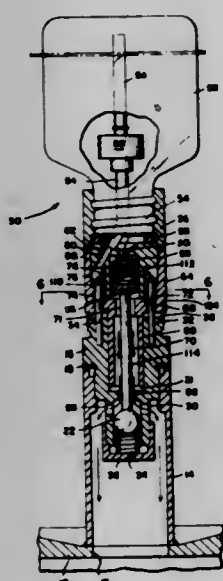
Peter Jürgen Schreiber, Doylestown, Pa., and Travers Fraser Sweatman, Toronto, Ontario, Canada, assignors to Fraser Sweatman Incorporated, Buffalo, N.Y., a corporation of New York

Filed Feb. 17, 1967, Ser. No. 616,961

Int. Cl. B65b 3/04, 1/04

U.S. Cl. 141—292

1 Claim



A device for preventing the introduction of an incorrect liquid into a container having a telescoping interlock with a portion thereof on the container being filled and a portion on the container being emptied. Check valves are employed to prevent liquid flow until the interlock is telescoped at which time actuators open the check valve.

#### 3,459,246

#### METHOD AND PLANT FOR TREATING LUMBER

Par Axel Rune Ottosson, Nybro, Sweden, assignor to Kahrs Maskiner Aktiebolag, Nybro, Sweden

Filed Sept. 23, 1966, Ser. No. 581,514

Claims priority, application Sweden, Sept. 24, 1965, 12,410/65

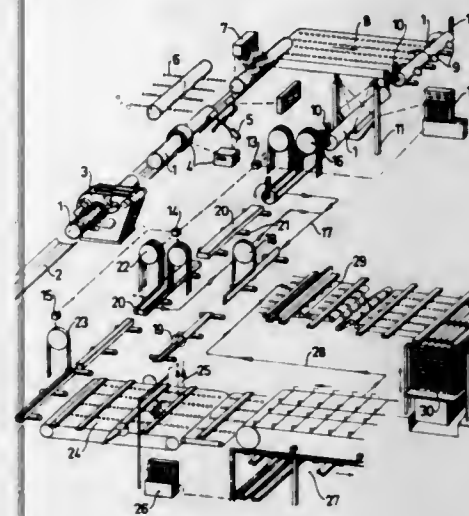
Int. Cl. B27b 1/00; B27c 9/00

U.S. Cl. 144—312

6 Claims

Examining an incoming log, with photocells to de-

termine the size, and radioscopically to determine quality



#### ERRATUM

For Class 146—225 see:  
Patent No. 3,460,162

#### 3,459,247

#### CHUM DISPENSER

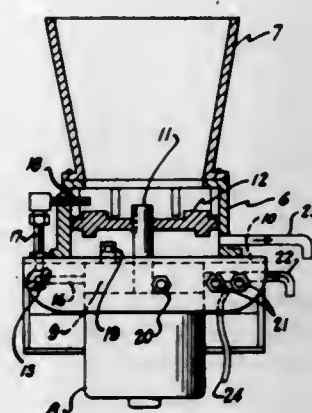
Edward G. Goodman, 608 Clearview Ave.,  
Trevose, Pa.

Filed Jan. 18, 1967, Ser. No. 610,172

Int. Cl. A47j 17/14; A01f 7/02

U.S. Cl. 146—192

1 Claim



This dispenser includes a hopper, a grinding chamber below the hopper, a cutting wheel within the grinding chamber, a pump located below the grinding chamber, an electric motor connected to the pump and cutting wheel for driving them, the pump having an intake pipe that is connected to a hose that can project into the water, the pump also having an outlet pipe connected to the interior of the grinding chamber, an exhaust tube connected to the interior of the grinding chamber and an exhaust hose connected to said exhaust tube.

#### 3,459,248

#### WIRE INSERT

Richard E. Waller, 534 Shenley Drive,  
Erie, Pa. 16505

Continuation of application Ser. No. 539,473, Apr. 1,  
1966. This application Jan. 11, 1968, Ser. No. 697,132

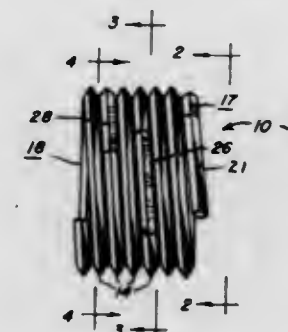
Int. Cl. F16b 39/30

U.S. Cl. 151—14

3 Claims

A wire insert comprising a wire with a diamond shape wound about an axis in a helical direction on a generally constant diameter to make up a plurality of coils. One end

of the insert has a tang extending generally normal to the axis to aid in inserting the insert into an internal screw thread. A plurality of chords are formed of the wire each of which has ends which terminate on a circumference defined by the referred to diameter. The chords adjacent



each other are spaced apart an angular distance of at least 180 degrees and no greater than 270 degrees. The ratio of the total number of chords over the total number of locking coils being in the range of 1.2 to 2.5 and more preferably 2.0 to 2.5 and it is also preferred that there be at least three chords.

#### 3,459,249

#### STIFF NUTS

Arthur Edmund Jordan and Reginald Hugh Williams,  
Birmingham, England, assignors to G.K.N. Screws &  
Fasteners Limited, Smethwick, Warley, Worcestershire,  
England, a British company

Filed Jan. 10, 1968, Ser. No. 696,827

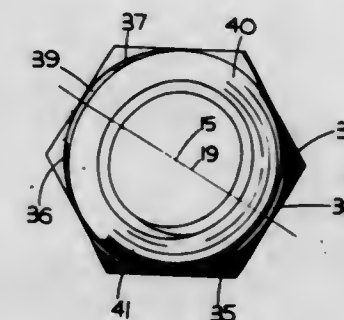
Claims priority, application Great Britain, Jan. 10, 1967,

1,230/67

Int. Cl. F16b 39/02, 39/28

U.S. Cl. 151—21

3 Claims



A stiff nut which has the required prevailing torque characteristics but which will avoid damage to a bolt. The stiff nut has a collar which is closed to elliptical shape by pressure applied at four points arranged symmetrically with respect to a diameter of the nut such that the angle between two adjacent points on opposite sides of the diameter is between 110 and 130°.

#### 3,459,250

#### PREVAILING-TORQUE LOCKSCREWS

Joseph A. Tabor, Greenwich, Conn., assignor to Burdall Russell & Ward Bolt and Nut Company, Port Chester, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 630,887,  
Apr. 14, 1967. This application Oct. 7, 1968, Ser.  
No. 765,595

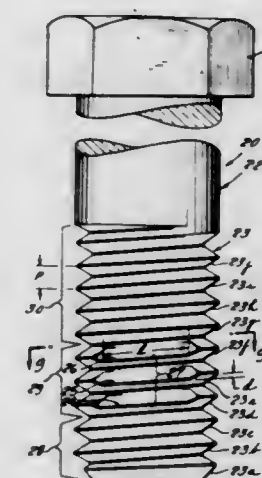
Int. Cl. F16b 39/30, 39/284

U.S. Cl. 151—22

17 Claims

Prevailing-torque lock screws in which certain threads are deflected to form a cluster of offset thread segments

producing spring action friction on mating female thread. The root diameter and root lead of the thread on the lock screw are uniform throughout the length of the thread,



and each of the offset thread segments lie throughout their lengths at the same helix angle as that of the remainder of the thread.

#### 3,459,251

#### RUBBER TIRES WITH NYLON REINFORCEMENT CORD CONTAINING DISPERSED THEREIN THE REACTION PRODUCT OF BORIC ACID AND AN ALIPHATIC ALCOHOL

Richard W. Kibler, Cuyahoga Falls, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Mar. 31, 1965, Ser. No. 444,464

Int. Cl. B60c 19/00

U.S. Cl. 152—330

1 Claim

The flat-spotting characteristics of nylon tire cord reinforced tires can be substantially minimized by including in the nylon tire cord the reaction product of boric acid and an aliphatic alcohol.

#### 3,459,252

#### RIM FOR VEHICLE WHEELS

Henri Verdier, Beauregard-L'Eveque, France, assignor to Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie, Clermont-Ferrand, Puy-de-Dome, France

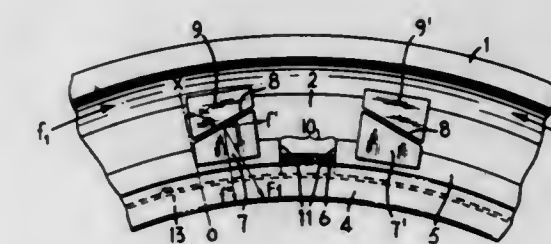
Filed May 26, 1967, Ser. No. 641,674

Claims priority, application France, May 27, 1966, 63,435

Int. Cl. B60c 7/24

U.S. Cl. 152—410

6 Claims



The invention disclosed herein relates to wheel rims in which respective angular displacement of the pieces forming the rim is prevented by equipping the axially movable ring forming the seat of the bead and the split locking ring with means which engage and resist torque applied to the axially movable bead seat ring tending to rotate it with respect to the rim base.



3,459,253

**METHOD OF CASTING PISTONS**

Arthur John Woolcott, Lymington, England, assignor to Wellworthy Limited, Lymington, England, a British company

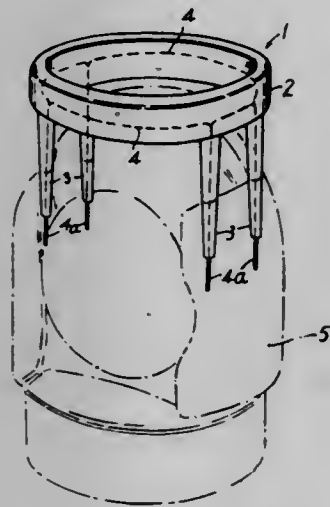
Filed Mar. 19, 1965, Ser. No. 441,180

Claims priority, application Great Britain, Mar. 25, 1964, 12,737/64

Int. Cl. B22c 9/02, 7/02

U.S. Cl. 164—36

8 Claims



This disclosure relates to a method of casting pistons particularly from aluminum and its alloys. According to the disclosure, a method of casting a metal piston having at least one cavity therein includes the steps of firstly casting a core from a molten water soluble salt to the shape or configuration of the cavity or cavities to be formed in the piston, casting the metal piston around this core and then dissolving out the soluble core from the cast piston so as to leave the desired cavity or cavities formed in the piston.

3,459,254

**PRESSURE POURING CONTROL ARRANGEMENT**

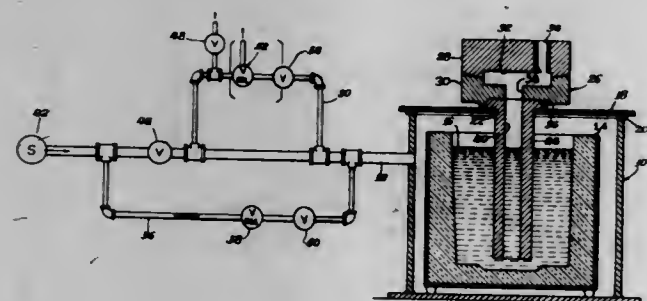
Raymond J. Dearth, Roselle, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey

Filed Dec. 27, 1966, Ser. No. 604,910

Int. Cl. B22d 27/14, 17/06

U.S. Cl. 164—119

5 Claims



A valve system is used in conjunction with a pressure casting operation to maintain a constant pressure and hold the molten metal in the mold. Additional pressure is added to compensate for leaks and a pressure relief valve is provided to bleed off pressure in excess of that required to fill the mold.

3,459,255

**GRAPHITE CONTINUOUS CASTING MOLD**

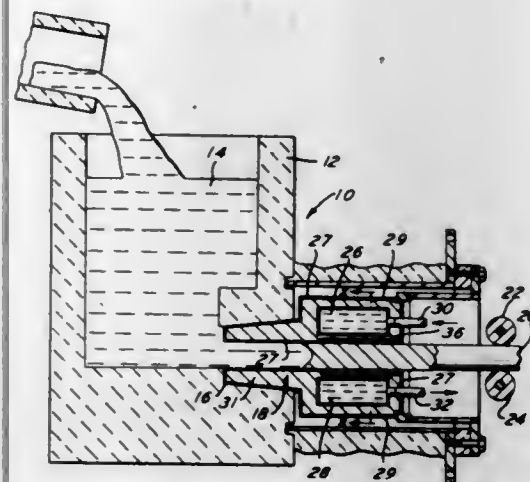
George Frederic Kolle, Yardley, Pa., assignor to Ascast Corporation, Riverton, N.J., a corporation of New Jersey

Filed Dec. 7, 1966, Ser. No. 599,920

Int. Cl. B22c 3/00; B22d 11/02

U.S. Cl. 164—283

4 Claims



A continuous casting mold made from low density graphite is coated with a thin layer of copper or silver to obtain advantages of dense graphite which is substantially more expensive and not commercially available in large pieces.

3,459,256

**CASTING APPARATUS**

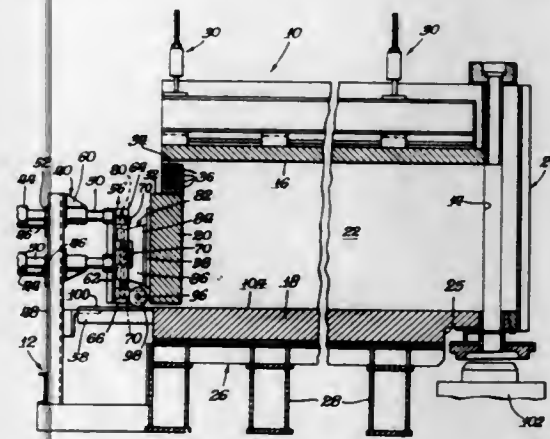
Lyman W. Jeffreys, Mount Prospect, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey

Filed Apr. 13, 1966, Ser. No. 542,335

Int. Cl. B28b 7/02; B22d 17/26; B41b 11/68

U.S. Cl. 164—342

8 Claims



An adjustable slab mold has a plurality of inner blocks interposed between opposed main side blocks to define a longitudinal casting cavity. An end block of the mold is biased away from an adjacent bottom block during loose engagement of the inner blocks and is movable on rollers across the cavity defining surface of the bottom block. Upon tight engagement of the inner blocks the end block is forced into contact with the bottom block.

3,459,257

**ROOM COOLING SYSTEM**

George F. Knapp, 8444 Lucerne Drive, Chagrin Falls, Ohio 44022

Filed July 24, 1967, Ser. No. 655,448

Int. Cl. F24f 3/14

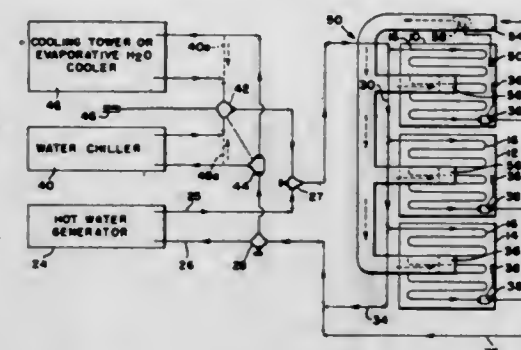
U.S. Cl. 165—3

7 Claims

A comfort conditioning system utilizing the heat transfer characteristics of radiant type panels and controlled by a humidity sensor exposed to outside conditions to

maintain the panel temperature at a level above the existing dew point. The cooling effect may be employed in conjunction with a forced air ventilation system which cooperates in the control of the humidity and temperature of the area under the direction of an indoor hu-

midity sensor. The cooling system is adaptable for use with an existing radiant panel heating system and senses dew point levels to control cooling and also maintain indoor conditions at a level to prevent condensation upon the heat transfer panels.



3,459,258

**HEAT EXCHANGER SUPPORTS**

Maurice Reginald Wagner, London, England, assignor to E. Green and Son Limited, Wakefield, Yorkshire, England, a British company

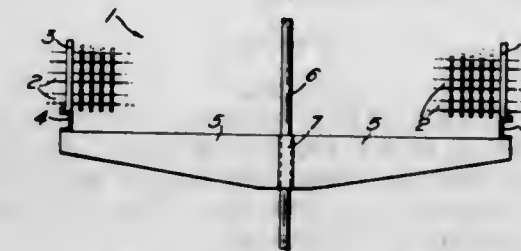
Filed July 21, 1966, Ser. No. 567,002

Claims priority, application Great Britain, July 26, 1965, 31,901/65

Int. Cl. F28f 9/00; F22b 37/24

U.S. Cl. 165—67

4 Claims



A heat exchanger comprising a bank of heat exchanger tubes supported in a heating chamber by vertical supports suspended from above, wherein the heat exchanger tubes are supported at points spaced along their length by cantilevers attached to the vertical supports.

3,459,259

**MUDLINE SUSPENSION SYSTEM**

William R. Matthews, Corpus Christi, Tex., assignor to Mobil Oil Corporation, a corporation of New York

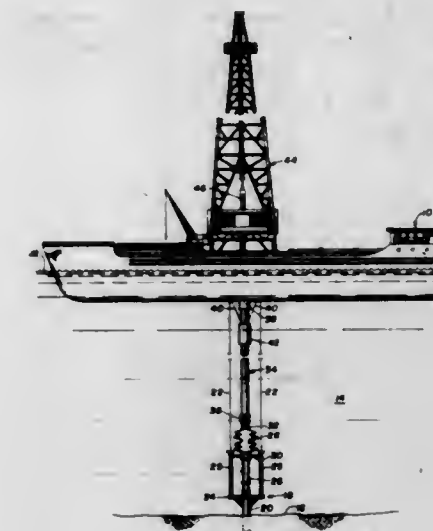
Filed Sept. 9, 1966, Ser. No. 578,248

Int. Cl. E21b 33/035, 43/01, 7/12

U.S. Cl. 166—5

10 Claims

This specification discloses apparatus for tying back a subaqueous well, originally capped on the bottom, to an above-surface deck of a later installed production platform. The capped well was originally drilled using a mudline suspension system wherein the casing strings are hung from, and supported at, the marine bottom. Between the above-surface deck of the production platform and the mudline suspension system is a marine riser and at least casing riser extensions of the outermost casings to permit the monitoring of pressure in the included annuli. Excessive pressure can be bled off from the deck of the platform. The marine riser and the casing riser extensions



the mudline system and the platform deck are not rigidly longitudinally fixed with respect to each other to allow movement as the platform is deformed under wind and wave loads.

3,459,260

**WELL TOOLS**

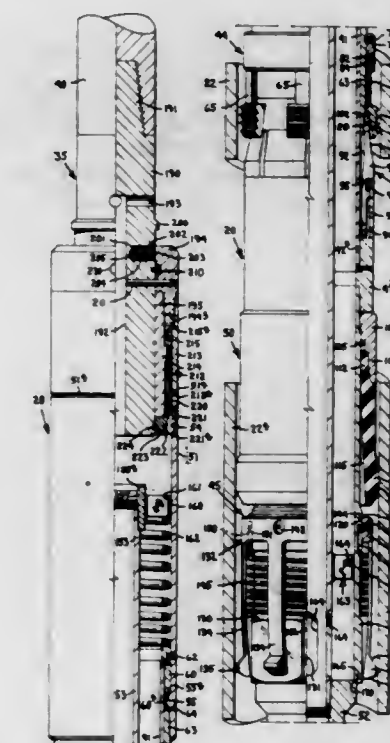
William W. Dollison, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware

Filed Mar. 27, 1967, Ser. No. 626,162

Int. Cl. E21b 33/03, 33/128, 23/00

U.S. Cl. 166—73

24 Claims

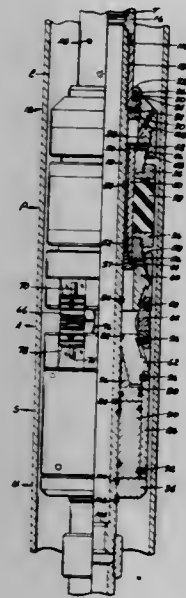


A surface controlled subsurface valve for controlling fluid flow through a conductor. A longitudinally movable valve in a body supporting an annular external seal for sealing around the body within a flow conductor. The valve has a spring biasing it toward closed position. A tubular member extends in the flow conductor to the valve to hold the valve at open position against the force of the valve spring. A surface positioned fluid controlled



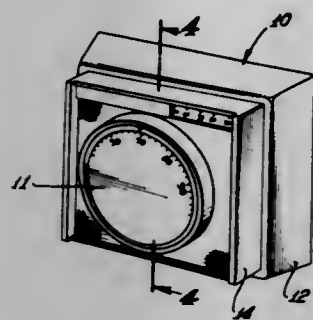
piston unit is secured to the tubular member for holding the valve at open position.

**3,459,261**  
**PRESSURE DIFFERENTIAL EXPANDING MEANS FOR WELL PACKERS**  
Chudleigh B. Cochran, Houston, Tex., assignor to Brown Oil Tools, Inc., Houston, Tex., a corporation of Texas  
Filed Dec. 13, 1965, Ser. No. 513,465  
Int. Cl. E21b 33/126  
U.S. Cl. 166—120 1 Claim



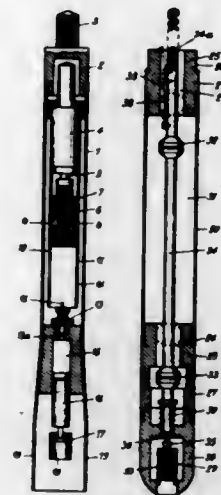
A well packer including a packing element mounted on a slidable sleeve between abutments with the sleeve being responsive to pressure differentials from both directions to increase the endwise compression on the packing element.

**3,459,262**  
**THERMOSTAT DIAL CLICKING MECHANISM**  
Ronald C. Powell, Los Angeles, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland  
Filed July 31, 1967, Ser. No. 657,325  
Int. Cl. G09f 9/00; G01d 21/00  
U.S. Cl. 116—133 7 Claims



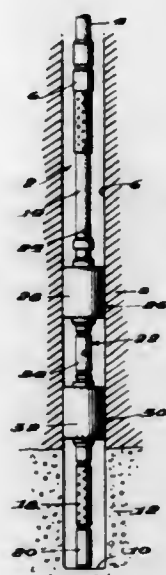
Toothlike serrations are resiliently mounted on the back side of a dial affixed to a control device shaft. A calibrated set of serrations provided on the control device housing mesh with the serrations of the dial such that rotative adjustment of the dial produces a clicking that is both audible and tactile as the teeth move into and out of mesh. The number of clicks is functionally related to the amount of adjustment imparted to the control device. A further aspect is that the serrations are produced by one-piece molding as part of the dial and housing respectively.

**3,459,263**  
**FLUID SAMPLING DEVICE**  
Jean Auguste Prosper Drivet, St.-Germain-en-Laye, France, assignor to Societe Anonyme: Societe Auxiliaire des Producteurs de Petrole Flopetrol, Paris, France  
Filed May 29, 1967, Ser. No. 641,895  
Claims priority, application France, June 9, 1966, 64,826  
Int. Cl. G01n 1/10  
U.S. Cl. 166—165 10 Claims



The present invention has reference to the taking of fluid samples from deep wells and their maintenance under conditions similar to those which prevail at the bottom of the well and relates more particularly to the taking of samples from oil wells while being also utilizable for sampling other fluids such as water whenever it is necessary to obtain samples taken under well bottom conditions by means of an apparatus operated by a steel wire line and requiring no electrical connection with the ground surface for correctly functioning.

**3,459,264**  
**PRESSURE REGULATING VALVE ASSEMBLY BETWEEN OPEN HOLE PACKERS AND METHOD**  
Cleo C. Olson, Duncan, Okla., and John B. Blevins, Midland, Tex., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware  
Filed May 18, 1967, Ser. No. 639,384  
Int. Cl. E21b 47/06, 43/00, 33/124  
U.S. Cl. 166—250 15 Claims



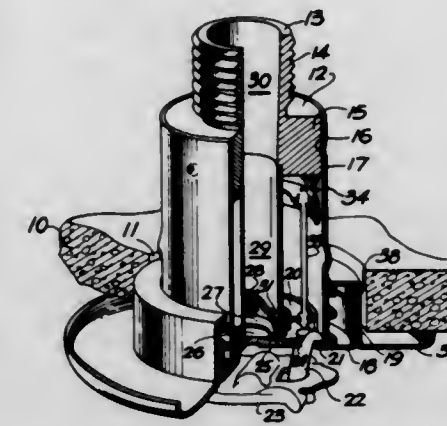
In drill stem testing of wells, the formation to be tested is sealed from the hydrostatic pressure of fluid in the well. This seal is provided by a pair of expandable packers positioned above the formation. The packers are

spaced apart in the tubing string and a port in the sub connecting the packers establishes fluid communication between the interior and exterior of the sub. A valve opens and closes the port in response to fluid pressure acting on the valve element. The valve opens while the string is being run to the depth of the formation in response to the hydrostatic pressure of the well fluid. After the packers have been expanded, the fluid pressure in the annulus below the upper packer drops as fluid bleeds through the port into the interior of the sub. The valve closes when the pressure reaches a certain minimum value. The hydrostatic pressure at the depth of the formation is determined and the valve is adjusted to close at a predetermined lower pressure to establish a pressure differential across the upper packer and a pressure differential across the lower packer, so that the hydrostatic load is distributed between the packers.

**3,459,265**  
**METHOD FOR RECOVERING VISCOUS OIL BY STEAM DRIVE**  
Thomas S. Buxton and Jack L. Shelton, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware  
No Drawing. Filed July 28, 1967, Ser. No. 656,642  
Int. Cl. E21b 43/24 9 Claims

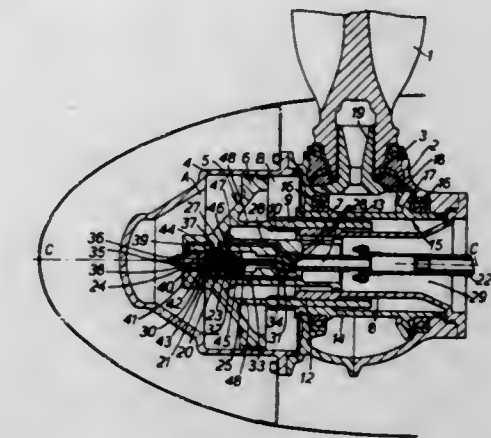
Viscous oil is recovered more easily from an underground formation by heating it with steam. Injection of steam is facilitated by forming and enlarging flow channels for the steam by injecting into the formation a mixture of an inert gas, such as methane, and an oil solvent, such as propane. A channel may be formed from a single well by injecting the mixture and then releasing the pressure so oil thinned by the solvent flows back into the well. A channel may also be formed between two wells or between an injection well and several outlet wells. Fractures may be formed to aid channel formation.

**3,459,266**  
**CEILING SPRINKLER**  
Wayne E. Ault, Youngstown, Ohio, assignor to "Automatic" Sprinkler Corporation of America, Cleveland, Ohio  
Filed Apr. 18, 1967, Ser. No. 631,713  
Int. Cl. A62c 37/12 4 Claims



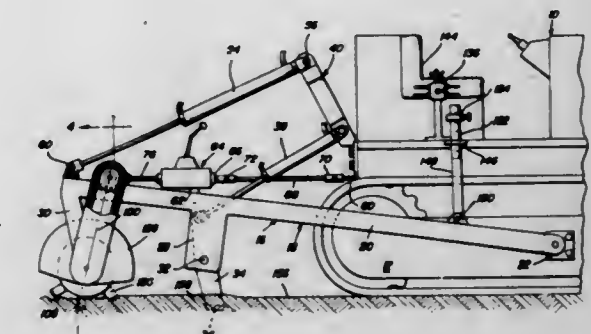
A fire extinguishing sprinkler for flush mounting in a ceiling, having a discharge opening normally closed by a combination valve element and deflector with heat fusible means holding said combination valve element and deflector in closed relation to said discharge orifice, said combination valve element and deflector being movable to a position spaced with respect to said discharge opening so as to act as a deflector for fire extinguishing fluid flowing from said discharge opening.

**3,459,267**  
**BLADED ROTORS**  
John Alfred Chilman, Painswick, England, assignor to Dowty Rotol Limited, Gloucester, England  
Filed Apr. 12, 1967, Ser. No. 630,251  
Claims priority, application Great Britain, Apr. 12, 1966, 16,007/66  
Int. Cl. B64c 11/06, 11/32; B63h 3/02  
U.S. Cl. 170—160.32 23 Claims



A bladed rotor having adjustable blading, adjustment of which is effected by the operation of a fluid pressure motor, includes a control valve adjustable for appropriate control of the motor. A further valve is operative, upon the occurrence of a predetermined but inadvertent amount of drift of the motor and thus of the blading, to lock the motor hydraulically. The blading is conveniently of variable pitch, and the further valve may be disposed hydraulically in series with the control valve and arranged to close in the event of said inadvertent drift of the motor and blading.

**3,459,268**  
**CRAWLER TRACTOR GROUND PULVERIZER ATTACHMENT**  
Albert P. Forster, Harlingen, Tex., assignor to one-half to Reginald F. Muggley, Harlingen, Tex.  
Filed Oct. 13, 1965, Ser. No. 495,404  
Int. Cl. A01b 49/02, 63/102 5 Claims



A draft vehicle mounted ground pulverizing attachment including a pair of powered opposite side front to rear extending lift arms pivotally supported at their forward end from a draft vehicle and including vertically swingable rear ends between which an elongated horizontally disposed and driven rotary ground pulverizing structure is journaled, the attachment also including an elongated horizontally disposed ground stripping blade disposed forward of said pulverizing structure and supported from said arms, intermediate their front and rear ends, for up and down swinging therewith and also for up and down adjustment relative to said arms and the ground pulverizing structure.



3,459,269

## FRUIT HARVESTER

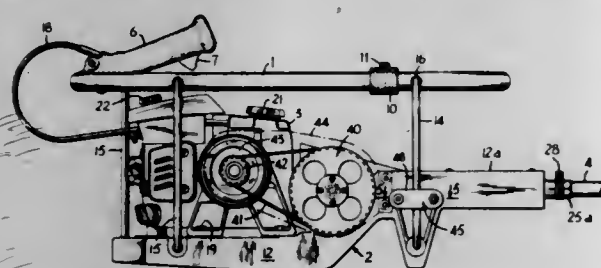
Thomas A. Hunter, Westport, Noble P. Sherwood, Greenwich, and Gilbert E. Buske, Stamford, Conn., and Alexander J. Guarino, Tuckahoe, N.Y., assignors to Textron, Inc., Providence, R.I., a corporation of Rhode Island

Filed May 25, 1967, Ser. No. 641,331

Int. Cl. B23b 45/04; A01g 19/00

U.S. Cl. 173-170

11 Claims



Apparatus for harvesting fruit by shaking a tree or limb comprises a hand held support preferably in the form of a rectangular tubular frame and a power unit suspended from the support by a parallelogram linkage permitting oscillation of the power unit relative to the support. A boom extending from the power unit and having at its upper end a connection for attachment to the limb of a tree, is mounted for generally lengthwise oscillation. The power unit comprises a motor and driving connections between the motor and the boom to oscillate the boom relative to the power unit. Reaction forces cause the power unit to oscillate relative to the support. The boom is positioned so that its longitudinal axis passes substantially through the center of gravity of the power unit so that the reaction forces of the boom and power unit are substantially in line with one another. A speed control for the motor is provided on the hand-held support and is connected to the motor by a flexible connection. A sliding torque arm restrains rotary movement of the boom.

3,459,270

## WEAR BUSHING FOR UNDERWATER DRILLING APPARATUS

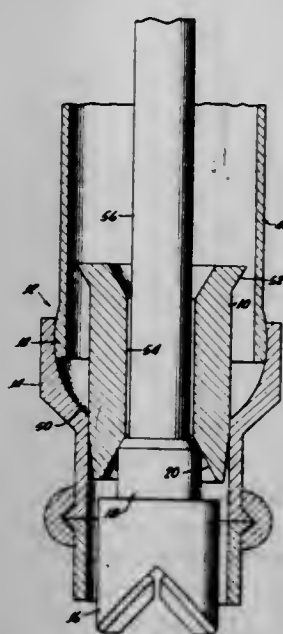
Frank J. Schuh, Dallas, Tex., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 8, 1967, Ser. No. 621,484

Int. Cl. E21b 15/02, 33/03

U.S. Cl. 175-7

3 Claims



This application relates to a wear bushing for use proximate the upper end of a blowout preventer assembly in an ocean floor drilling apparatus to protect the internal surfaces of the blowout preventer assembly from the lateral contact forces of the drill pipe which are present

when the riser, which extends from a floating vessel, is not perfectly aligned with the blowout preventer assembly.

3,459,271

## COMPUTING WEIGHING SCALE SYSTEM

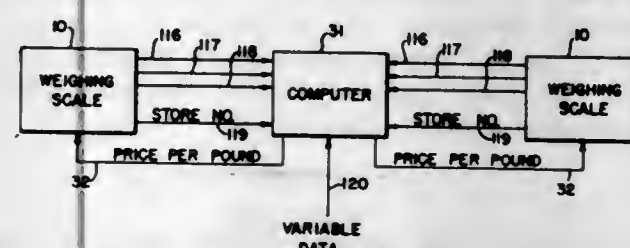
William C. Susor and Robert E. Bell, Toledo, Ohio, assignors, by mesne assignments, to The Reliance Electric and Engineering Company, Toledo, Ohio, a corporation of Ohio

Filed Oct. 12, 1967, Ser. No. 674,826

Int. Cl. G01g 23/38

U.S. Cl. 177-3

6 Claims



The disclosure describes a weighing scale system which includes a plurality of electrical or electronic computing scales. Each scale comprises a computer for multiplying the weight of a commodity upon the scale by a selected unit price factor. The weighing scales may be located in several widely separated areas in a city where the unit price of a commodity may vary according to the location. Additionally, the unit price may vary according to the commodity grade (Australian beef for hamburger), date (steak may be priced higher on Friday payday than on Monday), current inventory, etc. Each scale also includes a set of commodity name printing plates for printing on a label the name of the commodity being packaged and for providing commodity name information to a centralized computer. The centralized computer selects the unit price for each scale, when the respective commodity name printing plate is changed in accordance with the particular commodity name and in view of the respective scale location and variable data such as the foregoing commodity grade, date and inventory, and sets the unit price factors in each of the scale computers.

3,459,272

## CONDITION RESPONSIVE APPARATUS

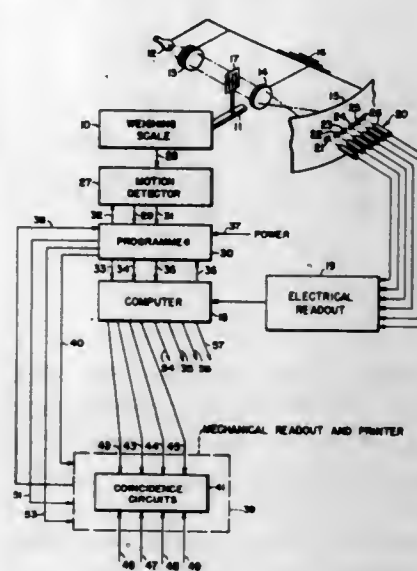
William C. Susor, Oregon, Ohio, assignor, by mesne assignments, to The Reliance Electric and Engineering Company, Toledo, Ohio, a corporation of Ohio

Filed Mar. 21, 1966, Ser. No. 535,760

Int. Cl. G01g 23/28

U.S. Cl. 177-4

8 Claims



An automatic computing weighing scale having print-

ing plates for printing commodity names and also for activating photosensitive means by permitting light to fall on such means in accordance with the unit prices of the respective commodity names. The activated photosensitive means inserts unit price into the computer of the scale.

3,459,273

## HYDRAULIC DRIVE AND STEERING CONTROLS FOR AN AGRICULTURAL MACHINE

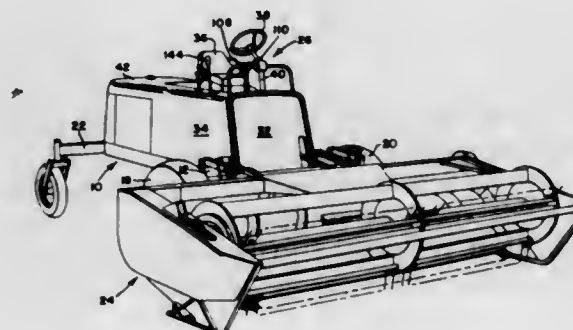
Joe Paul Leinhauser, Raymond Harry Fairbank, Donald E. Burrough, and Theodore Marion Barnes, Ottumwa, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Nov. 30, 1967, Ser. No. 686,913

Int. Cl. B62d 11/00; F16d 33/00

U.S. Cl. 180-6.48

11 Claims



A self-propelled windrower having separate hydrostatic drives for its right and left drive wheels, the windrower being steered by controlling the speed and direction of rotation of the respective drive wheels. Each drive includes a hydraulic motor driving one of the wheels and a variable displacement reversible pump controlled by a separate steering lever. Connected to the steering levers are a steering wheel for trim steering of the windrower and a master speed control lever for controlling the maximum forward speed position of the steering levers.

3,459,274

## SOUND BARRIER STRUCTURE AND METHOD OF MAKING SAME

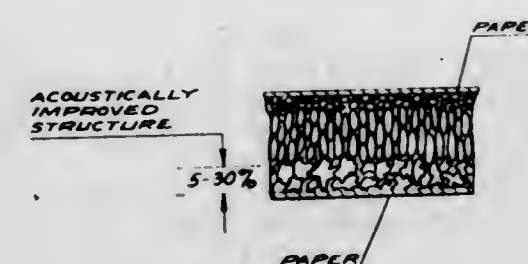
David D. MacPhail, Sr., Thompsonville, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Continuation-in-part of application Ser. No. 571,315, Aug. 9, 1966. This application July 31, 1967, Ser. No. 657,096

Int. Cl. G10k 11/04

U.S. Cl. 181-33

5 Claims



This application describes a foamed thermoplastic product wherein a critical portion of the cell structure of the foam is distorted and/or ruptured. The foamed product has improved acoustical characteristics, i.e., sound transmission resistance and is useful as panels or elements in building constructions. The critical distortion and/or rupture of the foam cell structure is achieved by

subjecting the foamed product to controlled partial compression.

3,459,275

## SOUNDPROOF COMPRESSED-AIR MACHINE

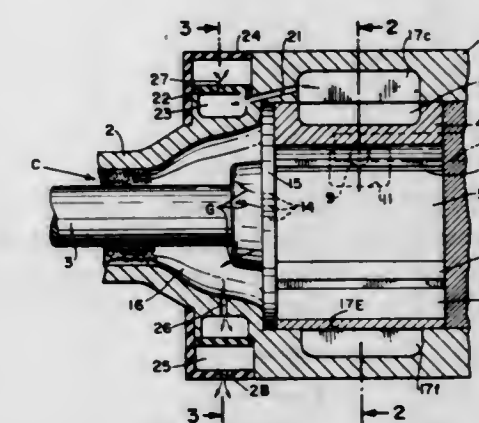
Hans Prillwitz, Klaus Mechülke, Karl-Heinz Kössler, and Bodo Seyfarth, Berlin, Germany, assignors to VEB Niles Pressluftwerkzeuge, Berlin-Pankow, Germany

Filed Aug. 5, 1968, Ser. No. 750,355

Int. Cl. F01n 1/18

U.S. Cl. 181-36

17 Claims



Soundproof compressed-air machine wherein the noise produced by the admitted and discharged compressed air is reduced by the provision of appropriate passages and chambers so as to shift the frequency range of air oscillations into an area which is less disturbing and health-damaging. Vibration-damping and sound-absorbing materials may also be used to increase the soundproofing effect.

3,459,276

## ROPE DEVICE FOR FIRE ESCAPE

Kiichiro Fuse, 745 Oaza-Sakal, Sakai-machi, Sawa-gun, Gumma-ken, Japan

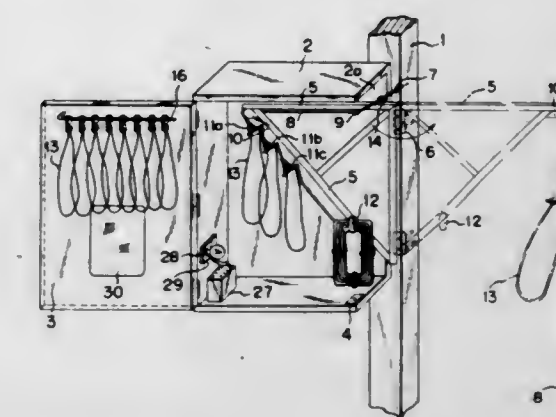
Filed Oct. 17, 1967, Ser. No. 675,941

Claims priority, application Japan, Oct. 20, 1966, 41/68,581

Int. Cl. A62b 1/14

U.S. Cl. 182-72

3 Claims



The rope device comprises a rope having one end rigidly fixed and the other end extended to lower place, a support means having an end for supporting said rope and a lowering unit consisting of an engaging means for engaging with the rope to produce frictional force for the rope and a support means for a person, wherein said engaging means is provided with at least two holes passed by the rope which is bent and tensioned by weight of the person whereby fire refugees may safely escape to lower floor or ground with lesser preparation.



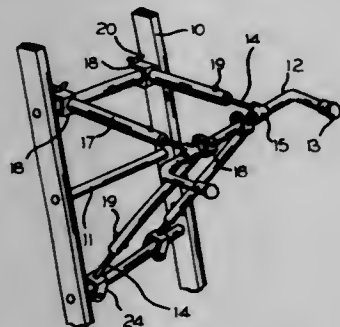
3,459,277

**LADDER JACKS**

Ezra F. Frederick, 1970 S. 81st St.,  
West Allis, Wis. 53214  
Filed Dec. 11, 1967, Ser. No. 689,719  
Int. Cl. E06c 7/06

U.S. Cl. 182—214

2 Claims



Ladder packs or support brackets capable of being selectively extended to desired lengths and amenable to use for supporting a ladder in use without the ladder contacting any vertical surface.

3,459,278

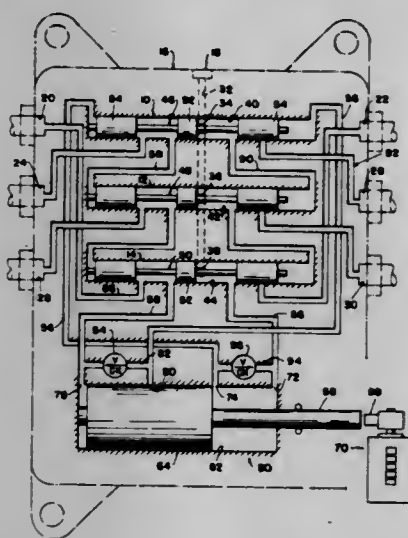
**INDICATING MEANS FOR DIVISIONAL LUBRICANT FEEDER**

James J. Callahan, Bloomfield Hills, Mich., assignor to McCord Corporation, Detroit, Mich., a corporation of Maine

Filed Sept. 27, 1967, Ser. No. 670,833  
Int. Cl. F01m 1/14

U.S. Cl. 184—7

5 Claims



A divisional lubricant feeder of the sequential divider valve type in which a piston and cylinder unit is interposed in certain of the transfer passages between two of the divider valves so that lubricant under pressure effects reciprocation of the piston once in each complete cycle of operation. A mechanically actuated counter is operated by the piston to record the cycles of operation.

3,459,279

**APPARATUS FOR OILING CONTINUOUSLY MOVING BODIES**

Nobuo Sensui and Tohei Honami, Yokohama-shi, Japan, assignors to Shibauro Kyodo Kogyo Kabushiki Kaisha, Kawasaki-shi, Kanagawa-ken, Japan, a joint-stock company of Japan

Filed Feb. 1, 1966, Ser. No. 524,286  
Claims priority, application Japan, Feb. 3, 1965, 40/5,511; Mar. 5, 1965, 40/16,922; Oct. 14, 1965, 40/63,046

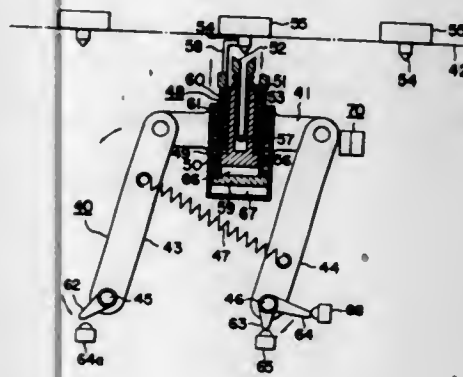
Int. Cl. F16n 9/04; F16f 15/12

U.S. Cl. 184—15

4 Claims

Apparatus for oiling continuously moving mechanism having a swing lever of a parallelogram mechanism disposed substantially in parallel with and close to the path

of movement or travel of continuously moving bodies to be oiled and an oiling mechanism and a piston cylinder assembly adapted to actuate a guide member are supported by the swinging lever. The guide member is advanced to the path of travel and engaged by the traveling bodies or elements thus moving the swinging lever in synchronism



with the traveling bodies. During this movement the oiling mechanism is operated to perform oiling. When the parallelogram mechanism reaches the end of its forward stroke the guide member is retracted and the parallelogram mechanism is restored to the original position in which the guide member is again advanced to commence the new cycle.

3,459,280

**BOUNDARY BARRIER**

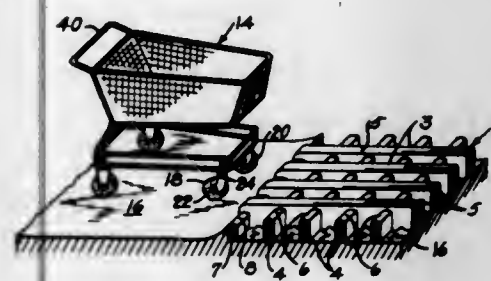
William K. Grimm, 1000 SE. 4th St., Apt. 124,  
Fort Lauderdale, Fla. 33316

Filed Jan. 8, 1968, Ser. No. 696,373

Int. Cl. F16d 63/00; E01c 9/10; B60t 3/00

U.S. Cl. 188—32

5 Claims



This invention relates to a new and improved boundary barrier for certain wheeled vehicles; and, more particularly, to a device for prohibiting removal of certain wheeled vehicles from a particular area in order to prohibit unauthorized, off premises use of the wheeled vehicle.

3,459,281

**DOUBLE CIRCUIT HYDRAULIC BRAKE**

Pierre André Georges Lepelletier, Chatou, France, assignor to Société Anonyme Française du Ferodo, Paris, France, a corporation of France

Filed May 22, 1967, Ser. No. 640,210

Claims priority, application France, June 2, 1966, 63,829

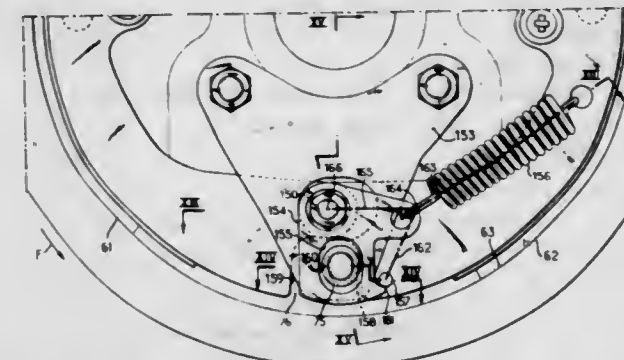
Int. Cl. F16d 51/00; B60t 11/10

U.S. Cl. 188—78

19 Claims

A double-circuit hydraulic brake comprising a fixed wheel-cylinder housing two opposite pistons adapted to co-operate respectively with two hydraulic chambers formed in said wheel-cylinder, two brake jaws respectively coupled to said pistons and intended to come into frictional contact with the rotating brake-drum, coupling means for connecting said jaws together in a zone diametrically opposite to said wheel-cylinder, and a fixed

support interposed between said jaws in said zone, either in the capsule to limit the required hydraulic fluid to of said jaws being applied against said fixed support operate the brakes and to serve as a stop to prevent the



while the other jaw is spaced apart from said fixed support by a pre-determined clearance.

3,459,282

**AUTOMATIC ADJUSTERS FOR VEHICLE BRAKES**  
Hermann Hans Hoenick, Immendorf, and Hans Albert Beller, Koblenz-Asterstein, Germany, assignors to Girling Limited, Birmingham, England

Filed Mar. 15, 1967, Ser. No. 650,143

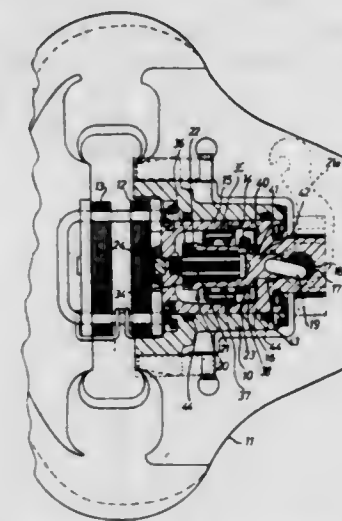
Claims priority, application Great Britain, Mar. 15, 1966, 11,208/66

Int. Cl. F16d 65/14, 55/00, 65/38

(Filed under Rule 47(a) and 35 U.S.C. 116)

U.S. Cl. 188—106

14 Claims



An automatic adjuster for a hydraulic brake actuator comprises a linear ratchet mechanism operative between a piston of the actuator and a cam (auxiliary mechanical actuator) journaled in a second piston opposed to the first-mentioned piston or in a cylinder body in which the piston is slidable. The ratchet mechanism includes a thrust member which is acted upon by the cam and which acts on pawls of the ratchet mechanism through a conical surface so that when the cam is turned to apply the brake mechanically, the pawls are urged positively into engagement with the ratchet teeth. An abutment on the thrust member acts on the pawls in the opposite direction to step the ratchet mechanism automatically when excessive travel takes place between the two pistons or between the piston and the cylinder in the event of pad wear.

3,459,283

**DIAPHRAGM OPERATED DISC BRAKE**

Charles Newstead, Walsall, England, assignor to Girling Limited, Birmingham, England, a British company

Filed June 7, 1967, Ser. No. 644,174

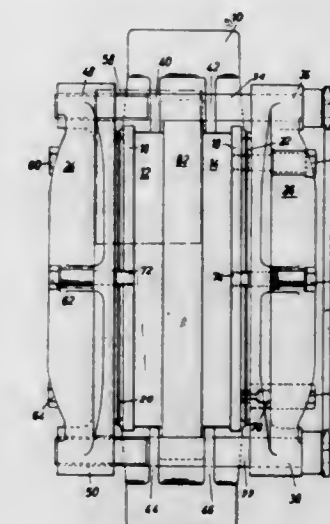
Claims priority, application Great Britain, June 7, 1966, 25,222/66

Int. Cl. B60t 11/10; F01b 19/00; F16j 3/00

U.S. Cl. 188—152

5 Claims

A capsule type expander for inter position between a brake pad and a pressure member, a solid metal insert



collapse of the capsule and movement of the brake pads in a releasing direction beyond a distance determined by the thickness of the insert.

3,459,284

**DISC SEGMENT COOLING MEANS**

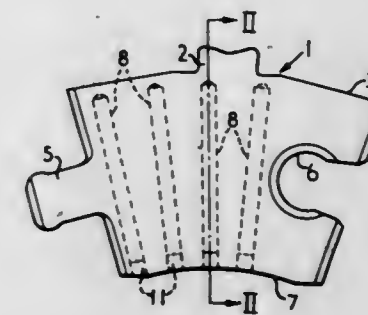
Edward Wray, Rugby, England, assignor to The Dunlop Company Limited, Erdington, England, a corporation of Great Britain

Filed Aug. 16, 1967, Ser. No. 661,043

Int. Cl. F16d 65/84, 13/72

U.S. Cl. 188—264

7 Claims



The invention relates to an arcuate segment for assembly with similar segments to form an annular friction member for a brake. The segment is comprised of a container portion formed from steel or similar material and including inserts of a material having a high specific heat received in cavities formed in the container portion between the braking surfaces of the friction member.

3,459,285

**TRANSMISSION AND CLUTCH CONTROL**

Alan Salisbury Lamburn, Kencott, via Lechlade, and Randle Leslie Abbott, Leamington Spa, England, assignors to Auto Transmissions Limited, London, England

Filed June 9, 1967, Ser. No. 644,913

Claims priority, application Great Britain, June 6, 1966, 26,903/66

Int. Cl. F16d 67/00, 13/00, 21/08

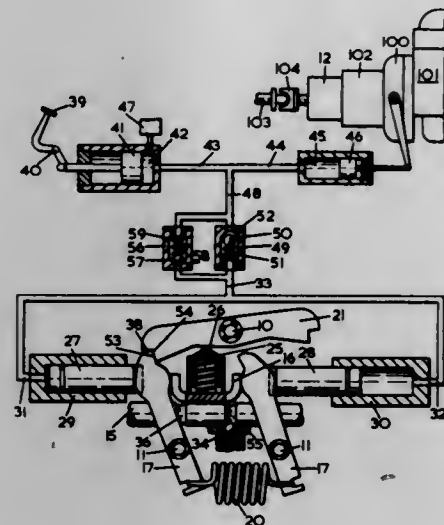
U.S. Cl. 192—3.5

30 Claims

The invention relates to the control of an auxiliary change-speed gearing of the kind in which ratio changes are effected by an axially-movable toothed coupling which is movable optionally between a first position in which it engages a first complementary toothed coupling



to provide drive at one ratio and a second position in which it engages a second complementary toothed coupling to provide drive at the other ratio. The invention



is particularly, but not exclusively, concerned with the control of the change-speed epicyclic gearing taught in our United States patent application No. 597,463.

3,459,286

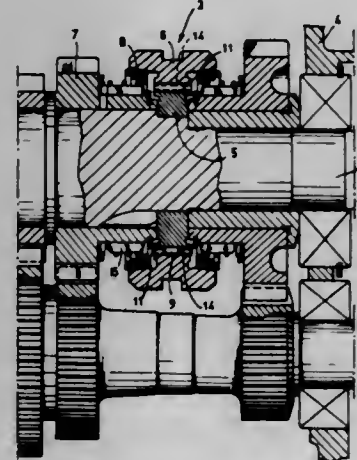
#### SYNCHRONISER FOR A MOTOR VEHICLE GEARBOX

Ettore Cordiano, Turin, Italy, assignor to Fiat Società per Azioni, Turin, Italy

Filed July 17, 1967, Ser. No. 653,898

Claims priority, application Italy, July 19, 1966, 775,026/66

Int. Cl. F16d 11/00, 13/00; F16h 3/38  
U.S. Cl. 192—53 3 Claims



The invention relates to improvements in synchronisers for motor vehicle gearboxes and seeks to prevent the undesirable effects of wear exhibited by the internal splines of a sleeve which surrounds an externally splined hub. Such wear has in the past resulted in the sleeve slipping off the hub and the invention prevents this by providing a plurality of auxiliary splines on the hub. These splines are larger in chordal thickness and smaller in axial length than the normal or so-called herein "basic" splines. In use, there is abutment of the sleeve splines and the auxiliary splines of the hub as well as the said basic splines and wear of the basic splines is compensated for automatically.

#### 3,459,287 ROLLING ANVIL MEMBER CONTROL MEANS FOR SERIAL PRINTER

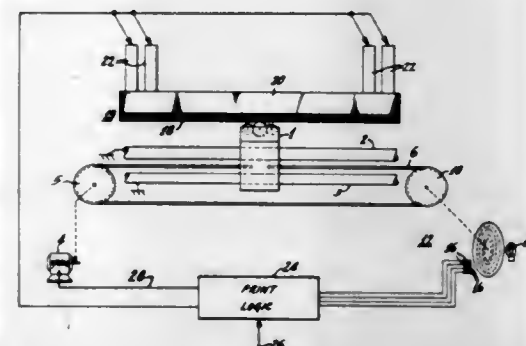
Jeremiah Y. Avins, Kendall Park, and James C. Miller, Pennington, N.J., assignors to RCA Corporation, a corporation of Delaware

Filed Nov. 7, 1967, Ser. No. 681,286

Int. Cl. B41j 25/18

U.S. Cl. 197—1

10 Claims



A printer apparatus is operated in a predetermined sequence following an interruption of the printing instructions in order to provide an operator with an unobstructed view of all the printed characters.

3,459,288

#### PLATEN ASSEMBLY AND A CONVEYOR SYSTEM UTILISING THE SAME

Charles Alan Clegg, London, England, assignor to Clairpol (Machines) Limited, London, England

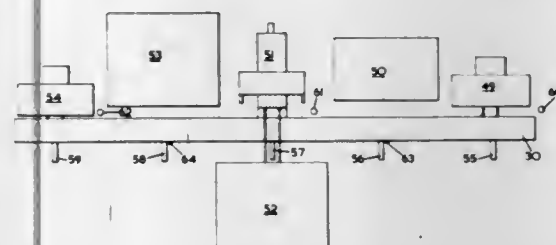
Filed Sept. 7, 1967, Ser. No. 666,168

Claims priority, application Great Britain, Sept. 8, 1966, 40,159/66

Int. Cl. B65g; B23q 7/00, 5/22

U.S. Cl. 198—19

12 Claims



In a conveyor system a conveyor track leads from an article loading station past a machine to an article unloading station. The machine has a machine track directed transversely to the conveyor track at a work station. A platen assembly has a first portion supported for longitudinal movement along the conveyor track and is stopped at each station. A second platen portion is supported by the first platen portion so that, after the platen assembly has been locked at the work station, the second platen portion is moved transversely off the first platen portion onto the machine whereby articles supported by the second platen portion are presented to the machine for a machine operation to be performed thereon.

3,459,289

#### MACHINE AND METHOD FOR TRANSFERRING AN ARTICLE

Joseph Charles Roseman, Bethlehem, Pa., assignor to Harris-Intertype Corporation, a corporation of Delaware

Filed Jan. 2, 1968, Ser. No. 694,969

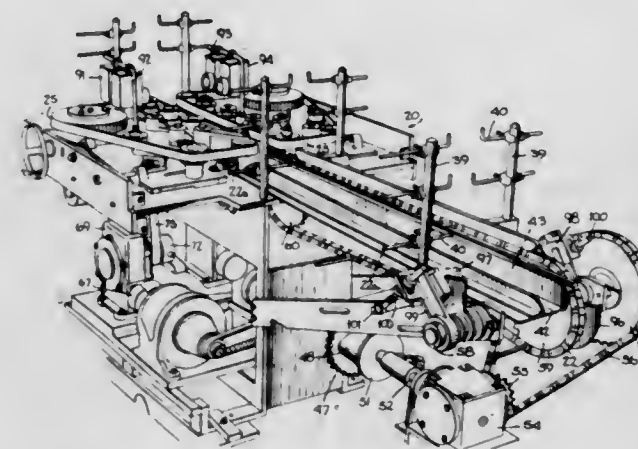
Int. Cl. B65g 47/00, 47/02, 43/08

U.S. Cl. 198—21

16 Claims

The disclosure relates to a machine for transferring an article from an infeed apparatus to an outfeed apparatus with the article being delivered to the outfeed apparatus

in a predetermined phase relationship therewith. In connection with book binding machinery, the transfer machine of the invention can be employed to transfer books from the chain conveyor of a gatherer to the chain conveyor of a binder. The transfer conveyor between the infeed conveyor and the outfeed conveyor can be driven at a plurality of speeds, the minimum of which is at least equal to the speed of operation of the outfeed apparatus. The arrival of the article is detected adjacent to the transfer conveyor. The machine includes means for controlling the driving means of the transfer conveyor into a selected one of its plurality of speeds. In addition, the machine includes means for producing a plurality of control signals each of which is responsive to a different one of a plurality of phase conditions of the outfeed apparatus in-



cluding a condition in which the article cannot be conveyed by the transfer conveyor to the outfeed apparatus, a condition in which the article can be conveyed at the velocity of the outfeed conveyor, and a final condition in which the article can be conveyed at a greater speed than the outfeed apparatus in order to be delivered thereto. In response to the control signal from the signal producing means and in response to the detection of the arrival of an article by the detecting means, the controlling means selects the proper speed for operating the transfer conveyor. With this arrangement the article is held, transferred at the speed of the outfeed apparatus, or accelerated with respect to the outfeed apparatus in accordance, the phase relationship of the outfeed apparatus and the time of arrival of the article at the transfer conveyor.

3,459,290

#### PLATE CONVEYOR

Takaaki Kurokawa, Chigasaki-shi, and Noboru Inoue, Funabashi-shi, Japan, assignors to Tokyo Shibaura Denki Kabushiki Kaisha, Horikawa-cho, Kawasaki-shi, Kanagawa-ken, Japan, a joint-stock company of Japan

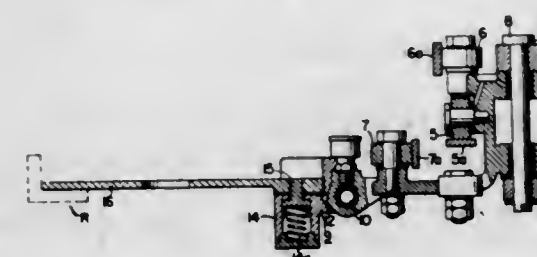
Filed May 19, 1967, Ser. No. 639,700

Claims priority, application Japan, Sept. 30, 1966, 41/91,701

Int. Cl. B65g 17/06

U.S. Cl. 198—189

2 Claims



A plate conveyor is fabricated by interconnecting a plurality of chain links to form a chain. Each link is provided with a supporting member for a removable unit

plate including means to receive one end thereof and a spring biased locking member to lock the unit plate in position.

3,459,291

#### CONVEYOR SUPPORT STRUCTURES

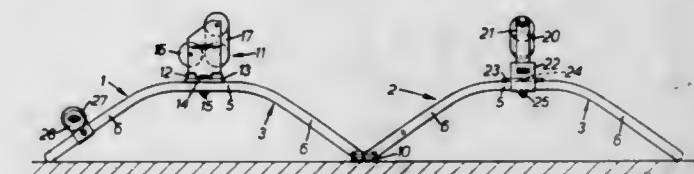
Peter Newsome Metcalfe, Normanton, England, assignor to Richard Sutcliffe Engineering Systems Limited, Horbury Wakefield, England, a British company

Filed Oct. 10, 1967, Ser. No. 674,273

Int. Cl. B65g 15/08, 15/60

U.S. Cl. 198—192

7 Claims



A conveyor support framework section which has two arch-shaped sides corresponding ends of which are joined by cross-pieces. An idler roller structure bridges the space between the arch-shaped sides and is supported by the roofs of those arches. The roller structure may be a self-troughing structure in which case the arch-shaped sides may be sufficiently resilient to cant towards each other and increase the troughing.

3,459,292

#### SPRING SYSTEM FOR VIBRATORY PARTS FEEDERS

Miroslav J. Piroutek, 55 River St.,

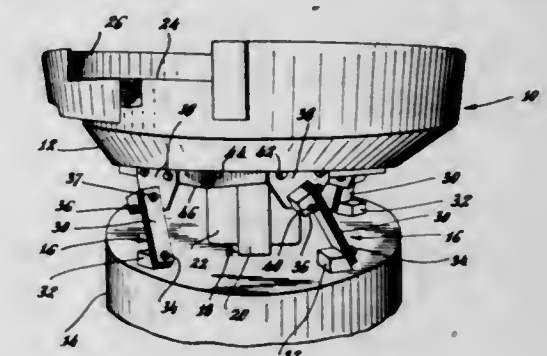
Stamford, Conn. 06901

Filed May 22, 1967, Ser. No. 640,198

Int. Cl. B65g 27/00; F16f 13/00

U.S. Cl. 198—220

14 Claims



The disclosed spring system for vibratory feeders includes plural spring mounting units, each consisting of an inclined stack of leaf springs affixed at its lower end to a base and rigidly connected at its upper end to the lower portion of a spring plate. The upper portion of the spring plate is fixedly connected to a feeder bowl. In the preferred embodiment, L-shaped adaptor blocks are connected to each end of the leaf spring stack and are themselves respectively connected to the base and the spring plate at points on a common center line, thereby facilitating alteration of the angular orientation of each leaf spring stack.

3,459,293

#### CLOTH REPAIR KIT

Joe A. Vitale, 2225 Gravois Ave., St. Louis, Mo. 63104

Filed Jan. 22, 1968, Ser. No. 699,537

Int. Cl. A45c 11/26; B65d 85/54

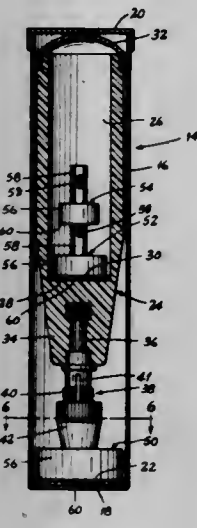
U.S. Cl. 206—16

2 Claims

A handy kit for use in repairing holes and tears in cloth material, particularly wearing apparel. Includes a



plurality of cutter tools having progressively larger diameters, each tool being provided with a razor-sharp circular cutting edge. A hollow operating handle is provided at one end with a manual chuck device adapted to releasably retain the arbor of a selected cutter. The hollow handle has a removable cap and provides a storage



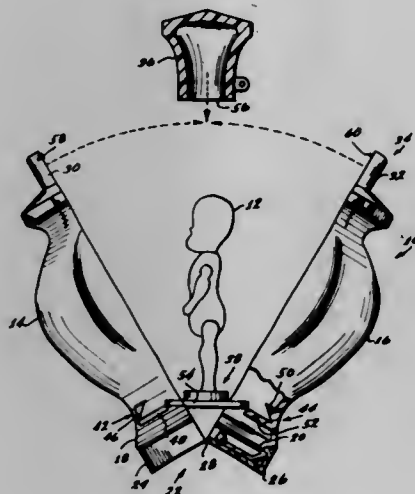
compartment for the smallest and intermediately diametered cutter tools when these are not in use. The largest diametered cutter tool is normally retained in the chuck, and all of the cutting mechanism when not in use is stored in an elongated container provided with a removable closure cap.

### 3,459,294 DOLL HOLDER

Dorland L. Crosman, Palos Verdes Estates, Thomas E. See, Huntington Beach, and Armando P. Villasana, Los Angeles, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of Delaware  
Filed Nov. 20, 1968, Ser. No. 777,425  
Int. Cl. B65d 5/50

U.S. Cl. 206—45.19

16 Claims



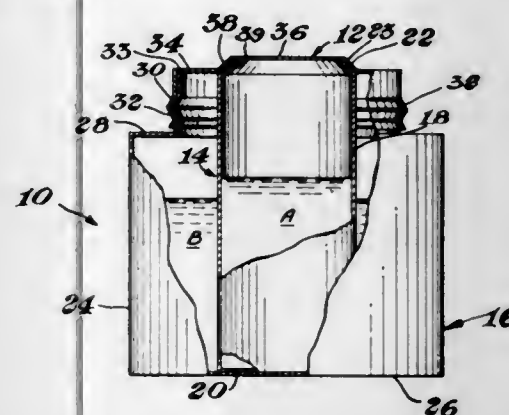
A doll case for holding a stand-supported doll, comprising two transparent case members pivotally joined at one end and having a latch at the other end. Each case member has a wedge on its inner surface for engaging the stand, the wedges moving together when the case is closed to firmly hold the stand in place. One case is formed as a bottle, with a bottle cap serving as a latch by fitting over the mouthpiece portions of the case members. Another case is formed as a lollipop, and still another case is formed as an ice cream cone.

### 3,459,295 MULTIPLE COMPARTMENTED CONTAINER

James F. Cousar, Cleveland, Ohio, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Filed Dec. 4, 1967, Ser. No. 687,664  
Int. Cl. B65d 81/32, 1/24, 1/04

U.S. Cl. 206—47

8 Claims



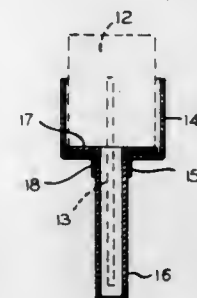
A multiple compartmented container with two receptacles concentrically arranged, one within the other. Specifically, an inner receptacle is fixed within a wider outer receptacle; the inner receptacle being taller than the outer receptacle. A cap having internal threads sealingly cooperates with external threads on the outer receptacle and has a slanted top surface band which cooperates with a slanted non-drip pouring lip at the top of the inner receptacle to effect a mechanical seal between the inner receptacle and the cap when the cap is secured onto the outer receptacle. Mixing of two products, one of which is located in each of the receptacles, is effected by pouring. The multi-compartmented container is reusable.

### 3,459,296 RECEPTACLE AND SUPPORT FOR FROZEN CONFECTION

Jean Leroy Berg, 1632 S. 94th St., West Allis, Wis. 53214  
Filed Oct. 20, 1967, Ser. No. 676,918  
Int. Cl. B65d 83/00

U.S. Cl. 206—56

2 Claims



A container for a portion of iced confection that can be exposed for eating. The container comprises an open ended body portion conforming to the shape of the confection and a bottom having an opening therein and a plate adjacent to the bottom having a hollow tubular handle extended through the opening in the bottom of the body portion.

### 3,459,297 LABEL PACKAGING AND HANDLING

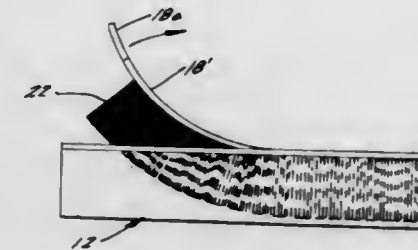
John Glenn Templeton and Howard J. Schultema, Grand Rapids, Mich., assignors to Rose Patch & Label Company, Grand Rapids, Mich., a corporation of Michigan  
Filed Dec. 20, 1967, Ser. No. 692,124  
Int. Cl. B65d 83/00, 1/34

U.S. Cl. 206—56

8 Claims

A label pack assembly adapted for manual or mechanized handling and label removal, having an elongated enclosure around a pack of labels, the labels being face

to back with one edge of each releasably secured to an adhesive coated strip means of sufficient flexibility to enable spreading apart of the labels by controlled flexing of the strip and label pack to a curvilinear configuration.



The strip means is a portion of the enclosure, or a separate strip in the enclosure. If the latter, it may be adhesive coated cardboard, plastic, or other generally flexible element having some resistance to flexing, or such a support element plus an attached band or loop of highly flexible adhesive tape of cloth, paper or the like, or such a tape.

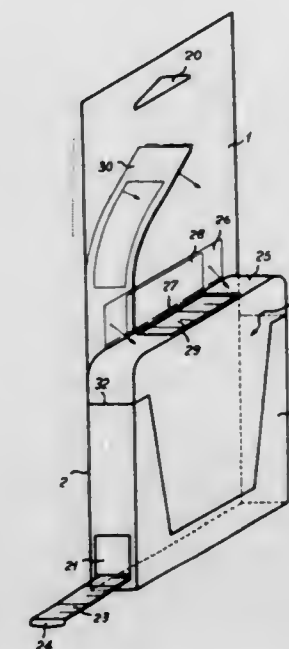
### 3,459,298 DISPLAY PACKAGE

Andre Quenot, Besancon, France, assignor to Quenot & Cie SARL, Besancon, France, a corporation of France  
Filed July 24, 1967, Ser. No. 655,558  
Claims priority, application France, Sept. 8, 1966, 75,667

U.S. Cl. 206—79

Int. Cl. B65d 73/00

5 Claims



One-piece display package having an upper opening for the removal of the object to be displayed, at least one opening for securing the package in a part thereof not covered by the object to be displayed, the total height of the display package being substantially equal to twice that of the object to be displayed, the package not extending beyond the object except on the face thereof serving for suspending it.

### 3,459,299 TALC BENEFICIATION

Venancio Mercade, Metuchen, N.J., assignor, by mesne assignments, to Engelhard Minerals & Chemicals Corporation, Menlo Park, Edison, N.J., a corporation of Delaware  
No Drawing. Filed Sept. 1, 1967, Ser. No. 664,934  
Int. Cl. B03b 1/00; B03d 1/02

U.S. Cl. 209—3

12 Claims

High purity talc concentrates are obtained from Vermont talc ore by wet-grinding the ore in the presence of

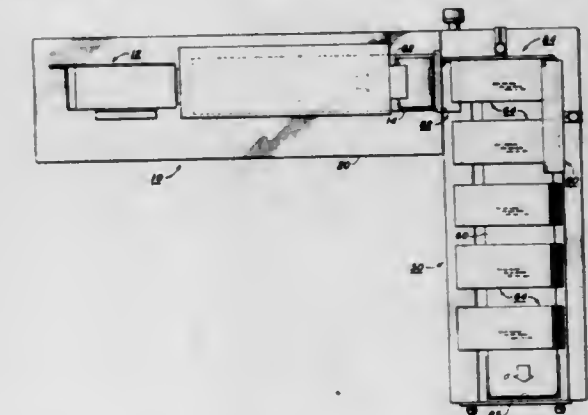
an alkaline dispersant such as a sodium condensed phosphate or sodium silicate, diluting the ground ore and subjecting the resulting alkaline pulp to froth flotation in the presence of a small amount of a nonionic, water-dispersible alkanolamide surface active agent prepared by condensing a higher unsaturated fatty acid with an alkanolamine. A small amount of an alkylarylsulfonate frother may also be present.

### 3,459,300 CONVEYING AND STACKING SYSTEM

John V. McGuire, Deerfield, Ill., assignor to Cheshire Inc., Mundelein, Ill., a corporation of Illinois  
Filed Oct. 25, 1967, Ser. No. 677,984  
Int. Cl. B07c 5/36, 5/02

U.S. Cl. 209—73

3 Claims



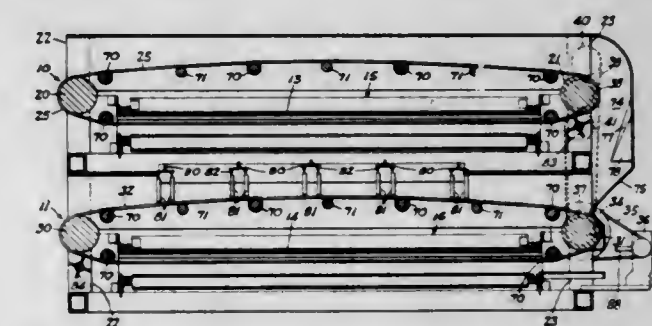
A system for stacking series of separate articles on a conveyor capable of actuation in response to a given signal. The output conveyor normally in the "stop" position while the remainder of the machine, i.e., the labeling head and article feeding system are operating. In response to a ZIP CODE change or in response to a predetermined number of mailing pieces having been addressed without a ZIP CODE change, the output conveyor is actuated and moved approximately the distance of a stack while the article feeding and labeling portion of the machine are disengaged. The conveyor is then automatically stopped ready to accept the next successive stack and the addressing machine is started.

### 3,459,301 CLEANING, SORTING, AND GRADING APPARATUS

Donald M. Gray, Batavia, N.Y.; Laura B. Gray, 8 S. Main St., Batavia, N.Y. 14020, executrix of said Donald M. Gray, deceased  
Filed Apr. 1, 1966, Ser. No. 539,450  
Int. Cl. B07c 1/16, 5/12

U.S. Cl. 209—102

6 Claims



A cleaning and grading structure for peanuts having two superposed sets of grading pulleys, each set consisting of a plurality of laterally spaced narrow endless belt members extending about pulleys, whereby the upper reach of each set of belts forms a horizontally moving grid surface for receiving the peanuts. The sets of belts run in opposite directions and the peanuts fall from the discharge end of the upper set of belts on to the receive-



ing end of the lower set for return movement along the lower set. Agitating means are supported above the lower set and consist of vertically elongated members loosely connected at their upper ends for free swinging movement above but closely adjacent to the material on the belt grid surface. Platforms are disposed between the upper and lower reaches of the belts of each set and wiper members continuously traverse this platform to remove material falling thereon from between the belts of the upper reach.

# ERRATUM

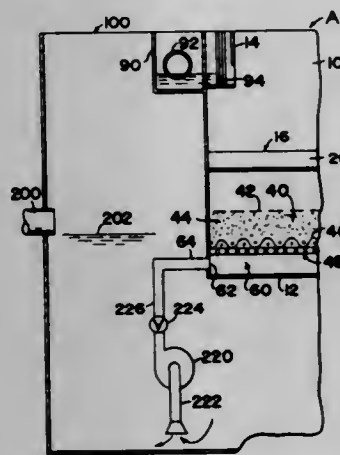
For Class 209—166 see:  
Patent No. 3,459,649

3,459,302

**APPARATUS AND METHOD OF FILTERING SOLIDS FROM A LIQUID EFFLUENT**  
David S. Ross, Lorain, Ohio, assignor to Hydro-Clear Corporation, Avon Lake, Ohio, a corporation of Ohio  
Filed Apr. 25, 1967, Ser. No. 633,458  
Int. Cl. B01d 23/24

U.S. Cl. 210—80

9 Claims



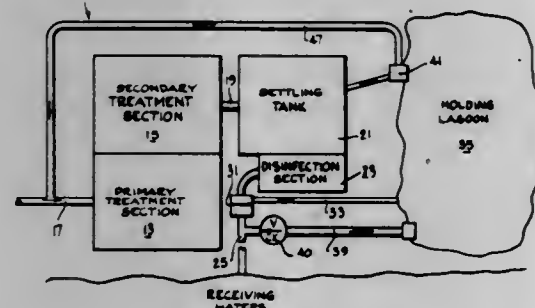
An apparatus and method of filtering solids from a liquid effluent wherein a sand filter having a single grade granular media is used having agitation of the effluent above the filter media surface at a rate to lift solids from the media surface and means for periodically backwashing clear effluents through the filter at a controlled rate which is not dependent upon the rate that a discharge system can receive the backwashing effluent. A trough is placed above the filter to accept the backwash effluent upon its passing through the filter in the reverse direction.

3,459,303

**WASTE TREATMENT SYSTEM**  
Edward F. Bradley, Hoffman Estates, Ill., assignor to Yeomans Brothers Company, Melrose Park, Ill., a corporation of Delaware  
Filed May 9, 1967, Ser. No. 637,303  
Int. Cl. B01d 35/12, 35/14

U.S. Cl. 210—85

16 Claims



A waste treatment system wherein the effluent is exposed to disinfection treatment, as by ultraviolet light. The disinfected effluent that is normally discharged to the

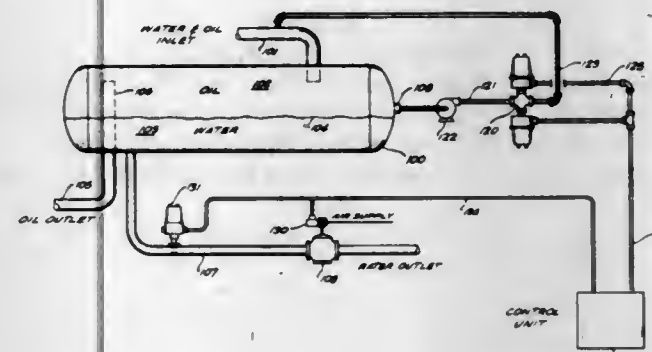
receiving waters is continuously monitored and a permanent record of the monitoring is made. As soon as the monitoring detects that the effluent does not meet the quality standard set, the effluent is diverted to a holding lagoon and an alarm is actuated by which the attention of a responsible person is attracted. Diversion is also effected upon occurrence of power failure to the plant or upon failure of components thereof. After diversion occurs effluent cannot be arbitrarily discharged to the receiving waters until the monitoring indicates the set level of disinfection is being achieved. The size of the lagoon is sufficient so state health authorities can be notified and proper action taken before the lagoon is filled.

3,459,304

**PHOTOSENSITIVE FLUID MONITORING DEVICE**  
George R. Brencley, 14740 E. Broadway, Whittier, Calif. 90604  
Filed Dec. 8, 1966, Ser. No. 600,253  
Int. Cl. G01n 21/24; B01d 21/24

U.S. Cl. 210—93

18 Claims



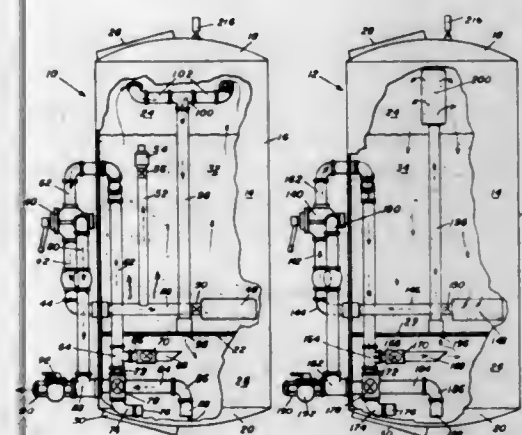
Disclosed is an apparatus for detecting the opacity of a fluid comprising a hollow body having two opposed openings thereto. A pair of hollow tubes having transparent end closures protruding inwardly into the body so that the transparent ends of the tubes are in opposed spaced relationship. A light source is mounted in one of the tubes and a photosensitive element in the other tube. The apparatus is disclosed as controlling the oil-water interface level of an oil-water separator.

3,459,305

**FILTERING APPARATUS**  
Martin J. Berardi, 149 NE. 98th St., Miami Shores, Fla. 33153  
Filed July 13, 1966, Ser. No. 564,877  
Int. Cl. B01d 23/10

U.S. Cl. 210—134

3 Claims



Filtering apparatus is provided for purifying water, and other liquids, and which is constructed so that the water passes through a filter bed composed of activated charcoal, or other appropriate materials. A feature of the invention is the manner in which the incoming water is first circulated down to a lower chamber in the filter ap-

paratus, and it is then passed up to the top of an upper chamber for subsequent filtration through the filtering material which is supported in the upper chamber. The apparatus is also constructed for the convenient backwashing of the filtering material in the upper chamber. This invention relates to filtering apparatus and more particularly to a multi-unit filtering system of wide utility.

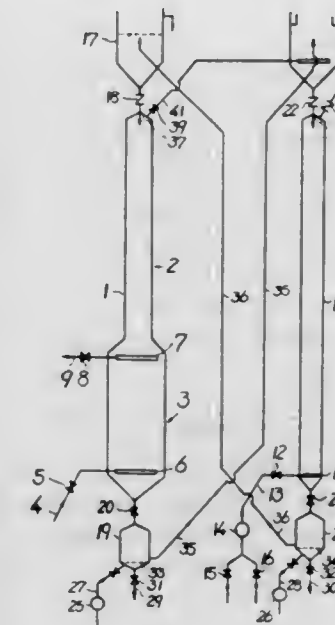
3,459,306

**CONTINUOUS ION EXCHANGE APPARATUS**  
Koichi Kanamori, Ota-ku, Tokyo-to, and Iwao Seto, Chigasaki-shi, Japan, assignors to Ebara Inflico Kabushiki Kaisha  
Filed Apr. 12, 1965, Ser. No. 447,465  
Claims priority, application Japan, Apr. 18, 1964, 39/21,860

Int. Cl. B01d 23/10

U.S. Cl. 210—189

1 Claim



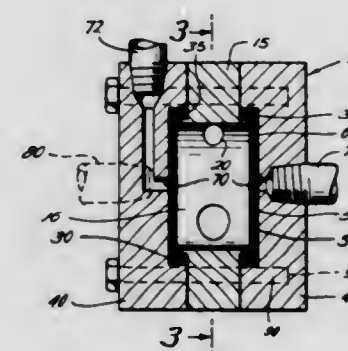
An apparatus for effecting continuous ion exchange is disclosed wherein the movement of the resins involved in the ion exchange is smoothly effectuated and the treated liquid is stabilized without varying the volume rate of flow thereof.

3,459,307

**SMALL PARTICLE BYPASS FILTER MEANS**  
Henry R. Collins, Jr., 4507 Hemlock, Baytown, Tex. 77520  
Filed Oct. 11, 1967, Ser. No. 674,625  
Int. Cl. B01d 27/10

U.S. Cl. 210—316

3 Claims



A filter means for removing undesired particles from process streams and the like utilizing a tangentially positioned opening into the cavity of a filter body to set up a

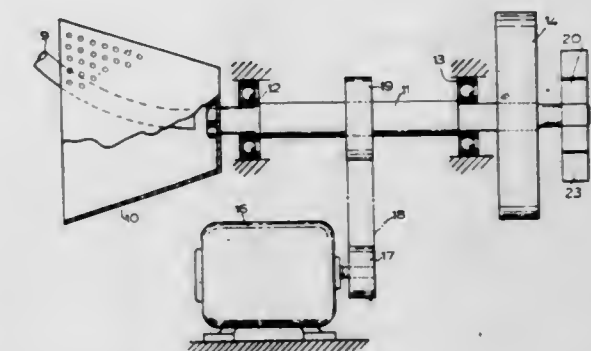
3,459,308

**VIBRATING CENTRIFUGES**

Francis Hartley Couch, Netherton, Huddersfield, England, assignor to Thomas Broadbent & Sons Limited, Huddersfield, England  
Filed Sept. 3, 1965, Ser. No. 485,026  
Int. Cl. B01d 33/06, 33/00

U.S. Cl. 210—370

10 Claims



The invention resides in a centrifuge having a divergent basket which is vibrated torsionally, i.e. circumferentially, instead of axially as hitherto, whereby to avoid the incidence of cross-loading in the axial direction.

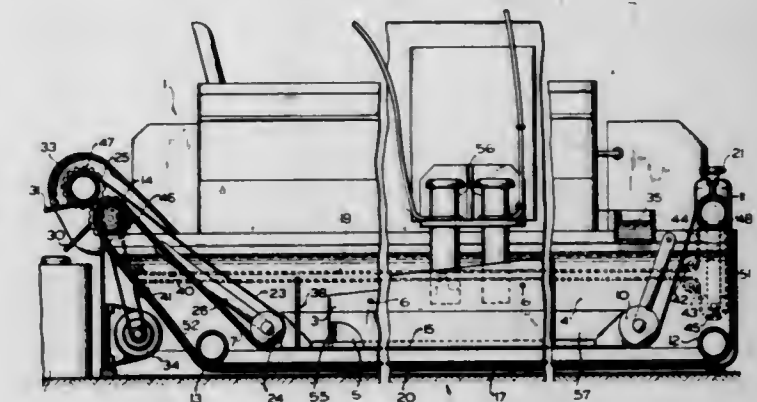
3,459,309

**COOLING WATER PURIFICATION APPARATUS**  
Philipp Eckstein, Darmstadt, Germany, assignor to Gustav Gockel Maschinenfabrik GmbH, Frankfurt am Main, Germany  
Filed Sept. 13, 1965, Ser. No. 486,798  
Claims priority, application Germany, Sept. 19, 1964, G 41,561

Int. Cl. B01d 33/04

U.S. Cl. 210—320

6 Claims



A surface grinder cooling water purification plant including an elongated settling trough divided into an in-feed and a settling chamber, with the conveying run of an endless belt forming the floor for both chambers so that impurities settling from water in the trough will be deposited on the belt. The conveying run of the belt includes an inclined segment leading from the trough to convey settled impurities therefrom. The walls of the discharge chamber act as a baffle, with the water in the trough flowing over the top of the walls, so that water



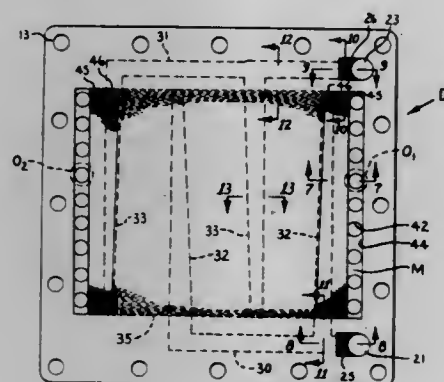
near the bottom of the infeed chamber, which contains the maximum impurities, is not permitted to flow into the discharge chamber nor is it disturbed by the pumping of water from the discharge chamber.

### 3,459,310 MEMBRANE FLUID DIFFUSION EXCHANGE DEVICE

Miles Lowell Edwards, 13191 Sandhurst Place,  
Santa Ana, Calif. 92705  
Continuation-in-part of application Ser. No. 456,675,  
May 18, 1965. This application Apr. 18, 1967, Ser.  
No. 631,668

Int. Cl. B01d 13/00  
U.S. Cl. 210—321

10 Claims



A device for the treatment of blood, for use either as an oxygenator or a kidney dialysis device, comprising a clamped stack of plates and membrane sheets wherein capillary passageways are formed by grooves in the plates.

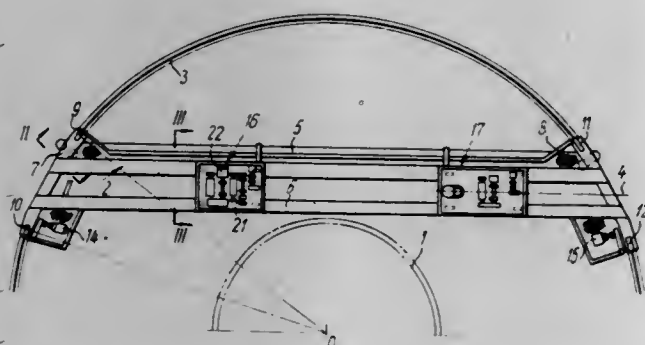
### 3,459,311 FULL-REVOLVING BRIDGE CRANES

Mark Borisovich Averbukh, ul. Gasheka 12, kv. 158;  
Grigory Movshevich Volchek, Izumrudnaya ul. 6, kv. 13;  
Vladimir Epifanovich Gora, Tatarskaya ul. 9-a, kv. 65;  
Isaak Markovich Elinson, Verkhnyaya Maslovka 11/13, kv. 11;  
Nikolai Konstantinovich Leonidov, ul. 1812 goda 7, kv. 45;  
Nikolai Vladimirovich Molochnikov, Prospekt Mira 103, kv. 227;  
Ber Simkhovich Kheifets, Prospekt Mira 188, Korp. 2, kv. 150;  
and Alexandr-Sever Julievich Shpigel, Novobasmannaya ul. 14, kv. 51, all of Moscow, U.S.S.R.

Filed June 28, 1967, Ser. No. 649,549  
Int. Cl. B66c 17/02

U.S. Cl. 212—10

3 Claims



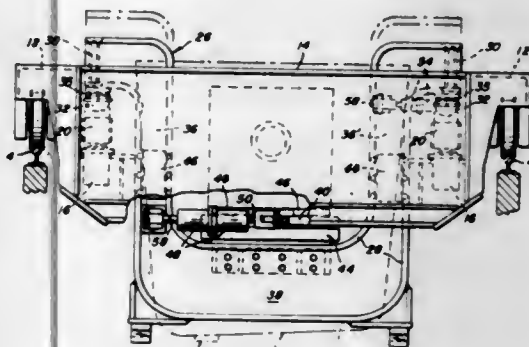
A bridge crane for servicing circular areas wherein the crane comprises a closed circular crane track disposed around the area being serviced, a bridge travelling along said crane track and having a longitudinal axis constantly disposed along a chord of the circle of the crane track, said chord passing at such a distance from the center of the track that the bridge does not touch the object being serviced. A load trolley is mounted to travel along the bridge.

### 3,459,312 CAR HAVING LADLE SUPPORTING AND POSITIONING MEANS

Harry H. Britcher, Jr., Johnstown, and Francis Gallucci,  
Irwin, Pa., assignors to United States Steel Corporation,  
a corporation of Delaware

Filed Apr. 12, 1967, Ser. No. 630,286  
Int. Cl. B65g 67/32; B61d 5/00; B66f 7/22  
U.S. Cl. 214—1

6 Claims



Car includes a movable ladle cradle disposed in the rectangular framework of the car. Segmental ladle-supporting bearings are provided on the cradle with hydraulic power cylinders connected therewith for moving the bearings to slew a ladle supported in the cradle. The cradle is supported at four corners by hydraulic lifting jacks which, when operated in pairs, effect tilting of the ladle, and when operated as a unit lift the ladle vertically. Push-pull hydraulic cylinders are provided for shifting the cradle transversely of the car.

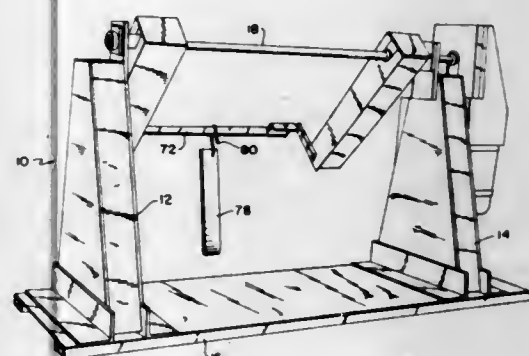
### 3,459,313 WORK TRANSPORTING APPARATUS

Norman W. Upton and Eugene L. Kemper, Mount  
Clemens, and Roger L. Brummel, Warren, Mich.,  
assignors to Upton Electric Furnace Company,  
Inc., Roseville, Mich., a corporation of Michigan

Filed June 28, 1967, Ser. No. 649,571  
Int. Cl. B25j 11/00, 13/00

U.S. Cl. 214—1

11 Claims



Apparatus is provided for quickly transporting a workpiece from one station to another. A main arm is rotated about an axis between the two stations. The main arm carries a secondary arm which receives the workpiece. The secondary arm rotates simultaneously with the main arm. In one embodiment, the secondary arm rotates at an angular speed greater than that of the main arm. In another embodiment, the two arms rotate at the same speed while the secondary arm is telescoped in an out of the main arm. The secondary arm has a work-carrying structure. The workpiece is loaded onto the work-carrying structure. In one embodiment, the angular speeds of the main and secondary arms and the lengths of these members are so proportioned, and in the other embodiment the telescoping action is such, that the work-carrying structure follows a path from one station to the next

consisting of a first relatively vertical portion, a second short curved portion, a third relatively horizontal portion, a fourth short curved portion and a fifth relatively vertical portion.

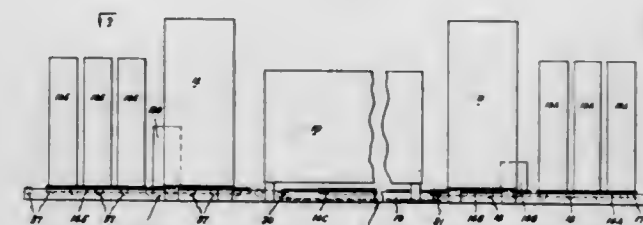
### 3,459,314 CONFECTIONERY MOULDING MACHINES

Hans A. Faerber, 69 Headlands Road, Castle Cove,  
near Sydney, New South Wales, Australia  
Continuation-in-part of application Ser. No. 548,133,  
May 6, 1966. This application May 22, 1967, Ser.  
No. 640,185

Claims priority, application Australia, Apr. 19, 1966,  
4,398/66

Int. Cl. B65g 57/02  
U.S. Cl. 214—6

4 Claims



In the combination of a confectionary starch moulding machine, a loader for feeding the moulding machine with trays from a stack of trays resting on a pallet and a stacker which accepts trays from the moulding machine and restacks same, a conveyor is provided for the transfer of empty tray pallets from the loader to the stacker.

The conveyor is of the kind which positively shifts a pallet when in operation but which permits pallets to slide freely along it if pushed by an outside agency in the normal direction of pallet travel. Means are provided to energize the conveyor to bring a fresh pallet to the stacker during the building of the last stack of trays to be built on the preceding pallet.

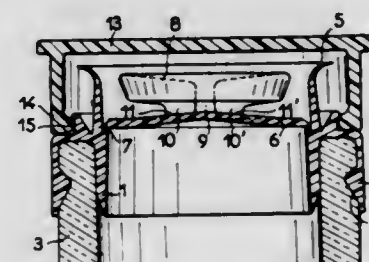
### 3,459,315 CLOSURE SPOUT HAVING TEAR-OUT PORTION

Maurice Labarre, Boulogne-sur-Seine, France, assignor to  
Generale Alimentaire S.A., Neuilly-sur-Seine, France, a  
company of France

Filed Feb. 19, 1968, Ser. No. 706,296  
Claims priority, application France, Feb. 21, 1967,  
95,797

U.S. Cl. 215—42

5 Claims



A closure of injection-moulded synthetic plastic material for a bottle or other receptacle, such closure comprising a tubular body having a throat insertable into the neck of the bottle and an integral fluid-tight diaphragm across the throat with an external gripping device by which the diaphragm can be torn off, wherein the gripping device is a ring separate from the watertight diaphragm but joined to the rim of the latter by means of a base connection which is also integrally moulded. The closure has an integrally moulded pouring spout, and a replaceable cap protecting the spout.

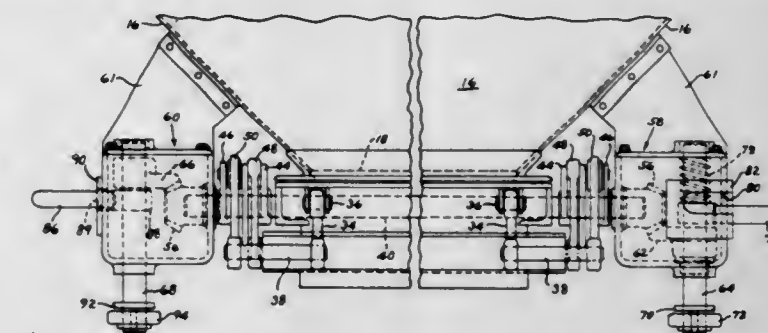
### 3,459,316 MEANS FOR AUTOMATICALLY OPERATING BOT- TOM HOPPER DISCHARGE DOORS DURING TRAVEL OF RAILWAY CARS

Earle McGrath, Ferguson, Mo., assignor to ACF Indus-  
tries, Incorporated, New York, N.Y., a corporation of  
New Jersey

Filed Oct. 31, 1967, Ser. No. 679,366  
Int. Cl. B61d 7/00; B65g 67/24

U.S. Cl. 214—63

14 Claims



A railway hopper car having bottom discharge doors which are opened and closed automatically during movement of the car along the track. A horizontally extending operating shaft is connected to the doors for moving the doors between open and closed positions and a vertical shaft is operatively connected to each end of the operating shaft to effect rotation of the operating shaft. Each vertical shaft has arms extending therefrom and trackside actuating means along the side of the track engages selective arms to rotate the vertical shafts and effect opening and closing of the doors during travel of the car.

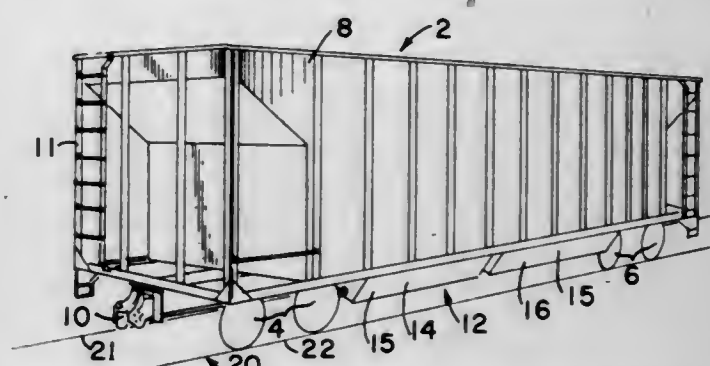
### 3,459,317 OPERATING MECHANISM FOR VEHICLE DISCHARGE MEANS

William R. Shaver, Munster, Ind., assignor to Pullman  
Incorporated, Chicago, Ill., a corporation of Delaware

Filed Dec. 1, 1966, Ser. No. 598,440

U.S. Cl. 214—63

24 Claims



This invention relates to operating mechanism for vehicle discharge means and, more in particular, relates to mechanism required to open the doors of the side type discharge hopper railroad car whereby the load, such as coal, may be discharged from the side of the railroad car into rail-side below-car lading storage pit as it passes along a certain point of the railroad track over which it traverses.

### 3,459,318 TREE FRUIT HANDLING RECEPTACLE

Arthur Delt Clark and Francis Delt Clark, both of Rte. 2,  
Wapato, Wash. 98951  
Filed Oct. 10, 1967, Ser. No. 674,259  
Int. Cl. B60p 1/56

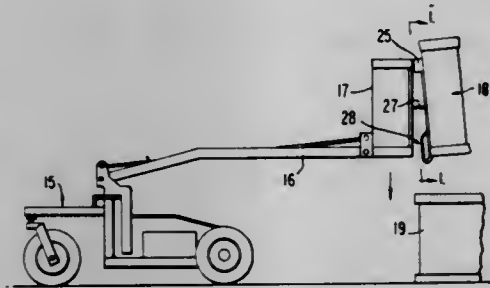
U.S. Cl. 214—83.1

11 Claims

A receptacle carried by the lifting boom of a mobile orchard machine into which several bushels of fruit may

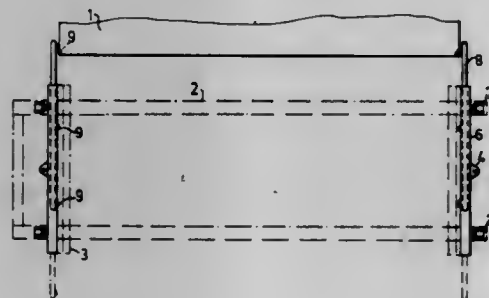


be placed manually by the picker on the adjacent picker supporting cage. The receptacle has a drop bottom which gradually descends under the weight of the fruit, together with release means to facilitate gently depositing



the fruit in a field bulk bin. The drop bottom is connected with a cylinder-piston unit which is connected with the low pressure discharge portion of the orchard machine hydraulic system.

**3,459,319**  
**RELOADING MECHANISM ON ROAD TRANSPORT VEHICLES FOR STANDARD LOADS**  
Johan Emil Ulin, Orebro, Sweden, assignor to AB Trapco, Orebro, Sweden, a corporation of Sweden  
Filed June 23, 1967, Ser. No. 648,422  
Claims priority, application Sweden, Aug. 10, 1966, 10,833/66  
Int. Cl. B60p 1/64; B65g 67/00  
U.S. Cl. 214—516 9 Claims



A reloading mechanism on road transport vehicles for standard loads, especially deck bodies or goods containers, having a pair of arms extending transversely of the vehicle protrusible in their longitudinal directions on either side of the standard load. Each of the arms provided, on the side intended to face the load, with a plurality of at least two entraining members adapted to engage into recesses or corner fittings of the standard load for reloading the same.

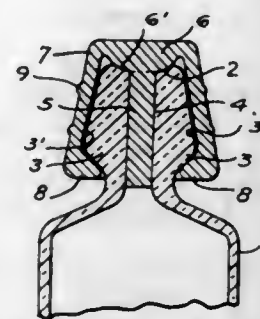
#### ERRATUM

For Class 215—42 see:  
Patent No. 3,459,315

**3,459,320**  
**ELASTIC CAP AND STOPPER SEAL**  
Mimpel Itoh, Yamato, Japan, assignor to Masanori Tsunoda, Tokyo, Japan  
Filed June 3, 1968, Ser. No. 734,167  
Claims priority, application Japan, June 3, 1967, 42/46,721  
Int. Cl. B65d 39/00, 41/22  
U.S. Cl. 215—47 4 Claims

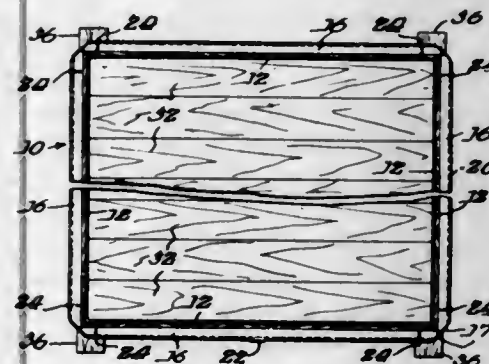
The present vessel closure is for capping the mouth of a vessel with an elastic cap which has a plug detach-

ably insertable in the mouth of the vessel and a truncated skirt with turned bottom flange for engaging the neck



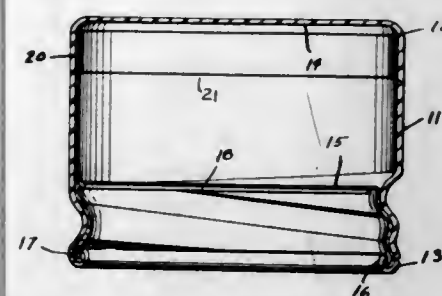
of the vessel for detachably retaining said cap on the vessel neck effecting a reliable sealing of the vessel.

**3,459,321**  
**COLLAPSIBLE PALLET BOX**  
Hershey L. Walt, Lake Zurich, Ill., assignor to General Box Company, Des Plaines, Ill., a corporation of Delaware  
Filed Apr. 9, 1968, Ser. No. 719,913  
Int. Cl. B65d 9/18  
U.S. Cl. 217—16 11 Claims



A collapsible pallet box having four sidewalls each in lapped relationship with the ends of the adjacent sidewalls when the box is erected. The sidewalls have aligned horizontal cleats, and the cleats have aligned channels carrying an endless strap running around the periphery of the box. The strap is slidable in the channel, and the cleats are designed so that the strap is tight both when the box is erected and when it is collapsed.

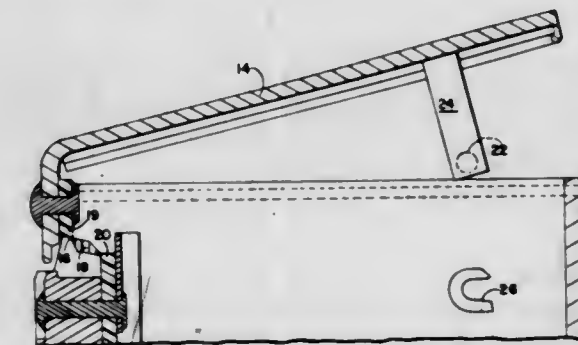
**3,459,322**  
**FRANGIBLE CLOSURE FOR A CONTAINER**  
Richard F. Hendrickson, Erie, and Roderick V. King, Girard, Pa., assignors to Sterling Seal Company, a corporation of Pennsylvania  
Filed Feb. 12, 1968, Ser. No. 704,721  
Int. Cl. B65d 41/00  
U.S. Cl. 220—27 6 Claims



The disclosure herein provides a cap suitable for use with an aerosol container or the like wherein the cap itself is made of a relatively thin, fairly flexible plastic material and a reinforcing ring made of a relatively rigid metal, is placed inside the cap adjacent the closed end and another reinforcing ring around the inside adjacent the rim

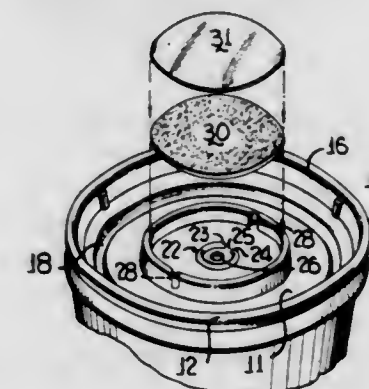
at the open end. The plastic can be curled inwardly to hold the ring. The ring can be made to snap over a rim on the container to hold it in place permanently until some tamper-proof element is removed. Any suitable tamper-proof structure can be applied.

**3,459,323**  
**PHOTOGRAPHIC CAMERA OR THE LIKE WITH TOGGLE HINGE CLOSURE MEANS**  
Grover Boothman, South Acton, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware  
Filed Mar. 15, 1967, Ser. No. 623,453  
Int. Cl. B65d 43/16  
U.S. Cl. 220—35 6 Claims



This application relates to a photographic camera having a body portion, a cover and means for hinging and latching the cover to the body. A particularly useful application of the disclosed concept is the provision on a camera body of a camera back which is hinged at one end and latched to provide a light-tight chamber for exposing the film through the camera lens.

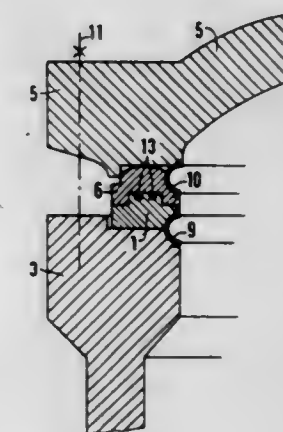
**3,459,324**  
**VENTED LID FOR HOT DRINK CUP**  
William L. Miller, Skokie, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York  
Filed Jan. 11, 1968, Ser. No. 697,206  
Int. Cl. B65d 51/16  
U.S. Cl. 220—44 14 Claims



This disclosure relates generally to closures for beverage containers, and more particularly provides an improved closure for cups in which hot beverages, such as coffee, are packaged for carry-out sales. The closure includes an upstanding bead defining therewithin a floor portion which includes an upstanding generally C-shaped wall. A pair of disks are disposed in overlying relationship to the floor portion with the C-shaped wall maintaining the lowermost disk in spaced relationship to the floor portion. An aperture within the C-shaped wall and a passage between the terminal ends of the C-shaped wall define means for the ingress of vapor from within a container through the floor portion into an area between the floor

portion and the disk adjacent thereto, while means for the egress of vapor from the area past the disks to atmosphere is formed by spacing means disposed along the periphery of the closure.

**3,459,325**  
**SEAL FOR ENCLOSURES SUBJECTED TO HIGH PRESSURES AND TEMPERATURES**  
Diethelm Knödler, Erlangen, and Alfons Jezussek, Erlangen-Buchenbach, Germany, assignors to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany  
Filed Mar. 29, 1967, Ser. No. 626,877  
Claims priority, application Germany, Apr. 7, 1966, S 103,081  
Int. Cl. B65d 53/00  
U.S. Cl. 220—46 6 Claims



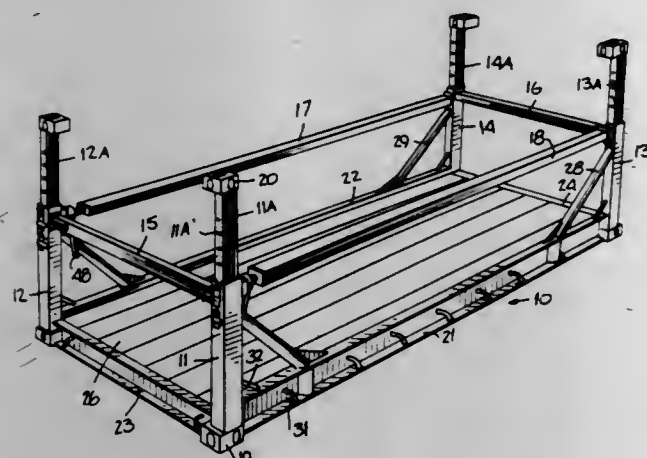
An enclosure which is subjected to high pressures and temperatures, such as a nuclear reactor. A pair of means coact to form the enclosure, this pair of means being a vessel means and a cover means for covering the vessel means. An intermediate ring is situated between this pair of means and has a sealing surface directed toward one of the pair of means and forming at least part of a sealed joint therebetween, this sealing surface of the intermediate ring removably carrying a sealing ring in the form of a metallic O-ring. An elastic sealing means extends between the intermediate ring and the other of the pair of means for elastically yielding during relative movement between the pair of means while holding the intermediate ring at the joint in a manner maintaining the tightness thereof, this elastic sealing means providing a sealed relationship between the intermediate ring and the other of the pair of means while elastically compensating for movement between the pair of means in a manner preventing any relative movement between the said one of the pair of means and the intermediate ring. This elastic sealing means is in the form of a thin metallic ring having a pair of opposed edges one of which is welded to the intermediate ring and the other of which is welded to the other of the pair of means and this thin metallic ring which forms the elastic sealing means can have in cross section either the configuration of a semicircle or a corrugated configuration enabling the elastic sealing means to act as a metallic bellows.

**3,459,326**  
**SHIPPING GONDOLA WITH REMOVABLE SIDE RAILS**  
Christopher H. Betjemann, R.D. 1, Lambertville, N.J. 08530  
Continuation-in-part of application Ser. No. 581,905, Sept. 26, 1966. This application May 31, 1968, Ser. No. 733,694  
Int. Cl. B65d 19/06, 19/08  
U.S. Cl. 220—1.5 6 Claims

A demountable cargo gondola having a floor assembly formed by a rectangular frame constituted by a pair of side beams and a pair of end beams, boards extend-

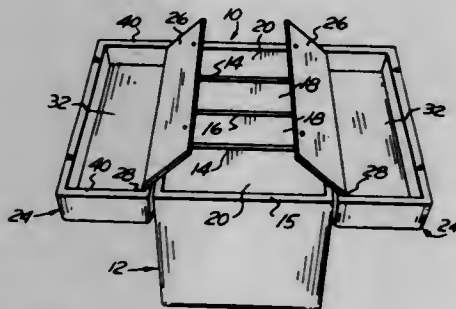


ing between said end beams and being flush with the top face thereof to define a floor surface, the side beams being of greater height than the end beams whereby the floor surface is depressed with respect to the top face of the side beams. Secured to the corners of the frame are four hollow corner posts provided with bottom corner fittings adapted to accommodate hooks and other engaging hardware. Between each pair of posts at either end of the gondola there is disposed a removable end gate, whereas between each pair of posts at either side of the gondola



there is disposed a removable side rail, which side rails have a rectangular cross-section and may be laid on the floor against an associated side beam to provide a broad track for supporting a load which occupies the full width of the gondola. Telescopically received within each corner post is an extensible section terminating in a top corner fitting, which section may be pinned to the corner post at any desired level whereby the effective height of the posts may be adjusted to the height of the load cradled in the gondola.

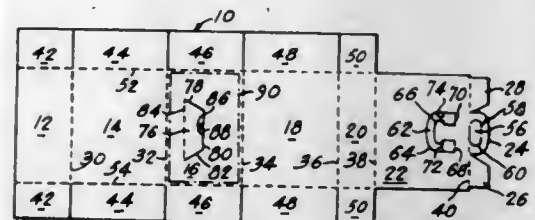
**3,459,327**  
**SHELL AND ACCESSORY CASE FOR SKEET AND TRAPSHOOTERS**  
William R. Harris, 26964 Davison Ave.,  
Detroit, Mich. 48239  
Filed Mar. 7, 1968, Ser. No. 711,283  
Int. Cl. B65d 1/24, 1/36, 85/54  
U.S. Cl. 220—20 2 Claims



A main open-topped rectangular box is provided with three vertical partitions, the outermost two of which are spaced apart from one another by distances slightly greater than the standard length of empty shotgun shells, while the middle partition is spaced apart from the two outermost partitions by distances slightly greater than the width of the standard shotgun shell box containing twenty-five shells. Hinged at their top edges to the longer opposite upper edges of the box are two hollow shallow half-covers or auxiliary boxes each provided with a hinged lid with catches, for the purpose of holding shooters' accessories, such as gloves, shooting glasses, score cards, ear plugs, and so forth. Each of these hollow half-covers swings through an angle of 180 degrees and when swung inward and downward, extends over one-half of the top of the box. These half-covers are provided with locking

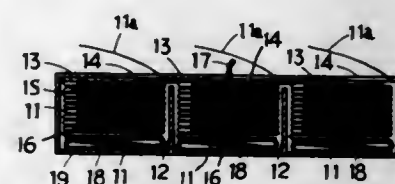
latches and carrying handles and, when swung outward, upward and then downward, come to rest with their hinged sides engaging the adjacent sides of the box, without the need for swing-limiting chains or slotted pivoted stop arms.

**3,459,328**  
**PARTITIONED END LOADING CARTON**  
Cecil Alan Rowley, Pointe Claire, Quebec, Canada, assignor to Domtar Limited, Montreal, Quebec, Canada, a company of Canada  
Filed Oct. 9, 1967, Ser. No. 673,773  
Claims priority, application Canada, Nov. 8, 1966, 975,127  
Int. Cl. B65d 75/00  
U.S. Cl. 220—115 4 Claims



The present invention relates to a blank and to an end loading carton formed therefrom, said carton having a top wall with an integral flap bendable from the plane of the wall for access to a handle member, the handle member being connected to the top of a longitudinal central partition member and lying in face-to-face relationship to said flap before the flap is open and said partition being connected to said top panel by means of glue flaps.

**3,459,329**  
**TISSUE PAPER CONTAINER SET**  
Katsumasa Mochizuki, Toshio Mochizuki, and Sayoko Mochizuki, all of 2872-1, Minami Kase, Kawasaki, Japan  
Filed Aug. 25, 1967, Ser. No. 663,375  
Int. Cl. B65h 1/04, 1/12, 1/28  
U.S. Cl. 221—34 4 Claims

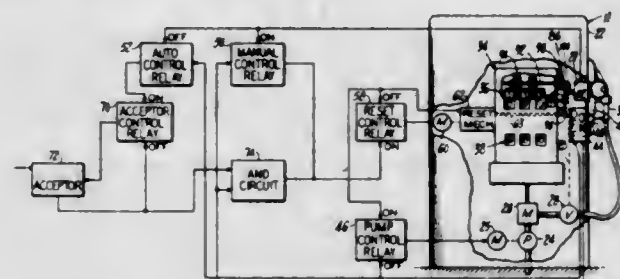


A set of tissue paper containers comprising a first container for packing batches or groups of interfolded tissue papers and a second container, which has been subdivided from the package of the first container, for carrying a group of the tissue papers about the person without being contaminated, soiled or crumpled. A single sheet of tissue paper can be readily and conveniently withdrawn from each container when required without disarranging the remainder of a supply of tissue papers.

**3,459,330**  
**CONTROL SYSTEM FOR FLUID DELIVERY MECHANISM**  
John H. Bickford, Middletown, and Igor Blinow, Hebron, Conn., assignors to Veeder Industries Inc., Hartford, Conn., a corporation of Connecticut  
Filed Oct. 5, 1967, Ser. No. 673,099  
Int. Cl. B67d 5/10, 5/30; G07f 13/02  
U.S. Cl. 222—2 10 Claims

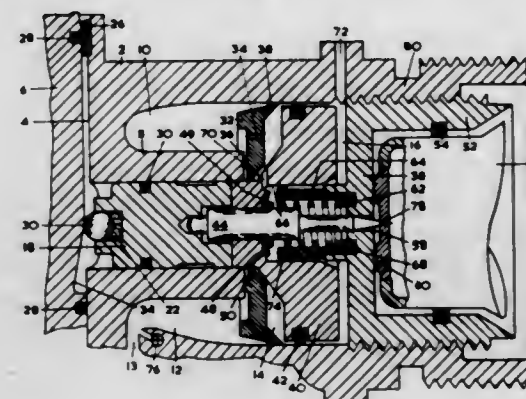
A fuel dispensing system having a fuel delivery pump which may be conditioned for "manual" delivery for delivering any desired amount of fuel or for "automatic" delivery controlled by an acceptor adapted for collecting a predetermined monetary deposit and/or for accepting a

"credit" card and which is adapted for activating the pump for delivering a fixed monetary amount of fuel. A two-stage shut-off valve in the delivery line is held in its fully open position by a key-operated selector when "manual" operation is selected, and a preset mechanism provides for holding the valve in its partially open or throttled position during "automatic" operation and for



closing the valve when the appropriate monetary amount of fuel is delivered. The preset mechanism is operated by a cam on the transfer pinion shaft of the cost counter of the pump, and the cam is indexed by the transfer pinion between the ten-cent and dollar number wheels of the cost counter to close the shut-off valve. The reset mechanism is reset to re-open the valve to its throttle position by the pump reset mechanism at the end of the reset cycle.

**3,459,331**  
**GAS CARTRIDGE PIERCER AND REGULATING VALVE**  
Christopher A. Hogg, Ilford, Essex, England, assignor to The British Oxygen Company Limited, a British company  
Filed Feb. 28, 1968, Ser. No. 708,840  
Claims priority, application Great Britain, Mar. 2, 1967, 9,987/67  
Int. Cl. B67b 7/24  
U.S. Cl. 222—5 11 Claims

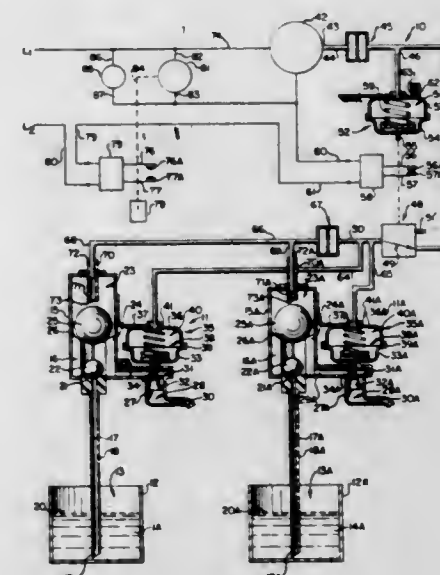


In a valve mechanism which uses as an operating medium gas under pressure released selectively from a "bulb" of liquefied or compressed gas, an excess pressure or rate of increase of pressure is prevented by a piston supporting a bulb-piercing member. When the limit conditions are reached a differential pressure is produced across the piston sufficient to move it to close the aperture in the bulb irrespective of demand and until the pressure or pressure rise has decreased sufficiently.

**3,459,332**  
**PNEUMATICALLY CONTROLLED DISPENSING APPARATUS**  
Robert L. Golden, Greensburg, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware  
Filed Aug. 16, 1967, Ser. No. 661,041  
Int. Cl. B67d 5/08  
U.S. Cl. 222—61 10 Claims

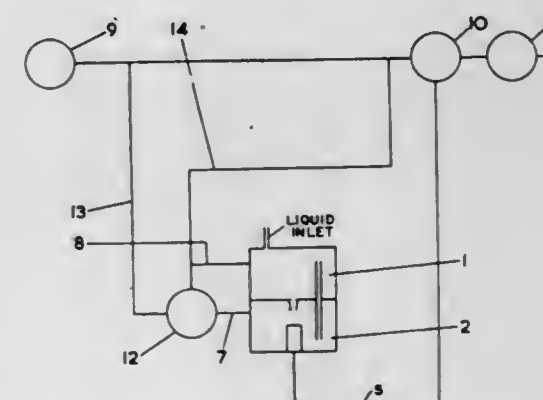
This disclosure relates to a pneumatic control system for dispensing metered quantities of liquid from one or

more different liquid supply chambers out through dispensing outlets in an automatic manner so that the dispensed liquids will be in proper quantities for providing



a predetermined mixture of liquids or the like each time the dispensing apparatus is operated, each dispensing operation being effected by pneumatically controlled actuator means.

**3,459,333**  
**LIQUID-DISPENSING APPARATUS**  
Samuel Inglefield, Runcorn, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain  
Filed Jan. 18, 1968, Ser. No. 698,754  
Claims priority, application Great Britain, Jan. 27, 1967, 4,208/67  
Int. Cl. B67d 5/08; G01f 11/00  
U.S. Cl. 222—64 5 Claims



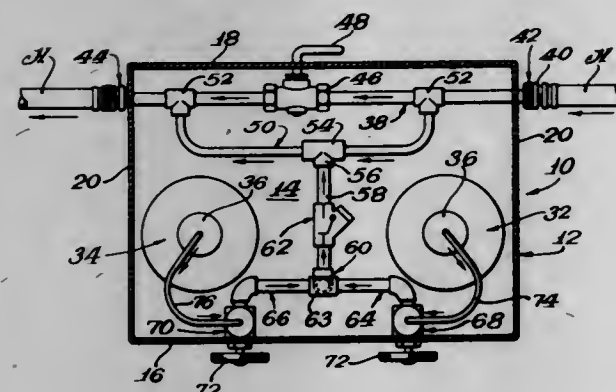
Liquid-dispensing apparatus for dispensing a predetermined volume of liquid by application of gas pressure includes the combination of (a) a sample compartment contained within a first chamber, with the sample compartment having a delivery outlet for delivering a predetermined volume of liquid from the sample compartment, (b) a second chamber for dispensing liquid into the sample compartment of the first chamber, conduit means for returning overflow liquid from the sample compartment to the second chamber, and (c) means for applying a relatively high gas pressure to the first chamber in which the sample compartment is located. The apparatus may be used with gas chromatography equipment for dispensing a sample of liquid into a vaporizer associated with the chromatography equipment.



**3,459,334**  
**AUTOMOBILE WASH AND WAX ASSEMBLY**  
 James A. Evans, 13011 S. 71st Ave.,  
 Palos Heights, Ill. 60463  
 Filed Sept. 11, 1967, Ser. No. 666,573  
 Int. Cl. B67d 5/56

U.S. Cl. 222—132

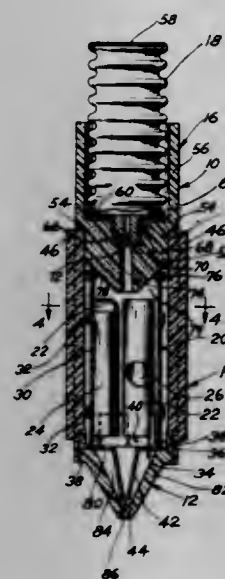
7 Claims



A portable wash and wax apparatus used with automobiles. The apparatus has an enclosure which contains a liquid wax container and a cleaning liquid container. An inlet for the passage of pressurized water is provided and an outlet is provided for passage of water or a mixture of water and wax or a mixture of water and a cleaning liquid. Conduits interconnect the liquid wax container and the liquid cleaning container at a point between the inlet and the outlet. Venturi means are also provided between the inlet and the outlet and communicates with the liquid in the container for drawing liquid wax or the cleaning liquid from the respective container as a result of the action of pressurized water passing through the venturi. Valve means are provided for selectively permitting the passage of pressurized water only through the outlet, the passage of mixed water and cleaning liquid through the outlet, or the passage of mixed water and liquid wax through the outlet.

**3,459,335**  
**MANUAL DISPENSER FOR HEATED ADHESIVE**  
 David J. Cohen, 720 W. Gordon Terrace 60613, and  
 Sidney L. Blivice, 1255 N. Sandburg Terrace 60610,  
 both of Chicago, Ill.  
 Filed Mar. 3, 1967, Ser. No. 620,470  
 Int. Cl. B67d 5/62; B65d 35/28  
 U.S. Cl. 222—146

10 Claims



An adhesive dispenser is provided having a melt chamber which is heated so that the adhesive or glue is

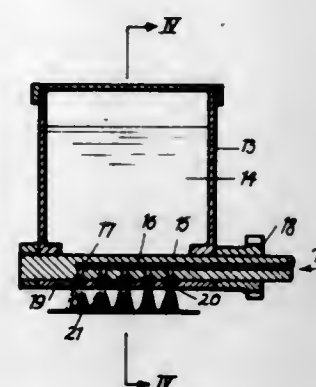
placed in a flowable condition. Preferably the melt chamber is rigid or shape sustaining, and the melted adhesive bridges over the outlet from the chamber without flowing therefrom, and gas pressure is applied to one end of the melt chamber to cause the flowable adhesive to be dispensed through the outlet at the other end of the chamber.

**3,459,336**  
**MEANS FOR DISPENSING GLUE OR ADHESIVES IN PREDETERMINED VOLUMES, PARTICULARLY FOR USE IN THE MANUFACTURE OF PACKAGES OF CARDBOARD**

Gunnar Ruud, Elgvelen 12, Sarpsborg, Norway  
 Filed Feb. 21, 1968, Ser. No. 707,207  
 Claims priority, application Norway, Feb. 27, 1967,  
 167,047; Mar. 22, 1967, 167,418  
 Int. Cl. B67d 5/62, 5/54; G01f 11/10

U.S. Cl. 222—146

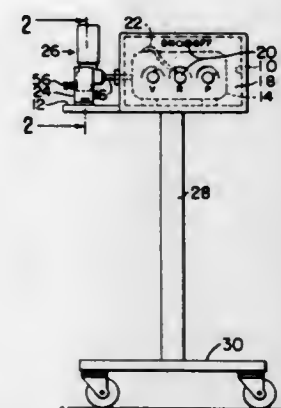
4 Claims



Application of glue or other adhesives to cardboard blanks which are to be formed into cardboard boxes or other types of packages, is made by means of movable members having recesses for reception of a predetermined volume of adhesive when moved into same, the adhesive being applied to the blank by an air burst supplied to the recesses through channels in said members.

**3,459,337**  
**INJECTION CARTRIDGE**  
 Donald E. Williamson, Miami, Fla., assignor to Cordis Corporation, Miami, Fla., a corporation of Florida  
 Filed Feb. 8, 1967, Ser. No. 615,020  
 Int. Cl. B67d 5/54; G01f 11/42; F04c 1/04  
 U.S. Cl. 222—183

9 Claims



An apparatus for injecting liquids consists of a unitary combination of a pump and flexible sealed reservoir. The unit is entirely filled with fluid, thereby preventing air from being injected after the reservoir is empty. For the injection of parenteral liquids, the entire unit can be sterilized by the manufacturer.

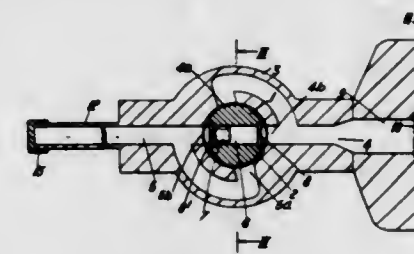
**3,459,338**  
**MECHANISMS FOR DISPENSING UNIT DOSES OF MATERIALS**

Ronald H. D. F. Lee, Berkhamsted, and Kay Dixon,  
 Tring, England, assignors to Cooper, McDougall &  
 Robertson Ltd., Berkhamsted, England

Filed Aug. 15, 1967, Ser. No. 660,741  
 Claims priority, application Great Britain, Aug. 16, 1966,  
 36,710/66

Int. Cl. G01f 11/04, 11/22  
 U.S. Cl. 222—219

7 Claims



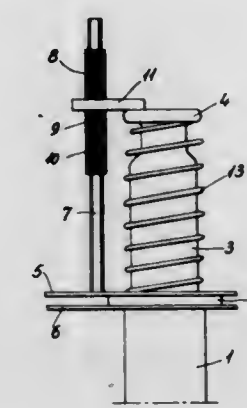
This invention particularly provides a mechanism for rapidly dispensing unit doses of medicaments, especially to animals such as sheep, wherein the medicament is forced by gas pressure out of a container into the mechanism which includes a rotatable plug with a bore therein in which a member is movable between stop means which define a unit dose. The inlet conduit has two inner ports and two corresponding inner ports are provided for the outlet conduit so that the plug can be oscillated to register the bore with one corresponding pair of ports of the inlet and outlet conduits and the other pair successively, the piston being caused at each registration to move towards the outlet conduit and dispense a unit dose from the one end of the bore while taking in another unit dose at the other end of the bore.

**3,459,339**  
**PIPETTE**  
 Lauritz Gudmund Damgaard, Virum, Denmark, assignor to H. Struers Chemiske Laboratorium, Copenhagen, Denmark

Filed Mar. 24, 1967, Ser. No. 625,669  
 Claims priority, application Denmark, Mar. 30, 1966,  
 1,663/66

Int. Cl. G01f 11/06  
 U.S. Cl. 222—309

7 Claims

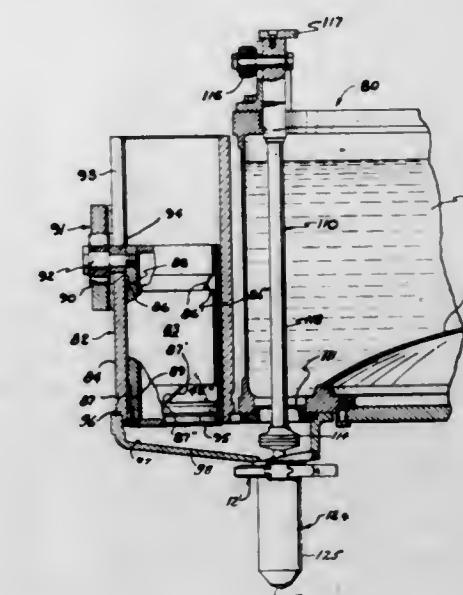


A dispensing pipette having a glass barrel and a glass plunger movable forward by finger pressure and rearward by a retraction spring, the rearward movement being limited by the engagement of the plunger with a non-circular stop disc clampable in an adjustable position between two

nuts on a screw-threaded column extending rearward from the barrel in a off-set position.

**3,459,340**  
**RECEPTACLE FILLING MACHINES**  
 Robert L. Smith, Louisville, Ky., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware  
 Application June 27, 1966, Ser. No. 560,583, now Patent No. 3,349,973, dated Oct. 31, 1967, which in turn is a division of application Ser. No. 342,427, now Patent No. 3,289,712. Divided and this application July 20, 1967, Ser. No. 663,912  
 Int. Cl. B67d 5/46; B65d 5/76  
 U.S. Cl. 222—380

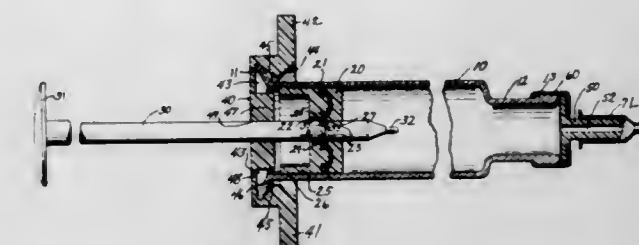
4 Claims



A receptacle filling machine having movable valve means for closing a discharge port during fluid metering and for closing an inlet port during discharge of the metered quantity of fluid. The valve means includes passages in fluid communication which prevent leakage after the metered quantity is discharged.

**3,459,341**  
**PISTON TYPE DISPENSER**  
 Jacob C. Copeland, Chicago, Ill., assignor of thirty percent to Orville N. Greene, New York, N.Y.  
 Filed Nov. 7, 1967, Ser. No. 681,263  
 Int. Cl. B67d 5/42; C01f 11/00  
 U.S. Cl. 222—386

3 Claims



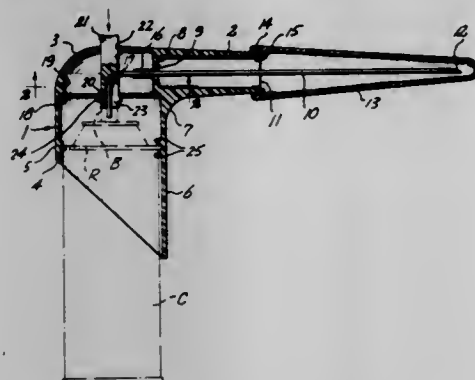
The invention relates to improvements on the "Piston Type Dispenser" of Gill, U.S. 3,248,014 which comprises a piston having a locking means cooperating with grooves on the actuating shaft for the piston to lock the shaft at one position with respect to the piston but which permits the device to be shipped or stored with the actuating shaft substantially entirely within the barrel of the dispenser. According to this invention, assembling of this device is facilitated by improving the locking means, and the cap which prevents accidental removal of the piston.



### 3,459,342 AEROSOL CONTAINER DISPENSING ATTACHMENT

Wilbur M. Manning, Box 1736, 1874 Mountain Drive,  
Kodiak, Alaska 99615  
Continuation-in-part of application Ser. No. 562,389,  
July 1, 1966. This application June 5, 1968, Ser.  
No. 734,795

Int. Cl. B65d 83/00, 83/14; A22c 9/00  
U.S. Cl. 222-402.13 2 Claims

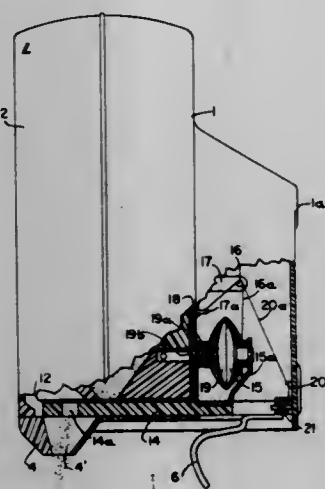


A hollow angle body of sheet material includes a shroud leg of circular cross section having an oblique open end for receiving the end of an aerosol container and a leg projecting transversely from the shroud leg and forming a sheath for an injection tube, a guard for a hand grasping the shroud leg and a mounting for the open end of a cap covering the portion of the injection tube projecting beyond the end of the sheath. The end portion of the injection tube enclosed by the body is bent relative to the portion of such tube extending through the sheath to project into the shroud for insertion into the dispensing aperture of an aerosol container top. A plunger reciprocable lengthwise, either in a direction axially of the shroud or transversely of it, can engage the dispensing button of an aerosol container for opening its valve to dispense liquid into the injection tube.

### 3,459,343 SOAP DISPENSER

Holger Rasmussen, 2 Chemin de Primerose,  
Lausanne, Switzerland

Filed Aug. 24, 1967, Ser. No. 663,154  
Int. Cl. B65d 47/00; B67b 7/24; B67d 5/38  
U.S. Cl. 222-477 1 Claim



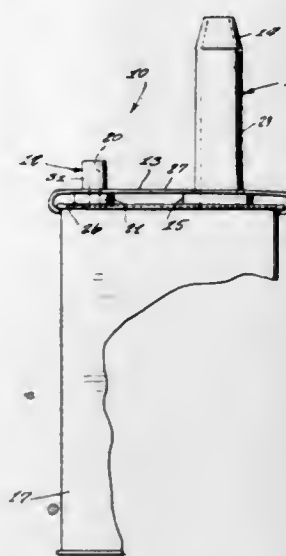
There is disclosed a soap dispenser including a housing having a supply of powdered soap therein, a slide disposed below the powdered soap, which slide may be drawn from a first position in which it is filled by a charge of soap falling from the supply thereof, into a second position in which the charge of soap is emptied

into a distributing orifice, resilient structure tending to return the slide into its first position whenever it is shifted therefrom, and timing mechanism preventing the return of the slide from its second position back into its first position until the expiration of a predetermined period of time following the dispensing of a charge of soap.

### 3,459,344 FLUID DISPENSING CONTAINER HAVING POUR AND VENT SPOUTS

Elgin W. Mackey, Box 415, Luling, Tex. 78648  
Filed Aug. 1, 1967, Ser. No. 657,551

Int. Cl. B67d 3/00; B65d 35/38; B65c 25/40  
U.S. Cl. 222-479 1 Claim

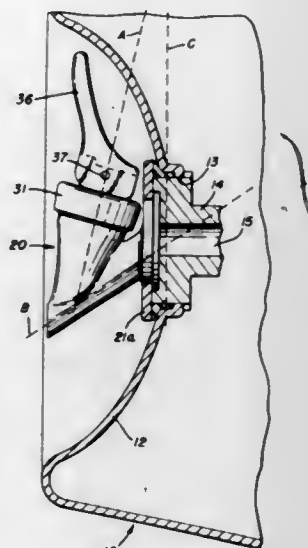


A pouring spout assembly securable to the upper side of a lubricating oil can, and which includes a pouring spout, a vent and a snap-on holder which is securable over the edges of the can and is used for providing a tight fit between the pouring spout and the can as well as between the suction vent and the can.

### 3,459,345 VALVE

John A. Chernak, Lyndhurst, and Elroy J. Glese, Cleveland, Ohio, assignors to Tomlinson Industries, Inc., Cleveland, Ohio, a corporation of Ohio

Filed May 26, 1967, Ser. No. 641,513  
Int. Cl. B67d 1/14, 1/16; F16k 1/30  
U.S. Cl. 222-505 9 Claims



A valve or tap for use with a beer keg or other liquid-containing reservoir with the valve being disposed in a restricted space such as the chime of the keg. The valve body is disposed at an angle to the chime and has an

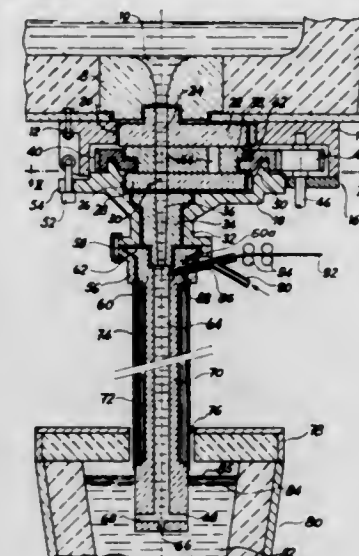
outlet passageway intersected by a sealing passageway at a point proximate the exterior end of the outlet passageway. Construction of the valve is such that upon attachment to the reservoir, the entire valve will be contained within the space defined by the chime and the plane of the peripheral edge of the keg.

### 3,459,346 MOLTEN METAL POURING SPOUT

Bernhard Tinnes, Zollikon, Switzerland, assignor to Metacon AG, Zollikon, Switzerland, a corporation of Switzerland

Filed Oct. 16, 1967, Ser. No. 675,711  
Claims priority, application Switzerland, Oct. 18, 1966, 15,071/66

Int. Cl. B65d 25/40; C21c 7/00; F16k 3/02  
U.S. Cl. 222-566 6 Claims

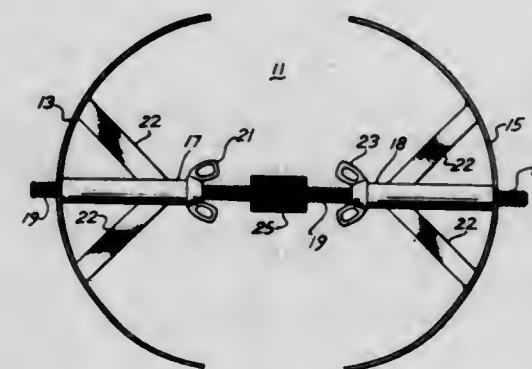


A pouring apparatus for a receptacle containing a molten material, especially steel and comprising slide closure means which incorporate two superimposed stationary slide closure elements and a movable slide closure element which is disposed between the aforesaid two superimposed stationary slide closure elements. Additionally, the invention contemplates the provision of pouring tube means formed of refractory material and arranged at the lower stationary slide closure element. The pouring tube means is adapted to be immersed in a molten bath and possesses an internal compartment for the through passage of the molten material. The lower stationary slide closure element is equipped with an opening with which communicates the internal compartment of the pouring tube means.

### 3,459,347 HAT STRETCHER

Joseph Navara, 2105 W. Walton St.,  
Chicago, Ill. 60622

Filed Nov. 20, 1967, Ser. No. 684,227  
Int. Cl. A42c 1/04  
U.S. Cl. 223-25 3 Claims



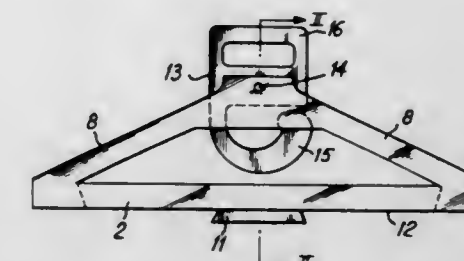
An apparatus for stretching and shaping caps or hats is disclosed including two arcuate elements mounted on a cooperating elongated member, and having means for

moving the arcuate elements outwardly on said cooperating member and with respect to each other to provide a stretching action to the cap or hat.

### 3,459,348 CLOTHES HANGER

Henri Masson, Vincennes, France, assignor to Serametta S.A., Lucerne, Switzerland  
Filed Dec. 23, 1966, Ser. No. 604,323  
Claims priority, application France, Jan. 17, 1966, 46,066; Apr. 4, 1966, 56,223; June 16, 1966, 65,694

Int. Cl. A47j 51/097, 51/08  
U.S. Cl. 223-87 2 Claims

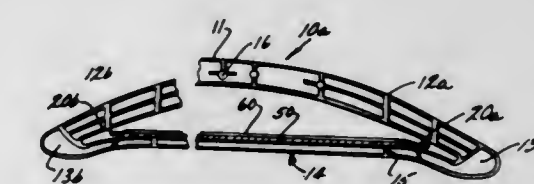


A clothes hanger has a combined hook-handle which is swingable between positions in which the hook is uppermost or in which the handle is uppermost. A lower bar for holding trousers is provided by a folded-over portion of triangular cross section the end of which is inserted for retention in a slot. When the end portion is in the slot, the hanger has considerable thickness; but when the end portion is out of the slot, the hanger can fold flat.

### 3,459,349 GARMENT HANGER

John H. Batts, Grand Rapids, Mich., assignor to John Thomas Batts Inc., Zeeland, Mich., a corporation of Michigan

Filed Oct. 17, 1967, Ser. No. 675,951  
Int. Cl. A47j 51/08  
U.S. Cl. 223-91 7 Claims



A molded plastic garment hanger having intergally molded at each extremity of the trouser bar section a protruding hook-like member. After the trousers or other apparel are placed on the bar, a closed resilient loop of material such as a rubber band is suspended between the hooks to retain the trousers or the like on the bar.

### 3,459,350 METHOD AND APPARATUS FOR PUNCHING

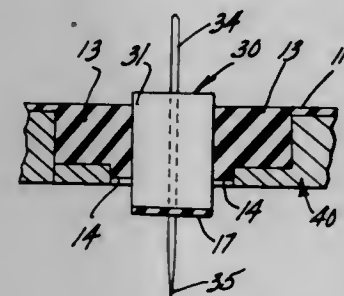
Harvey L. Wahn, Grand Rapids, Mich., assignor to Corduroy Rubber Co., Grand Rapids, Mich., a corporation of Delaware

Filed Oct. 11, 1967, Ser. No. 674,547  
Int. Cl. B26f 1/02, 3/02  
U.S. Cl. 225-2 11 Claims

A method of and/or apparatus for punching the plug from the inside diameter of a molded, flexible component, for example, a bushing, wherein the boundary between the plug and the adjacent material is weakened by means

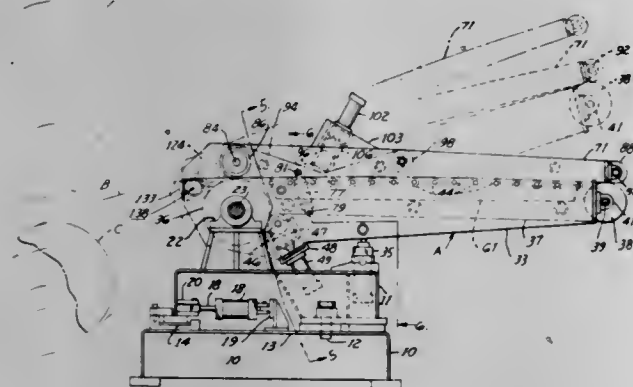


of a peripherally broken die. Subsequent to weakening, the webbing-connected sheet is placed on a suitable platform and a sharpened fixture brought into contact with the plug, preferably penetrating it. A blunt punch member which axially surrounds the sharpened fixture is then butted against the plug and forced through the surround-



ing material to separate the plug therefrom. The penetrated pin prevents the plug from sliding to one side during the punching process. The pin or sharpened fixture is then withdrawn with respect to the blunt punch member to cause the plug to drop free. It is understood that this abstract is not to be utilized to limit the scope of this invention.

**3,459,351**  
**METHOD AND APPARATUS FOR TENSIONING A MOVING STRIP**  
Max H. Bursk, North Olmsted, Ohio, assignor to Wilson Lee Engineering Company, Inc., Cleveland, Ohio, a corporation of Ohio  
Filed Sept. 26, 1967, Ser. No. 670,707  
Int. Cl. B65h 23/18, 23/08  
U.S. Cl. 226—39 14 Claims

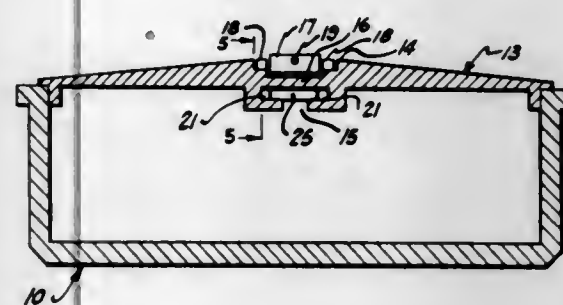


A method and apparatus for applying a pulling or tensioning force to a moving strip or web, such as sheet steel for example, either in the direction of travel of the strip or opposite to the direction of travel. A vacuum system is used in cooperation with moving belts to apply the tensioning force.

**3,459,352**  
**RETRIEVER FOR THE BROKEN ENDS OF STRIP MATERIAL IN AN ENCLOSED TANK**  
William L. Ingram, Rte. 2, Box 84, Hebron, Ind. 46341  
Filed Oct. 30, 1967, Ser. No. 679,050  
Int. Cl. G03b 1/56 6 Claims

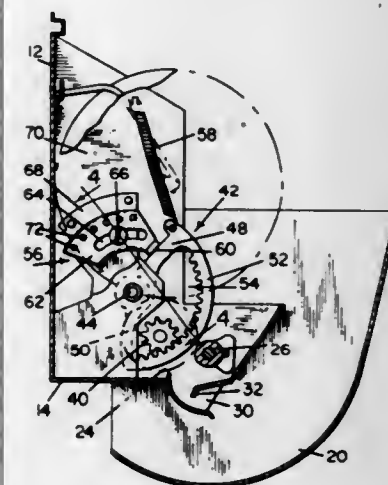
A nonmetallic cover for a tank has upper and lower recesses running centrally along the length thereof. A permanent magnet is supported in the upper recess by rollers and is moveable by a tow line back and forth across the tank. A retriever magnet is located in the tank cover's lower recess and it too is mounted on rollers and

adapted to be moved back and forth in its recess in the tank's cover by magnetic attraction to the permanent magnet in the upper recess. A flexible retriever band on the retriever magnet hangs down through the lower recess into the tank so as to be drawn therethrough after



the retriever magnet. When it reaches the other side, the flexible band is used to retrieve a broken end of strip material that is otherwise fed into and through the tank by means of power-driven rollers located at the tank's ends.

**3,459,353**  
**ADJUSTABLE LENGTH SHEET DISPENSER**  
Milford J. Taylor, Erving, Mass., assignor to Erving Paper Mills, Erving, Mass., a corporation of Massachusetts  
Filed Aug. 3, 1967, Ser. No. 658,164  
Int. Cl. B65h 17/26 7 Claims

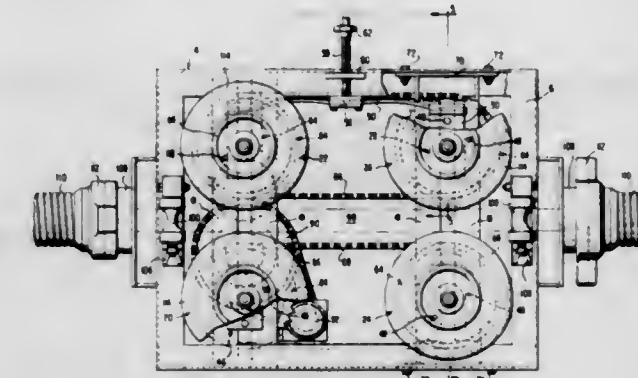


A dispenser for sheets in continuous form, e.g., towels, including means for projecting a predetermined length of sheet material from a roll by manual actuation of a dispensing device, said means being located in a housing and being concealed therein, with means for adjusting the length of the sheet dispensed. The adjustment means comprises an adjustable stop which controls the length of actuation of the manually actuated dispensing device.

**3,459,354**  
**WHEEL MOUNTING STRUCTURE**  
John R. Land and Forrest C. Pittman, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware  
Filed Mar. 8, 1966, Ser. No. 532,739  
Int. Cl. B65h 17/22 4 Claims

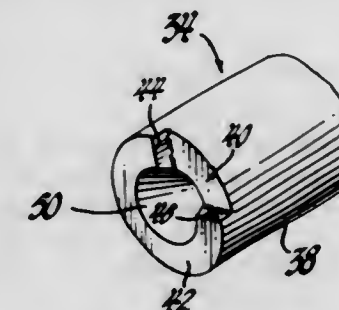
Apparatus for pushing and pulling hoses, cables, and similar flexible elongated articles in an axial direction. The apparatus includes pairs of opposed wheels mounted on a frame in substantially coplanar relation with the central axis of the wheels in substantially parallel relation. The wheels are provided with inflated tires with

the tread of the tires forming gripping surfaces for engaging the elongated article being conveyed. One wheel of each pair is mounted for rotation on a bearing fixed to the frame, while the other wheel is mounted for rotation on a bearing that is guided for movement toward and away from the opposed wheel, and a common spring



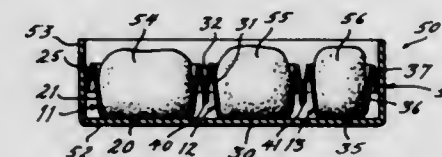
connects the movable bearings of adjacent pairs of wheels with the machine frame. Power for driving the wheels is transmitted to the movable wheels by a pair of universal joints and a sliding, splined coupling which allows movement of the wheel relative to the frame without interrupting transmission of power to the wheels.

**3,459,355**  
**ULTRASONIC WELDER FOR THIN WIRES**  
Robert W. Metzger, Jr., Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Oct. 11, 1967, Ser. No. 674,465  
Int. Cl. B23k 1/06 4 Claims



A high frequency vibratory apparatus for welding thin wires to transistors and having a transducer coupled to an elongated tubular welding member through which the wire extends. The welding member is characterized by having a wedge-shaped groove formed in one end thereof for accommodating a portion of the wire and permitting the latter to be angularly positioned about the longitudinal axis of the welding member during a welding operation.

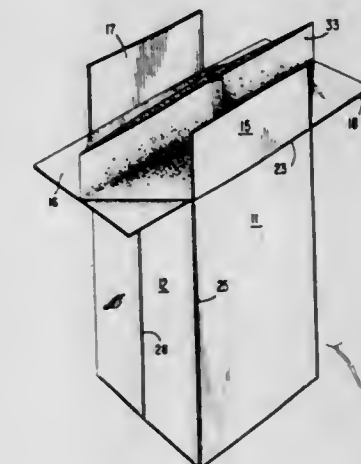
**3,459,356**  
**CONFECTIONERY PACKAGE**  
George C. Sparks, Concord House F-6, Harleysville, Pa. 19438  
Filed Nov. 29, 1967, Ser. No. 686,559  
Int. Cl. B65d 5/48, 1/36, 81/00, 85/36, 85/60  
U.S. Cl. 229—15 7 Claims



This invention relates generally to a confectionery package wherein an insert for a tray or box is fabricated of

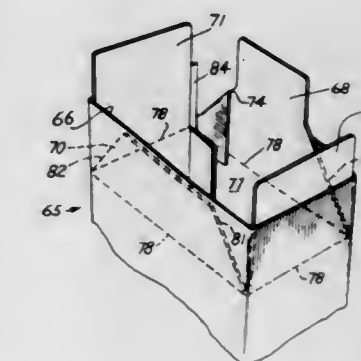
flexible sheet material being cut and formed to define a plurality of cups or cup-shaped receptacles for articles of confection, and flexible connector elements or strips between proximate portions of adjacent receptacles.

**3,459,357**  
**BAG-IN-A-BOX**  
William Egger, Somerville, and Edward Shaw Naylor, Trenton, N.J., assignors to Union Camp Corporation, New York, N.Y., a corporation of Virginia  
Filed Jan. 5, 1967, Ser. No. 607,550  
Int. Cl. B65d 5/02, 5/58 4 Claims



A collapsible container comprising a box having sides with bottom and top flaps attached thereto. Median fold lines traverse two opposing sides and their attached flaps. A flat, open top bag is located between the median lines within the collapsed box, and is bonded by adhesive to the sides and flaps. The bag is bonded to the two flaps which are traversed by the median lines at its oppositely disposed top corners. In view of the bonding between the box and the bag, inward movement of the sides having the median lines sets up the box and bag with its top open for filling. Outward movement of the top flaps secured to the opposite top corners of the bag brings the tops of the sides of the bag into parallel juxtaposition for sealing. Inward movement of the top and bottom of the bag causes unfolding movement of the top and bottom of the bag to form rectangular top and bottom closing means.

**3,459,358**  
**PREWRAPPED GIFT CARTON**  
Leonard Adams, Jr., Louisville, Ky., assignor to The Finn Industries, Chicago, Ill., a corporation of Delaware  
Filed Jan. 31, 1968, Ser. No. 701,942  
Int. Cl. B65d 5/02, 65/00 7 Claims



A carton blank which is cut and scored so as to provide side walls, at least one glue flap, and end flaps at



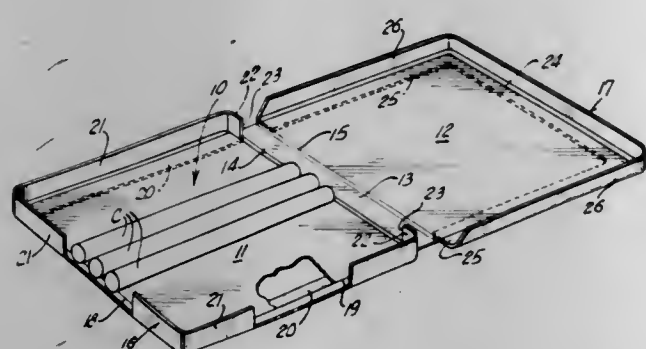
the top and bottom of the side walls, and by applying a decorative pre-wrap in the form of a flat sheet of material to the carton blank in a fashion such that the latter can be pre-formed and shipped and/or stored flat or knocked down. The appearance of the carton and the ability to machine form, fill and close the carton of the present invention is improved by providing a notch in the top edge of the glue flap, which notch is aligned with and forms an extension of the edge of the end flap along which the free portion of the continuous web between the end flaps is folded.

**3,459,359**  
**COMPOSITE PLASTIC AND FLEXIBLE PANEL CONTAINER**

William R. Heffernan, Westfield, N.J., assignor to Johnson & Johnson, a corporation of New Jersey  
Filed Mar. 2, 1967, Ser. No. 620,088  
Int. Cl. B65d 5/66, 1/00

U.S. Cl. 229-44

2 Claims



A composite plastic and flexible panel container of the general type disclosed in U.S. Patent 3,119,540 is formed with a receptacle portion and captive lid portion made from a unitary blank of flexible sheet material with the receptacle and lid portions each injection molded with independent plastic frames, and with a paneling section intermediate the receptacle and lid portions devoid of rigid plastic interconnection with the other plastic frames to enable a hinging and relative telescoping action between receptacle and lid and the closing of the receptacle in the vicinity of the intermediate paneling section.

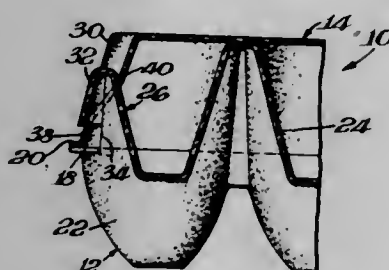
**3,459,360**  
**LOCKING MEANS FOR CARTON COVERS**  
Marcel Bagay, Lorient, France, assignor to Keyes Fibre Company, Waterville, Maine, a corporation of Maine  
Filed Feb. 12, 1968, Ser. No. 704,592

Claims priority, application France, Mar. 8, 1967, 97,987

Int. Cl. B65d 85/00, 5/66

U.S. Cl. 229-44

10 Claims



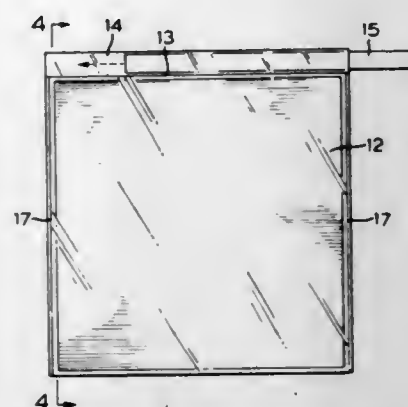
Containers molded of fibrous pulp material comprising upper and lower halves with a post latch on one of the container halves and a locking aperture in the upstanding side wall portion of the other half arranged to

receive the post latch when the container is closed. The locking aperture defines a forward edge portion in the side wall beyond which the post latch laterally extends when the container halves are latched together and a rear edge portion in the side wall that limits rearward flexing of the post latch in a direction away from the forward edge portion.

**3,459,361**  
**TRANSPARENT FILING ENVELOPE WITH INDEX**  
Harry E. Matton, 24 Nelles Road S., Grimsby, Ontario, Canada  
Filed Nov. 6, 1967, Ser. No. 680,892  
Int. Cl. B65d 31/12

U.S. Cl. 229-56

3 Claims



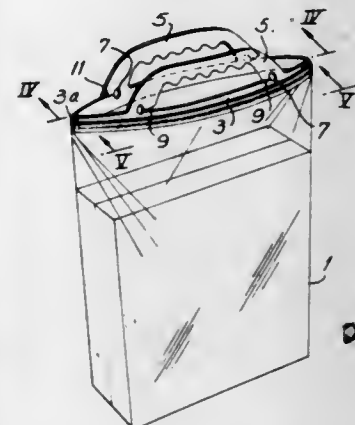
A transparent tabbed envelope suitable for phonograph records and the like comprises a smaller pocket to receive the tab joined to a larger pocket along one edge by a flexible junction; the opening to the larger pocket is along the edge thereof in the immediate neighborhood of the said junction.

**3,459,362**  
**COMPOSITE REINFORCEMENT AND HANDGRIP FOR A LADIES HANDBAG**  
Sante Glachi, Via S. Gervasio, 11 Florence, Italy  
Filed Nov. 1, 1967, Ser. No. 679,737  
Claims priority, application Italy, Nov. 15, 1966, 26,105/66

Int. Cl. B65d 29/00, 33/06

U.S. Cl. 229-54

2 Claims

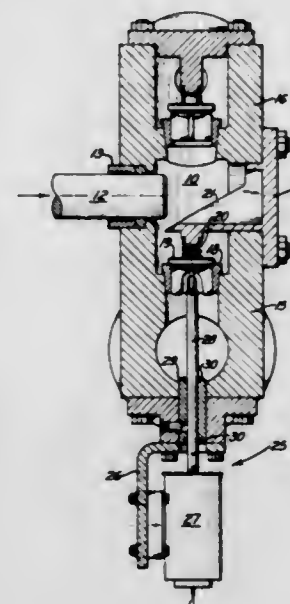


A tube of flexible plastic material with a diametral extent equal to that of an open mouth of a handbag body is flattened and a template cut therefrom to produce a ring with a pair of opposed elongated loops thereon, the ring then being welded to the mouth of the handbag such that the ring constitutes a reinforcement and the loops a handle.

**3,459,363**  
**VALVE-UNLOADING MECHANISM FOR RECIPROCATING PUMPS**  
John E. Miller, Dallas, Tex., assignor to United States Steel Corporation, a corporation of Delaware  
Filed Dec. 21, 1967, Ser. No. 692,557  
Int. Cl. F04b 49/02, 49/06, 39/00

U.S. Cl. 230-24

5 Claims



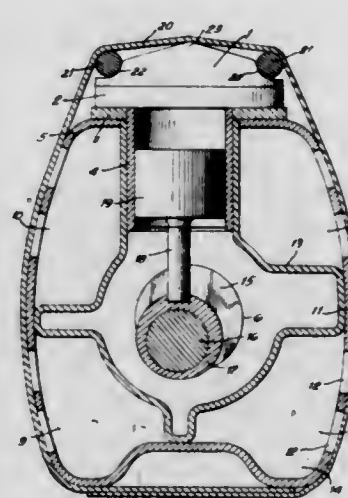
A mechanism for holding the suction valve of a pump open to stop discharge of fluid from the pump while the pump continues to operate. Includes a solenoid-operated rod engageable with the valve disk. Solenoid controlled by a circuit which can be actuated only when pump is making a suction stroke.

**3,459,364**  
**COMPRESSOR ESPECIALLY FOR REFRIGERATING MACHINES**  
Knud V. Valbjorn, Nordborg, Bendt Wegge Larsen, Augustenborg, and Anker Erik Madsen, Nordborg, Denmark, assignors to Danfoss A/S, Nordborg, Denmark, a company of Denmark  
Filed Dec. 11, 1967, Ser. No. 689,374  
Claims priority, application Germany, Dec. 17, 1966, 51,810

Int. Cl. F01b 29/08; F04b 39/12

U.S. Cl. 230-58

6 Claims



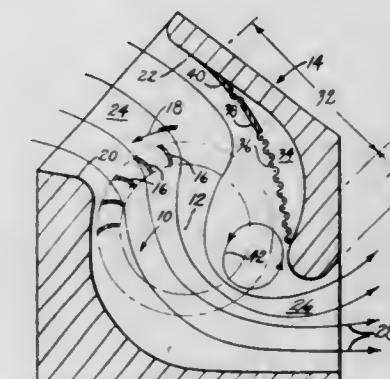
The invention relates to compressors of the type used in refrigerating machines. Compressors of this type have a cylinder assembly and a cylinder head which must be soundly fastened together during the assembly operation

and must be capable of being disassembled relatively easily for repairs. The invention involves the use of a closed ended metal clamping strip for attaching the cylinder head to the cylinder assembly. In the assembly operation the closed ended strip, in the first instance, loosely surrounds these two members and then has the slack thereof taken up by one or more wedge shaped members being driven between the closed ended strip and one of the members. The wedge shaped members function to tension the strip and thereby soundly connect the cylinder head to the cylinder assembly.

**3,459,365**  
**TRANSVERSE FLOW BLOWER UNIT HAVING CAVITY WITH RESTRICTED OPENING ADJACENT CUT-OFF SECTION**  
Dov Zeev Glucksman, West Newton, Mass., and Richard W. Bornstein, Torrington, Conn., assignors to The Torrington Manufacturing Company, Torrington, Conn., a corporation of Connecticut  
Filed Dec. 1, 1967, Ser. No. 687,303  
Int. Cl. F04d 17/08, 29/40; F04b 39/00

U.S. Cl. 230-125

4 Claims

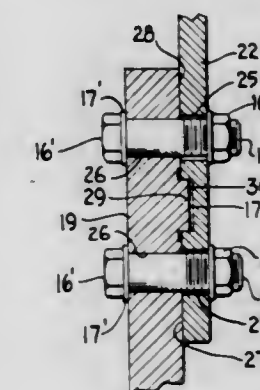


A transverse flow blower unit comprising a rotor and a housing with a cavity located adjacent and on the inlet chamber side of a housing cut-off section in turn disposed between inlet and discharge chambers, and one or more axially elongated members disposed adjacent the cut-off section on the inlet chamber side thereof to restrict the cavity opening for sound attenuation and to effect vortex stabilization.

**3,459,366**  
**FAN CONSTRUCTION**  
Joachim W. Schroeter, Depew, N.Y., assignor to Buffalo Forge Company, Buffalo, N.Y., a corporation of New York  
Filed May 2, 1967, Ser. No. 635,454  
Int. Cl. F04d 29/28; F16d 1/06

U.S. Cl. 230-134

4 Claims



A fan construction including a blade mounting section attached to a hub by substantially circular interfitted

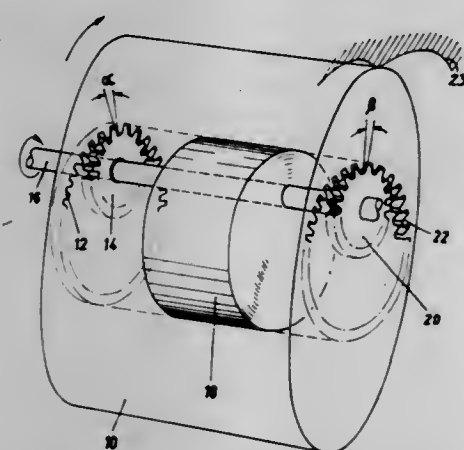


ridge and groove means and fastener means extending through aligned apertures in the hub and blade mounting section.

**3,459,367**  
**TRANSMISSION DRIVE FOR ROTARY PISTON VACUUM PUMP**

Hansen Pfaff and Hartmut Sinn, Hanau am Main, and Maximilian Wutz, Gros-Krotzenburg, Germany, assignors to Leybold-Heraeus GmbH & Co., KG, Cologne-Bayental, Germany

Filed Oct. 6, 1967, Ser. No. 673,427  
Claims priority, application Germany, Oct. 10, 1966, H 60,696  
Int. Cl. F04c 17/02; F16h 55/18, 1/20  
U.S. Cl. 230—145 3 Claims

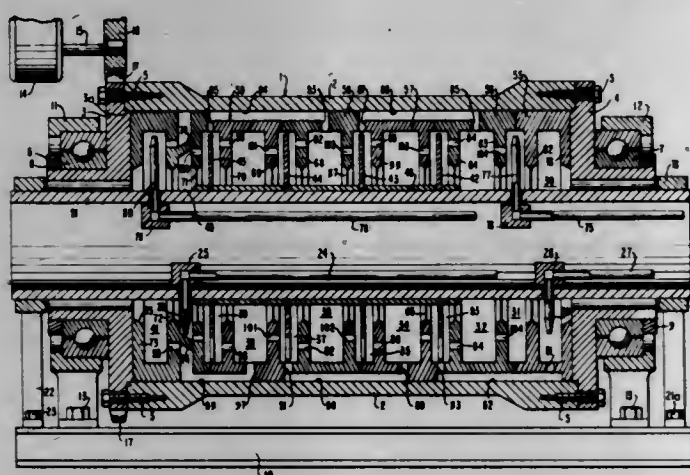


An eccentrically rotatable hypotrochoidal piston is rotatable in a housing having the form of an appropriate enveloping figure; the piston has internal toothing formed in each end face, the toothing each matching with a pinion. The pinions are fixedly mounted to the housing, coaxially about the drive shaft, and angularly offset with respect to each other such that play between the piston and the drive shaft can be substantially eliminated.

**3,459,368**  
**APPARATUS FOR THE DECONTAMINATION OF LIQUIDS**

Jacques Dollfus, Saint-Mande, France, assignor to La Societe des Ateliers Robatel et Mulatier, Lyon, Rhone, France

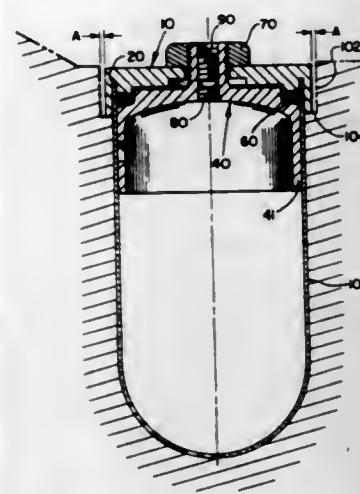
Filed July 21, 1966, Ser. No. 566,911  
Int. Cl. B04b 15/02, 11/02  
U.S. Cl. 233—15 6 Claims



Apparatus for the continuous, repeated and sequential mixing and decantation of two normally immiscible liquids of different specific gravity, comprising a tubular drum rotating rapidly about its longitudinal axis. A plurality of like, one-piece tubular sections fit within the drum in end-to-end contacting relation and rotate as a unit therewith. Each section has two integral, radially-inward-

ly, and circumferentially-extending flanges. The inner peripheries of the flanges extend circularly about the axis of the drum. Each pair of flanges of each section defines an annular decantation chamber between them, and each flange of one section defines with the contiguous flange of the next adjacent section, an annular mixing chamber. Lighter liquid enters a mixing chamber at a first end of the drum and is therein mixed with heavier liquid flowing from the second decantation chamber. Thereafter the mixed liquids flow together in a first direction toward the second end of the drum, through apertures in the flange, to the first decantation chamber where they are decanted centrifugally. The decanted lighter liquid then continues flow in the first direction to the second mixing chamber where it meets and is mixed with decanted heavier liquid coming from the third decantation chamber, and so on. Thus the two liquids are introduced at opposite ends of the drum, flow generally in opposite directions from chamber to chamber, and are exhausted at opposite ends.

**3,459,369**  
**CENTRIFUGE TEST TUBE CAP**  
Lloyd C. Marks, Saratoga, Calif., assignor to Beckman Instruments, Inc., a corporation of California  
Filed Sept. 16, 1965, Ser. No. 487,770  
Int. Cl. B04b 7/00  
U.S. Cl. 233—26 5 Claims

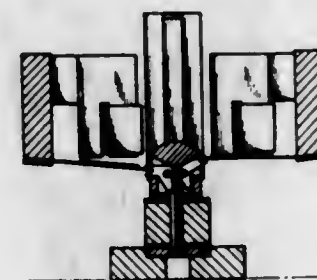


A centrifuge test tube cap, including a stem having a downwardly and outwardly sloping surface, a crown having an upwardly and outwardly sloping surface and an O-ring disposed between the sloping surfaces whereby as the cap is tightened the O-ring is compressed and simultaneously forced against the inside wall surface of the vessel thereby effecting a fluid tight seal.

**3,459,370**  
**SELECTIVE PUNCH DEVICE**  
Erich Elsfeldt, Munich, and Rainer Kofferlein, Munich-Solln, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany  
Filed Aug. 5, 1966, Ser. No. 570,651  
Claims priority, application Germany, Aug. 5, 1965, S 98,676  
Int. Cl. G06k 1/02  
U.S. Cl. 234—114 5 Claims

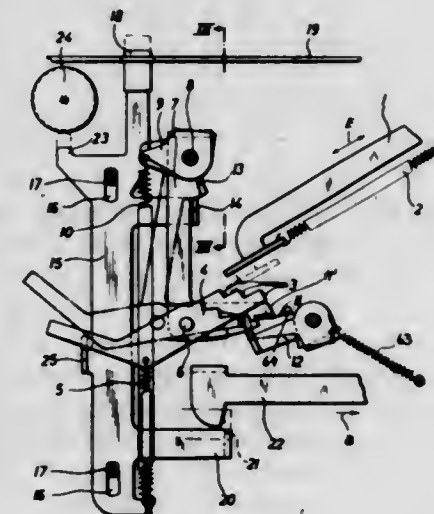
High speed columnwise punching of recording carriers is made possible by a punching installation wherein the punching force of a reciprocating crossbar is carried by rotatably mounted selectively engageable transfer members to individual punching dies. The transfer members comprise an angle lever having a first generally horizontal leg and a second generally vertical leg intersecting each other in a gamma-shaped configuration and rotat-

ably mounted in the area of the intersection. A selector means includes a leaf spring having one end engaging the free end of the first leg, a magnetic armature on said leaf spring within the magnetic field of an electromagnet whereby if the electromagnet is energized the leaf spring acts to rotate the corresponding transfer member out of engagement with the punching die, as said crossbar reciprocates into punching position. If said electromagnet is not energized, said leaf spring moves with said angle



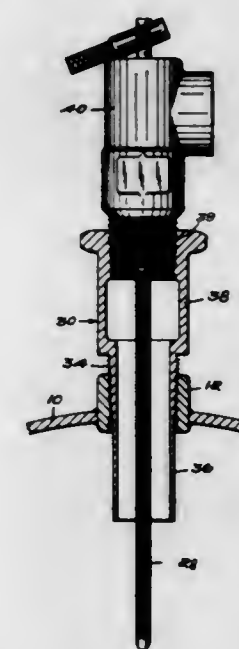
lever as the crossbar moves into punching position and tends to prevent said angle lever from rotating so that said transfer member transmits said punching force to said punching die. Return of the punching dies to their initial position is accomplished by a resilient comb means extending into cooperating recesses in the punching die. The punching dies may be arranged in mirror image relationship and operated off a common crossbar member.

**3,459,371**  
**ARRESTING MECHANISM FOR RESULT PRINTER IN CALCULATOR HAVING MULTIPLICATION FACILITY**  
Helmut Bresslein, Middelshausen, and Klaus Korte, Braunschweig, Germany, assignors to Olympia Werke AG, Wilhelmshaven, Germany, a corporation of Germany  
Filed May 8, 1967, Ser. No. 636,718  
Claims priority, application Germany, May 11, 1966, O 11,676  
Int. Cl. G06c 29/00  
U.S. Cl. 235—60 8 Claims



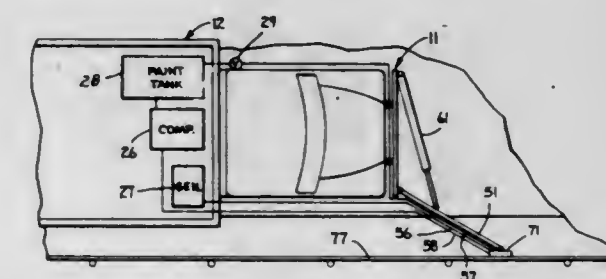
Calculator with a multiplicand register such as a pin carriage and a shiftable multidigit multiplier register whose combined storage capacity is such that the multiplication product may exceed the capacity of an associated totalizer which normally controls a result printer responding to a signal or combination of signals indicative of the end of a multiplication operation, the printer being inhibited whenever the drive for stepping the pin carriage executes a predetermined minimum number of extra steps (e.g. three) after the carriage has returned to its units position.

**3,459,372**  
**ADAPTER IN COMBINATION WITH A RECEPTACLE**  
James V. Salamone, Newton, Mass.  
(62 Falmouth Road, West Newton, Mass. 02165)  
Filed Apr. 21, 1967, Ser. No. 632,708  
Int. Cl. G05d 23/00; F16l 55/24; F22b 5/00  
U.S. Cl. 236—93 3 Claims



An adapter of non-ferrous metal in combination with a receptacle of ferrous metal having a hollow boss, the adapter screw-threadedly connecting with said boss and having an extension that passes through said boss and extends into the interior of the receptacle.

**3,459,373**  
**HIGHWAY RIGHT-OF-WAY MAINTENANCE APPARATUS**  
Vincent A. Koers, 5228 N. Central Ave., Indianapolis, Ind. 46220  
Filed Mar. 6, 1967, Ser. No. 620,723  
Int. Cl. B05b 7/26, 9/02  
U.S. Cl. 239—1 11 Claims



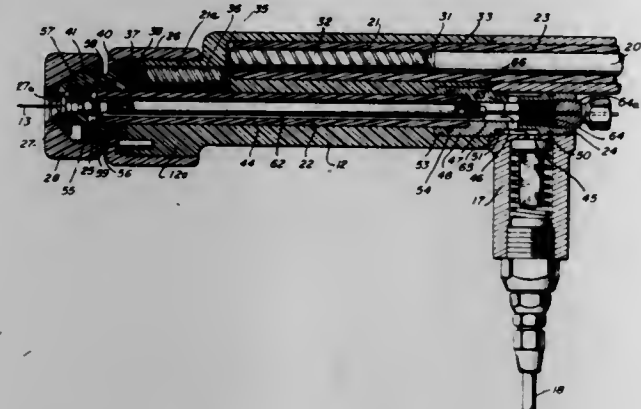
A vehicle-mounted apparatus having a frame for mounting the apparatus on a vehicle, a hydraulically operated boom for supporting a guide box for piloting on a highway guardrail and for supporting miscellaneous brushing, spraying, sandblasting and other devices for maintaining guardrails and treating the ground area in the vicinity of guardrails.

**3,459,374**  
**ELECTROSTATIC COATING APPARATUS**  
Richard O. Probst, Indianapolis, Ind., assignor to Ransburg Electro-Coating Corp., a corporation of Indiana  
Filed July 7, 1965, Ser. No. 470,144  
Int. Cl. B05b 5/02  
U.S. Cl. 239—15 8 Claims

A hydrostatic, electrostatic paint spray hand gun with an elongated barrel and a valve at the front thereof. A liner in a coating material passage through the barrel



provides the strength necessary to withstand the high hydrostatic pressures used and permits inexpensive fabrication of the barrel. A valve actuator extends rearwardly through the coating material passage and a sealing gland to a trigger. The valve seat, actuator and barrel are demountable for cleaning, and the gland body is held in the barrel by the handle, eliminating threaded joints

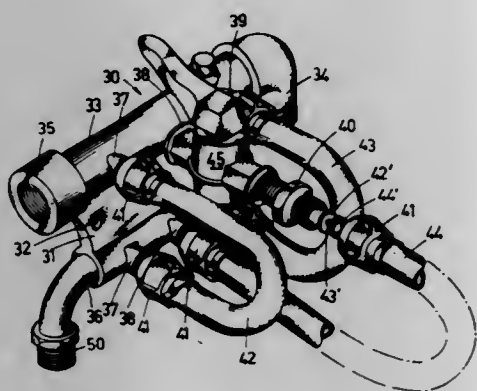


which require sealing for the high pressure coating material. A sleeve of plastic insulating material surrounds the end of the high voltage cable and the voltage dropping resistor in a second passage through the barrel and handle. The trigger is connected with the valve actuator by a latch which is disengageable when the gun is not in use.

#### 3,459,375 FARMING SPRAYER

Joseph Goffin, 38 Rte. de Namur, Eghezee, Belgium  
Filed July 11, 1967, Ser. No. 652,510  
Claims priority, application Belgium, May 16, 1967,  
43,677

Int. Cl. B05b 9/00, 9/06; F15d 1/00  
U.S. Cl. 239—127 3 Claims



In a farming sprayer having means to adjust the flow of the pump with reference to the rate of advance of the sprayer as well as a by-pass taken off the connection between the pump and the run of spraying nozzles, provided with a device for adjusting the quantity of liquid bled according to the desired quantity of liquid unit area, the improvement wherein calibrated elements are inserted in the by-pass for easily controlling the by-passed liquid.

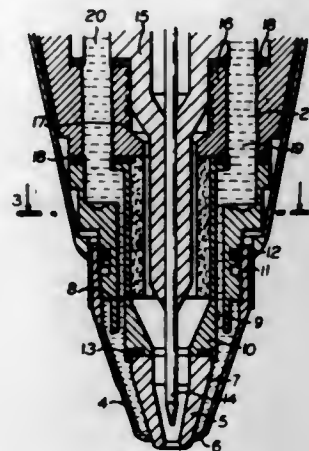
#### 3,459,376 PLASMA BURNER

Lothar Haase and Rudolf Pochert, Dresden, Germany, assignors to Kjellberg Elektroden & Maschinen GmbH in Verwaltung, Finsterwald, Germany, a corporation of Germany

Filed June 12, 1967, Ser. No. 645,334  
Int. Cl. B05b 15/00; B23k 9/16, 9/24  
U.S. Cl. 239—132.3 2 Claims

A plasma burner comprising a conical burner head and a nozzle cap operatively connected with the burner head, a plasma burner having measurements being a

part and a multiple, respectively, of its outer diameter, such that the burner head is reduced over its longitudinal length, amounting to about 2.2 up to about 2.8 times of its outer diameter, to a diameter amounting to about 0.1 up to about 0.3 times of its outer diameter. The cone of the nozzle-cap is reduced from a diameter, amounting to about 0.3 up to 0.7 times of the outer diameter, over a length, amounting to about 0.3 up to

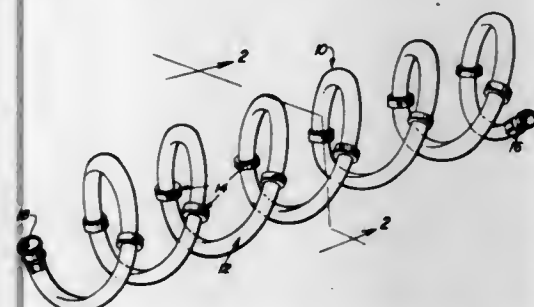


about 0.5 times of the outer diameter, to a predetermined diameter, and the total length of the nozzle cap amounts to about 0.5 up to about 0.8 times of the outer diameter. The length of the cone above the nozzle cap results from the difference of the longitudinal length of the burner head and the total length of the nozzle cap, and the length amounts to about 1.3 up to 1.7 times of the outer diameter.

#### 3,459,377 SPRINKLER HOSE CONSTRUCTION

Kenneth I. Van der Hulst, P.O. Box 229, Palm Beach, Fla. 33480  
Filed Nov. 14, 1967, Ser. No. 682,799  
Int. Cl. A01g 25/02

U.S. Cl. 239—394 10 Claims



Plant watering apparatus comprising an elongated spirally formed water conveying hose capable of being expanded and contracted within the limits of the spiral configuration and maintaining an adjusted position. A plurality of valve collars are rotatably mounted on the hose at spaced points along the length thereof in overlying relation to water discharging outlets or holes in the hose itself. Each of the valve collars includes a plurality of spray ports therein selectively alignable with the hose outlet so as to obtain a variety of different spray patterns upon an adjustment of the valve collar.

#### 3,459,378 LOAD CONTROL SYSTEM

John L. Hill, North St. Paul, Minn., assignor to Ramsey Engineering Company, St. Paul, Minn., a corporation of Minnesota

Filed Oct. 13, 1965, Ser. No. 495,536  
Int. Cl. B02c 25/00

U.S. Cl. 241—35 17 Claims  
A conveyor feeds rock to a crusher, the crusher motor being able to withstand a lower load level on a continuous basis and a higher load level for temporary periods

of operation. A first potentiometer establishes a minimum speed of the conveyor whereby material is fed at a lower rate which rate is acceptable for continuous operation of the crusher and a second potentiometer similarly establishes a maximum conveyor speed whereby material is fed at a higher rate which rate is unacceptable for continuous operation but acceptable for short operational periods. A sensor determines when the unacceptable state is reached and causes a relay to be energized which switches the control from the second potentiometer to the first potentiometer which causes the feed rate to be

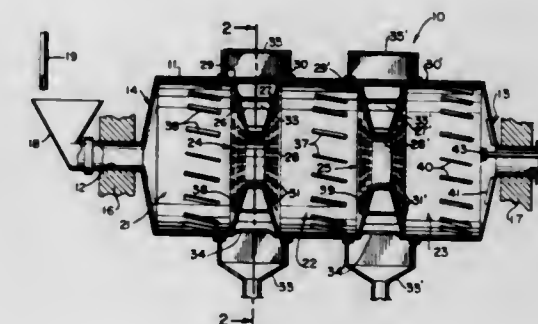
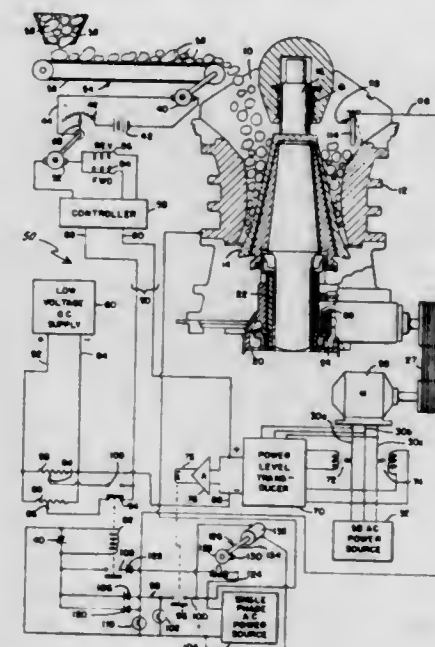
be understood that the principles of the present invention can be employed in any apparatus for reducing of defibrating wood.

#### 3,459,380 APPARATUS AND METHOD FOR MAKING A SLURRY

Helge Carl Christian Kartman, Copenhagen-Valby, Denmark, assignor to F. L. Smidth & Co., New York, a corporation of Delaware

Filed May 3, 1966, Ser. No. 547,331  
Claims priority, application Great Britain, May 4, 1965,  
18,748/65

Int. Cl. B28c 1/02  
U.S. Cl. 241—43 8 Claims



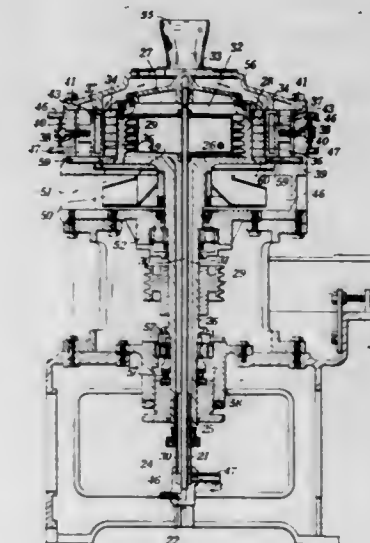
A combined wash and grinding mill which is divided into at least two compartments by a hollow sieve ring. One compartment is used for initially preparing a slurry of required fineness for separation out of the hollow sieve ring and a second compartment is used for simultaneously washing and autogenously grinding the remaining slurry.

#### 3,459,381 PULVERIZER

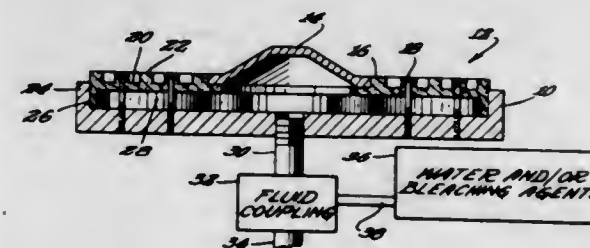
Keiichi Takahashi, Yao-shi, Osaka-fu, Japan, assignor to Horai Tekko Sho Co., Ltd., Osaka-shi, Japan

Filed Sept. 13, 1966, Ser. No. 579,146  
Int. Cl. B02c 7/08; 7/17, 21/00

U.S. Cl. 241—67 3 Claims



3,459,379  
MECHANICAL PULPING APPARATUS  
Kenton J. Brown, Rockford, Ill., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin  
Filed Jan. 18, 1967, Ser. No. 610,164  
Int. Cl. B02c 7/12; B24b 55/00  
U.S. Cl. 241—38 4 Claims



The disclosed embodiment of the present invention is an apparatus for refining wood chips and pulp which includes a porous plate forming the defibrating surface on one surface thereof and a fluid cavity or reservoir on the other surface thereof to which fluid is supplied under pressure. The fluid passes through the porous plate from the fluid cavity to the defibrating surface. The disclosed exemplification of the invention is a disk refiner, but it is to

A pulverizer is provided with a hollow rotary member having a plurality of annular cutting members disposed thereabout and a plurality of stationary cutter members, each of which is a hollow arcuate segment disposed in spaced annular relation about the rotary cutter members. A cooling fluid is circulated through the hollow rotary member and each of the hollow stationary members to remove the heat generated during the pulverizing opera-

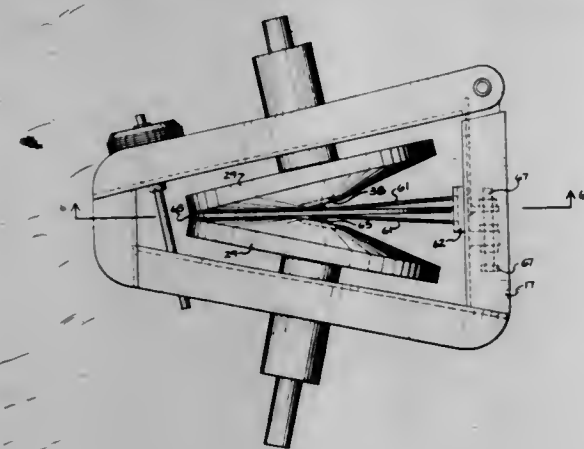


tion. A pair of annular plates having predetermined spacing are disposed at the outlet end of the space between the rotary and stationary cutters to determine the final mesh of the pulverized material.

**3,459,382**  
**CONICAL GRAIN ROLLER**  
Reynold J. Renn, 443 Riverdale Ave. SW.,  
Calgary, Alberta, Canada  
Filed Nov. 24, 1965, Ser. No. 509,590  
Int. Cl. B02c 9/04, 15/00, 19/00

U.S. Cl. 241—141

27 Claims

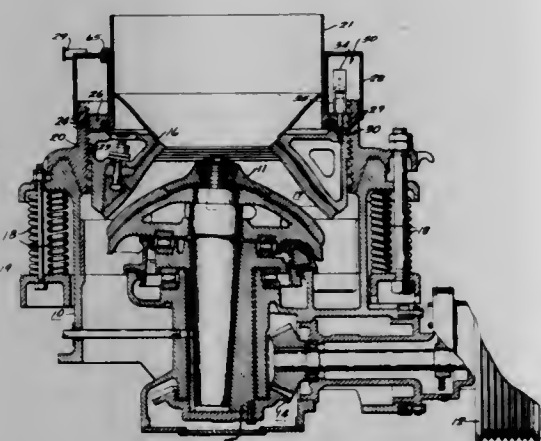


This device consists of a pair of conical rollers in almost interfacial relationship between the apices thereof and the perimetrical edges. At least one of these rollers is driven and grain is fed downwardly between the rollers thus becoming crushed. Means are provided to adjust the interfacial relationship between the rollers, to maintain the parallelism thereof, and to enable them to move outwardly in case of stones or the like entering with the grain. A further embodiment contemplates a disc being situated between the rollers thus doubling the capacity of the crushing rollers.

**3,459,383**  
**CLAMPING AND RELEASE MEANS FOR CRUSHER BOWLS**  
Ronald B. De Diemar, Cedarburg, Wis., assignor to Barber-Greene Company, Aurora, Ill., a corporation of Illinois  
Filed Dec. 23, 1966, Ser. No. 604,290  
Int. Cl. B02c 2/06, 25/00, 7/00

U.S. Cl. 241—215

10 Claims



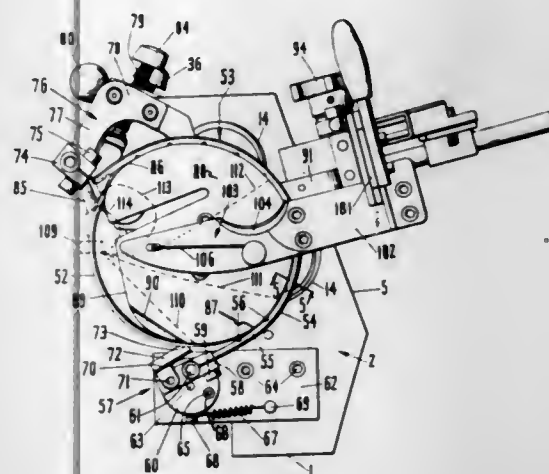
The present invention relates generally to improvement in gyratory crushers, and relates more particularly to an improved mechanism for mechanically clamping the crushing bowl to the frame of the crusher and for hy-

draulically releasing the clamping action to permit bowl rotation.

**3,459,384**  
**TOROIDAL CORE WINDING HEAD**  
Kenneth P. Gorman, 480 S. Main St.,  
Randolph, Mass. 02368  
Filed Jan. 13, 1966, Ser. No. 520,466  
Int. Cl. B65h 81/02

U.S. Cl. 242—4

6 Claims

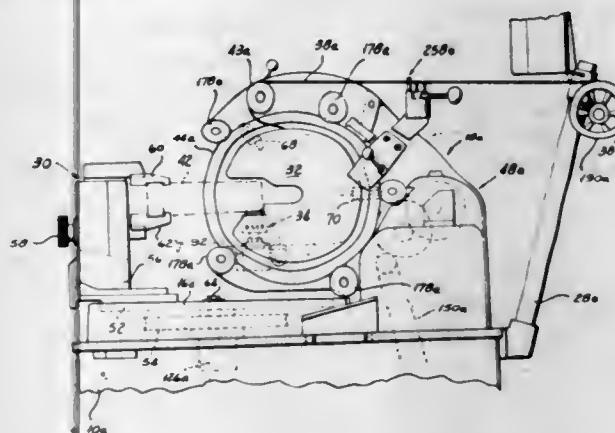


A toroidal core winding machine having an annular shuttle, with a shuttle plate positioned adjacent to the shuttle having an arcuate periphery extending radially outward of the periphery along a portion thereof. An elongated wire-engaging band extends laterally on either side of the plane of the shuttle and is supported in fixed relation to it. The wire wound on the shuttle is dropped from the shuttle to the toroidal core with the band functioning as a fixed slider that does not pass through the core.

**3,459,385**  
**TOROIDAL COIL WINDING MACHINE**  
Rudolf Fahrback, Union, N.J., assignor to Universal Manufacturing Company, Inc., Irvington, N.J., a corporation of New Jersey  
Filed Oct. 23, 1965, Ser. No. 503,651  
Int. Cl. B65h 81/02

U.S. Cl. 242—4

3 Claims

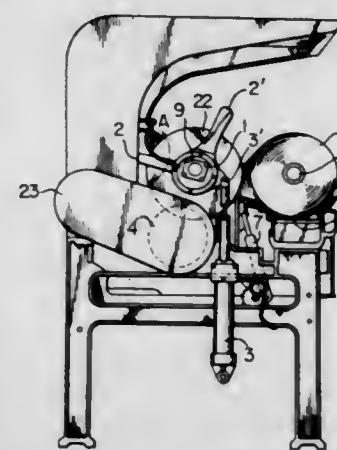


A toroidal coil winding machine provided with a clamp support for oscillating a core in timed relation with a shuttle and magazine for developing bank windings on the core. A two-position auxiliary roller support is arranged to support heavy cores in substantially diametrical opposite relation to the clamp. A precisely adjustable oriented guide plate is disposed in relation to the shuttle and core to effect a substantially radial or vertical leg on each turn of the winding on the core without allowing any slant or pitch in said portion of the turn.

**3,459,386**  
**LAP FORMING AND DOFFING METHOD AND ITS APPARATUS**  
Iwao Ohsaki, Osaka-fu, Kazuyoshi Fukui, Ise-shi, and Shinzo Kitamura, Akashi-shi, Japan, assignors to Tokyo Boseki Kabushiki Kaisha and Kanpatsu Kogyo Kabushiki Kaisha, both of Osaka, Japan, and both companies of Japan  
Filed Jan. 10, 1967, Ser. No. 608,343  
Claims priority, application Japan, Jan. 14, 1966, 41/2,142; Mar. 18, 1966, 41/16,984; Apr. 22, 1966, 41/25,775  
Int. Cl. B65h 75/02

U.S. Cl. 242—55.1

19 Claims

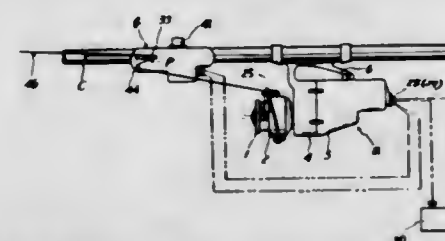


An improved automatic lap forming method and lap forming machine having a single lap roller and biasing means for maintaining constant lap forming pressure and an automatic doffing means for doffing full packaged laps and an automatic feeding means for feeding a bare mandrel to lap forming position on the signal lap roller.

**3,459,387**  
**MOTORIZED FISHING REEL**  
Toshiaki Miyamae, 292 Nishi-Iwata, Higashi-Osaki-shi, Osaka-fu, Japan  
Filed Feb. 20, 1967, Ser. No. 617,389  
Int. Cl. A01k 89/00

U.S. Cl. 242—84.21

2 Claims



An electric motor is employed in a fishing reel to rotate a flyer about a reciprocated spool to retrieve the line. A switching attachment connected to the fishing rod forward of the reel uses a line engaging lever disposed to be pivoted by a pull on the line to cam an associated lever into a switch closing position to operate the motor to retrieve a hooked fish.

**3,459,388**  
**MANDREL FOR HIGH-SPEED REELING**  
Ernst Daniel Nystrand and John J. Bradley, Green Bay, Wis., assignors to Paper Converting Machine Company, Inc., Green Bay, Wis., a corporation of Wisconsin  
Filed Feb. 20, 1967, Ser. No. 617,225  
Int. Cl. B65h 49/26

U.S. Cl. 242—68.5

4 Claims



A reeling mandrel capable of high-speed rotation with-

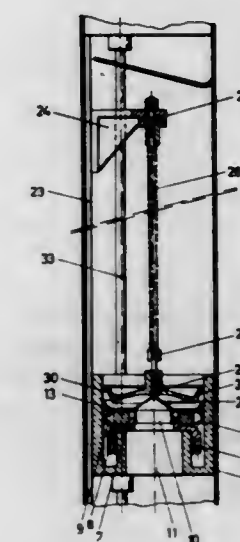
865 O.G.—5

out excessive vibration constructed of material having a modulus of elasticity-density ratio in excess of about  $2 \times 10^8$  inches, as exemplified by beryllium.

**3,459,389**  
**YARN TENSIONING DEVICE**  
Edwin Wildi, Niederuzwil, and Benno Bischof, Uzwil, Switzerland, assignors to Maschinenfabrik Benninger A.G., Uzwil, Switzerland, a body corporate of Switzerland  
Filed Feb. 15, 1967, Ser. No. 616,323  
Claims priority, application Switzerland, Feb. 15, 1966, 2,208/66  
Int. Cl. B65h 59/22

U.S. Cl. 242—150

7 Claims



A yarn tensioning device encompassing at least an upper and a lower disk between which passes the yarn so as to be tensioned by opposite surfaces of such disks. At least one of these two disks, and typically the lower disk, is positively driven independent of the speed of movement of the yarn, in order to insure that the through-passing yarn exerts a self-cleaning action upon the opposite disk surfaces, and further, that the tensioning action of these two disks upon the yarn is maintained substantially constant. The invention further contemplates providing a further pair of such disks wherein the lower disk thereof may also be positively driven, and therein the first pair of disks of the two disk pairs serves to steady the yarn which is moving in a substantially linear or straight line path through the yarn tensioning device.

**3,459,390**  
**RELEASEABLE ONE-WAY CLUTCH FOR A TAPE REEL**  
Fred Hugel, Boxborough, Mass., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware  
Filed Apr. 17, 1967, Ser. No. 631,200  
Int. Cl. G11b 15/43; F16d 11/12

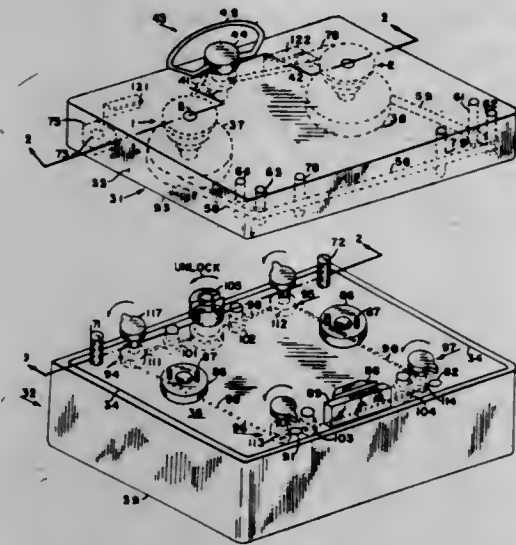
U.S. Cl. 242—200

16 Claims

A releasable one-way clutch is provided and adapted for use in a magnetic tape cartridge to maintain tension in the portion of the tape disposed between the supply and take-up reels. The clutch includes concentric release and reel hubs with leaf springs attached to the release hub and engaging serrations on the reel hub so that the latter is prevented from rotating except in one direction. The engaging leaf springs are guided through openings in a fixed cam ring between the hubs when the release hub is rotated in one direction until the springs abut the serrations. The springs are withdrawn from the openings when the release hub is rotated in the opposite direction, permitting the



reel hub to rotate in either direction. Two such releasable clutches are employed in the tape cartridge, one for each reel so that when the cartridge is not used, the clutches are engaged and the reels can only rotate in such directions as will increase tension in the tape disposed between the



two reels. In use, the cartridge is affixed to a tape recorder so that a key on the cartridge engages a keyway on the recorder and the key is turned locking the cartridge and recorder together and releasing the clutches so that the reels can rotate in either direction.

3,459,391

**INTERCONNECTION OF SOLAR CELLS**

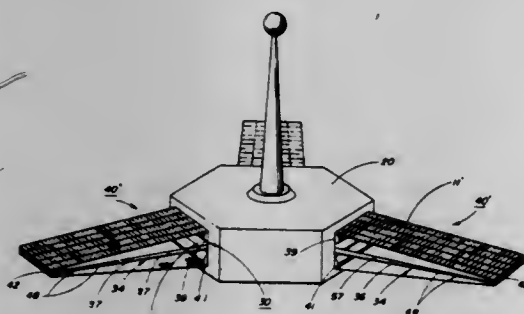
Joseph G. Haynos, Rockville, Md., assignor to the United States of America as represented by the National Aeronautics and Space Administration

Filed Feb. 13, 1964, Ser. No. 344,793

Int. Cl. B64c 39/02; H02n 11/00; H01v 1/30

U.S. Cl. 244-1

16 Claims



Solar cells are interconnected by expanded metal strips to produce a matrix having good electrical and mechanical performance and, at the same time, capable of taking a variety of configurations. Moreover, since the expanded metal strips have the characteristics of being both flexible and resilient, they permit a solar cell array to be constructed such that it can be stored in a rolled-up condition and, at a predetermined time, be extended to form a large surface.

3,459,392

**PASSIVE HOMING GUIDANCE SYSTEM**

George R. Buynak, Cuyahoga Falls, Ohio, and Roy K. Paxton, Orlando, Fla., assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware

Filed Sept. 24, 1959, Ser. No. 843,034

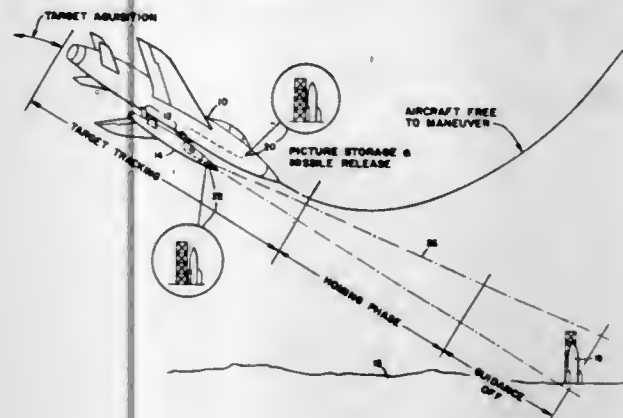
Int. Cl. F42b 15/02; G06f 15/50; F41g 7/00

U.S. Cl. 244-3.17

7 Claims

1. The combination in a system for guiding a missile from a manned vehicle to a target, or the like, of a vehicle,

a missile, means for releasably securing the missile to the vehicle, sensing means providing a picture of a target in the missile, means simultaneously providing the picture of the target in the vehicle, means for firing the missile from the vehicle, means for substantially continuously providing in the missile and in comparative relation to the picture an image of the target towards which the missile



is headed, means in the missile for effecting comparison between the picture and image, means in the missile responsive to the comparison to bring the missile into correct heading for the target, and means in the missile and controlled by acceleration of the missile for changing the effective comparison size of the picture as a function of decreasing range.

3,459,393

**VARIABLE POWER ABSORBING HYDRAULIC APPARATUS**

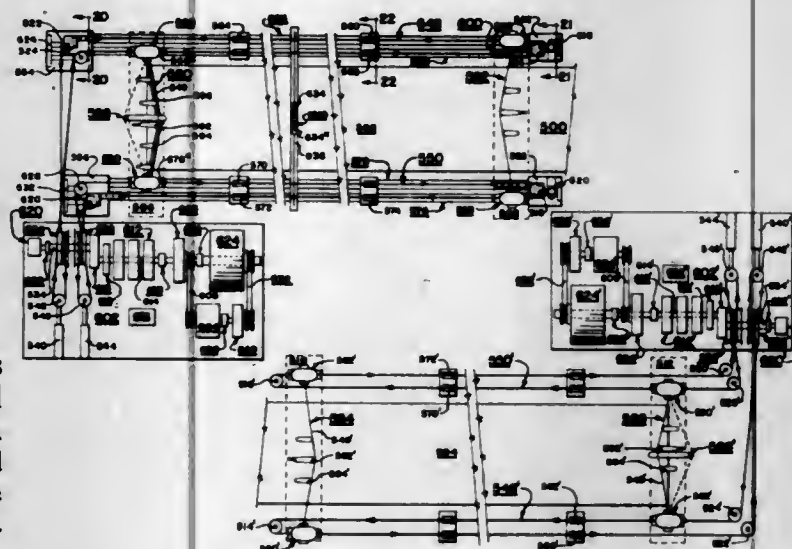
John R. Thomas, Wichita, Kans., assignor to The Thomas Company, Wichita, Kans., a corporation of Kansas

Filed May 13, 1965, Ser. No. 455,365

Int. Cl. B64f 1/02, 1/12

U.S. Cl. 244-63

74 Claims



Hydraulic apparatus of the hydrostatic type is used for retarding including (a) retarding a vehicle such as a truck by connecting a pump gear to a vehicle drive shaft, and (b) retarding an aircraft as a part of landing arrestment gear by connecting a pump gear to cable capstan. Maximum power absorption rate level of the hydrostatic unit is selectively limited. The complete aircraft system includes cables brought to about aircraft landing speed before aircraft engagement, during landing arrestment usage, and includes dual usage of cables and other parts of the arrestment system for aircraft launching.

3,459,394

**MOUNTING MEANS FOR DRILL BOOMS**

Erich Voldemar Kimber, Vendelso, Sweden, assignor to Atlas Capco Aktiebolag, Nacka, Sweden, a corporation of Sweden

Filed Feb. 12, 1968, Ser. No. 704,921

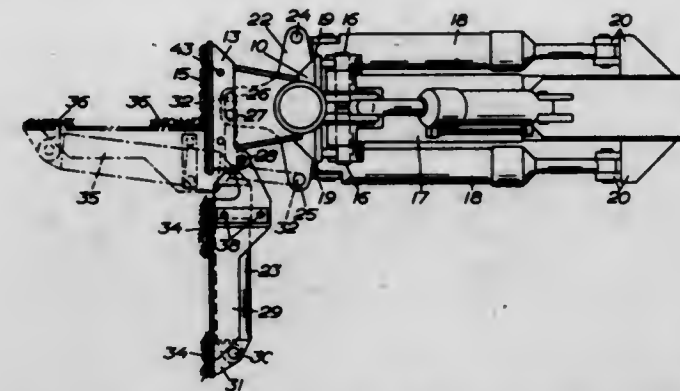
Claims priority, application Sweden, Feb. 15, 1967,

2,078/67

Int. Cl. F16m 1/00; E02d 27/44; E09g 25/08

U.S. Cl. 248-2

7 Claims



A mounting means for rock drilling apparatus positioning booms has a base designed in a hinge-like manner with one leaf of the hinge base carrying journal bearings thereon for the drill boom and the other leaf providing a support for a hydraulic power ram connectable to the drill boom for swinging the latter in said journal bearings, said base being mountable on extraneous support selectively with the leaves of the hinge base in alignment with or at an angle to one another.

3,459,395

**SHOCK ISOLATING MEANS**

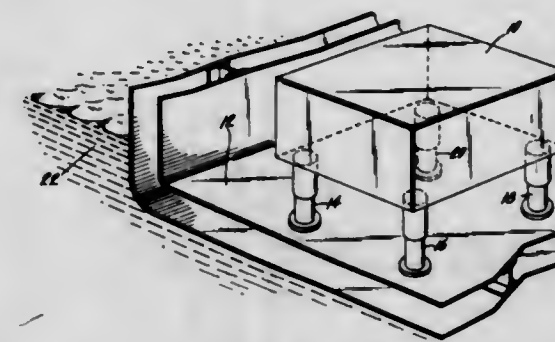
Dominick P. Scotto, Plainview, N.Y., assignor to AMBAC Industries Incorporated, Garden City, N.Y., a corporation of New York

Filed Aug. 16, 1967, Ser. No. 661,056

Int. Cl. F16f 15/00

U.S. Cl. 248-20

25 Claims



A shock isolator for minimizing the effects on a load of large mechanical shocks applied to a frame connected to the load, for example to reduce the shock to personnel or equipment on a vehicle subject to shock from beneath, such as a boat near which an underwater explosion has occurred. In one embodiment the load is supported on an easily-reciprocable piston, which is normally coupled by a pressurized pneumatic seal to the side of the frame from which shock is expected, by pneumatic pressure; the seal is preferably between an annular portion of the piston head and an annular portion of a cylinder head fixed to the frame. Shocks of greater than a predetermined minimum magnitude applied to the frame break the pneumatic seal early in the shock period, effectively disconnecting the piston from the frame and from the shock during the remainder of the shock period, and hence isolating the load from most of the shock energy. After the shock is ended, a mechanical or pneumatic return preferably resets the piston to its original position for repressurization.

3,459,396

**FASTENER DEVICE AND MOUNTING ASSEMBLY**

Albert T. Buttriss, Westlake, Ohio, assignor to Tinnerman Products, Inc., a corporation of Ohio

Original application Feb. 28, 1966, Ser. No. 530,722, now

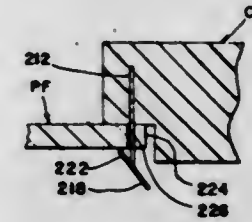
Patent No. 3,368,780, dated Feb. 13, 1968. Divided

and this application Oct. 24, 1967, Ser. No. 677,528

Int. Cl. H02g 3/00

U.S. Cl. 248-27

5 Claims



A fastening device including a generally flat body with one end adapted to be embedded within the material of an article and the other end having a resilient tongue adapted for locking engagement with a support member for mounting the article in assembled relation through an opening in the support member.

3,459,397

**ELECTRICAL CLAMP**

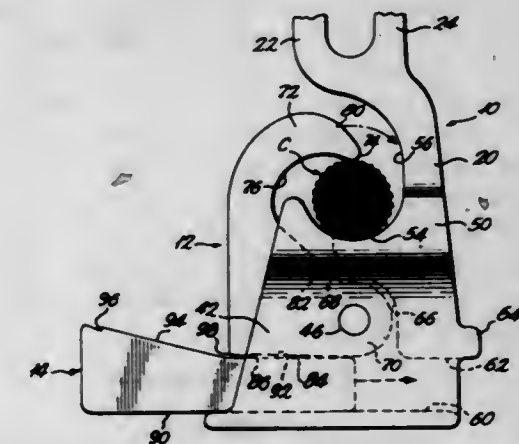
Carl Raymond Hedberg, Efters, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Mar. 17, 1967, Ser. No. 624,020

Int. Cl. F16l 3/10

U.S. Cl. 248-63

7 Claims



The present invention employs a simplified arrangement wherein the apparatus consists of only three parts, two of these parts being pivotally interconnected with one another, and a third part being adapted to be driven into place to lock the components in clamping position.

3,459,398

**IRON STAND**

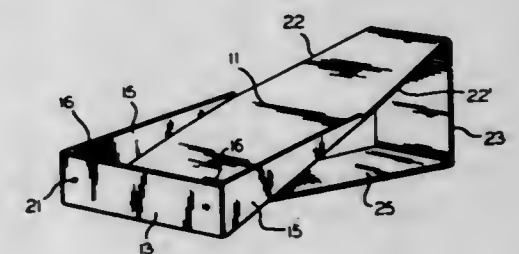
Peter Agrusa, 1014 E. Pearson St., Milwaukee, Wis. 53202

Filed July 7, 1966, Ser. No. 564,514

Int. Cl. D06f 79/02

U.S. Cl. 248-117.2

2 Claims



Includes a flat surface portion which projects at an angle and has side portions which project upward at the



bottom thereof which conform to the shape of an iron for support of an iron. The flat surface is supported by a vertical support.

3,459,399

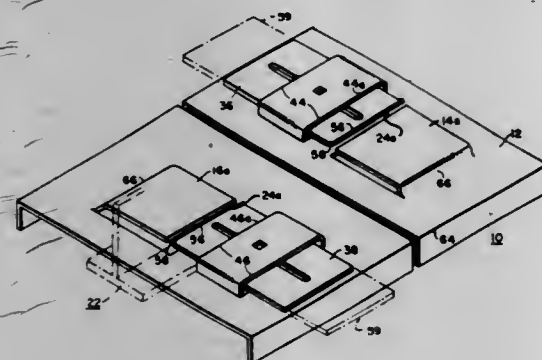
**BEAM MOUNTED ATTACHING DEVICE**

William R. Everson, Irwin, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

Filed Jan. 16, 1967, Ser. No. 609,596  
Int. Cl. E04g 17/18

U.S. Cl. 248—343

1 Claims



I disclose support means for securing an item to a flanged bar, comprising a panel member having a lanced tab and a lanced loop integrally formed therewith in spaced juxtaposition to lie generally on opposite sides of said bar, said lanced loop and said lanced tab and said lanced tab being spaced from adjacent surfaces of said panel member, a slide member inserted between said loop and said panel member and positioned for movement toward and away from said lanced tab, said slide member being movable to a position of overlapping engagement with an adjacent bar flange, said tab being engageable with a bar flange on the opposite side of said bar relative to said slide member, and fastening means for securing said slide member to said lanced loop when so engaged to prevent disengagement of said slide member from said adjacent bar flange.

3,459,400

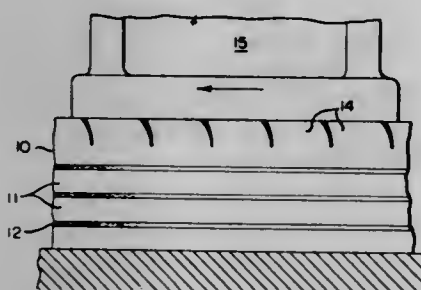
**VIBRATION DAMPING PAD**

Edward M. Rothermel, Winchester, Mass., assignor to American Biltrite Rubber Co., Inc., Chelsea, Mass., a corporation of Delaware

Filed Dec. 20, 1966, Ser. No. 603,290  
Int. Cl. F16f 15/04; E02d 27/44

U.S. Cl. 248—358

1 Claim



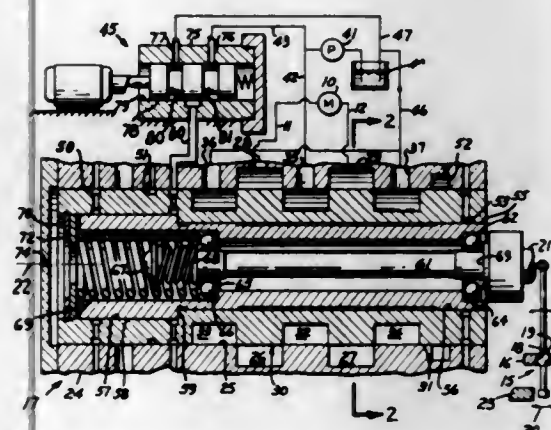
A vibration damping pad comprising laminated plies of rubber and fabric permanently united between external plies of rubber, one at least of said external plies being provided in its exposed outer face with a pattern of siping cuts defining a multiplicity of tongues yieldingly movable transversely in the surface of the pad.

3,459,401  
**DITHERER AND TRACER VALVE ASSEMBLY**  
Paul J. Weaver, Pasadena, Calif., assignor to True-Trace Corporation, El Monte, Calif., a corporation of Connecticut

Filed Aug. 8, 1966, Ser. No. 570,840  
Int. Cl. F16k 29/00; B23q 35/14

U.S. Cl. 251—3

2 Claims



This invention provides means to supply oscillation motion between the sleeve and spool of a spool valve, thereby to provide a pulsating output from the spool valve. The means comprises a bore in the spool, and a piston in the bore. The piston is connected to a stylus which is mounted to the sleeve and is the basic positioner for the spool relative to the sleeve. Means provide pulsating pressure within the bore and against a face of the piston and an associated pressure responsive face of the spool, thereby causing the said oscillatory motion.

3,459,402

**TRACER VALVE ASSEMBLY**

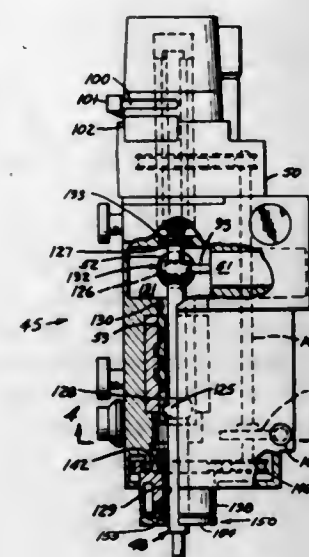
Paul J. Weaver, Pasadena, Calif., assignor to True-Trace Corporation, El Monte, Calif., a corporation of Connecticut

Continuation-in-part of application Ser. No. 412,114, Nov. 18, 1964. This application Apr. 21, 1967, Ser. No. 634,049

U.S. Cl. 251—3

Int. Cl. B23q 35/16

22 Claims



This invention relates to tracer-controlled machine tools, and to a multiple-mode tracer valve capable of manual operation in three dimensions, and of optional manual or automatic operation in two dimensions and incorporating means to control simultaneously the feed rate of certain of the valve elements independently of the stylus deflection.

3,459,403

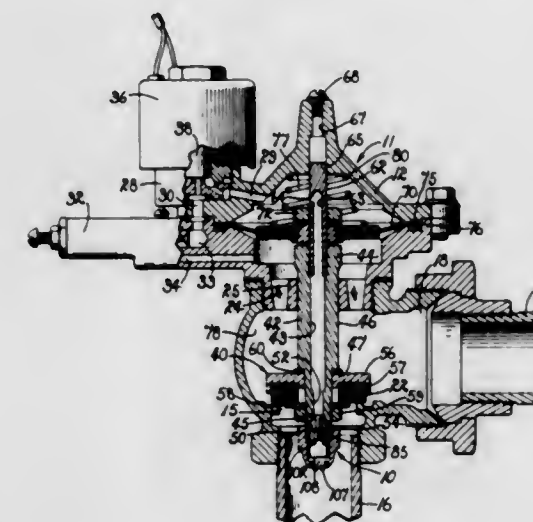
**FLUID METERING DEVICE**

John A. Royer, Fresno, Calif., assignor to Bunkner Industries, Inc., a corporation of California

Filed Feb. 13, 1967, Ser. No. 615,480  
Int. Cl. F16k 31/42; F15b 13/044

U.S. Cl. 251—34

4 Claims



A fluid metering device adapted to provide a controlled flow of pilot fluid pressure through a control passage in a fluid pressure regulating valve with the passage having an inlet end connected to a source of fluid under pressure and an opposite end subject to volumetric and pressure fluctuations and including a pair of spaced seats within the passage. A slotted plunger is disposed within the passage in reciprocable, free-floating relation between the seats and has opposite ends alternately engageable with respectively adjacent seats to permit a metered flow of fluid pressure therethrough for controlled closing of the valve and alternately to block the return flow of fluid through the passage. The plunger further permits a transfer of fluid in the passage around the plunger during its movement between the seats so as to flush any extraneous matter from the plunger and seats.

3,459,404

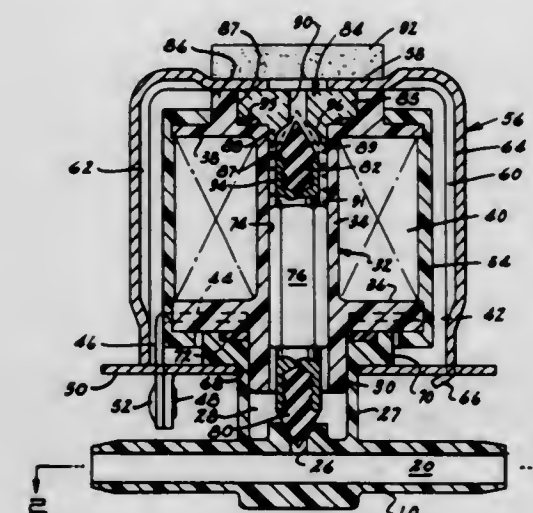
**SOLENOID VALVE**

Arthur John Wisniewski, 25631 Friar Lane, Southfield, Mich. 48076

Filed Feb. 3, 1967, Ser. No. 613,955  
Int. Cl. F16k 51/00; F16l 29/00

U.S. Cl. 251—141

1 Claim



This invention relates to solenoid valves, particularly miniature gas control valves having tight-seating characteristics.

The principal feature of the invention is the addition of a novel pole piece to an otherwise conventional valve to provide improved magnetic pull with a given size solenoid coil. An additional feature is an economical pole piece-armature relationship whereby different air flows can be handled without change in the magnetic air gap between the armature and pole piece.

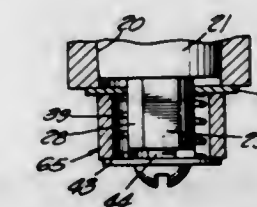
3,459,405

**SPRING BIASED TAPERED PLUG VALVE**  
Saul Epstein, Los Angeles, Calif., assignor to American Metal Products Corp., Los Angeles, Calif., a corporation of California

Filed May 11, 1966, Ser. No. 549,294  
Int. Cl. F16k 25/00

U.S. Cl. 251—181

6 Claims



The invention is a plug or rotor valve having a stem with a spring arranged to normally draw the rotor into its bore. Spacer means are provided whereby the rotor is non-displaceable in that it cannot be pulled out of the bore although the spring urges it into the bore. Additionally, the stem on the rotor rotates a stop washer provided with a lug which engages abutments on the valve body to provide limit stops.

3,459,406

**DOVE HOIST**

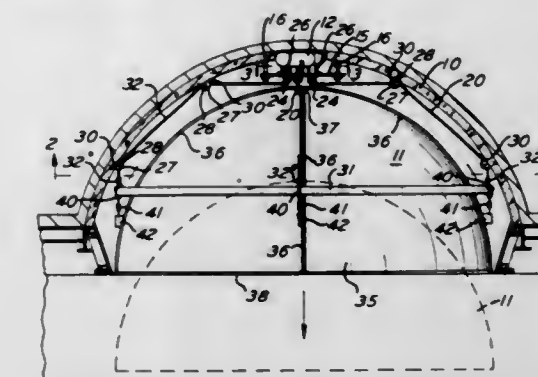
Albert A. Faulkner, Conshohocken, Pa., assignor to Harmonic Reed Corporation, Conshohocken, Pa., a corporation of Pennsylvania

Filed Sept. 25, 1967, Ser. No. 670,290

Int. Cl. B66c 23/60; B66d 1/12; G09b 27/00

U.S. Cl. 254—144

4 Claims



A dome hoist for planetarium domes wherein the hoist mechanism is centrally located and mounted above the dome with cables extending to a ring supporting the dome and which may be simultaneously wound on a single drum.

3,459,407

**DEVICES FOR MIXING LIQUIDS**

Phillip Geoffrey Hazlehurst, Solihull, Sydney G. Hollis, Rednal, and Bryan F. Phillips, Kempsey, England, assignors to The Austin Motor Company Limited, Longbridge, Birmingham, England

Filed Jan. 31, 1968, Ser. No. 702,034

Claims priority, application Great Britain, Feb. 15, 1967, 7,150/67

Int. Cl. B01f 5/00, 15/00

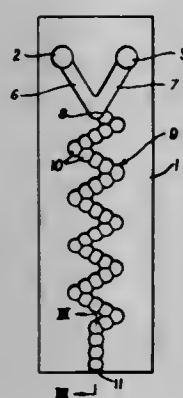
U.S. Cl. 259—4

6 Claims

A device for mixing two or more liquids comprising



two channels leading to a single mixing duct having op- within which a helically shaped auger turns. The auger is cut away however along its longitudinal axis. Water



posed walls which are corrugated to create turbulent flow therein.

3,459,408

## APPARATUS FOR PREPARING FOOD PRODUCTS

William M. Boushka, Dallas, Tex., assignor to General Mills, Inc., a corporation of Delaware

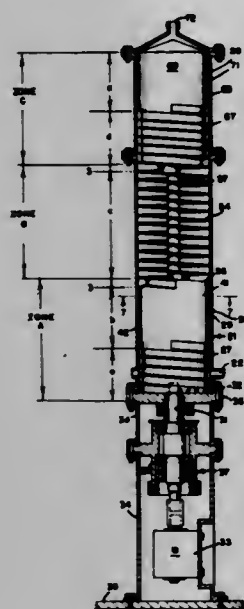
Original application Nov. 27, 1964, Ser. No. 414,132.

Divided and this application July 12, 1968, Ser. No. 744,368

Int. Cl. B01f 15/02; A23i 1/31

U.S. Cl. 259—8

5 Claims



An apparatus for mixing a number of food products to produce a homogeneous mixture of individual ingredients utilizing smear mixing techniques produced by relatively moving mechanical surfaces between which the food products are forced by helical flights.

3,459,409

## MIXING AND CONVEYOR SYSTEM

Richard H. Goldberger, 331-4 Academy Terrace, Linden, N.J. 07036

Filed Feb. 16, 1967, Ser. No. 619,886

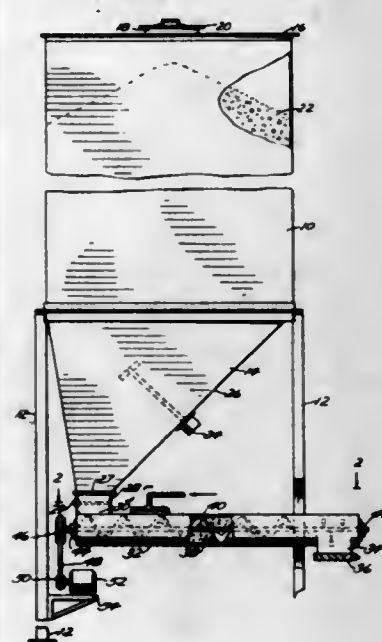
Int. Cl. B28c 7/14, 5/10; B65g 33/00

U.S. Cl. 259—168

2 Claims

A dry mix conveyor comprising a tubular conduit

Heating apparatus includes a heating chamber having openings for the passage of work through the chamber. The chamber is movable to an operative position surrounding the path of the work, and to an inoperative position spaced from the work path. A sealing device seals the lower work-passage opening when the heating chamber is in the inoperative position to minimize chilling of the heating chamber by a natural draft through the work-passage openings.



3,459,410

## MOVABLE-CHAMBER HEATING APPARATUS WITH SEAL

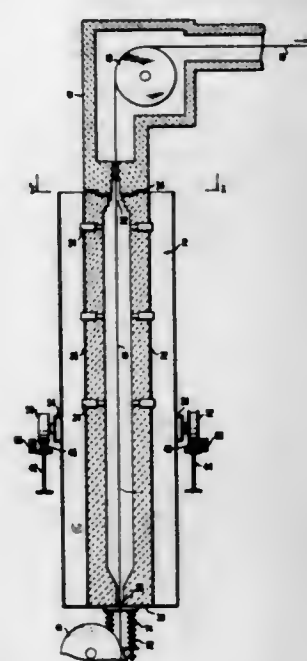
Earl C. Uban, Valparaiso, Ind., assignor to National Steel Corporation, a corporation of Delaware

Filed Oct. 25, 1967, Ser. No. 678,063

Int. Cl. F27b 9/28

U.S. Cl. 263—3

5 Claims



3,459,411

## FURNACE ARRANGEMENT AND METHOD

Alfred Jacobs, Montignies-sur-Sambre, Belgium, assignor to Glaverbel S.A., Brussels, Belgium

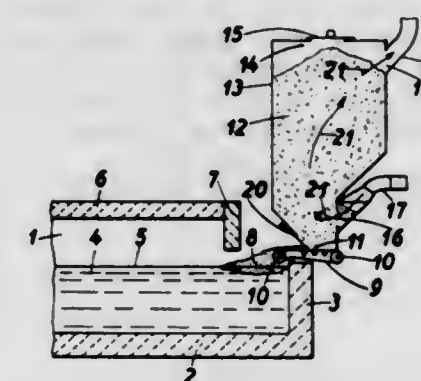
Filed Apr. 8, 1966, Ser. No. 541,238

Claims priority, application Luxembourg, Sept. 14, 1965, 48,378

Int. Cl. F27d 3/18, 13/00, 3/10

U.S. Cl. 263—27

21 Claims



A method and an arrangement for preheating and feeding loose solid material to a bath of molten material in a tank furnace, the loose solid material being preferably the ingredients for making glass and may include cullet. The materials to be preheated are in the form of a column where they descend without undergoing free fall but solely due to their own weight and in this manner they are transmitted to the glass furnace.

3,459,412

## METHODS OF CONTINUOUSLY FIRING CERAMIC CHARGE MATERIAL IN TUNNEL KILNS, AND TUNNEL KILNS FOR CARRYING OUT THESE METHODS

Heinrich Fries and Richard Pfeil, Laggenbeck, Westphalia, Germany, assignors to Keller Ofenbau G.m.b.H., Laggenbeck, Westphalia, Germany, a firm

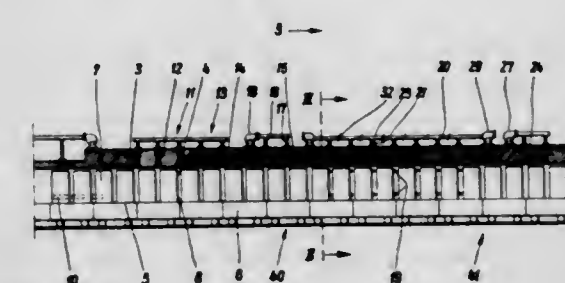
Filed Mar. 23, 1967, Ser. No. 625,374

Claims priority, application Germany, Apr. 6, 1966, K 58,941

Int. Cl. F27b 9/14, 9/12

U.S. Cl. 263—28

14 Claims



A method of continuously firing ceramic charge material in a tunnel kiln, comprising the steps of passing the material in a predetermined direction through the kiln, subjecting the material to an oxidizing atmosphere at a first zone in the direction, subjecting the material to a reducing atmosphere in a second zone in the direction, removing oxidizing and reducing atmospheres from the kiln in a direction countercurrent to the direction, and subjecting the material to a cooling gas in a third zone flowing in the direction to cool the material to a temperature which substantially precludes reoxidation.

3,459,413

## GLASS TANK COOLERS

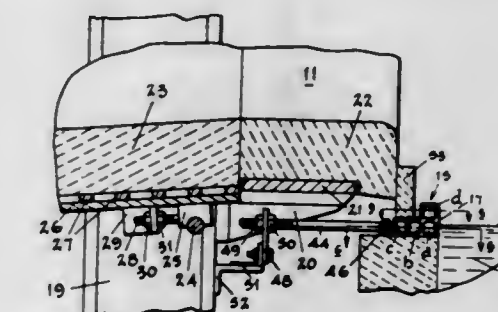
Aubrey T. Bracken, Millen E. Luhrs, and Charles F. Green, Toledo, Ohio, assignors to Libbey-Owens-Ford Company, Toledo, Ohio, a corporation of Ohio

Filed Oct. 9, 1967, Ser. No. 673,541

Int. Cl. F27d 1/12, 9/00; C02b 5/22

U.S. Cl. 263—44

7 Claims



Heat exchangers which rest upon the lower side walls of a continuous glass melting and refining furnace cool the walls to retard the eroding action of the molten glass within the furnace. The L-shaped configuration of the heat exchangers enables them to act as a base for refractory blocks which seal the space between the upper and lower side walls thereby imparting a cooling effect to the upper walls, while the lip formed thereby prevents refractory particles which flake off the upper walls from falling into the furnace.

3,459,414

## HEAT-TREATMENT APPARATUS

Theodor Schmidt, Essen, Germany, assignor to Firma Indugas Gesellschaft für industrielle Gasverwendung m.b.H., Essen, Germany, a corporation of Germany

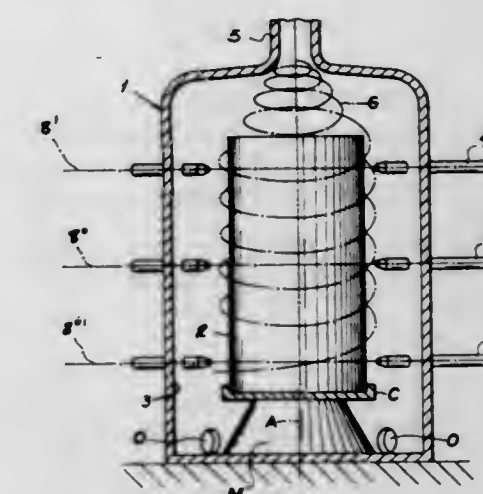
Filed Apr. 14, 1966, Ser. No. 542,611

Claims priority, application Germany, Apr. 17, 1965, J 27,944

Int. Cl. C21c 1/08, 1/12

U.S. Cl. 266—5

3 Claims



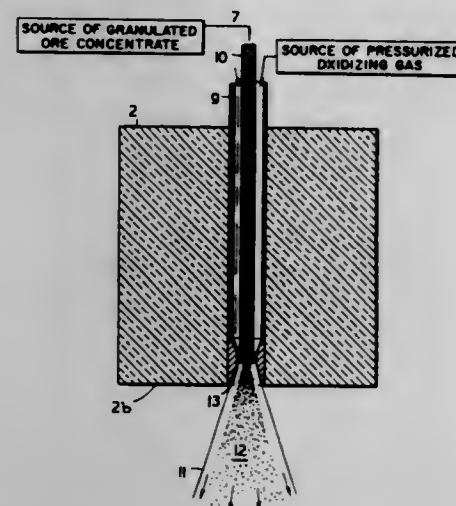
An apparatus for and a method of heat-treating elongated cylindrical metallic bodies positioned along an up-right axis wherein, at a plurality of vertically spaced locations, a plurality of flame jets are directed toward the body at angles greater than the tangential but not yet radial, the jets being so arranged that the gases within an annular space surrounding the body spiral inwardly with a velocity inversely proportional to the distance of the region of gas flow from the axis.



**3,459,415**  
**APPARATUS FOR THE CONTINUOUS PRODUCTION OF CONVERTER COPPER**  
 Julius Holéczy, Juraj Schmiedl, and František Sehnálek, Koice, Czechoslovakia, assignors to Vyskumny ustav kovu Panenske Brezany, a firm of Czechoslovakia  
 Filed Oct. 15, 1965, Ser. No. 496,426  
 Int. Cl. C22b 15/06

U.S. Cl. 266—11

7 Claims

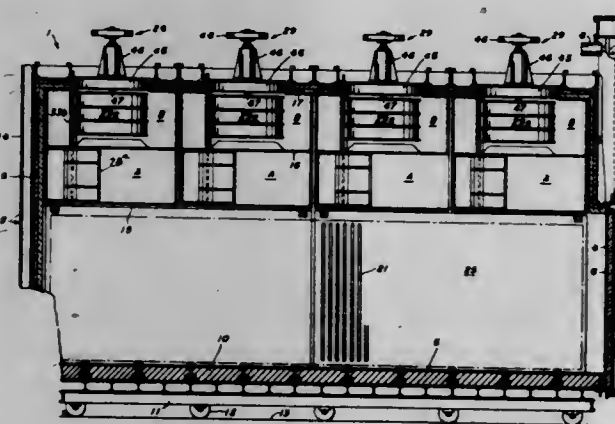


An apparatus for continuously producing converter copper from finely granulated copper-bearing sulfidic materials. A stationary converter having walls made of refractory materials. Two co-axial tubes extending through a block made of special refractory protective material which forms part of the walls of the converter. A first outer tube of the two co-axial tubes serves as an inlet for pressurized oxidizing gas and a second inner tube serves as an inlet for conducting granulated ore concentrates into the converter. The ore concentrate melts in the converter which is being heated, thereby forming a bottom layer of metallic converter copper, a middle layer of white matte and a top layer of slag. The outlet ends of the two co-axial tubes, being spaced at an optimum distance from the top layer so that a protective coating of constant thickness forms on said block of special protective refractory material. Suitable outlets disposed in the converter for continuously withdrawing slag and metallic converter copper.

**3,459,416**  
**INDUSTRIAL FURNACES**  
 William C. Shirley and John F. Corcoran, Lebanon Township, Allegheny County, Pa., assignors to Loftus Engineering Corporation, Pittsburgh, Pa., a corporation of Maryland  
 Filed June 21, 1965, Ser. No. 465,367  
 Int. Cl. B21b 7/02; F27d 7/00

U.S. Cl. 266—24

4 Claims



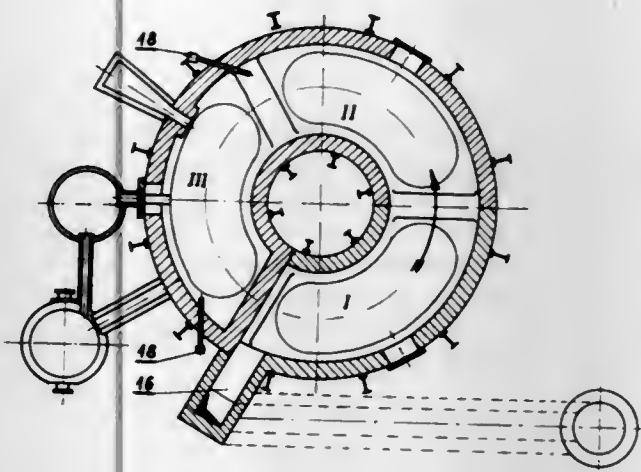
The present disclosure is concerned with industrial furnaces wherein a plurality of metal objects are uniformly reheated for improving their metallurgical qual-

ity wherein the furnace structure provides uniform recirculation of controlled heated air through and around the metal articles alternately from opposite sides of the furnace to effect uniform heating of the entire batch of metal objects and controlled removal of the cooled gases after contact therewith.

**3,459,417**  
**FURNACE FOR THE PRODUCTION OF STEEL**  
 Oskar Goszyk, Gliwice, Kazimierz Budzynski and Leopold Juszczyk, Katowice, Zdzislaw Bonenberg, Zabrze, Daniel Dybal and Stanislaw Sasiadek, Gliwice, and Stanislaw Zakrawacz, Zabrze, Poland, assignors to Biuro Projektow Przemyslu Hutniczego "Biprobud," Gliwice, Poland, a corporation of Poland  
 Filed Nov. 9, 1966, Ser. No. 593,167  
 Claims priority, application Poland, Nov. 10, 1965, P 111,541

U.S. Cl. 266—34

3 Claims



Apparatus for producing steel in which an annular hearth provided with a plurality of segmental hearth sections is rotated within a furnace housing subdivided into sectoral zones so that a refinable charge is introduced at a first zone and passes successively through a preheating zone (in which the charge is subjected to the hot gases from a subsequent zone) and thence into a refining zone in which the hot gases are generated. The gases flow annularly from the refining zone through the preheating zone and are discharged at the charging zone. Oxygen lances inject oxygen into the molten steel in the refining zone, the molten steel being tapped from the corresponding hearth section before rotation of the hearth carries each section back into the charging zone.

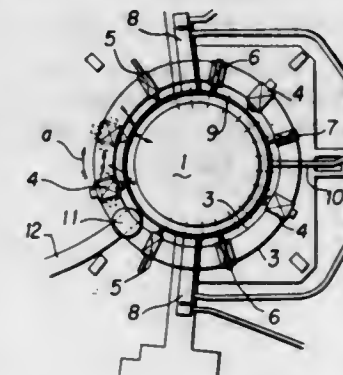
**3,459,418**  
**BLAST FURNACE SERVICING APPARATUS**  
 Kumao Ueshima, Yoshio Hiratsuka, and Toshiki Kuga, Kitakyushu, and Hirokazu Yoshinaga and Yoichi Hayashi, Sakai, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan  
 Filed July 21, 1967, Ser. No. 655,213  
 Claims priority, application Japan, July 21, 1966, 41/47,341

U.S. Cl. 266—41

7 Claims

A blast furnace servicing apparatus by which the efficiency and interchangeability of the auxiliary equipment is increased and by which the cast house operations is mechanized. Said blast furnace servicing apparatus is characterized in that, in an upright blast furnace having a bustle pipe for hot air, annular rails are provided just below the bustle pipe for hot air so as to surround the periphery of the furnace. Such auxiliary

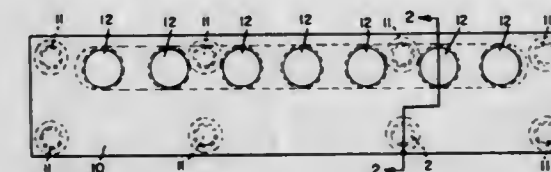
equipment as tuyere replacing means, tapping hole opening means, tapping hole closing means (e.g. a mud gun), and slag notch opening and closing means are provided with wheels and at least one motor and are suspended on said annular rails. Siding rails and direction changing means operatively associated with said annular rails are provided so that said pieces of auxiliary equipment can be removed from the annular rails at the position of said direction changing means and said siding rails.



**3,459,419**  
**WORK HOLDING AND DRIVING DEVICES**  
 Charles D. Lillie, Bickenhill, Solihull, England, assignor to Hydrax Limited, Birmingham, England, a British company  
 Filed Oct. 21, 1966, Ser. No. 588,594  
 Claims priority, application Great Britain, June 9, 1966, 25,686/66

U.S. Cl. 269—267

3 Claims

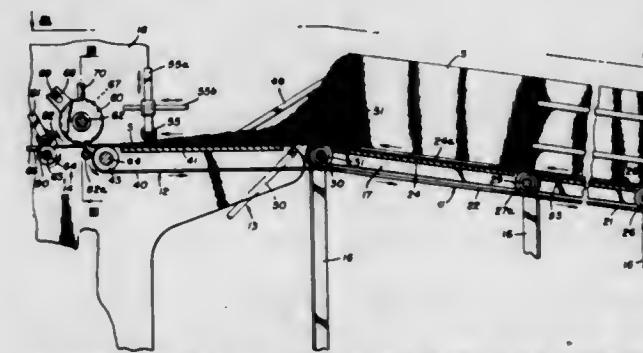


A work engaging device comprising a body that is provided with a plurality of separate bores each opening into a chamber which is common to all of the bores, a plunger slidable in each of the bores, a pad of solid but yielding material which is of the same shape and dimensions as the chamber and is located in and fills the chamber, each of the plungers having one end seating on the pad and the other end projecting from the body for work engagement.

**3,459,420**  
**SHEET UNSTACKING AND FANNING MACHINE**  
 Claude Raymond Huntwork, Upper Arlington, Ohio, assignor, by mesne assignments, to National Graphics Corporation, Columbus, Ohio, a corporation of Ohio  
 Filed Sept. 8, 1967, Ser. No. 666,306  
 Int. Cl. B65h 3/04, 5/02

U.S. Cl. 271—45

4 Claims



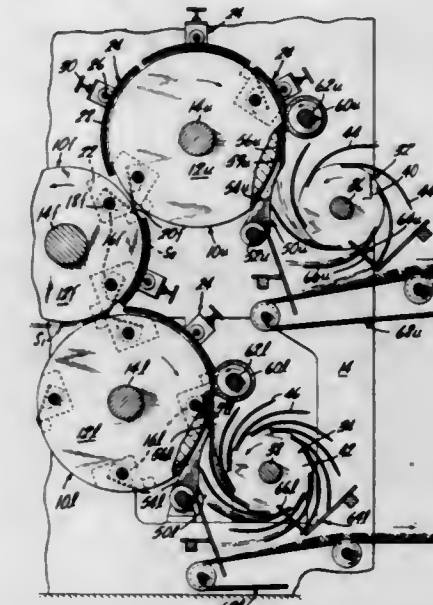
A machine for receiving a stack or bundle of sheets, such as sheets of paper, which are stacked or bundled in face-to-face contact and which are supplied to the ma-

chine as a stack or bundle of upright sheets resting on one edge which continuously and progressively feeds the bundle or stack forwardly and which simultaneously fans out the lower edge portions of the leading sheets and positions them in a layer of substantially horizontal but forwardly and downwardly inclined sheets with the leading edges of the succeeding sheets in longitudinally spaced relationship.

**3,459,421**  
**FOLDER DELIVERY APPARATUS**  
 John C. Motter, York, Pa., assignor to John C. Motter Printing Press Co., York, Pa., a corporation of Delaware  
 Filed Aug. 9, 1967, Ser. No. 659,375  
 Int. Cl. B65h 29/06, 29/58, 29/68

U.S. Cl. 271—64

9 Claims



Folder delivery apparatus for use in printing equipment to deliver folded signatures from a folder mechanism onto a creeping belt or the like comprising a first rotatable gripper and slowdown cylinder and at least one and preferably two second rotatable gripper and slowdown cylinders, each having grippers for receiving and gripping the backbones of each of a stream of folded signatures coming in succession from the folder mechanism and each carrying the folded signature at a speed less than the speed at which it is received along an arcuate path, the second cylinders receiving the signatures from the first. The signatures are transferred from each of the second gripper and slowdown cylinders to a fan wheel which has a plurality of spaces for capturing and carrying the signatures for deposition on the creeping belt. Guides located in the path of movement of the signatures carried by the second gripper and slowdown cylinders guide the signatures into the receiving spaces of the fan wheels and rotatable propeller discs engage the signatures against the second gripper and slowdown cylinder and propel them into the receiving spaces of the fan wheels without diminution of their speed until after they are released to the fan wheel. The signatures are kept flat on the gripper and slowdown cylinders by means of a series of longitudinally spaced, arcuate brushes fixed concentric to each gripper cylinder and encompassing a substantial part of the segment along with the signatures pass as they are carried by the cylinder.

**3,459,422**  
**ROUNDABOUT**  
 Lavoy Winton, Mount Dora, Fla. 32757  
 Filed Mar. 7, 1966, Ser. No. 532,242  
 Int. Cl. A63g 1/00, 1/08

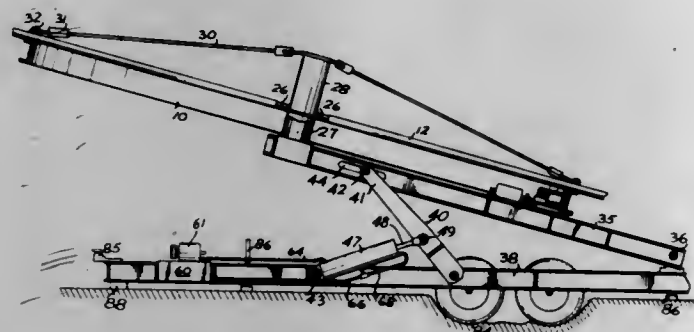
U.S. Cl. 272—51

4 Claims

A roundabout amusement ride comprising a supporting chassis, a frame pivotally supported at one of its ends



about a horizontally extending axis to the supporting chassis, an hydraulic cylinder-piston assembly operatively connected between the supporting chassis and the frame and operable to pivot the frame from a substantially horizontal attitude toward a vertical attitude. A pump is positioned with its outlet connected to one end of the cylinder and its inlet connected to the other end of and intermediate the ends of the cylinder, whereby continuous operation of the pump displaces the piston



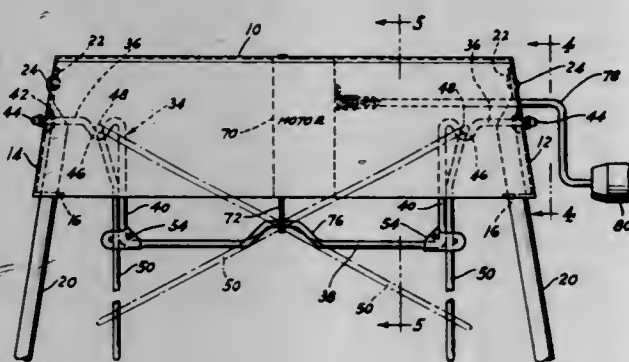
in the cylinder to a predetermined position as set by the position of the connection of the pump inlet intermediate the ends of the cylinder. A turntable is connected at its center of rotation to the other end of the frame and rotatable about an axis normal to the frame. A driving wheel energized through a fluid coupling engages the turntable to rotate it about its center of rotation, and a brake mechanism is provided for stopping the driving wheel and turntable during the operation of the fluid coupling.

### 3,459,423 TORSION BAR SWING CONSTRUCTION

James R. Meade, 2477 New York Ave.,  
Huntington Station, N.Y. 11746  
Filed June 14, 1963, Ser. No. 287,998  
Int. Cl. A63g 9/16; A47d 13/10

U.S. Cl. 272-86

10 Claims



1. A swing for juvenile use comprising in combination, a head having spaced ends, supporting legs depending downward and outward from said head adjacent said ends thereof to said torsion bar and suspended therefrom, ported respectively by said ends of said head and having rigid means depending downwardly from the pivotal axes of said ends of said bar and spaced apart transversely of said bar, a seat, supporting means for said seat extending upwardly therefrom and connected at the upper ends thereof to said torsion bar and suspended therefrom, means connecting said supporting means and rigid depending means on said bar at a location below the pivotal axis of said torsion bar for pivotal movement of the same in unison, power means supported by said head independently of said torsion bar, and driving means operated by said power means and engaging said rigid means depend-

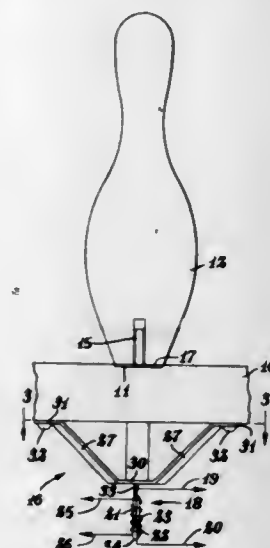
ing downwardly from said torsion bar and operable to oscillate said torsion bar about the pivotal axis thereof to move the seat of the swing in similar oscillating manner.

### 3,459,424 PIN DETECTION SYSTEM

William D. Cornell, Grand Haven, Mich., assignor to Brunswick Corporation, a corporation of Delaware  
Filed May 21, 1965, Ser. No. 457,618  
Int. Cl. A63d 5/06

U.S. Cl. 273-52

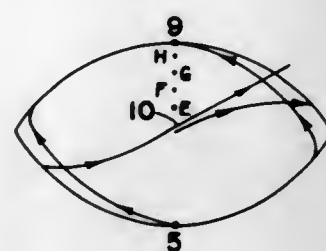
24 Claims



A system for automatically calibrating a pinfall detecting device wherein a magnetically biased reed switch indicates the presence or absence of a pin on a pin spot, said calibrating system including means for setting the reed switch to close within the range of a variable resistor connected in circuit with the reed switch biasing means, means for driving the variable resistor through its range of adjustment, and means for interrupting the driving means in response to the closing of the reed switch to leave the reed switch in a predetermined state of sensitivity.

3,459,425  
FOOTBALL WITH GEODESIC WINDINGS  
Rudolph George Holman, Santa Ana, Calif., assignor to W. J. Voit Rubber Corp., a corporation of California  
Original application Aug. 15, 1962, Ser. No. 221,927, now Patent No. 3,317,146, dated May 2, 1967. Divided and this application Apr. 19, 1966, Ser. No. 543,610  
Int. Cl. A63b 41/00, 41/02, 41/12  
U.S. Cl. 273-65

1 Claim



An athletic ball comprising a spheroidal bladder, a plurality of continuous reinforcing windings distributed over the surface of said spheroidal bladder in the form of a series of substantially geodesic curves, and an outer cover positioned over the reinforcing windings.

3,459,426  
GOLF PUTTER HAND GRIP  
Aaron Wiley Sherwood, 3411 Chatham Road,  
Hyattsville, Md. 20783  
Filed Nov. 14, 1966, Ser. No. 594,088  
Int. Cl. A63b 53/14

U.S. Cl. 273-81

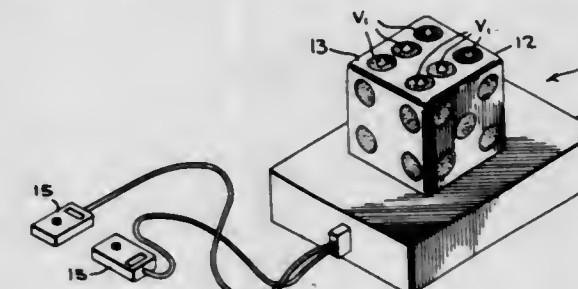
8 Claims



This invention relates to a golf club putter which enables the player to look directly down on the ball and use a pendulum motion, the club handle being so shaped that the player's two hands engage the opposite sides of the club handle with the same pressure applied by each hand.

3,459,427  
ELECTRONIC CHANCE INDICATOR DEVICE  
Patrick D. Rhodes, Roanoke, Va., assignor of one-fourth to Peyton R. Keller and one-fourth to John T. Williams, both of Roanoke, Va.  
Filed May 29, 1967, Ser. No. 641,944  
Int. Cl. A63b 71/00; A63f 1/00  
U.S. Cl. 273-138

9 Claims



The present invention relates in general to electronic game apparatus, and more particularly to electronic apparatus housed in a casing in the form of a cube having dots on the side faces to resemble the faces of dice, and six dots on the top face, each having a neon bulb therein, the six neon bulbs each being respectively associated with an oscillator circuit including switch contacts which form part of a manual or relay operated gang switch having contacts in each oscillator circuit, which cause the oscillators to cease oscillation at an unpredictable point in their oscillating cycles to leave the exposed neon bulbs in ignited or extinguished condition in various combination.

### 3,459,428 PRACTICE GOLF TEE INCLUDING MIRROR MEANS

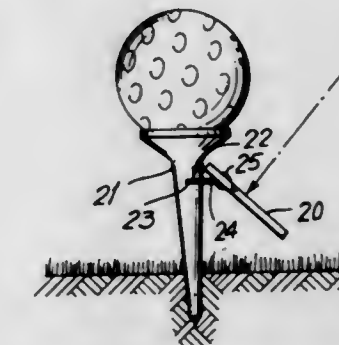
Nathan Miller, 60 Hempstead Ave.,  
Lynbrook, N.Y. 11563  
Filed Nov. 15, 1967, Ser. No. 683,360  
Int. Cl. A63b 69/36

U.S. Cl. 273-183

1 Claim

A golf tee carries an adjustable planar mirror. The

mirror may be adjusted, to reflect a portion of the golfer's head, permitting the golfer visually to check the stability

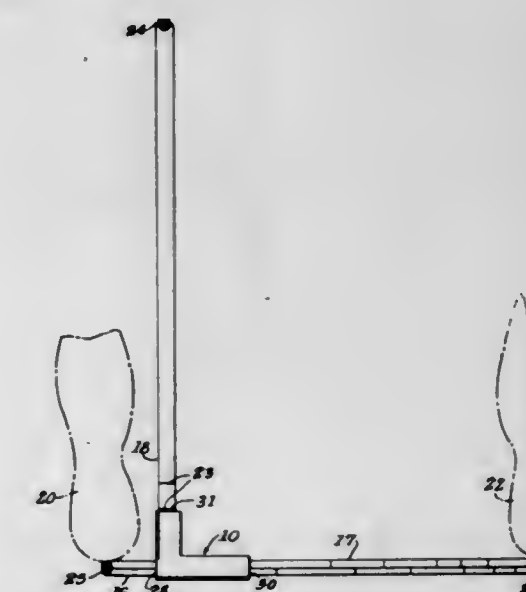


of his head throughout the golf swing by noting any movement of that portion of his head reflected in the mirror.

3,459,429  
GOLF STANCE GUIDING DEVICE  
Richard V. Green, 471 S. Barranca St.,  
Covina, Calif. 91722  
Filed Nov. 14, 1967, Ser. No. 682,784  
Int. Cl. A63b 69/36

U.S. Cl. 273-187

5 Claims



A compact training and practice device having a body with three chambers in each of which a roll-up tape is housed, two of the tapes being aligned and bearing indicia which, when the tapes are extended, guide the position of the golfer's feet in relation to the ball according to the sex of the golfer and the club to be used, and the third tape, when extended in a direction normal to the mentioned two tapes, providing a gauge that has an end that lines up the device with the ball and with the golfer's line of sight.

3,459,430  
MECHANICAL SEAL ASSEMBLY  
Rowland E. Ball, Long Beach, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

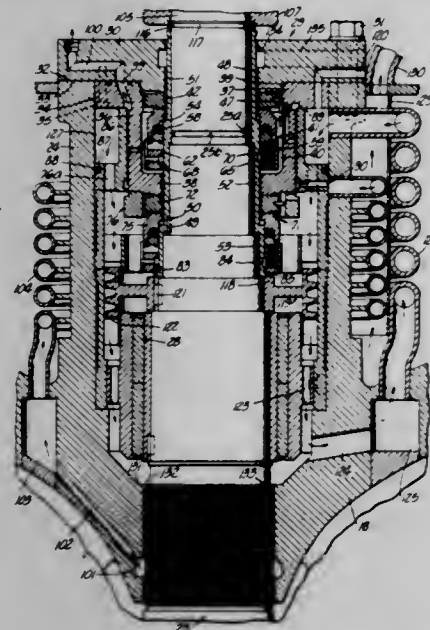
Filed July 6, 1967, Ser. No. 651,466  
Int. Cl. F16j 15/40, 15/00; F16k 41/00  
U.S. Cl. 277-3

7 Claims

A mechanical seal assembly for sealing a rotary shaft to a housing containing fluid under pressure, the assembly being in the form of a cartridge that may be installed and removed as a unit over the end of the shaft.



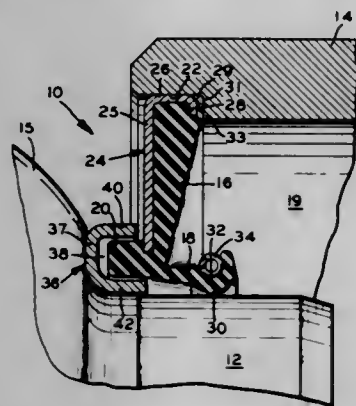
The assembly has inboard and outboard mechanical seal subassemblies arranged in tandem, and may include a



pressure breakdown system for proportioning the pressure drop across each mechanical seal subassembly.

**3,459,431**  
**OIL SEAL-DUST SHIELD ASSEMBLY**  
Patrick W. Baker, 4118 Daner Drive,  
Fort Wayne, Ind. 46805  
Filed Mar. 13, 1967, Ser. No. 622,580  
Int. Cl. F16j 15/48, 15/00; F02f 11/00  
U.S. Cl. 277-57

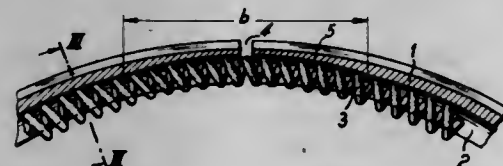
5 Claims



An oil seal-dust shield assembly including an elastomeric element sealingly connected to a stationary housing and having a primary lip sealingly engaging a member rotatably disposed in the housing and having an annular secondary lip projecting into an annular ring of C-shaped cross-section fitted on the rotatable member forming a labyrinth seal therewith which keeps dirt and dust away from a primary sealing lip.

**3,459,432**  
**OIL CONTROL PISTON RING**  
Horst Reussner, Stuttgart-Bad Cannstatt, Germany, assignor to Mahle Komm.-Ges., Stuttgart-Bad Cannstatt, Germany  
Filed Oct. 5, 1967, Ser. No. 673,209  
Claims priority, application Germany, Nov. 26, 1966, M 71,791  
Int. Cl. F16j 15/00, 9/06; F02f 5/00  
U.S. Cl. 277-163

1 Claim

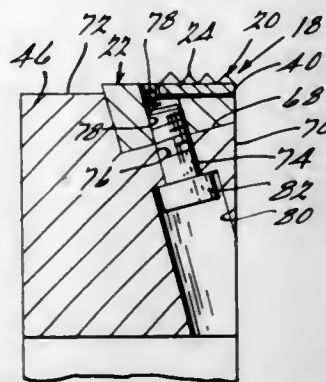


An oil control piston ring for an internal combustion

tion engine has a coil expander spring seated in a groove in the inner circumference of said spring. The groove has flattened portions adjacent the ring end joint which reduce the wear of the ring without reducing the sealing effectiveness of the ring.

**3,459,433**  
**REPLACEABLE JAW INSERTS**  
George Hohwart, Farmington, Mich., assignor to N. A. Woodworth Company, Ferndale, Mich., a corporation of Michigan  
Filed Mar. 2, 1966, Ser. No. 531,126  
Int. Cl. B23b 31/10, 31/00  
U.S. Cl. 279-123

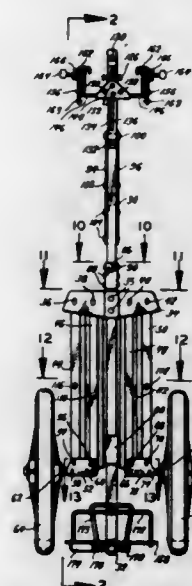
10 Claims



A chuck jaw having replaceable work engaging and holding inserts which are uniquely formed and coactive with the body of the jaw so that clamping pressure and pull-back action applied to the jaw in the operation of the chuck does not tend to loosen the inserts in the jaw.

**3,459,434**  
**GOLF CART**  
John E. Dulaney, 7739 Circle Drive,  
St. Louis, Mo. 63121  
Filed Dec. 5, 1966, Ser. No. 599,232  
Int. Cl. B62b 1/04, 3/02, 7/06  
U.S. Cl. 280-38

5 Claims

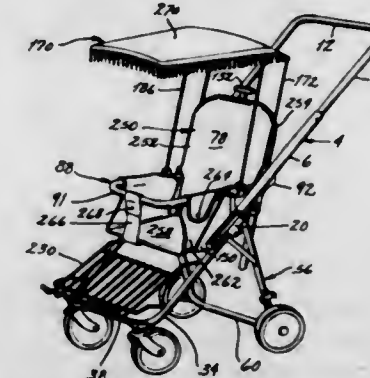


A folding golf cart has a frame member of rectangular cross section, a sliding member of rectangular cross section which can be moved axially relative to said frame member to move wheels between "closed" and "open" positions, and guide plates with flat inner faces fixedly secured to one of said members and surrounding and confining the other of said members to prevent twisting of said sliding member relative to said frame member. Latching plates with flat inner faces rotatably secure a handle of rectangular cross section to said frame member and prevent twisting of said handle relative to said frame member. A supporting bracket is mounted on said frame member and clamps are movably mounted relative to said

supporting bracket to engage and hold the upper ends of golf bags which have different thicknesses and different diameters.

**3,459,435**  
**BABY STROLLERS**  
Edward Daniel Garner, Lincoln, Nebr., assignor to Herschal F. Garhan, Rising City, Nebr.  
Filed Aug. 21, 1967, Ser. No. 662,067  
Int. Cl. B62b 1/04, 3/02, 7/06  
U.S. Cl. 280-41

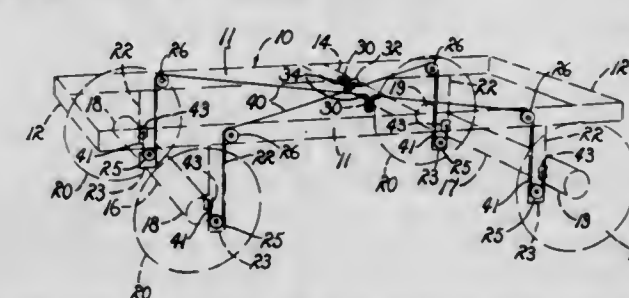
7 Claims



A baby stroller having foldable upper, front and rear frames which carry foldable back and seat frames. A fabric cover is attached to the back and seat frames and includes a padded seat section suspended from the seat frame for supporting a child. The upper, front and rear frames are hingedly connected to one another so that they fold into side-by-side relation. The back and seat frames also fold down against the rear frame so that all the frames can be folded into a highly compact configuration. The seat frame is partially supported by side plates which have arcuate grooves adapted to receive and contain locking studs on the upper frame when the back and seat frames are in their erected positions. Accordingly, the upper frame is prevented from moving with respect to the front frame when the back frame is erected, and the rear frame is also prevented from moving with respect to the front frame by means of links interconnecting the two.

**3,459,436**  
**SUSPENSION SYSTEM**  
Theodore C. Rusconi, 927 W. Fairmont,  
Fresno, Calif. 93705  
Filed Dec. 16, 1966, Ser. No. 602,283  
Int. Cl. B62d 21/06  
U.S. Cl. 280-104

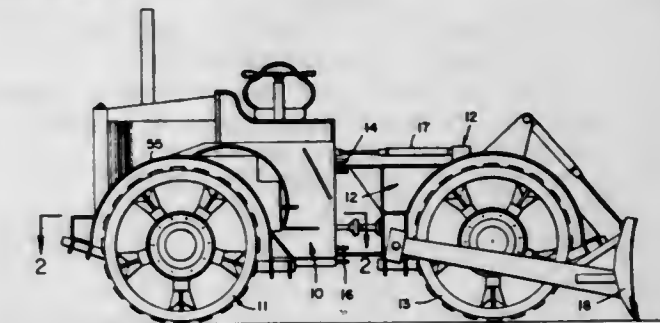
6 Claims



This disclosure sets forth a vehicle suspension system suspending a rectangular vehicle frame on a pair of axles. Arms are provided at each corner of the frame which extend vertically downward adjacent, but not attached to, the axles. A pair of cables are mounted criss-cross in the frame with each cable extended between diagonal corners of the frame and attached at each end of the axle. Pulleys are provided on the frame and arms, adjacent each corner, through which the cables are passed in a manner which supports the frame. A spring urged cable slack loop is provided at the approximate center of each cable which acts to equalize the end lengths of the cable upon movement of the frame with respect to the axle.

**3,459,437**  
**HEAVY-DUTY VEHICLE**  
Orville G. Barnum, South San Francisco, Calif., assignor, by mesne assignments, to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin  
Continuation-in-part of application Ser. No. 512,424, Dec. 8, 1965. This application Aug. 29, 1966, Ser. No. 579,449  
Int. Cl. E02f 3/76  
U.S. Cl. 280-124

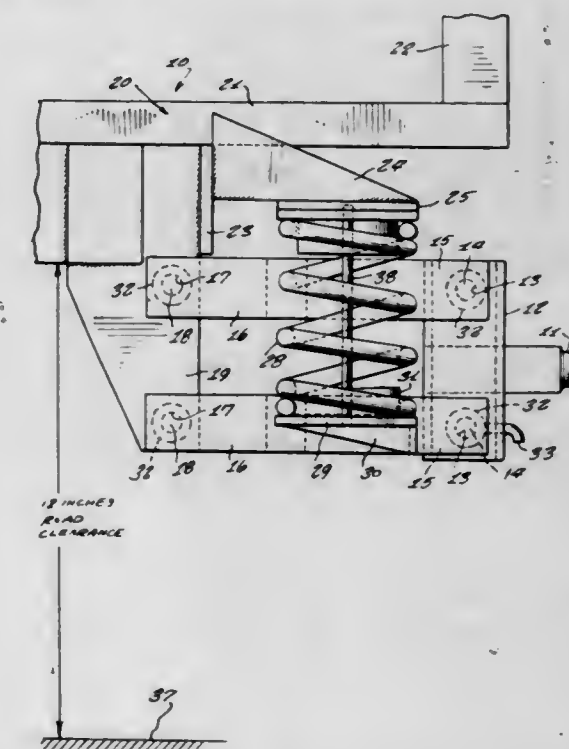
4 Claims



Suspension units for mounting axle assemblies to frames of self-propelled vehicles of off-the road, heavy duty types are disclosed. Rigid beams are mounted on the axle longitudinally of the vehicle and rigid frame supports overlie the beams. A block of resilient material is mounted at each end of the beams (four for each axle unit) and are there retained in a box-like housing furnished by portions of the beam and the frame to align the axle both longitudinally and laterally with the vehicle. In one form of the invention the blocks of resilient material are disposed in a horizontal attitude while in another form they are inclined upwardly to furnish a self-centering action in assembling the frame to the axle. A resilient torque reaction device is interposed between the ends of each beam structure and the frame supporting members for resisting rotational movement of the beam structure connected to the axle with respect to the frame.

**3,459,438**  
**COIL SPRING AND LEVER ACTION AXLE ASSEMBLY**  
Earl L. Bailey, 1708 Freeman, Toledo, Ohio 43606  
Filed Mar. 20, 1967, Ser. No. 624,341  
Int. Cl. B60g 17/00, 11/14  
U.S. Cl. 280-124

1 Claim



An axle assembly including each spindle being supported between two ends of a pair of parallel levers, the opposite ends of the levers being pivotably secured to a rigid part



of the automobile frame so that the spindle is at all times parallel with the road surface, and the axle assembly including a compression coil spring bearing at its lower end against one of the parallel levers and its upper end against a rigid part of the vehicle frame, and the axle assembly further including a limiting bolt to keep the spring from rebounding should there be any.

3,459,439

# LOW VOLUME SPRING VEHICLE SUSPENSION AND ELEVATION SYSTEM

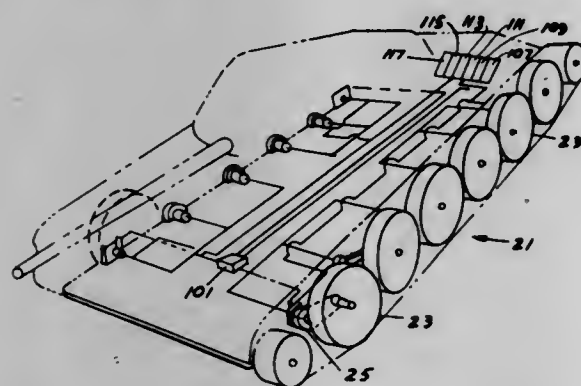
Alex H. Sinclair, Southfield, and Robert J. Otto, Detroit, Mich., assignors to the United States of America as represented by the Secretary of the Army

Filed Apr. 28, 1967, Ser. No. 635,962

Int. Cl. B60g 3/12, 11/48; B62d 55/12

U.S. Cl. 280—124

6 Claims



A vehicle suspension and elevation system having a roadarm for each road wheel of the vehicle. Each roadarm is oscillatable within a predetermined angular range from a remote position by means of a rotatable hydraulic valve which can provide passages for fluid to and from an hydraulic cylinder in the roadarm. A piston is mounted in each cylinder and its related piston rod is eccentrically mounted relative to the roadarm axis so that, as the cylinder is filled with fluid, the roadarm rotates.

A gas charged hydraulic accumulator is provided in each roadarm. The accumulator acts as a spring and damper by compressing a gas as the accumulator accepts hydraulic fluid from the cylinder when the roadarm is oscillated due to its associated wheel hitting an obstacle or bump.

3,459,440

# BELT RETRACTING DEVICE

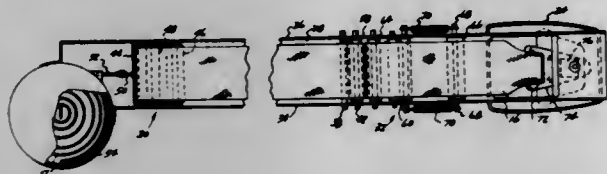
Thomas Hopka, Belleville, and Robert W. Stoffel, Ferndale, Mich., assignors to Jim Robbins Seat Belt Company, Royal Oak, Mich., a corporation of Delaware

Filed Jan. 9, 1967, Ser. No. 608,000

Int. Cl. B60r 21/10; A62b 35/02

U.S. Cl. 280—150

10 Claims



A retracting device for the safety belt of a vehicle having a locking mechanism preventing an excessive belt feed-out rate. The locking mechanism includes a first fixed roller member and a second roller member mounted for movement toward the first roller member in response to a pull-out force applied to a belt section wrapped around the rollers. An excessive pull-out force causes the movable roller member to clamp the belt between itself and the fixed roller member.

# AIR CUSHION SHOCK ABSORBER FOR BICYCLES, MOTORCYCLES AND SIMILAR VEHICLES

3,459,441

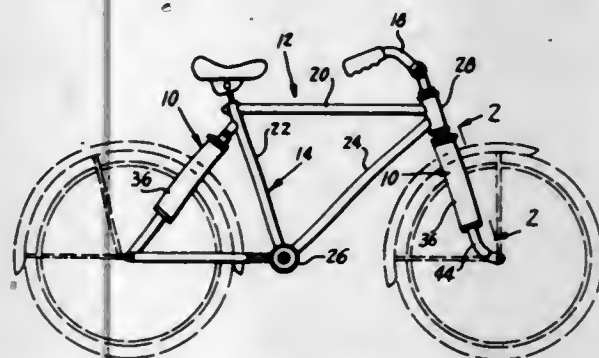
Guyton Ellis Hornsby, 4001 Rose Lane, Annandale, Va. 22003

Filed June 5, 1967, Ser. No. 643,428

Int. Cl. B62k 3/00, 3/02; B60g 11/26

U.S. Cl. 280—276

6 Claims



A shock absorbing suspension for vehicles, especially bicycles and motorcycles which employ air as the cushioning component. The frame of the bicycle or motorcycle includes telescopic piston and cylinder assemblies with each assembly having an air bag incorporated therein to cushion movement of the piston inwardly in the cylinder.

3,459,442

# SUBSEA PIPE COUPLING APPARATUS

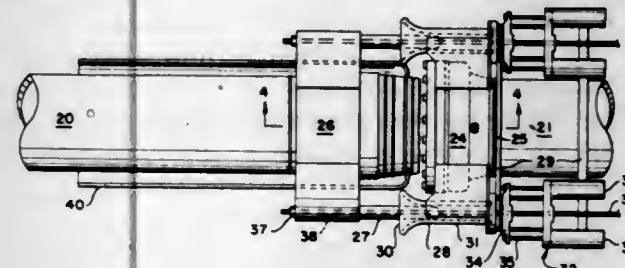
Harry W. De Yarmett, Metairie, and Murray F. Johnson, Arabi, La., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Nov. 29, 1967, Ser. No. 686,563

Int. Cl. F16l 35/00, 55/00, 37/18

U.S. Cl. 285—27

5 Claims



An underwater pipe coupling apparatus in which specially formed mating pipe ends are axially aligned by co-operating guide means carried by each pipe end and the ends pulled together in coupled relationship by a cable puller carried by one pipe end which acts on a cable attached to the guide means of the other pipe end.

3,459,443

# TAMPERPROOF COUPLING

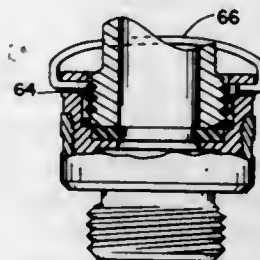
Lamont Chester Butters, Lowell, and George Burchard Horne, Ipswich, Mass., assignors to Watts Regulator Co., Lawrence, Mass., a corporation of Massachusetts

Filed Feb. 1, 1967, Ser. No. 613,231

Int. Cl. F16l 35/00, 55/00

U.S. Cl. 285—39

5 Claims



A coupling device comprising a coil in an open round hole of a connecting member. The coil includes a braking turn, further away from the mouth of the hole than some

other turns, and the connecting member includes a stop preventing release of the coil from the round hole but allowing entrance of a male threaded member into the round hole through the mouth.

3,459,444

# BELLOWS FLEX JOINT

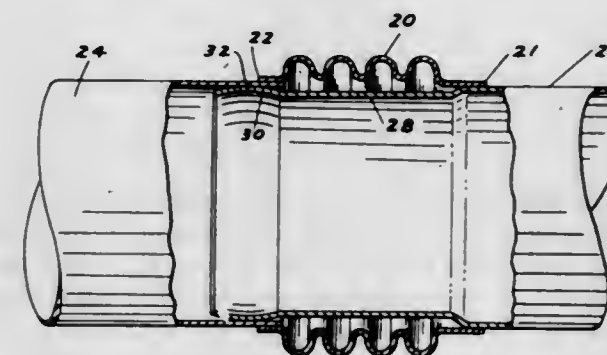
Duane H. Rofe, Lake Orion Township, Oakland County, Mich., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Jan. 10, 1968, Ser. No. 696,874

Int. Cl. F16l 27/10, 21/00, 51/02

U.S. Cl. 285—226

1 Claim



A flexible conduit wherein two pipe ends are placed in telescoping relation and a flexible covering joins the pipes for a gas tight seal and wherein the inner pipe is shaped like a ball where it contacts the outer pipe.

3,459,445

# PIPE FITTING AND METHOD OF MANUFACTURE

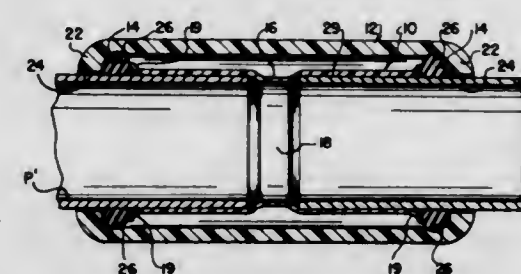
Dennie Parkhill, Jr., Brecksville, Ohio, assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Aug. 26, 1965, Ser. No. 482,673

Int. Cl. F16l 21/02, 27/12

U.S. Cl. 285—302

5 Claims



A pipe fitting and method for making the same comprising an inner sleeve adapted to receive a pipe therein, an outer sleeve and a sealing member coating between the inner and outer sleeves for gripping and sealing the pipe with respect to the fitting.

3,459,446

# PIPE COUPLING HAVING MANUAL QUICK JOINING RING MEANS

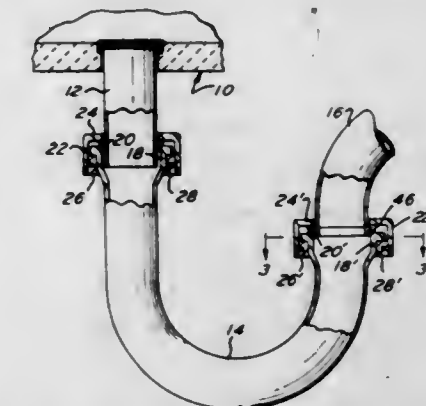
James D. Walsh, New Britain, Conn. 48013  
(756 Weybridge Drive, Bloomfield Hills, Mich.)  
Filed May 23, 1967, Ser. No. 640,728

Int. Cl. F16l 37/00, 43/00

U.S. Cl. 285—362

1 Claim

A quick connect coupling is provided wherein conduits such as a sink trap may be manually coupled to another conduit rapidly without necessitating the use of tools.



3,459,447

# FLUSH FASTENER FOR PANEL ASSEMBLY INCLUDING SOFT CORE MATERIAL

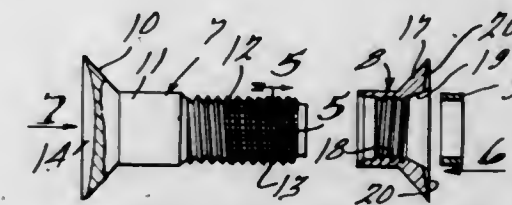
Ramon L. Hurd, Royal Oak, and Herbert M. Wittmeyer, Detroit, Mich., assignors to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan

Filed Dec. 13, 1966, Ser. No. 601,377

Int. Cl. F16b 19/00, 2/04

U.S. Cl. 287—189.36

4 Claims



A fastener assembly for a soft core material including a pin and a filler sleeve threaded together and locked together with a swaged annular collar.

3,459,448

# LOW-FRICTION INSERT FOR LATCH BOLT RETRACTOR

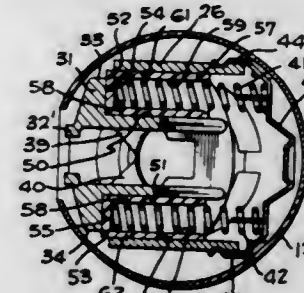
Fred J. Russell, South Gate, Richard L. Armstrong, Santa Fe Springs, and Vernard W. Sanders, Los Angeles, Calif., assignors, by direct and mesne assignments, to Norris Industries Inc., Los Angeles, Calif., a corporation of California

Filed Apr. 14, 1967, Ser. No. 631,062

Int. Cl. E05b 63/10

U.S. Cl. 292—336.5

5 Claims



The invention relates to door locks of a type provided with a reciprocating retractor which is adapted to retract a conventional latch bolt. There is a central, substantially cylindrical case which is located in an appropriate recess in the door. Within the case is an interior housing, com-



monly called a frame, which is fastened to the case and upon which is mounted other stationary portions of the device shown as threaded spindle bearings. Within the frame is a block-like element called a retractor which reciprocates back and forth between left-hand and right-hand positions, and which is normally urged in a direction from right to left by two springs. A plastic member of some appropriate type is mounted between opposite edges of the retractor and the interior of the frame, whereby to provide a sliding engagement. The form, location, and character of the plastic member is of significance.

3,459,449

**ONE-PIECE MOULDED STACKING CHAIR**

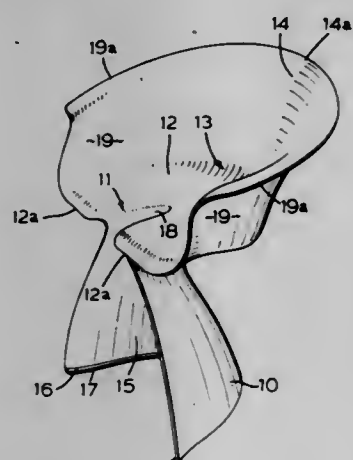
Leo Herman Klausen, 338 Hillcrest Ave.,  
Willowdale, Ontario, Canada

Filed Aug. 7, 1967, Ser. No. 658,835

Int. Cl. A47c 3/04, 5/12

U.S. Cl. 297-239

4 Claims



A one-piece, moulded, stacking chair which obtains its structural strength from its configuration, without reinforcing elements.

3,459,450

**CHILD'S AUXILIARY SEAT**

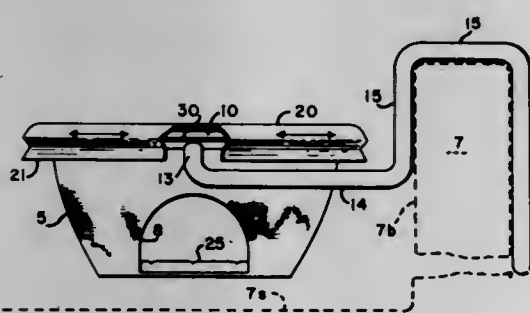
Theresa M. Patellaro, 2037 Randolph Drive,  
San Jose, Calif. 95128

Filed Feb. 23, 1967, Ser. No. 617,979

Int. Cl. A47d 1/10

U.S. Cl. 297-254

4 Claims



A child's auxiliary seat having a stationary ring supported on the back of an adult-size automobile or other seat. The child is seated in a flexible basket-shaped seat member which is attached to a movable ring supported by and concentric with the stationary ring so that the seat member can rotate 360° in either direction.

3,459,451

**SEMI-TRAILER VEHICLES**

Gordon Hoy, Danbury, Chelmsford, Essex, England, assignor to Hoynor Limited, Essex, England, a corporation of Great Britain

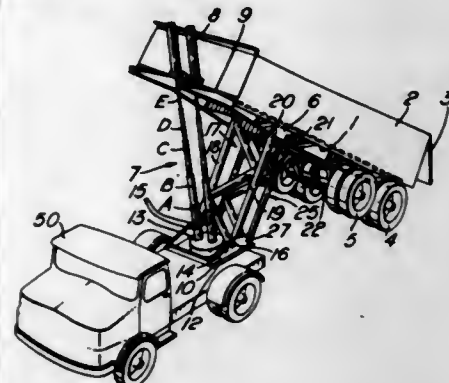
Filed Oct. 13, 1966, Ser. No. 586,551

Claims priority, application Great Britain, May 19, 1966, 22,394/66

Int. Cl. B60p 1/16, 1/28

U.S. Cl. 298-22

5 Claims



This invention relates to semi-trailer vehicles of the type comprising a tractor vehicle having a fifth wheel coupling connection and a trailer having rear road wheels and at its front end a fifth wheel coupling plate for engagement on the fifth wheel connection of the tractor vehicle. This invention relates particularly to trailers for use in such vehicles.

3,459,452

**TUNNELING DEVICE**

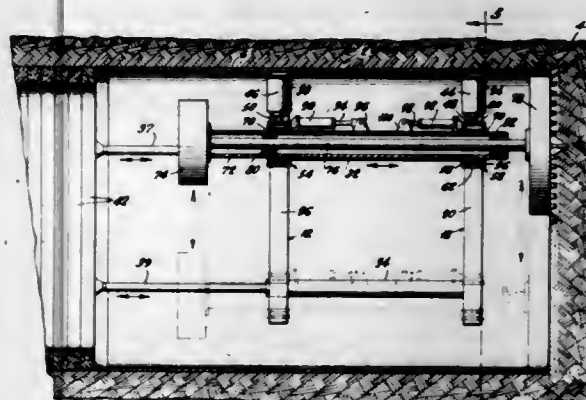
Harry Schnabel, Jr., 7010 Longwood Drive,  
Bethesda, Md. 20034

Filed June 30, 1967, Ser. No. 650,420

Int. Cl. E21b 3/08; E21c 23/00, 29/02

U.S. Cl. 299-31

14 Claims



A tunneling device capable of boring noncircular holes including a casing with semicircular top and bottom portions and elongated straight sides connecting them. The drilling is achieved by a rotary cutting head which is capable of being moved longitudinally and vertically of the casing to excavate an area at the face of the tunnel corresponding in configuration to the cross section of the casing. Hydraulic rams connected to the casing are employed to urge the casing forwardly into the excavated opening.

3,459,453

**CONTOUR CUTTER FOR CONTINUOUS MINER**

Edward F. Brill, Oconomowoc, Wis., and Howard E. Shelley, Niles, Ill., assignors to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 580,029, Sept. 16, 1966. This application Apr. 15, 1968, Ser. No. 721,512

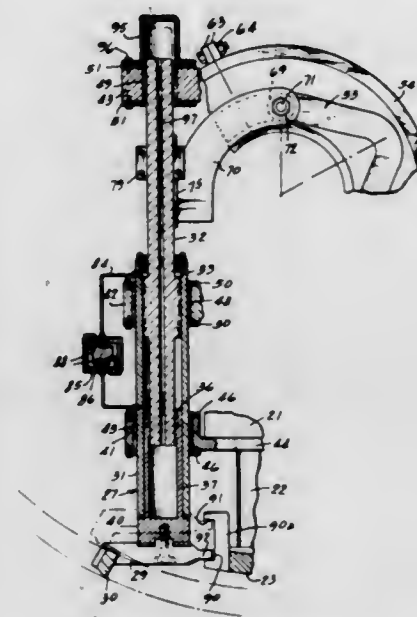
Int. Cl. E21b 11/06; E21c 1/02, 13/00

U.S. Cl. 299-59

15 Claims

Contour cutter for contouring the circular bores being formed by the boring heads of boring types of continuous

mining machines. The contour cutter is in the form of a cutter arm supplemental to the main boring arm of the machine. The contour cutter arm includes a cylinder, piston and piston rod unit bodily moved translationally as a unit by rotation of the boring head relative to its support and held in an extended boring position by a hydraulic



lock. The lock is releasable by pressure to accommodate the telescopic boring arm to shorten the cylinder with respect to its piston as the boring arm is contracted into a tramming position. A cam and follower drive is provided to translationally move the contour cutter arm as the contour cutter arm and boring head rotate.

3,459,454

**ELLIPTICAL WHEEL**

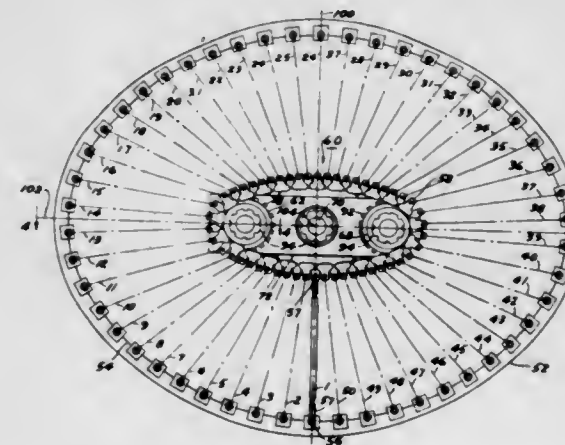
Ronald A. Liston, Hancock, Mich., assignor to the United States of America as represented by the Secretary of the Army

Filed Aug. 7, 1967, Ser. No. 658,958

Int. Cl. B60b 1/02, 27/04

U.S. Cl. 301-5

12 Claims



An elliptically-shaped wheel having a flexible rim, an ellipse generating hub, and a plurality of non-rigid spokes connecting the rim and the hub so that the outer rim of the hub maintains an elliptical shape, thereby improving the traction capabilities of the wheel. The spokes are all non-radial with respect to the rotational axis of wheel with the exception of two spokes which are the maximum number of spokes that may be radially oriented at any given point of rotation.

3,459,455

**WHEEL ADAPTOR ASSEMBLY**

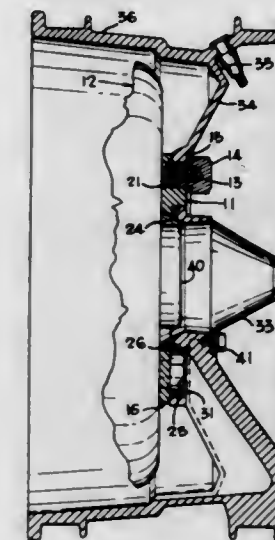
Charles A. Muench, Chesterfield, and Allen D. Penniman, Jr., Crestwood, Mo., assignors to Forecast, Inc., St. Louis, Mo., a corporation of Missouri

Filed June 14, 1967, Ser. No. 645,907

Int. Cl. B60b 1/00, 27/00, 1/06

U.S. Cl. 301-9

6 Claims



An annular adaptor plate placed between an automobile wheel hub and the wheel drum to enable one type of wheel hub to be fitted to wheel drums of different concentric hole diameters. The adaptor plate has several concentric hole circles, each corresponding to the stud circle of a particular class of automobile. The wheel hub is provided with a concentric circle of identical oversized holes spaced at equal intervals and corresponding in number to the wheel drum studs. Plugs are provided on the adaptor plate, radially adjacent to the adaptor plate holes and are so shaped as to occupy a portion of the associated oversized holes in the wheel hub. In this way the studs may be aligned with a like-sized hole in the wheel hub, and the hub can be mounted to the drum with only a normal amount of play between the fastener and the hole. Pockets on the wheel hub accommodate plugs not being utilized.

3,459,456

**ARTICLE FEEDING APPARATUS**

Desmond Walter Molins and George Robert Bennett, London, England, assignors to Molins Machine Company Limited, London, England, a corporation of Great Britain

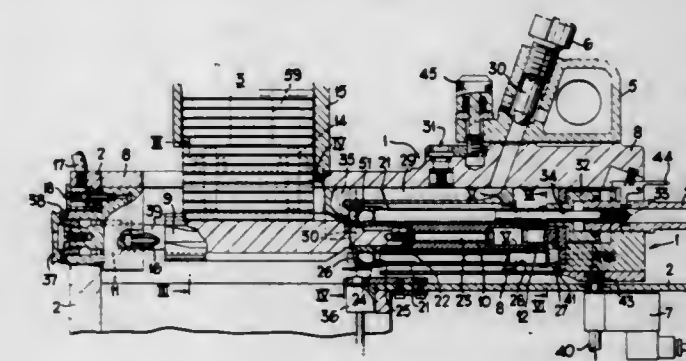
Filed Dec. 20, 1967, Ser. No. 692,015

Claims priority, application Great Britain, Dec. 23, 1966, 57,611/66

Int. Cl. B65g 53/04, 53/40

U.S. Cl. 302-2

27 Claims



Apparatus for feeding plugs of cigarette filter material in a continuous stream from a magazine to a pneumatic



feed pipe, having a continuously rotating fluted delivery rotor to scoop plugs out of the magazine and a discharge rotor rotating on the same shaft as the delivery rotor and having a number of tubular bores wherein the plugs are pushed by an air jet from the delivery rotor flutes to the discharge rotor tubes and then carried to a position where a further air jet blows them out of the tubes into the feed pipe.

3,459,457

# SILO FILLING ATTACHMENT FOR AN AIR SEALED SILO HAVING A DOME SHAPED ROOF

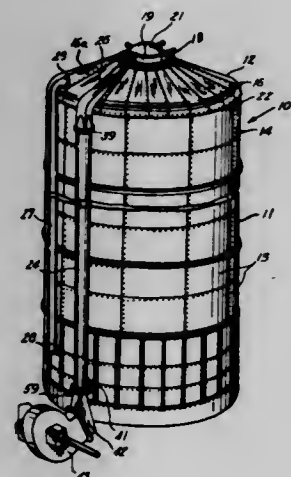
Curtis C. Weaver, 901 S. Congress, Polo, Ill. 61064, and Robert E. Kirkpatrick, 101 Hickory Lane, Humboldt, Iowa 50548

Filed Jan. 18, 1968, Ser. No. 698,974

Int. Cl. B65g 53/40; A01f 25/16; A23k 3/00

U.S. Cl. 302—60

7 Claims



The silo filling attachment is intended for use with a silo of air sealed type such as the "Harvestore" silo made by Harvestore Products, Inc. of Arlington Heights, Ill., and having a circular side wall and a dome shaped roof. The attachment includes a fill pipe or material guide way member of an inverted channel shape positioned within a radial slot formed in the roof and extended from the outer edge of the roof to a position spaced from the central portion of the roof. The guide way from the lower end of the slot progressively drops within the slot so that the upper end of the guide way is located below the roof and extends inwardly of the silo to a position adjacent the central portion of the silo. The guide way is secured in air sealed engagement with the side walls of the slot and has its lower end connected to the delivery end of a material conveyor pipe that extends vertically along the outside of the silo wall. An air pipe arranged vertically to the outside of the silo wall has its upper end open to the silo and secured to the roof. During silo filling the lower end of the air pipe is open to the atmosphere. After the silo has been filled both the conveyor pipe and the air pipe have their lower ends air sealed by respective removable cover assemblies. A material distributing member within the silo is movably supported on the guide way and is manipulated by a flexible actuating element which is located within the air pipe with one end connected to the distributing member and its other end connectable to the air pipe within the lower end thereof.

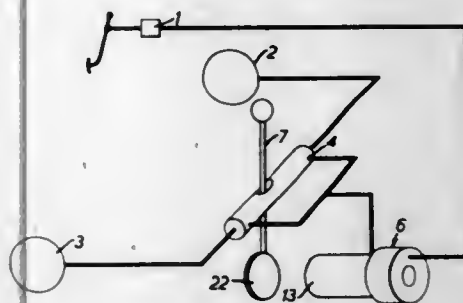
3,459,458  
**TRACTOR BRAKING SYSTEMS**  
Martin Green and Roy Campbell, Birmingham, England, assignors to Girling Limited  
Filed Jan. 16, 1968, Ser. No. 698,235  
Claims priority, application Great Britain, Jan. 16, 1967, 2,140/67

Int. Cl. B60t 13/00, 11/10, 17/02

U.S. Cl. 303—6

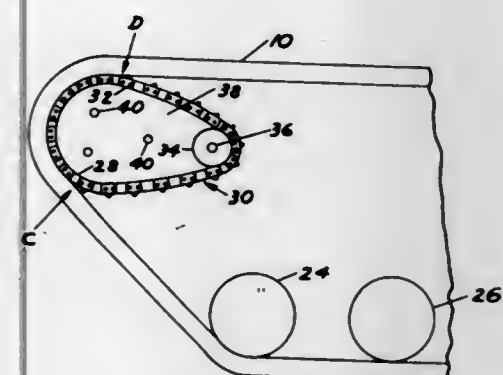
4 Claims

The invention resides in an improvement in tractor braking systems of the type in which a selector valve is used to transmit braking pressure either to both of a pair



of wheel brakes, for normal braking, or to either brake alone, for brake assisted steering. The invention employs a pressure control valve which co-operates with the selector valve so as to transmit a higher pressure when brake assisted steering is required than when normal braking is required, thereby to reduce the effort required from the driver for a given braking force when effecting steering manoeuvres. The control valve can be a booster valve or a reducer valve. If the former, the control valve is normally inoperative but is rendered operative when brake-assisted steering is to be effected, if the latter, it is rendered inoperative for brake-assisted steering. Preferably, there is a simple mechanical linkage between the pressure control valve and a manual operating lever for the selector valve.

3,459,459  
**TRACK DRIVING SYSTEM**  
John A. Eilers, 27746 Park Court, Madison Heights, Mich. 48071  
Filed June 16, 1967, Ser. No. 647,300  
Int. Cl. B62d 55/00, 55/08; F16h 7/00  
U.S. Cl. 305—33 5 Claims



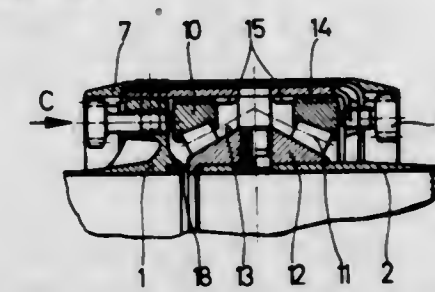
The dynamic transition which generates vibrations in the free lengths of track or chain in endless track or chain driving systems is eliminated through the use of a modified driving system which utilizes a curve having zero curvature at its points of contact with the endless track or chain in the linear portions of its path of motion to produce smooth transition in such systems. According to the preferred embodiment the curve consists of a hypocycloid.

3,459,460  
**AUTOMATIC HEAT COMPENSATOR FOR ANTI-FRICTION BEARINGS**  
Gerhard Kopp, Munich, Germany, assignor to Entwicklungsring Sud GmbH, Munich, Germany, a corporation of Germany  
Filed May 24, 1967, Ser. No. 640,863  
Claims priority, application Germany, June 7, 1966, E 31,816

Int. Cl. F16c 35/00; F16l 55/00

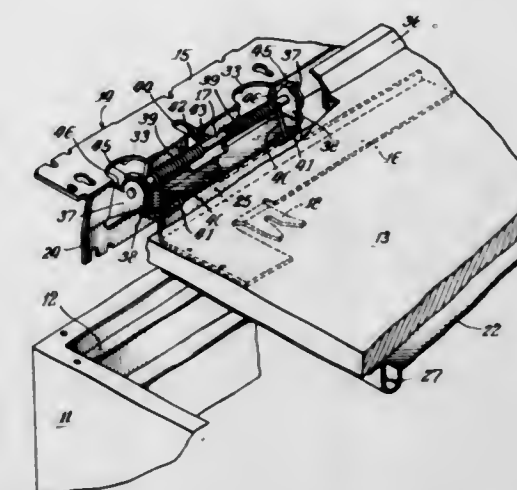
U.S. Cl. 308—207

7 Claims



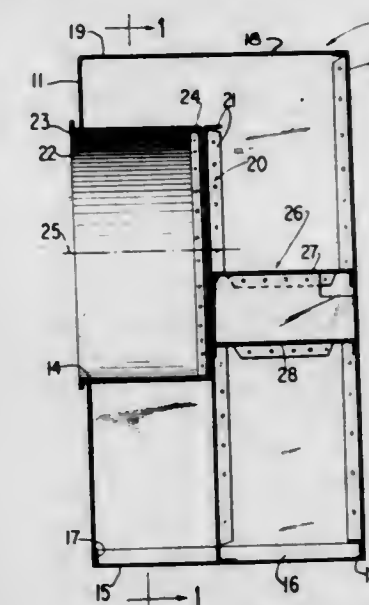
An anti-friction bearing assembly between tubular segments of a jet deflector which expands and contracts in accordance with temperature by providing a control for adjusting the location of one race of the bearing in response to temperature.

hinge is attached to the receptacle and the bracket of the hinge is attached to the lid and the means for attaching



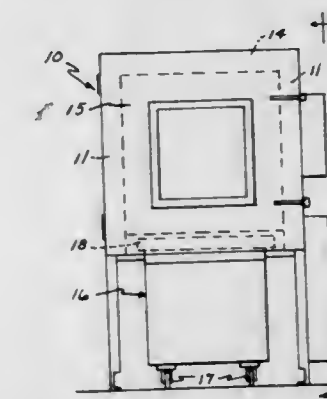
the bracket to the lid includes spaced tongues integral with the bracket.

3,459,461  
**WASHER-EXTRACTOR UNITARY FRAME STRUCTURE WITH PARALLEL PLATES**  
Thomas W. Bannon, Jr., 927 39th Ave., East Moline, Ill. 61244  
Filed Oct. 2, 1967, Ser. No. 672,364  
Int. Cl. F26b 11/04; D06f 23/02  
U.S. Cl. 312—214 5 Claims



A cabinet for a laundry machine having front, intermediate and rear vertical panels with side panels at the edges thereof. A tubular shell is mounted between an opening in the front panel and the bulkhead panel. Between the bulkhead panel and the rear panel there is mounted a drive support comprising a pair of spaced, horizontal, parallel panels with a pair of parallel, vertical panels welded therebetween.

3,459,463  
**BOUNDARY SEAL FOR TEST CHAMBERS USING A VIBRATOR**  
Ronald L. Nacht, Hewlett, N.Y., assignor to Tenney Engineering, Inc., Union, N.J.  
Filed Aug. 29, 1967, Ser. No. 664,124  
Int. Cl. A47b 97/00, 95/00, 96/00  
U.S. Cl. 312—352 12 Claims



A seal for a temperature humidity variable atmospheric pressure chamber in which the chamber has one side open and there is provided a vibrator unit with a flat panel to fit and enclose said open side of the test chamber. An elastomeric foam boundary seal around the periphery of said flat panel to be pressed into abutting relationship with the open side of said test chamber to maintain a sealed chamber during the oscillatory movement of the flat panel.

3,459,462  
**RECEPTACLE**  
Walter C. Barnard, White Bear Lake, and Robert W. Coburn, Sr., Minneapolis, Minn., assignors to Whirlpool Corporation, a corporation of Delaware  
Filed Oct. 4, 1967, Ser. No. 672,752  
Int. Cl. A47l 19/02; A47k 1/04  
U.S. Cl. 312—228 20 Claims

A receptacle having a hinged lid over an access opening including a hinge structure in which the rail of the

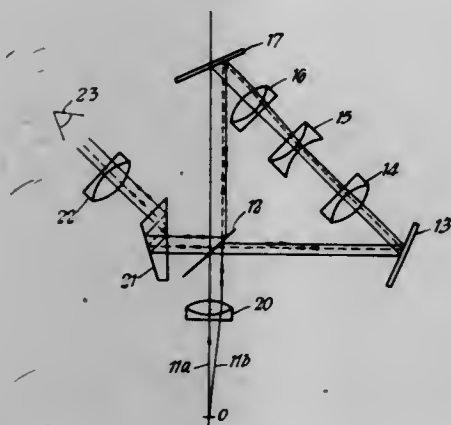
3,459,464  
**OPTICAL DUAL MAGNIFICATION SYSTEM**  
Francis Hughes Smith, Purley Lane, Surrey, England, assignor to Vickers Limited, London, England, a British Company  
Filed Jan. 25, 1966, Ser. No. 522,978  
Claims priority, application Great Britain, Feb. 5, 1965, 5,224/65

Int. Cl. G02b 21/22

U.S. Cl. 350—40 5 Claims  
A variable magnifying lens combination and a number of mirrors one of which can be placed in one position to direct a beam of light in one direction through the



combination and removed to allow the beam of light to pass through the combination in the opposite direction



to the first mentioned direction in order to obtain two magnification ranges for the same lens combination.

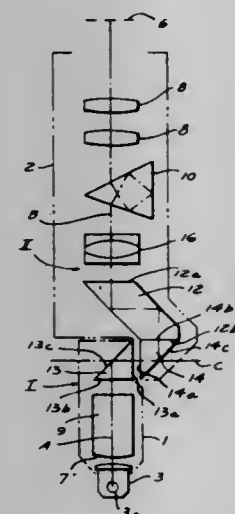
### 3,459,465 OPTICAL SYSTEM FOR VISUAL FLIGHT SIMULATION

Seymour Rosin, Massapequa Park, and Paul T. Kaestner, Huntington, N.Y., assignors to Bell Aerospace Corporation, Wheatfield, N.Y.

Filed July 3, 1967, Ser. No. 650,760  
Int. Cl. G02b 23/02

U.S. Cl. 350—49

8 Claims



Pitch movements of an aircraft are simulated by turning a first optical assembly including a head prism, an objective, and a first right angle prism, relative to a second optical assembly including a second right angle prism, about an axis passing through the first and second prisms. The axis of the second assembly represents the yaw axis.

### 3,459,466 OPTICAL BEAM PEAK POWER AMPLIFIER AND BUNCHER

Joseph A. Giordmaine, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

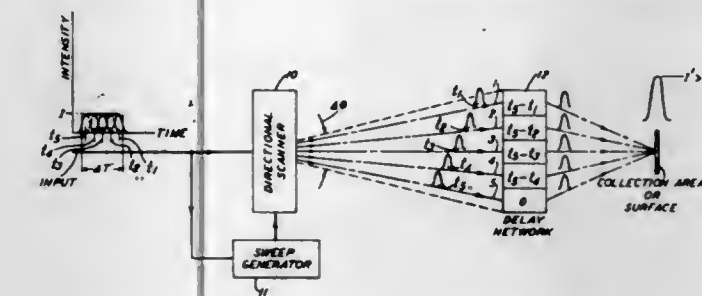
Filed Dec. 30, 1964, Ser. No. 422,222  
Int. Cl. G02f 1/28

U.S. Cl. 350—160

13 Claims

This application describes arrangements for increasing the peak power of an optical pulse. In accordance with one embodiment, a pulse of optical energy is divided into a plurality of spatially separate portions displaced in time relative to each other. The separate portions are

then delayed different relative lengths of time such that they reassemble in time coincidence. The effect is to compress the energy in the optical pulse into a smaller time interval.



In a second embodiment, the wave energy is frequency modulated and then passed through a dispersive medium which delays the different frequency component different periods of time to produce the desired compression.

The same technique can be used to convert a continuous wave beam into pulses.

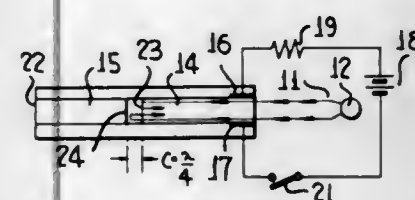
### 3,459,467 ELECTRONICALLY CONTROLLED INTER- FERENCE FILTER

Misha I. Kantor, Orlando, Fla., assignor to Radiation, Incorporated, Melbourne, Fla., a corporation of Florida

Filed Aug. 10, 1964, Ser. No. 388,650  
Int. Cl. G02b 5/28

U.S. Cl. 350—163

7 Claims



An electronically-controlled interference filter responsive to light of wavelength  $\lambda$  has an open-ended housing in which a pair of crystals are longitudinally aligned and bonded to the housing to provide a gap between their opposing parallel end faces equal to an odd number of quarter wavelengths  $\lambda$ . At least one of the crystals is piezoelectric and is bonded to the housing only at the crystal end opposite the gap so that its length may be varied upon application of a voltage thereto independently of the housing, and thereby vary the gap length to control the transmission of light therethrough. Both crystals and the housing have the same coefficient of thermal expansion to render the gap length insensitive to ambient temperature variations, so that passage or blockage of light is independent of temperature. A display panel is composed of a plurality of such filters arranged in a grid-like array of rows and columns, with appropriate selective control of voltage application to each filter.

### 3,459,468 TWO-ASPHERICAL-SURFACED, HIGH SPEED PHOTOGRAPHIC OBJECTIVE LENS

Helmut Marx and Paul Sindel, Wetzlar, Germany, assignors to Ernst Leitz, G.m.b.H., Wetzlar, Germany

Filed Apr. 19, 1965, Ser. No. 449,192  
Claims priority, application Germany, Apr. 25, 1964, L 47,701

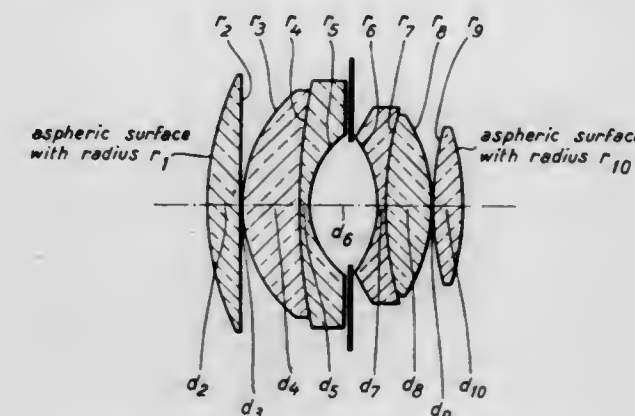
Int. Cl. G02b 3/04

U.S. Cl. 350—176

1 Claim

A photographic objective including a stop and having at least two aspherical surfaces, the apertures and image

angles of which are large relative to one another. The aspherical surfaces are positioned in the front and rear portions of the objective so that aberrations of higher order may be directly modified. The aspherical surfaces permit alterations of the distribution of the Seidel aberrations



tions throughout the optical system and thus permits modification of the arrangement of the lenses and their respective optical properties. Effective although indirect correction for image aberrations of higher order is thus permitted.

### 3,459,469 LENS SYSTEM

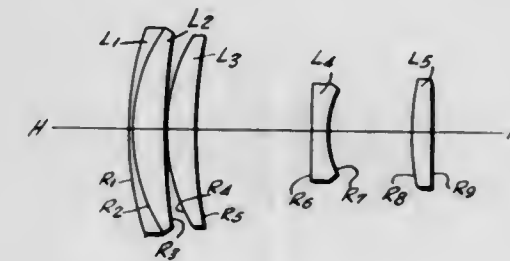
Yasuo Takahashi, Tokyo-to, Japan, assignor to Asahi Kogaku Kogyo Kabushiki Kaisha, Tokyo-to, Japan, a corporation of Japan

Filed Nov. 2, 1966, Ser. No. 591,574  
Claims priority, application Japan, Nov. 4, 1965, 40/67,249

G02b 9/60  
Int. Cl. G02b 9/60

U.S. Cl. 350—223

1 Claim



A telephotographic objective wherein advantageously the first lens is negative with a concave rear face and the second lens is positive with a convex front face mating said first lens rear face to form a compound lens group, the third lens is positive with its front face of greater curvature than its rear face, the fourth lens is negative with a rear face of greater curvature than its front face, and the fifth lens is positive with a front face of greater curvature than its rear face.

### 3,459,470 REMOTELY ADJUSTABLE MOTOR DRIVEN REARVIEW MIRROR

Otto Hahn, Frickenhausen, Wurttemberg, Germany, assignor to Immanuel Maier, Kongen, Wurttemberg, Germany

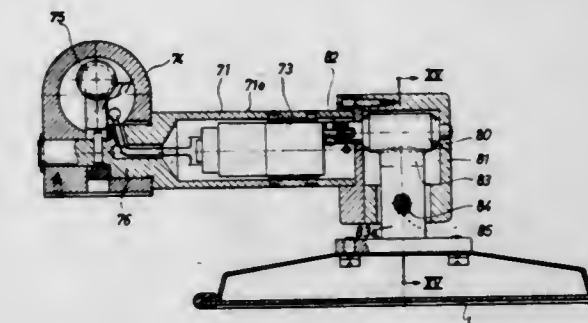
Filed Mar. 30, 1964, Ser. No. 355,645  
Claims priority, application Germany, Apr. 6, 1963, H 48,779; Oct. 10, 1963, H 50,510; Oct. 23, 1963, M 58,641

Int. Cl. G02f 1/00

U.S. Cl. 350—289

4 Claims

A rearview mirror is mounted on interconnected hous-



mirror can be placed in any desired position by operation of two switches controlling the two motors.

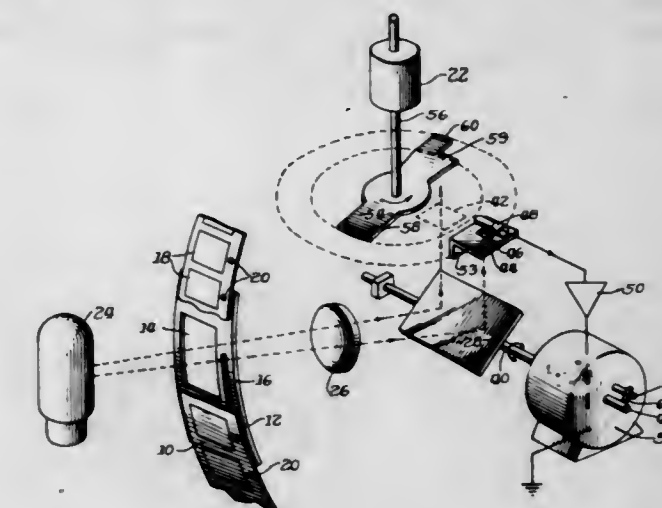
### 3,459,471 CONTINUOUS FILM FEED PROJECTION SYSTEM

Robert F. Johnston, Wildwood, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed Nov. 4, 1966, Ser. No. 592,050  
Int. Cl. G03b 41/10

U.S. Cl. 352—105

15 Claims



A motion picture projector has a mirror mounted on the shaft of a galvanometer. Images of the film frame and of a control aperture are projected onto the mirror adjacent each other. The image of the control aperture is reflected from the mirror through a small aperture in an opaque shield and onto a photocell mounted behind the shield. As the film frame moves continuously through the projection gate the image of the control aperture moves progressively to illuminate a greater portion of the photocell. The photocell increases current to the galvanometer which pivots the mirror to counteract the movement of the film and stabilize the image on the screen. A shutter periodically interrupts the light to the photocell to allow the mirror to return to its initial position where it locks onto the succeeding frame image.

### 3,459,472 MOTION-PICTURE FILM VIEWER

David W. Husted, 2731 Byington Blvd., and James A. Holbrook, 1503 E. Park Ave., both of Ann Arbor, Mich. 48103

Filed Sept. 6, 1966, Ser. No. 577,271  
Int. Cl. G03b 1/00

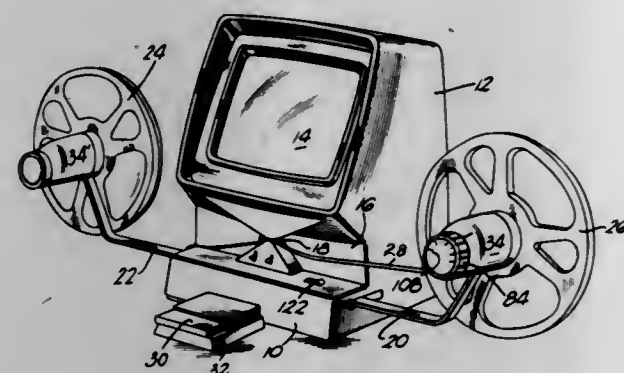
U.S. Cl. 352—129

9 Claims

Motion-picture film viewing apparatus of the type utilizing an internal light source and translucent back-lighted screen mounted upon a base having lateral sides from which extend reel supporting arms. Separate electric mo-



tors are mounted upon each of the reel supporting arms for rotating the reel spindle mounted upon each arm, and common control means mounted upon one of the arms

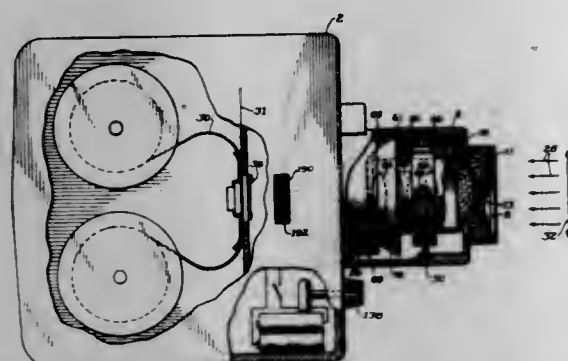


for selectively controlling operation of the electric motors whereby the motion picture film may be moved through the viewer in either direction by the electric motors.

**3,459,473**  
**CONCENTRIC LENS STABILIZATION SYSTEM**  
Daniel D. Call, Mount Prospect, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois  
Filed Oct. 12, 1965, Ser. No. 495,204  
Int. Cl. G03b 3/00

U.S. Cl. 352-140

27 Claims



A cylindrical lens support member is gimbal mounted in a camera. A lens to be stabilized is mounted on one end of the lens support and a spherically surfaced hollow rotor is concentrically rotatably mounted on the other. A drive means frictionally engages a portion of the rotor's spherical surface so as to spin the rotor about the lens support so that both it and the lens are spatially stabilized. The frictional drive forces on the rotor's surface are selectively adjustable to vary the precession rate of the rotor, the lens support and the stabilized lens. The stabilized lens is mounted adjacent a second camera lens to form a Boscovich type of wedge so that the image at the focal plane of the wedge remains stable even though the camera housing is subjected to undesirable vibrations.

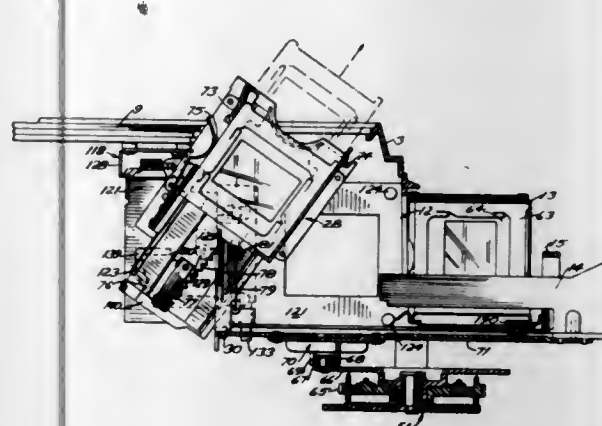
**3,459,474**  
**AUTOMATIC SLIDE PROJECTOR**  
Torulf F. Aasen, Little Neck, Joseph H. Schlessel, Great Neck, and Peter J. Waznys, Richmond Hill, N.Y., assignors to Alrequisit Inc., New Rochelle, N.Y., a corporation of New York  
Filed Dec. 23, 1966, Ser. No. 604,333  
Int. Cl. G03b 21/06

U.S. Cl. 353-21

6 Claims

A slide projector having a drive system permitting alternate manual or motor-driven operation with a timer de-

vice for automatic slide changing at selected time intervals. A pop-up slide editor is located on the projection axis between the projection lamp and the objective lens for receiving slides for projection. The editor is pivotally mounted to swing into an opening in the projector housing

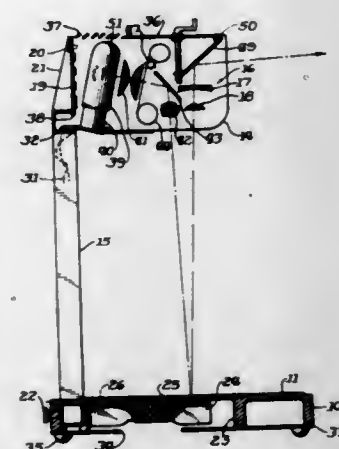


vice so that a slide at the viewing position may be manually removed therefrom for editing. An interlock permits the operation of the editor only when a slide is in position for projection and prevents actuation of the projector slide transfer lever when the editor is swung to the editing position. An automatic lens focusing system is included.

**3,459,475**  
**OVERHEAD PROJECTOR**  
James Wortz Lucas, 1480 N. Doheny Drive, Los Angeles, Calif. 90069  
Filed Nov. 14, 1966, Ser. No. 593,909  
Int. Cl. G03b 21/28

U.S. Cl. 353-37

15 Claims



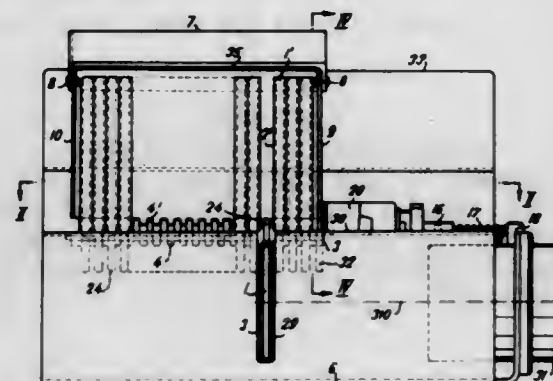
A method and apparatus for minimizing double images in reflective projectors. The projector has an image transparency located between the light source and a reflective converger so that light emanating from the source, after passing through the transparency, is reflectively converged back through the transparency toward a projection lens which focuses the image from the transparency on a screen. The method of minimizing the double images includes the step of maintaining the reflectively converged light from the reflective converger at its minimum diameter as it enters the projection lens, while at the same time maintaining the light emanating from the source at its minimum diameter as it enters a first projection lens located adjacent the other projection lens and at substantially the same distance from the reflective con-

verger as the minimum diameter portion of the reflectively converged light.

**3,459,476**  
**AUTOMATICALLY OPERATED SLIDE PROJECTOR**  
Alois Kovářík, Prague, and Jindřich Suchanek, Brno, Czechoslovakia, assignors to MEOPTA, narodni podnik, Prerov, Czechoslovakia  
Filed May 31, 1967, Ser. No. 642,532  
Claims priority, application Czechoslovakia, June 2, 1966, 3,738/66  
Int. Cl. G03b 21/14

U.S. Cl. 353-118

8 Claims

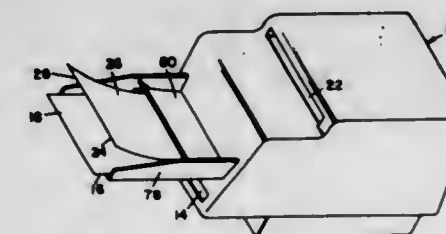


A slide projector has a magazine whose individual, pivotally mounted slide pockets are fed by gravity into the optical axis of the projector and lifted back into the magazine between indexing movements of the latter. A threaded drum rotates continuously and is shifted back and forth by a partly helical cam having the same pitch as the threads. Lugs projecting from inoperative pockets into the threads thus remain stationary during backward drum movement, and the magazine is shifted forward with the drum. A lifting face on the drum engages the lug of an operative pocket for return to the inoperative position.

**3,459,477**  
**COPY MACHINE AND METHOD OF ELECTROSTATIC COPYING**  
Jacob Anthes, Philadelphia, Pa., assignor to Electrocopy Corporation, Philadelphia, Pa., a corporation of Delaware  
Filed Mar. 7, 1966, Ser. No. 541,419  
Int. Cl. G03g 15/00

U.S. Cl. 355-12

7 Claims

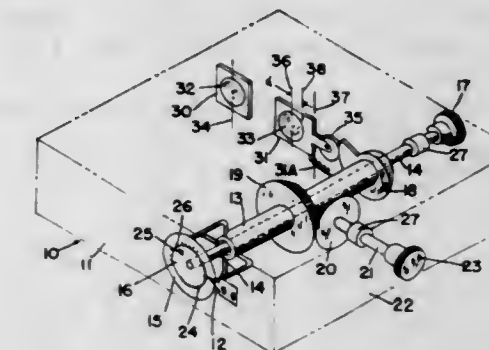


An electrostatic copy machine including a single upper half negative electrostatic charger and a cooperating ground plate disposed below the said charger half, and air duct paper separating means. The invention includes a method of electrostatic copying wherein a single exposing and charging chamber is utilized and lens systems and reflector systems have been eliminated by placing the original and transfer sheets together and then exposing the transfer sheet directly through the original sheet.

**3,459,478**  
**STADIAMETRIC RANGEFINDER INCLUDING A TRANSVERSELY MOVABLE LENS**  
Paul M. Marasco, Cherry Hill, N.J., and Walter W. Hollis, Salinas, Calif., assignors to the United States of America as represented by the Secretary of the Army  
Continuation-in-part of application Ser. No. 364,040, Apr. 30, 1964. This application Dec. 2, 1968, Ser. No. 780,503  
Int. Cl. G01c 3/22

U.S. Cl. 356-22

2 Claims

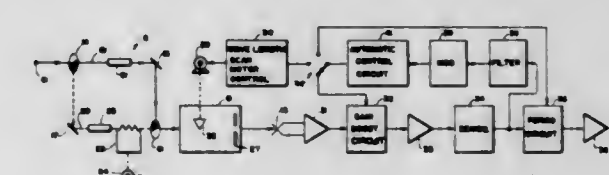


A stadiametric rangefinding instrument having a beam-splitting optical system including a prism cluster, formed of a rhomboid prism and a pair of porro prisms, to combine incident target image beams from stationary and movable lenses and direct the combined beams to a reticle and eye lens aligned therewith. The ranging mechanism, upon adjustment to provide for an estimated target width, has a range knob which rotates, through bevel gearing, a coaxial cam and range dial as the movable lens is translated laterally to follow the cam surface by a biasing spring. When, after initially setting the instrument with viewable coinciding target images range knob rotation enables viewing of transversely abutting or aligned end-to-end target images in a single exit pupil through the eye lens, the movable lens has moved laterally a distance representing a proportional amount of the target width and an accurate indication of the target range is observable on the range dial.

**3,459,479**  
**AUTOMATIC GAIN BOOST FOR ANALYZERS**  
Karl Erik Sundstrom, Fullerton, Kenneth Vincent Matthews, Garden Grove, and Wilbur Irving Kaye, Fullerton, Calif., assignors to Beckman Instruments, Inc., a corporation of California  
Filed Jan. 31, 1964, Ser. No. 341,607  
Int. Cl. G01j 3/42, 1/36

U.S. Cl. 356-89

11 Claims



The specification discloses an apparatus for reducing tracking errors in a double beam radiation analyzer of the optical null type. The apparatus comprises a gain boost circuit having a potential divider of two fixed resistors placed across the input of an amplifier in a comb servo loop. The input of the amplifier is taken across one of the fixed resistors while a variable resistor is placed in parallel with the other fixed resistor. The variable resistor is responsive to variations in intensity of the difference between the two beams, the variable resistor lowering in resistance as the intensity difference increases. The greater the intensity difference, the greater the input to the amplifier and, therefore the greater the gain of the

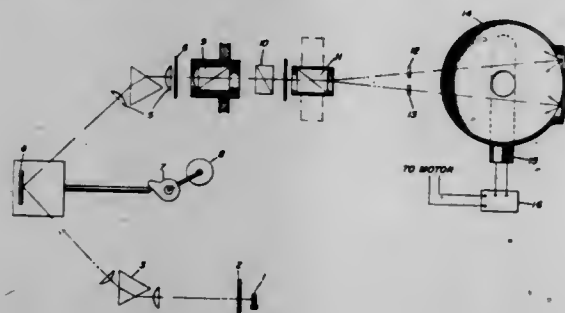


comb loop. The variable resistor may also be switched into a period circuit of the comb servo loop or into a scan motor control, both of which may be operated selectively or in conjunction with the gain boost circuit.

**3,459,480**  
**MODIFIED FLICKERING BEAM SPECTROPHOTOMETER PRODUCING DIGITIZED OUTPUT**  
William Benjamin Prescott, Bridgewater Township, Somerset County, and Henry C. Lawrence, Warren Township, Somerset County, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Dec. 31, 1964, Ser. No. 422,847  
Int. Cl. G01j 3/42, 3/46  
U.S. Cl. 356—90

4 Claims

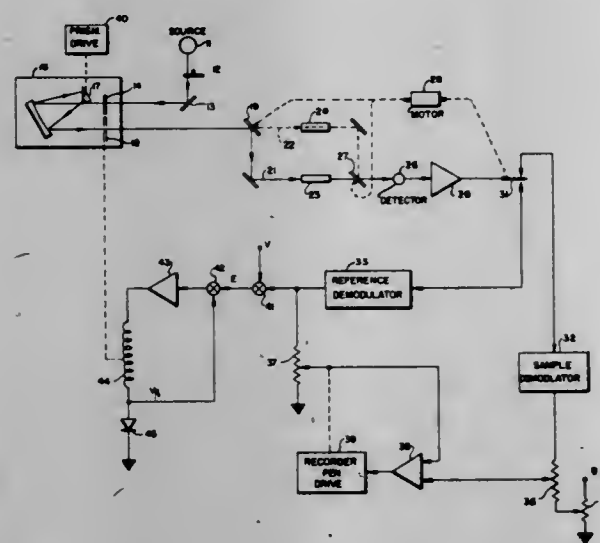


A flickering beam spectrophotometer is modified by driving the photometering polarizing element linearly from a motor actuated by flicker frequency differential signal from sample and reference beam, the same motor driving also linearly an analog to digital encoder to produce digitized spectrophotometric measurements at different wavelengths throughout the spectrum. Preferably the encoder encodes at a predetermined number of wavelengths and encoding readout is effective at the proper wavelengths by drive from the spectrophotometer monochromator.

**3,459,481**  
**SPECTROPHOTOMETER HAVING MAGNETIC SLIT-SERVO SYSTEM**  
Attila Denes Boronkay, La Habra, Calif., assignor to Beckman Instruments, Inc., a corporation of California  
Filed June 29, 1965, Ser. No. 467,918  
Int. Cl. G01j 3/42

U.S. Cl. 356—95

11 Claims

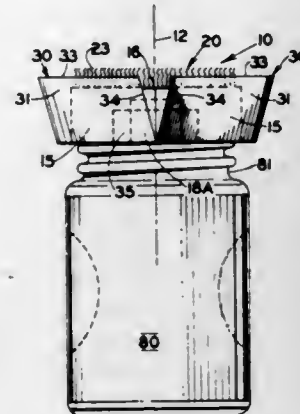


There is disclosed an improved slit servo system for use in optical double beam analyzers utilizing an electromagnetic drive for controlling the slit width of a monochromator. The improved slit servo system may be utilized with double beam radiant energy analyzers of either the ratio recording or optical null type. In such analyzers it

is the usual practice to develop an electrical reference signal proportional to the radiant energy incident upon the sample and to utilize this signal in the slit control loop for varying the slit jaws of the monochromator in such a manner as to maintain this signal constant. This reference signal is compared with a source of fixed potential to develop a difference or error signal. The error signal is applied to one input of a comparator and after amplification utilized to energize the electromagnetic drive mechanism for the slits. A silicon diode is connected in series with the electromagnetic drive. The voltage developed across this element is a logarithmic function of the current therethrough and the voltage thereacross is fed back to the comparator such that the output of the comparator is the difference between the error voltage and the feedback voltage. The input to the electromagnetic drive is therefore a linear function of the width of the slit.

**3,459,482**  
**APPLICATOR FOR FLUIDS**  
Lowell T. Fears, Council Bluffs, Iowa, assignor to Miracle Mask, Inc., Omaha, Nebr., a corporation of Nebraska  
Filed July 18, 1967, Ser. No. 654,219  
Int. Cl. A46b 15/00; A47l 1/00; B44d 3/28  
U.S. Cl. 401—15

8 Claims

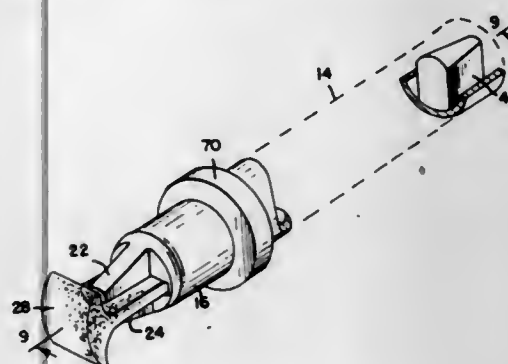


This invention relates generally to applicator devices for fluids. In particular this invention relates to an applicator for applying a removably adherent shield layer onto the border areas of a transparent window pane immediately adjacent to, but specifically excluding, the surrounding frame of the window pane whereby the frame may be subsequently painted without attendant paint application upon the border areas of the glass pane itself.

**3,459,483**  
**MARKING DEVICE**  
William A. Brastad, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware  
Filed Mar. 1, 1967, Ser. No. 619,696  
Int. Cl. B43k 23/02, 5/00

U.S. Cl. 401—131

10 Claims

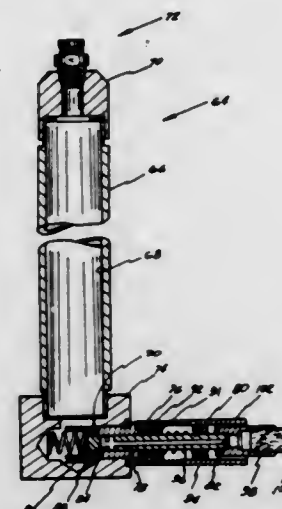


A marking device which includes a cylindrical barrel out of which a sponge wick or nib projects, thereby

forming a tip. The wick is saturated with a water soluble dye solution, and when the wick is in a moistened condition, the dye will leach out of it onto a surface against which the tip is pressed. A wedge-shaped plug is inserted within the opposite end of the barrel for inducing water to remain in the barrel when that end is dipped in a water source, thereby moistening the wick.

**3,459,484**  
**MARKING DEVICE**  
Paul S. Abrams, 25830 Berkley, Huntington Woods, Mich. 48070  
Filed May 1, 1967, Ser. No. 635,215  
Int. Cl. B43k 5/00; A46b 11/04; A47l 13/22  
U.S. Cl. 401—206

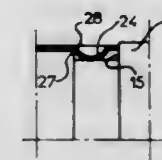
8 Claims



A production marking device comprising a barrel with an ink reservoir, an elongated feed member having an axial passage with a transverse inlet and an outlet and mounted to the barrel for reciprocal movement in a variable stroke between a retracted position where the inlet registers with the reservoir to admit ink into the passage and an extended position where the inlet is sealingly shut off from the reservoir. A porous nib attached to the feed member adjacent the outlet of the axial passage receives a metered quantity of ink during a marking stroke which is proportional to the length of the stroke.

**3,459,485**  
**FOUNTAIN-PEN CLOSING DEVICE BY MEANS OF A CAP**  
Guy Frederic Rigondaud, Paris, France, assignor to Societe Le Foyer et Cie, Paris, France, a body corporate  
Filed Jan. 19, 1967, Ser. No. 610,292  
Claims priority, application France, Jan. 21, 1966, 46,685  
Int. Cl. B43k 9/00  
U.S. Cl. 401—246

3 Claims

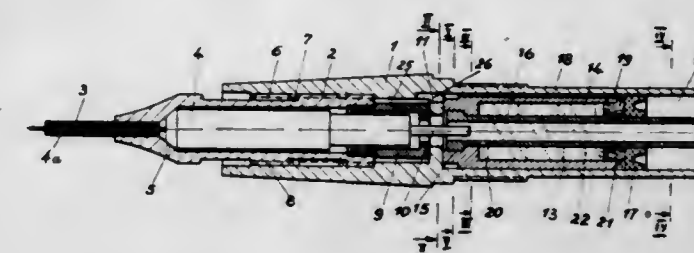


A writing instrument in which a resilient cap can be removably secured on a body to cover a tapered front section of the body at which the writing nib is located. At the rear part of the tapered section is a cylindrical groove which is adjoined by cylindrical surfaces forming radial shoulders at the ends of the groove. The cylindrical surface furthest from the tip has a greater diameter than that of the other cylindrical surface, and the cap has a plurality of internal part-spherical projections defining a

cylindrical interior opening which is smaller than the diameter of the smaller cylindrical surface whereby when the body is inserted into the cap, the latter is resiliently deformed, and when the projections reach the groove they are urged thereinto by the elastic action of the cap, the degree of penetration of the body into the cap being limited by the contact of the lower edge of the cap with the shoulder at the larger cylindrical surface.

**3,459,486**  
**WRITING UTENSIL**  
Franz Matschkal, Nuremberg, Germany, assignor to J. S. Staedtler Kommanditgesellschaft, Nuremberg, Germany, a German company  
Filed Aug. 3, 1967, Ser. No. 658,113  
Claims priority, application Germany, Aug. 5, 1966, St 25,722  
Int. Cl. B43k 5/00  
U.S. Cl. 401—259

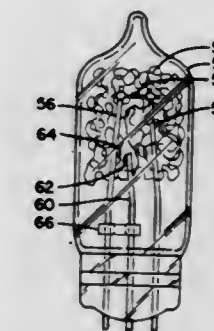
7 Claims



A writing utensil in which the writing fluid such as ink is supplied to the writing point from a storage chamber within the utensil and make-up air is admitted into the chamber through an air duct. Excessive outflow of ink near the writing point due to a pressure build-up in the storage chamber as caused, for instance, by a sharp temperature increase, is avoided by a pressure compensating chamber in which an excessive outflow of ink due to the pressure build-up is accumulated and from which it is gradually discharged when the pressure build-up subsides.

**3,459,487**  
**TEMPERATURE SENSITIVE DEVICES**  
Charles A. Glenn, 92 Four Mile Road, West Hartford, Conn. 06107  
Filed Feb. 2, 1966, Ser. No. 524,570  
Int. Cl. F21k 5/02; G03b 15/02, 9/70  
U.S. Cl. 431—95

6 Claims



Temperature sensitive electrical switch devices particularly well suited for incorporation in photo flash lamps, the switches being normally open and employing elements which undergo a permanent physical change in response to temperatures in excess of normal environmental temperatures, the physical change causing closing of the switches to establish an electrical circuit. The elements which undergo physical change in response to elevated temperatures may be a body of low temperature insulating material which normally electrically isolates a pair of conductors and/or adjacently situated fusible conductors or heat shrinkable plastic members.



3,459,488

**FLASHBULB AND ATTACHMENT FOR CAMERA**

Johann Schröder, Aachen, Germany, and Louis Marius Nijland, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 3, 1967, Ser. No. 628,091

Claims priority, application Netherlands, Apr. 2, 1966, 6604442

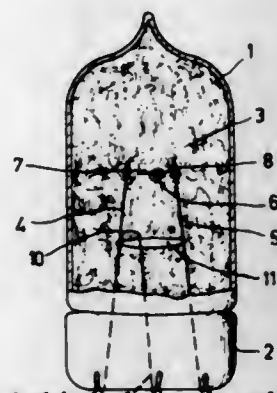
Int. Cl. F21k 5/02

U.S. Cl. 431-95

8 Claims

A flashbulb includes three current-supply elements with the filament secured between the first and second elements, and a globule of paste secured between the first and third elements. Upon ignition of the filament the bulb flashes producing actinic light. Reacting from either

the evolved actinic light or heat the paste globule dissociates becoming an electrically conductive bridge be-



tween the first and third elements, which bridge operates as a switch for ignition of an adjacent similar flashbulb.

## CHEMICAL

3,459,489

**CATIONIC DYESTUFFS, MIXTURES THEREOF AND THEIR USE IN DYEING FIBERS BASED ON ACRYLONITRILE**

Robert Frederic Michel Sureau, Enghien-les-Bains, and Marie Joseph Jeanne Aicot, Soisy-sous-Montmorency, France, assignors to Ugine Kuhlmann, Paris, France. No Drawing. Continuation-in-part of application Ser. No. 541,501, Apr. 11, 1966. This application July 5, 1967, Ser. No. 651,158

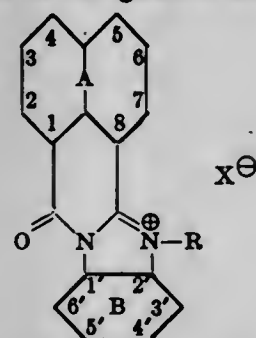
Claims priority, application France, Apr. 13, 1965, 13,041; Aug. 4, 1966, 72,028

Int. Cl. D06p 3/70

U.S. Cl. 8-25

11 Claims

Cationic dyestuffs of the general formula:



wherein the naphthalene nucleus A may be unsubstituted or substituted by one or two chlorine or bromine atoms, one or two hydroxy groups, or one or two O—Y groups in which Y represents an alkyl, aralkyl or aryl group, the benzene nucleus B may be unsubstituted or substituted by one or more chlorine or bromine atoms or methyl, nitrile, trifluoromethyl or O—Y groups, at least one of the nuclei A and B being substituted, R represents an alkyl or aralkyl group and X represents a monovalent anion.

Also mixtures of such cationic dyestuffs, their use in dyeing and fibres based on polymers or copolymers of acrylonitrile dyed with the dyestuffs or the mixtures thereof.

3,459,490

**METHOD AND APPARATUS FOR THE DISINFECTION OF TEXTILES AND OTHER DRYCLEANABLE ARTICLES DURING DRYCLEANING**

Heinrich Fühling, Augsburg, Klaus Wunderlich, Haunstetten, and Johannes Helmut Sleber, Neuss, Germany, assignors to Böhler & Weber KG Maschinenfabrik, Augsburg, Germany

Filed Apr. 13, 1964, Ser. No. 361,930

Claims priority, application Germany, Apr. 13, 1963, B 71,505

Int. Cl. D06l 1/00; A61l 3/00

U.S. Cl. 8-142

4 Claims

1. A method of drycleaning fabric infected with micro-

organisms, comprising the steps of agitating said fabric at a temperature below about 40° C. in contact with a liquid organic drycleaning solvent consisting essentially of perchloroethylene and having a boiling point above the temperature at which said micro-organisms upon entrainment in said solvent are destroyed; leading away at least a portion of the solvent upon its contamination with said micro-organisms; briefly heating said portion of said liquid solvent to a temperature of about 100° C. to 120° C. and sufficient to destroy said micro-organisms and substantially immediately thereafter cooling the heated solvent to a temperature below about 40° C.; and subsequently contacting soiled fabric with the solvent thus treated.

3,459,491

**METHOD OF DEODORIZING AMINE-CONTAINING MATERIAL UTILIZING CIS-SUCCINIC ACID OF GAUCHE FORM**

Tadataka Hara, Tokyo, Japan, assignor to Kaken Kagaku Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Application Nov. 15, 1966, Ser. No. 594,602, now Patent No. 3,352,759, dated Nov. 14, 1967, which is a continuation-in-part of application Ser. No. 860,227, Dec. 17, 1959. Divided and this application Aug. 3, 1967, Ser. No. 669,331

Claims priority, application Japan, Jan. 14, 1959, 34/534; June 29, 1959, 34/20,893

Int. Cl. A61l 3/00, 13/00

U.S. Cl. 21-55

3 Claims

1. A process for deodorizing amine-containing material comprising contacting the material with cis-succinic acid of Gauche form.

3,459,492

**RETARDING EVAPORATION OF WATER**

John D. Cawley and Orris D. Hawks, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 2, 1965, Ser. No. 472,077

Int. Cl. B01j 1/18

U.S. Cl. 21-60.5

31 Claims

Evaporation of water from reservoirs, ponds, lakes, tanks, and the like, is retarded by applying to the surface of the water a thin film formed from 1-monoglycerides of saturated, straight chain, fatty acids of 18 to 24 carbon atoms or a mixture of such monoglycerides and long chain primary alkanols.

3,459,493

**PROCESS FOR SAFELY REACTING ACTIVE METALS**

Francis J. Ross, Niagara Falls, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 23, 1967, Ser. No. 610,768

Int. Cl. C01g 1/00

U.S. Cl. 23-1

7 Claims

A safe, controllable, convenient process for reacting an active metal with a reactive liquid comprising immersing said metal in a two-layer liquid system, the top layer being a nonreactive liquid and the bottom layer being a reactive liquid.

3,459,494

**PROCESS FOR DECOMPOSITION OF OXIDES OF NITROGEN**

Samuel W. Harris, Chicago, Ill., Edwin F. Morello, Hammond, Ind., and Gavin H. Peters, Centerville, Ohio, assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Dec. 14, 1966, Ser. No. 601,561

Int. Cl. B01d 53/00

U.S. Cl. 23-2

10 Claims

1. A process for providing substantially complete decomposition of nitrogen oxide into nitrogen and oxygen, which method comprises contacting nitrogen oxide with a high melting, catalyst selected from at least one member of the group, consisting of alkali metal oxide, alkali metal silicates, alkaline earth metal oxides, alkaline earth metal silicates, and mixtures thereof at a temperature above about 700° C. for a time sufficient to convert the nitrogen oxide to nitrogen and oxygen.

3,459,495

**METHOD FOR THE REMOVAL OF HYDROGEN SULFIDE IN THE AIR OF WASTE GAS**

Suetoshi Iida, Yokohama-shi, Yoshio Marushima, Ichikawa-shi, and Nobuyasu Hasebe, Tokyo, Japan, assignors to Tokyo Gas Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Nov. 4, 1965, Ser. No. 506,399

Claims priority, application Japan, Apr. 14, 1965, 40/21,622

Int. Cl. B01d 53/34; C01b 17/04

U.S. Cl. 23-2

5 Claims

Method of desulfurizing gases containing hydrogen sulfide wherein said gases are contacted with an aqueous alkaline solution containing a material having an oxidation-reduction potential in aqueous solution at 25° C. of from 0.45 v. to 0.70 v. in the presence of molecular oxygen thereby simultaneously to desulfurize the gas and regenerate the absorbent solution. Exemplary of such materials are certain derivatives of naphthoquinone, anthraquinone and phenanthrene and their salts such as sodium-1,4-naphthoquinone-2-sulfonate.

3,459,496

**PROCESS FOR THE RECOVERY OF POTASSIUM FROM MOTHER AND WASTE LIQUORS OF THE TREATMENT OF POTASSIUM SALTS**

Alberto Scarfi and Emanuele Gugliotta, Siracusa, Italy, assignors to Sincat-Soc. Industriale Catanese S.p.A., Palermo, Italy, a corporation of Italy

No Drawing. Filed Jan. 27, 1965, Ser. No. 428,533

Claims priority, application Italy, Jan. 30, 1964, 2,017/64

Int. Cl. C22b 27/00

U.S. Cl. 23-50

3 Claims

A method for recovering metastable kainite or langbeinite from the final liquors and other aqueous wastes of processes for the recovery of potassium from minerals containing same, the liquid having a potassium concentration, as the chloride, as little as 4 moles per 1000 moles of solution, whereby, without evaporation, the desired

salt is precipitated at a temperature between 60° C. to 80° C. for kainite and upwardly of 80° C. for langbeinite after sufficient magnesium sulfate has been added to produce the salt, but in an amount not more than 30 moles of magnesium sulfate per 1000 moles of water, seed kainite or langbeinite being supplied to establish a crystal pattern. The salts are recovered without evaporation.

3,459,497

**INCREASING THE BULK DENSITY OF SODA ASH BY ADDING CALCIUM AND MAGNESIUM IONS PRIOR TO PRECIPITATION**

Joseph S. Coglatti, Jr., and Daniel J. Masterson, Green River, Wyo., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 315,896, Oct. 14, 1963. This application Mar. 10, 1967, Ser. No. 622,172

Int. Cl. C01d 7/26, 7/00

U.S. Cl. 23-63

4 Claims

Process for consistently producing soda ash of high bulk density (around 57 to 63 lbs./ft.<sup>3</sup>) wherein sodium carbonate is precipitated from an aqueous sodium carbonate solution, separated and dried by adding Ca<sup>++</sup> and Mg<sup>++</sup> to the aqueous sodium carbonate solution prior to precipitation of sodium carbonate. The amount added should be sufficient to permit at least 400 p.p.m. of both Ca<sup>++</sup> and Mg<sup>++</sup> (as calcium carbonate on a soda ash basis) to be found in the precipitated sodium carbonate provided that the minimum amounts of Ca<sup>++</sup> and Mg<sup>++</sup> that are found in the precipitated sodium carbonate are, respectively, 260 and 100 p.p.m. (as calcium carbonate on a soda ash basis).

3,459,498

**CONVERSION OF CYANATES TO THIOCYANATES**

Gerald A. Johnson, Austin, Tex., assignor to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

No Drawing. Filed May 7, 1965, Ser. No. 454,164

Int. Cl. C01c 3/00

U.S. Cl. 23-75

2 Claims

Cyanates are converted to thiocyanates by direct reaction with sulfur.

3,459,499

**METHOD FOR THE CONTINUOUS PREPARATION OF AN AQUEOUS AMMONIATED PHOSPHATE COMPOSITION**

George Clarence Mullen, Jr., Tulsa, Okla., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Apr. 29, 1966, Ser. No. 546,411

Int. Cl. C01b 25/28; C05b 11/10

U.S. Cl. 23-107

4 Claims

Aqueous ammonium phosphate plant nutrients are prepared by the continuous process wherein ammonia and wet-process phosphoric acid are reacted after first being introduced into a turbulent, aqueous stream. The acid is added subsequent to and downstream from the point of introduction of the ammonia, thereby ensuring that the reaction environment is basic. Reaction conditions are carefully controlled so that after the ammonium phosphates are formed enough polyphosphate ions, which are initially present in the acid, are available to sequester any metal impurities which may be present in the finished composition.



### 3,459,500 NOVEL LITHIUM SILICATE COMPOSITIONS AND PROCESS FOR PRODUCING SAME

Marnell Albin Segura, Baton Rouge, La., and Edward Allen Hunter, Lake Jackson, Tex., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 27, 1964, Ser. No. 414,408  
Int. Cl. C01b 33/32

U.S. Cl. 23—110 12 Claims  
This invention relates to an improved process for the preparation of water soluble lithium silicate compositions. The water-soluble lithium silicate is prepared by exchanging lithium salts over a strongly acidic ion exchange resin and subsequently employing a sodium silicate solution in a second exchange to produce the lithium silicate solution.

### 3,459,501 METHOD FOR PREPARING HIGH-SILICA FAUJASITE

Charles J. Plank, Woodbury, and Edward J. Rosinski, Almonesson, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Oct. 30, 1964, Ser. No. 407,881  
Int. Cl. C01b 33/28

U.S. Cl. 23—112 4 Claims  
A method of preparing a solid crystalline aluminosilicate zeolite involving the use of a preformed silica-alumina hydrosol or a preformed all-embracing silica-alumina hydrogel as a source of silica and alumina.

### 3,459,502 PRODUCTION OF ALUMINA FROM DAWSONITE

Robert A. Van Nordstrand, Tulsa, Okla., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 10, 1967, Ser. No. 622,091  
Int. Cl. C01f 7/38

U.S. Cl. 23—143 7 Claims  
A process for the production of alumina from sodium aluminum carbonate hydroxide such as dawsonite comprising heating the sodium aluminum carbonate hydroxide from about 500 or 700° F. to 1100° F. to produce a partial decomposition thereof, leaching the resulting product with water to remove sodium leaving a relatively pure aluminum hydroxide, and subsequently calcining this aluminum hydroxide, e.g. at 2100° F. to produce alumina.

### 3,459,503 HOT PRESSING TITANIUM DIOXIDE

Donald W. Roy and William F. Parsons, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,937  
Int. Cl. C04b 35/46; B29d 11/00; C01g 23/08

U.S. Cl. 23—202 9 Claims  
Producing infrared transmitting titanium dioxide optical elements by hot pressing titanium dioxide powder at a temperature of 800–1300° C. and at a pressure greater than 20,000 p.s.i. The resulting product has a density of from 99% up to and including the theoretical density of titanium dioxide.

### 3,459,504 FORMATION OF CARBIDE COMPOUNDS BY VAPOR DEPOSITION ON GRAPHITE BODIES

Ronald C. Bracken, Richardson, Ralph F. Stroup, Dallas, and Gene F. Wakefield, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Continuation-in-part of application Ser. No. 565,606, July 15, 1966. This application Oct. 21, 1966, Ser. No. 588,578

U.S. Cl. 23—208 7 Claims  
A process for forming carbide compounds by heating a

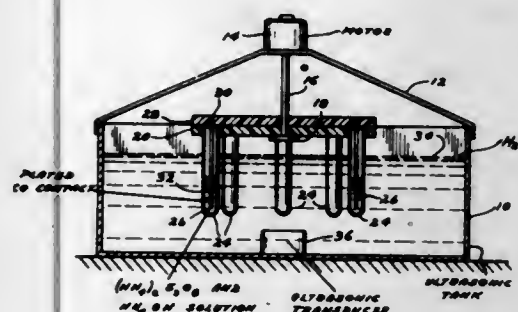
graphite body to an elevated temperature, passing a decomposable gaseous mixture of hydrogen and a compound of the element to be deposited over the graphite body, and subsequently elevating the temperature of the graphite body in order to effect penetration and conversion of the deposited element to a carbide of that element.

### 3,459,505 METHOD OF TESTING THE POROSITY OF COATED ARTICLES

Rexford E. Tweed, Mound, Minn., assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed Oct. 11, 1965, Ser. No. 494,718  
Int. Cl. G01n 33/20

U.S. Cl. 23—230 8 Claims



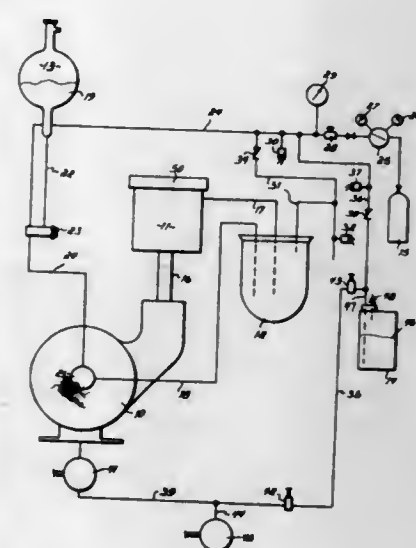
Articles to be tested are suspended in an ultrasonically agitated reagent capable of chemically dissolving the basis metal but not the coating, and the reagent is subsequently tested for the basis metal.

### 3,459,506 METHOD AND APPARATUS FOR DETERMINING AMOUNT OF LUBRICANT PRESENT ON TEXTILE FIBERS

Thomas W. Finucane, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Aug. 1, 1966, Ser. No. 574,886  
Int. Cl. G01n 31/16, 33/36, 1/28

U.S. Cl. 23—230 7 Claims



1. The method of determining the quantity of lubricant oil coated on a fiber, said lubricant oil carrying a titratable analyte therein; comprising the steps of  
(a) exposing a sample of said fiber to a liquid solvent medium, and

(b) titrating said analyte present in said liquid solvent x-axis, to get crystalline grains to grow in proportion to medium after it has been exposed to said fiber the distance through which they fall in the vessel, also sample.

### 3,459,507 METHOD FOR DETERMINING FREE PHOSPHORIC ACID CONTENT IN TRICHLOROETHYLENE-BASED PHOSPHATIZING BATHS

Robinson Ord, Jr., Deerfield, Ill., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 28, 1966, Ser. No. 605,204  
Int. Cl. G01n 31/16

U.S. Cl. 23—230 4 Claims  
A process for determining the free phosphoric acid content in a trichlorethylene-based anhydrous phosphatizing bath by a simple and efficient titration procedure on a sample obtained by partition using extraction by mutually insoluble solvents.

### 3,459,508 METHOD OF ASCERTAINING THE ALCOHOL CONTENT OF EXHALED AIR, AND ALSO A TESTING TUBE FOR CARRYING OUT SUCH METHOD

Lothar Miczka, Wellerfeldweg 225, Marl, Westphalia, Germany

Filed Mar. 25, 1966, Ser. No. 537,417  
Claims priority, application Germany, Mar. 26, 1965, M 64,661

Int. Cl. G01n 33/00 6 Claims

U.S. Cl. 23—232



A method and apparatus for ascertaining the alcohol content of exhaled air. An alcohol responsive indicator agent is positioned in a testing tube together with a serially positioned moisture-responsive indicator agent. A change of color of the moisture-responsive agent indicates that a predetermined volume of exhaled air has passed through the tube and through the alcohol responsive indicator agent. At this time, the color of the alcohol responsive agent is examined. A changed color of the alcohol responsive agent indicates an alcohol content of the exhaled air of at least a minimum known quantity.

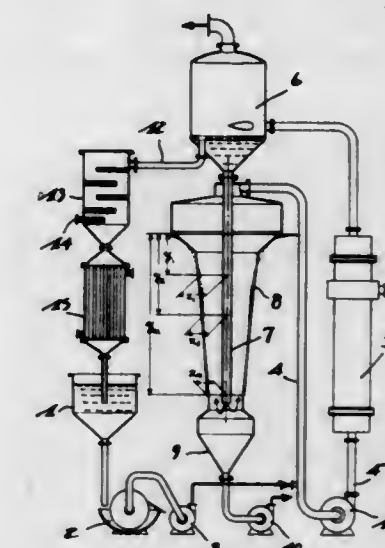
### 3,459,509 CONTINUOUS CRYSTALLIZATION APPARATUS FOR EVEN GRAINS

Yoshio Aoyama, Osaka, Japan, assignor to Daido Namarikakoki Company, Limited, Konohanaku, Osaka, Japan

Filed May 9, 1966, Ser. No. 548,690  
Int. Cl. B01d 9/02

U.S. Cl. 23—273 3 Claims

An apparatus having a crystallizer vessel the side wall of which has a profile approximately defined by a curve  $y = -1/x^{1/2}$  the vertical center line of vessel taken as the y-axis and the diameter at the top of vessel taken as the



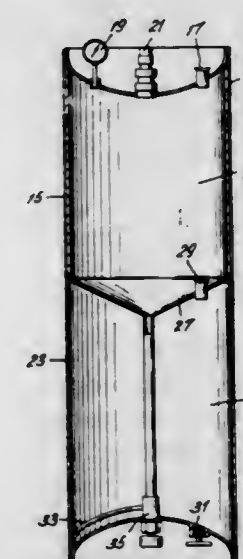
having a movable block to restrict a cross section of the crystallizer vessel at the neck thereof.

### 3,459,510 HYDROGEN GENERATOR

Lawrence M. Litz, Lakewood, and Jack E. Rothfleisch, Westlake, Ohio, assignors to Union Carbide Corporation, a corporation of New York

Filed Dec. 28, 1965, Ser. No. 516,915  
Int. Cl. B01j 7/02

U.S. Cl. 23—282 3 Claims



A portable, self-contained apparatus for the generation of hydrogen gas resulting from the contact of a liquid fuel with a solid metallic catalyst, such apparatus having the ability to vary the hydrogen production rate automatically as required to satisfy a variable consumption rate.

### 3,459,511 EXOTHERMIC CATALYTIC REACTION APPARATUS

Minoru Jotoku, Shinya Naka, and Naohiko Inada, Niigata-shi, Japan, assignors to Japan Gas-Chemical Company, Inc., Tokyo, Japan

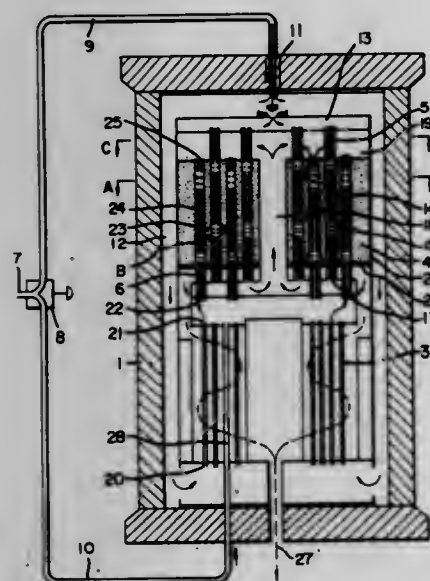
Filed Aug. 23, 1965, Ser. No. 481,475  
Int. Cl. B01j 9/16

U.S. Cl. 23—289 11 Claims

A self-heat exchange type apparatus suitable for use in an exothermic, catalytic, gaseous reaction of the synthesis of ammonia, methanol, etc., comprising a double



tube system where a plurality of cooling tubes are provided in a catalytic layer, said cooling tubes being arranged in counter-flow type and parallel-flow type in alternate and symmetrical manner and each of said cooling tubes consisting of inner and outer tubes, said inner tube being closed at one end and having openings provided at



different relative positions in the longitudinal direction at suitable intervals, whereby the amount of feed gas running through a passage formed between the inner and outer tubes is redirected longitudinally, and the temperature distribution is made uniform throughout the catalyst layer.

3,459,512

#### CENTRIFUGAL RECOVERY OF COPPER-VANADIUM CATALYST FROM ADIPIC ACID REACTION MIXTURE

James Massey Connolly and Christopher John Lowery, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Jan. 17, 1966, Ser. No. 520,916  
Claims priority, application Great Britain, Jan. 20, 1965, 2,547/65

Int. Cl. B01j 11/30

U.S. Cl. 23—293

4 Claims

A process for the recovery of metal catalyst comprising copper and vanadium compounds from the mother liquor obtained after separating adipic acid from the reaction mixture obtained by oxidizing with nitric acid starting materials containing cyclohexanol or cyclohexanone or their mixtures, which includes evaporating the mother liquor in the presence of sulphuric or phosphoric acid to remove water and nitric acid thereby leaving a molten residue, submitting the molten residue to centrifugal action and collecting the heavy fraction which separates as a result of the centrifugal action, the heavy fraction containing the copper and vanadium compounds and being recycled to the nitric acid oxidation step.

3,459,513

#### PROCESS OF EXTRACTION OF POLONIUM

Claudette Clmetiere, Chateau-Malabry, Jean Desroches, Malakoff, and Claude Routier, Paris, France, assignors to Commissariat à l'Energie Atomique

No Drawing. Filed Mar. 3, 1966, Ser. No. 531,366  
Claims priority, application France, Mar. 17, 1965, 9,572

Int. Cl. B01j 1/22; B01d 15/08; C01g 57/00

U.S. Cl. 23—312

7 Claims

A process is provided for the extraction of polonium from a mixture of bismuth and polonium wherein the mixture of bismuth and polonium is dissolved in a 0.5

to 2.0 N solution of nitric or hydrochloric acid, the acid solution obtained is contacted with activated charcoal for a time which is sufficient to absorb a substantial amount of the polonium, the acid solution containing the bismuth is separated from the activated charcoal and the polonium absorbed on the activated charcoal is desorbed therefrom by contacting the activated charcoal with 5 to 7 N nitric acid or by contacting the activated charcoal with metallic silver in a hydrochloric acid solution.

3,459,514

#### METHOD FOR PREPARING ALKALI METAL BOROHYDRIDES

James D. Johnston and Albert P. Giralda, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Continuation-in-part of applications Ser. No. 308,691, Sept. 13, 1963, and Ser. No. 322,054, Nov. 7, 1963. This application Oct. 1, 1964, Ser. No. 400,888

Int. Cl. C01b 6/14

U.S. Cl. 23—362

6 Claims

A method of preparing alkali metal borohydrides comprising reacting an alkali metal or alkali metal hydride, desiccated borax, hydrogen, and silicon, in an inert hydrocarbon at about 250° C. to 500° C. and 15 to 500 p.s.i.

3,459,515

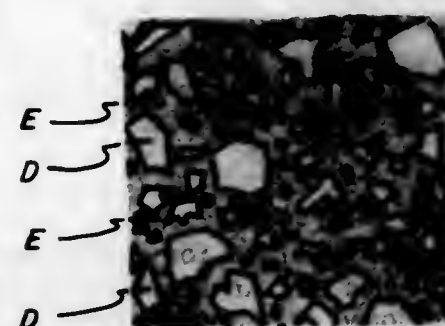
#### CERMETS OF ALUMINUM WITH TITANIUM CARBIDE AND TITANIUM AND ZIRCONIUM BORIDES

Oswald R. Bergmann, Cherry Hill Township, Camden County, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
Continuation-in-part of application Ser. No. 259,698, Feb. 19, 1963, which is a continuation-in-part of application Ser. No. 143,125, Oct. 5, 1961. This application Mar. 31, 1964, Ser. No. 356,699

Int. Cl. B01k 3/06; B22f 3/00

U.S. Cl. 29—182.8

8 Claims



Strong, current-conducting cermets useful, e.g., as electrodes in electrolytic cells, comprise a finely divided ceramic component of titanium carbide, alone or in admixture with titanium boride and/or zirconium boride, which ceramic component is bonded by about from 10 to 30% aluminum based on the total weight of the cermet. These cermets are characterized by being substantially free of self-bonding between the particles of ceramic component and having substantially all of such particles coated with metallic aluminum.

3,459,516

#### ELECTRICAL CONTACT TAPE

Henry Ty and Rene A. Dubuc, Attleboro, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Aug. 10, 1966, Ser. No. 571,609

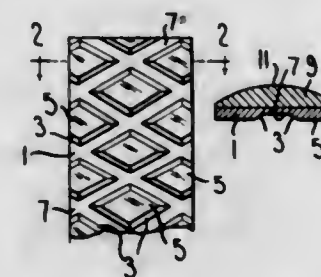
Int. Cl. B21b 15/00, 47/00

U.S. Cl. 29—191.6

4 Claims

A weldable base metal backing strip has a precious metal facing strip metallurgically bonded thereto to form

a composite which is knurled between pressure rolls to emboss low truncated diamond shaped pyramids extending from the face of the base metal backing strip. The



truncations are substantially flat and lie substantially in a common plane so that the resulting electrical contact material has improved weldability to supporting parts.

3,459,517

#### MEMORY ELEMENT WITH STACKED MAGNETIC LAYERS

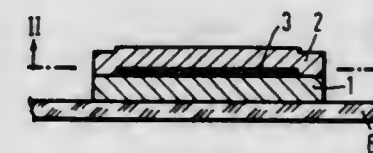
Ernst Feldtkeller and Karl-Ulrich Stein, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed Apr. 13, 1966, Ser. No. 542,362

Int. Cl. G11b 5/66

U.S. Cl. 29—191

2 Claims



A memory element composed of alternating layers of magnetic and electrically conductive non-magnetic materials wherein the magnetic layers are free of non-magnetic layers at the peripheral zones and extend generally parallel to the magnetically easy axis.

3,459,518

#### SULFONYL SUBSTITUTED TERPOLYMER FUEL DETERGENTS

Enver Mehmedbasch, El Cerrito, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Dec. 22, 1966, Ser. No. 603,787

Int. Cl. C101 1/24

U.S. Cl. 44—63

4 Claims

Terpolymer compositions of relatively low molecular weight having aliphatic 1-olefins of from about 8 to 30 carbon atoms, N-substituted maleimides and olefins having a sulfone interrupted chain. The compositions find use as detergents in fuels.

3,459,519

#### GAS-AIR SUPPLY SYSTEM

Arthur E. Wastle, Westfield, N.J., assignor to Drake & Townsend, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 7, 1965, Ser. No. 424,018

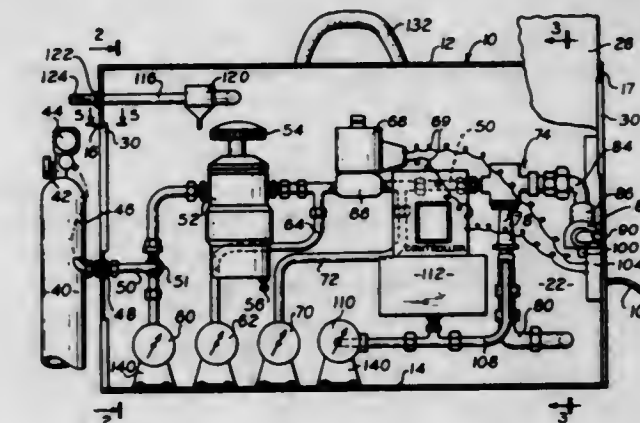
Int. Cl. C10k 3/06; B01f 3/04

U.S. Cl. 48—191

15 Claims

A portable, self-contained unit for converting gas from a liquefied petroleum gas storage cylinder to an air-gas mixture having the heating value of the State standard for city gas. The air for mixing with the liquefied petroleum

gas from the storage cylinder is drawn into the gas stream by an aspirator which delivers the gas-air mixture at the



pressure required for a domestic appliance which is designed for standard city gas.

3,459,520

#### PROCESS FOR THE PRODUCTION OF GASES CONTAINING METHANE FROM HYDROCARBONS

George Percival, Solihull, England, assignor to The Gas Council, London, England, a British body corporate

No Drawing. Filed Mar. 5, 1964, Ser. No. 349,752

Int. Cl. C10g 11/28

U.S. Cl. 48—214

6 Claims

A process is disclosed for the production of gases containing methane by reaction of paraffinic hydrocarbon vapour, the hydrocarbon having an average of from 4-15 carbon atoms per molecule, with steam by passing a mixture thereof into a bed of nickel catalyst at a temperature of at least 350° C. A portion of the reaction product gas is recycled and mixed with the hydrocarbon vapour-steam mixture prior to passage into the nickel catalyst bed. The catalyst bed is maintained between 400° C. and 600° C. This process enables the life of the catalyst to be prolonged.

3,459,521

#### METHOD OF AND APPARATUS FOR THE SHAPING OF PLASTIC SHEETS

Maurice Nedelec, Paris, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France

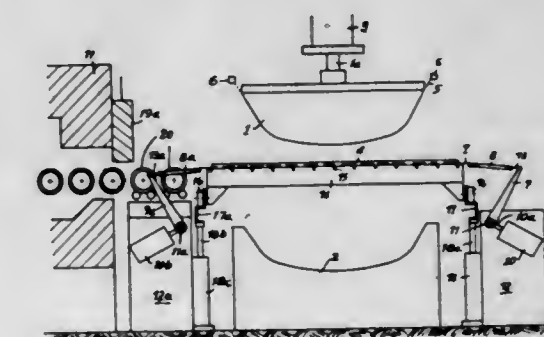
Filed Mar. 29, 1965, Ser. No. 443,384

Claims priority, application France, Apr. 2, 1964, 969,526, Patent 1,398,897, Apr. 5, 1965

Int. Cl. C03b 39/00

U.S. Cl. 65—25

8 Claims



Method and apparatus for shaping a sheet of glass. The hot glass sheet is positioned over a platen provided with orifices over its area and through which cushioning air is forced to support the sheet over the platen and a hammock of foraminous fabric is interposed between the platen and the hot glass sheet. After emplacement of the sheet over the platen, the air is cut off and the platen is lowered away from the hammock leaving the sheet supported by the hammock between upper and lower shaping dies. The dies are forced together with the sheet and hammock between them to shape the sheet.



### 3,459,522 METHOD OF TREATING A POROUS, HIGH SILICA CONTENT GLASS

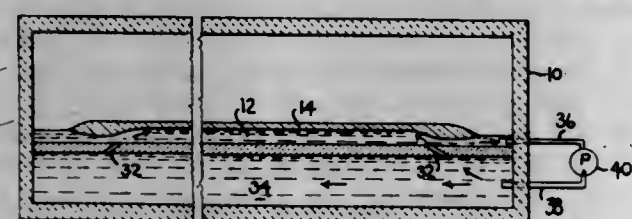
Thomas H. Elmer and Martin E. Nordberg, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York  
No Drawing. Continuation of application Ser. No. 293,249, July 8, 1963. This application Aug. 1, 1967, Ser. No. 657,708  
Int. Cl. C03c 21/00, 17/08

U.S. Cl. 65—30 10 Claims  
A method of removing residual water from a porous, high silica content, glass body in a flowing stream of a substantially dry, chlorine containing atmosphere at a temperature of 600°–1000° C. for a sufficient time, the atmosphere having such a low moisture content as to replace hydroxyl ions by chlorine ions and consolidating the treated porous body in a dry, nonoxidizing atmosphere to produce a nonporous, transparent substantially water-free glass article.

### 3,459,523 METHOD AND APPARATUS FOR THE MANUFACTURE OF FLOAT GLASS ON A BI-LEVEL SUPPORT BATH

Florian V. Atkeson, Springdale, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania  
Filed Aug. 4, 1966, Ser. No. 570,219  
Int. Cl. C03 18/02

U.S. Cl. 65—99 7 Claims



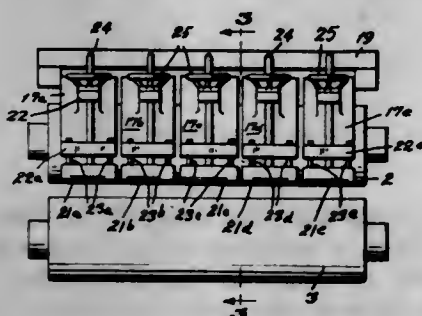
In the float glass process, to make glass of thicknesses differing from the equilibrium thickness, a force is applied to a portion of the body of the supporting liquid below the surface thereof so as to maintain the surface thereabove at a level different from that of adjacent surfaces and thus presenting a continuous casting or forming surface for molten glass.

### 3,459,524 APPARATUS FOR PRODUCTION OF ARMORED SHEET GLASS

Georg Hainke, Stolberg, Rhineland, Germany, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France  
Filed Oct. 2, 1963, Ser. No. 313,366  
Claims priority, application France, Oct. 5, 1962, 911,443

Int. Cl. C03b 13/12; C03c 27/02  
U.S. Cl. 65—150 12 Claims

1. In an apparatus for the production of glass sheets



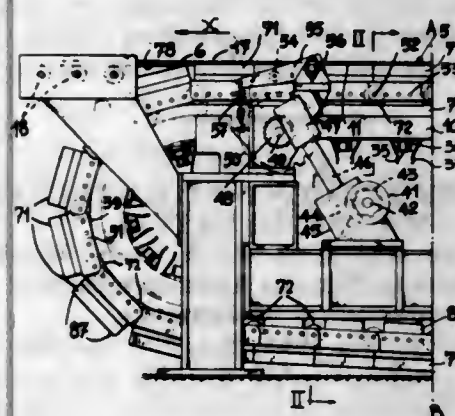
having reinforcement embedded therein, comprising, upper and lower horizontal spaced rollers adapted to draw molten glass from a source and flatten it into a sheet while drawing reinforcement for embedding into the glass as it enters between said rollers, a plurality of discrete guides having lower edges substantially aligned to

extend conjointly along and parallel with said upper roller and about which reinforcement passes in contact as it enters into the glass, and means operable to selectively and individually move each said guide to adjust its edge transversely with respect to the space between said rollers.

### 3,459,525 APPARATUS FOR THE PRODUCTION OF RIBBED GLASS SHEETS

Henri Discry, Ixelles, Belgium, assignor to Glaverbel, Brussels, Belgium  
Filed Sept. 13, 1965, Ser. No. 486,732  
Claims priority, application Luxembourg, Sept. 17, 1964, 46,970

Int. Cl. C03b 13/06 16 Claims

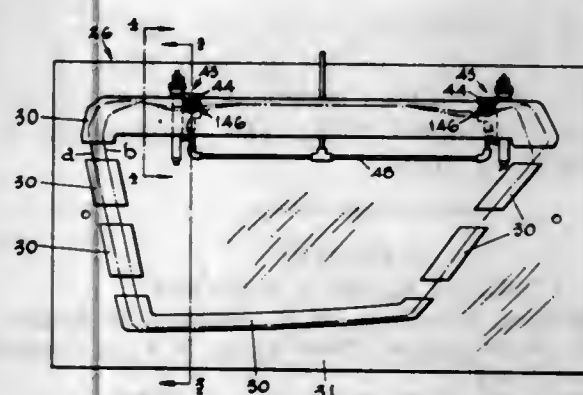


Apparatus for the production of sheets of glass having at least one surface with ribs in which a mobile, grooved support is adapted for longitudinal advancement, and a rotary roller is disposed above said support a distance equal to the thickness of the sheet of glass to be produced upon the passage of molten glass between the roller and mobile support. The support is constructed as inter-articulated carriages supporting spaced shoes, between which are formed the grooves, the shoes being removed from the sheet at a location where it is desired to remove the glass sheet from the support.

### 3,459,526 APPARATUS FOR BENDING GLASS SHEETS WITH ALIGNING MEANS

Allwin Stickel, Toledo, and Floyd T. Hagedorn, Oregon, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio  
Filed Jan. 24, 1966, Ser. No. 522,702

Int. Cl. C03b 23/00 5 Claims



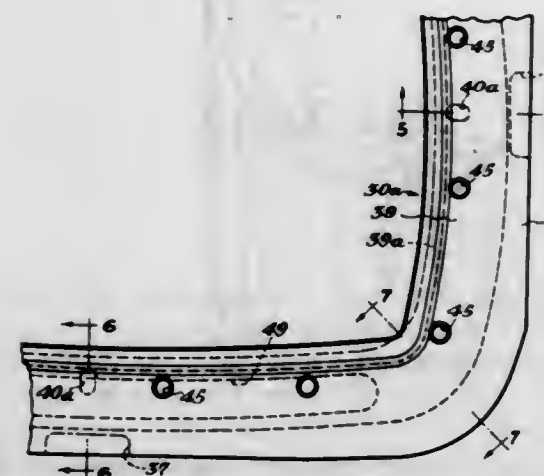
Adjustable stops for positioning the sheets in a glass sheet bending apparatus. The stops are pneumatically actuated and are independently adjustable to permit the angular relationships of the sheet relative to the bend-

ing mold to be varied, and means are provided to effect the adjustments remotely so that they can be made while the apparatus remains in operation.

### 3,459,527 CENTRIFUGAL FORMING MOLD

Gerald D. Peterson, Addison, and Harry J. Schaffer, Horseheads, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York  
Filed July 26, 1965, Ser. No. 474,738  
Int. Cl. C03b 19/04

U.S. Cl. 65—302 6 Claims



A ring mold for use in conjunction with a generally rectangular funnel-shaped centrifugal forming mold being constructed with channels or air chambers extending along the lengths of the ring mold which lie above the lengths of the sidewalls of said forming mold that are generally parallel with the major axis of the opening of the forming mold to provide thermal insulation to selectively cool and prevent crizzle on the sealing surfaces of the funnel members.

### 3,459,528 UREA CONDENSATION PRODUCT SLOW RELEASE NITROGEN FERTILIZER COMPOUNDS AND THE PREPARATION THEREOF

Robert A. Wiesboeck and John D. Nickerson, Atlanta, Ga., assignors, by mesne assignments, to USS Agri-Chemicals, Inc., Pittsburgh, Pa., a corporation of Delaware  
No Drawing. Filed Apr. 26, 1966, Ser. No. 545,261

Int. Cl. C05c 9/02 6 Claims

U.S. Cl. 71—28  
Bis(ureidomethylene)isobutylenediurea which is useful as a slow release nitrogen fertilizer is prepared by reacting isobutylenediurea with formaldehyde to form the dimethylol derivative at about 60–90° C. and at a pH above 7, and condensing the reaction product with an excess of urea at 20–90° C. at a pH of 1–4.

### 3,459,529 UREA-BIURET CONDENSATION PRODUCTS AS SLOW RELEASE NITROGEN FERTILIZER AND THE PREPARATION THEREOF

Robert A. Wiesboeck, Atlanta, Ga., assignor, by mesne assignments, to USS Agri-Chemicals, Inc., Pittsburgh, Pa., a corporation of Delaware  
No Drawing. Filed Apr. 26, 1966, Ser. No. 545,265

Int. Cl. C05c 9/00 10 Claims

U.S. Cl. 71—28  
Bis(ureidomethylene)biuret or bis(biuretmethylene)biuret or dimethylenetriurea which are useful as slow release nitrogen fertilizer are prepared by reacting dimethylolbiuret or dimethylolurea with urea or biuret at 20–90° C. and at a pH of 1–4.

885 O.G.—6

### 3,459,530 PRODUCTION OF GRANULAR MAGNESIUM AMMONIUM PHOSPHATE

John W. Hudson, Atlanta, Ga., assignor, by mesne assignments, to USS Agri-Chemicals, Inc., Pittsburgh, Pa., a corporation of Delaware

Filed Dec. 2, 1966, Ser. No. 598,647

Int. Cl. C05b 9/00, 19/00 5 Claims

U.S. Cl. 71—33  
A bed of magnesium ammonium phosphate granules is maintained in a rolling condition while introducing wet process phosphoric acid and ammonia beneath the rotating bed and while spraying a slurry of magnesium hydroxide over the bed so as to form alternate layers of monoammonium phosphate and magnesium hydroxide on the granules so that the layers may react at their interface to form magnesium ammonium phosphate.

### 3,459,531 METHOD OF THERMALLY EXPANDING VERMICULITE IN A HOT LIQUID AND PRODUCT PREPARED BY SAID PROCESS

Judson K. Chapin, Jr., Greenville, S.C., and David W. Robinson, Libby, Mont., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Feb. 16, 1966, Ser. No. 527,765

Int. Cl. C05b 7/00; C04b 31/26 11 Claims

U.S. Cl. 71—62  
Vermiculite is thermally expanded in a mixture of liquid plant nutrients to produce a fertilizer.

### 3,459,532 METHOD OF INCREASING SEED YIELD BY THE APPLICATION OF A MIXTURE OF TRIODOBENZOIC ACID AND FERTILIZER

Thomas J. Army, Northbrook, Ill., and Alvin J. Ohlrogge, West Lafayette, Ind., said Thomas J. Army assignor to International Minerals & Chemical Corporation, a corporation of New York, and said Alvin J. Ohlrogge assignor to Purdue Research Foundation, a corporation of Indiana

No Drawing. Filed Aug. 10, 1966, Ser. No. 571,424

Int. Cl. A01c 21/00; C05g 3/00 16 Claims

U.S. Cl. 71—80  
Seed yield of beans and peas is increased by placing a compound having an active 2,3,5-triodobenzoic acid moiety in the soil as a band parallel to the crop row at a distance of about 1 to 6 inches from the row and a depth of about 1 to 5 inches in the soil in admixture with a nitrogen and phosphorus-containing fertilizer in an amount to provide about one-half to four ounces per acre of the material calculated as 2,3,5-triodobenzoic acid equivalent.

### 3,459,533 N-(HYDROCARBYLTHIOALKYL)HALOPHENOXY-ACYLAMIDES AS HERBICIDES

William E. Weesner, Kettering, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Jan. 3, 1966, Ser. No. 518,012. Divided and this application Nov. 28, 1967, Ser. No. 708,445

Int. Cl. A01n 9/12, 17/00 4 Claims

U.S. Cl. 71—98  
Applicant of an N-(hydrocarbylthioalkyl)halophenoxy-acylamide as a preemergent and contact herbicide.



3,459,534

**METHODS OF CONTROLLING BACTERIA, FUNGI, NEMATODES AND WEED PESTS WITH TETRA-HALOXYBENZAMIDES**

Edwin Dorfman, Grand Island, and Edward D. Weil, Lewiston, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

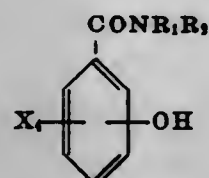
No Drawing. Continuation-in-part of application Ser. No. 241,128, Nov. 30, 1962. This application Nov. 29, 1965, Ser. No. 510,375

Int. Cl. A01n 9/20

U.S. Cl. 71-118

8 Claims

1. A method for the control of bacteria, fungi, nematodes, and weed pests which comprises applying to the locus to be treated a pesticidal amount of a compound of the formula



wherein X is selected from the group consisting of chlorine and bromine, R<sub>1</sub> and R<sub>2</sub> are substituents selected from the group consisting of hydrogen, alkyl, phenyl, benzyl, halophenyl, alkylphenyl and nitrophenyl, wherein the alkyl is of 1 to about 20 carbon atoms.

3,459,535

**TREATMENT OF COPPER BEARING COMPLEX SULPHIDES**

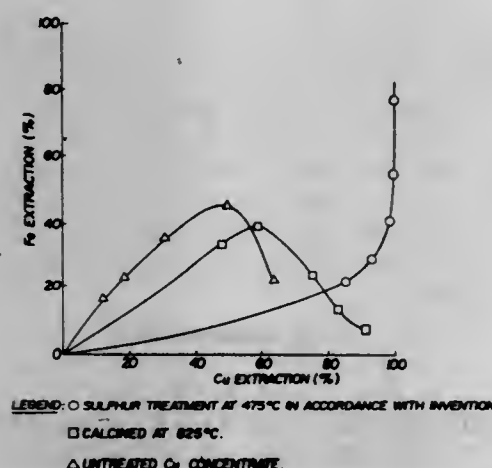
Andrew I. Vizzoli and Anna M. Armstrong, Vancouver, British Columbia, and Frank A. Forward, Ottawa, Ontario, Canada, assignors to Sherritt Gordon Mines Limited, Toronto, Ontario, Canada, a company of Canada

Filed Mar. 7, 1966, Ser. No. 532,444

Int. Cl. C22b 1/02, 15/08

U.S. Cl. 75-1

8 Claims



The method for pretreating complex copper-iron-sulphur mineral sulphides to improve their responsiveness to acid oxidation leaching. The complex sulphides are heated at a temperature within the range of 300° C. to 600° C. in contact with elemental sulphur for a time sufficient for at least a portion of the elemental sulphur to be taken up by the complex sulphides with concurrent formation of simple copper sulphides and iron sulphides.

3,459,536

**METHOD FOR MIXING MOLTEN METAL**

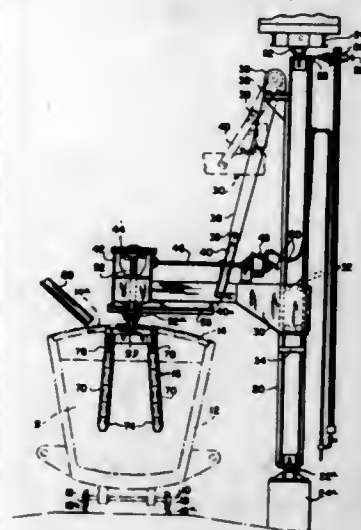
Robert E. Touzalin, Aurora, and Rudolph R. Patrick, Broadview Heights, Ohio, assignors to Interlake Steel Corporation, a corporation of New York

Original application Nov. 6, 1964, Ser. No. 409,393, now Patent No. 3,313,528, dated Apr. 11, 1967. Divided and this application Feb. 9, 1967, Ser. No. 632,845

Int. Cl. C21c 7/00; C21b 9/00

U.S. Cl. 75-45

5 Claims



A method for adding and mixing additive materials with molten metal in a ladle. The steps including mixing the molten metal by rotating an impeller mechanism, selectively regulating the rate of rotation of the impeller mechanism to cause a vortex to be formed in the molten metal, and feeding an additive material into the vortex for uniformly mixing the additive material with the molten metal.

3,459,537

**CONTINUOUSLY CAST STEEL SLABS AND METHOD OF MAKING SAME**

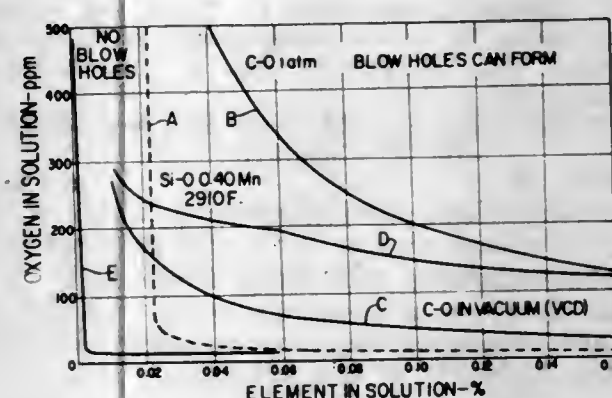
John N. Hornak, Munhall, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed Aug. 25, 1966, Ser. No. 574,997

Int. Cl. C21c 7/10; C22c 39/04; B22d 11/00

U.S. Cl. 75-49

5 Claims



A method of producing steel suitable for use in sheets and tin plate in a continuous-casting process. A steel free of blowholes in the as-cast condition and containing a controlled quantity and size of silicate inclusions is required. This necessitates lowering the total oxygen content of the steel to about 150 parts per million. The invention accomplishes this by adding a small quantity of silicon to the steel in the tap ladle to serve as a mild deoxidizer which precludes having a wild heat in the ladle, passing the steel through a vacuum zone, where oxygen and carbon are removed, and then adding aluminum as a further deoxidizer. The steel thus treated is cast to form a slab or bloom in a continuous-casting machine of any known construction.

3,459,538

**CORROSION RESISTANT LOW-ALLOY STEEL**

Akira Teramae, Kyoze Shimmyo, and Satoshi Kado, Tokyo, Yasuo Otaguro, Sagami-hara-shi, Ikuya Noda, Kamaishi-shi, and Tsugio Ikeda and Shoichi Nakanishi, Himeji-shi, Japan, assignors to Fuji Iron & Steel Co., Ltd., Tokyo, Japan

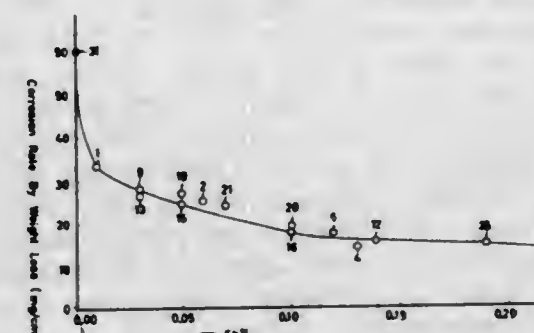
Filed Mar. 23, 1966, Ser. No. 536,914

Claims priority, application Japan, Mar. 25, 1965, 40/17,312

U.S. Cl. 75-125

Int. Cl. C22c 39/54, 39/30

4 Claims



Low alloy steel which is resistant to non-oxidizing acids. It consists essentially of not more than 0.80% of carbon, 0.20-1.50% of manganese, not more than 1.00% of silicon, 0.01-0.15% of antimony, not more than 0.03% of sulphur, not more than 0.030% of phosphorus, 0.08-0.60% of copper, the balance being substantially iron. The copper and antimony produce a synergistic effect on the resistance to the alloy to such acids.

3,459,539

**NICKEL-CHROMIUM-IRON ALLOY AND HEAT TREATING THE ALLOY**

Herbert L. Elselstein and Thomas H. Bassford, Huntington, W. Va., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 15, 1966, Ser. No. 527,490

Int. Cl. C22c 39/20; C21d 1/26, 1/60

U.S. Cl. 75-128

8 Claims

The invention is directed to an alloy containing about 29% to about 40% nickel, about 19% to about 25% chromium, about 0.2% to about 0.5% carbon, about 0.25% to about 1.25% titanium, up to about 1% aluminum, and the balance essentially iron. The alloy may be prepared by air melting and has high creep and rupture properties when heat treated at temperatures of about 2300° F. to about 2350° F. for at least about two hours.

3,459,540

**PRODUCTION OF CLEAN FINE GRAIN STEELS**

Norman F. Tisdale, Apt. 11K, Gateway Towers, Pittsburgh, Pa. 15222, and Rowland A. Tisdale, 144 Sunridge Drive, Pittsburgh, Pa. 15234

No Drawing. Filed Feb. 1, 1966, Ser. No. 523,889

Int. Cl. C21c 7/00

U.S. Cl. 75-129

6 Claims

A method of limiting nonmetallic inclusions and producing fine grain steels in improved ferrous metal alloys wherein a granular compacted iron, aluminum, and niobium composition is introduced into the melt at a predetermined rate.

3,459,541

**PROCESS FOR MAKING NODULAR IRON**

Willard R. Hohl, Oxford, and Charles Korpak, Union Lake, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Filed Sept. 22, 1966, Ser. No. 580,162

Int. Cl. C22c 37/10

U.S. Cl. 75-130

3 Claims

A method is disclosed for treating molten cast iron with magnesium to manufacture nodular iron. In a pre-

ferred embodiment magnesium particles and scrap cast iron or steel particles are mixed together and briquetted, magnesium making up 5% to 30% by weight of the briquettes. A suitable number of these briquettes are immersed in molten cast iron to obtain a retained magnesium content therein of about 0.035% to 0.07% by weight.

3,459,542

**POWDER METALLURGICAL PROCESS FOR PRODUCING LOW CARBON FERROCHROMIUM**

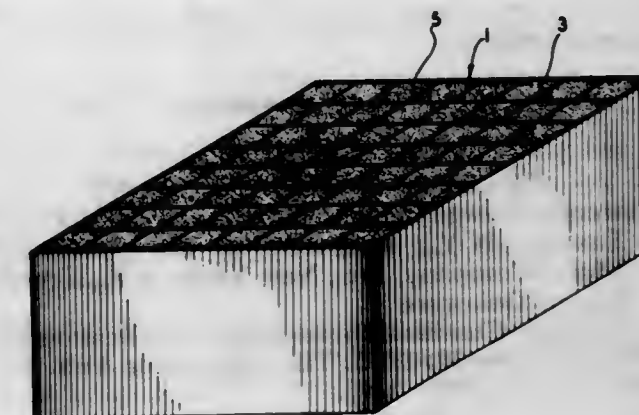
Ernest O. Knight, Marietta, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Filed Nov. 1, 1966, Ser. No. 591,184

Int. Cl. C22c 33/00, 39/14

U.S. Cl. 75-130.5

3 Claims



1. In the vacuum decarburization of a high carbon ferrochromium-oxidant mixture by heating the mixture at elevated temperatures under vacuum conditions to provide a chromium product containing a maximum of about 0.025% of carbon and about 64 to 72% chromium, the improvement which comprises:

- (1) providing a high carbon ferrochromium-oxidant mixture in the form of a dry, loose, mixture in which the average particle sizing of the high carbon ferrochromium is about 10 to 20 microns with at least 10% of the ferrochromium particles being retainable on a 200 mesh screen and in which the average particle sizing of the oxidant is about 3 to 5 microns,
- (2) introducing the mixture prior to heating, into a heat consumable container of predetermined size and,
- (3) heating the mixture in said container to cause reaction of the mixture and the production of the desired low carbon ferrochromium product whereby in the course of said heating the container is decomposed.

3,459,543

**SUPERCONDUCTING DEVICE**

Jean Mueller, Geneva, Switzerland, and Ernst Bucher, Murray Hill, N.J., assignors to Ciba Limited, Basel, Switzerland

No Drawing. Filed July 26, 1966, Ser. No. 567,816

Claims priority, application Switzerland, Sept. 1, 1965, 12,228/65

Int. Cl. C22c 25/00

U.S. Cl. 75-150

2 Claims

Devices are provided which have superconductive properties at temperatures up to 10° K., which are formed of an alloy of 90-99.5 atom percent of beryllium and 10-0.5 atom percent of rhenium.



### 3,459,544 HIGH STRENGTH ALLOY OF THE Cu-Al-Be SERIES

Seizo Watanabe, 61 Shinomiya-jutaku, 58 Kamishimagashira, Kadoma-cho, Kadoma-gun, Osaka-fu, Japan  
No Drawing. Continuation-in-part of application Ser. No. 317,888, Oct. 22, 1963. This application Jan. 17, 1967, Ser. No. 609,789

Claims priority, application Japan, Nov. 9, 1962, 32/50,442

Int. Cl. C22c 9/00

U.S. Cl. 75-162 2 Claims

An alloy of the Cu-Al-Be series particularly suitable for the propeller of a high speed ship, consisting essentially by weight, aluminum 8.6 to 9.8 percent, beryllium being present in proportion to said aluminum according to a fixed percentage, and the balance being copper. In a modified form there may be present small percentages of nickel, iron, cobalt, titanium, molybdenum chromium, and manganese. This alloy has excellent castability, and workability, excellent tensile strength, and more than fifteen percent elongation as cast, and excellent cavitation erosion resistance.

### 3,459,545 CAST NICKEL-BASE ALLOY

Clarence George Bieber, Suffern, and John J. Galka, Tuxedo, N.Y., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 468,154, June 29, 1965. This application Feb. 20, 1967, Ser. No. 617,071

Int. Cl. C22c 27/00

U.S. Cl. 75-171 6 Claims

Directed to a nickel-base alloy particularly useful in the form of castings such as in the form of turbine blades and the like and characterized by an improved resistance to corrosion due to the combined effects of chlorides and sulfur while retaining high creep strength at elevated temperatures. A preferred alloy contains about 16% chromium, about 10% cobalt, about 2% molybdenum, about 2.5% tungsten, about 1% columbium, about 1.25% tantalum, about 4% aluminum, about 3% titanium, about 0.18% carbon, about 0.02% boron, about 0.1% zirconium, and the balance essentially nickel.

### 3,459,546 PROCESSES FOR PRODUCING DISPERSION- MODIFIED ALLOYS

John B. Lambert, Mill Creek Hundred, Del., assignor, by mesne assignments, to Fansteel Inc., a corporation of New York

No Drawing. Filed Mar. 15, 1966, Ser. No. 534,416

Int. Cl. C22c 33/02, 1/05

U.S. Cl. 75-205 8 Claims

Powder metallurgy methods heretofore known for producing chromium-iron group metal alloys dispersion-strengthened with a particulate refractory oxide such as thoria have included the steps of compacting a powder containing chromium and the iron-group metal, with the refractory oxide dispersed therein, to a "green" billet of low strength and high porosity, canning the billet in a non-contaminating container such as a mild steel can, and hot-working the canned billet, as by extrusion, to theoretical density. The densified alloy so-obtained has an objectionably high excess oxygen content. By first heating the starting powder with nitrogen at 650 to 890° C. to convert the chromium to chromium nitride, CrN, then compacting it to a green billet, canning the billet, denitrating it with hydrogen at 900 to 1000° C., and hot-working it to a dense metal product while still in the can, the undesirable excess oxygen pick-up is avoided and alloy products having a clean microstructure are obtained.

### 3,459,547 METHOD OF MAKING A STRUCTURAL ALLOY STEEL CONTAINING COPPER AND OTHER ALLOY ELEMENTS

Eugene R. Andreotti, Geneva, and Sherwood W. McGee, Lisle, Ill., assignors to Burgess-Norton Mfg. Co., Geneva, Ill., a corporation of Illinois

Filed June 28, 1967, Ser. No. 650,570

Int. Cl. B22f 3/26; C21d 1/80

U.S. Cl. 75-208 9 Claims

This invention comprises an alloy system and method of fabrication for producing useful steel articles exhibiting tensile strengths on the order of 150,000 p.s.i. with useful ductility on the order of 1% to 2½% tensile elongation. The alloy system entails suitable metallurgical combinations of iron, carbon, copper, manganese, nickel, tin and minor elements combined through a process of copper liquefaction and high temperature capillary infiltration. Ferrous constituents in the alloy group are fabricated using metal powders and powder metallurgy techniques entirely. Cuprous members of this alloy system can be either as powdered components or as cast or wrought components.

### 3,459,548 SCAVENGERS FOR OXIDIZED DEVELOPING AGENT

Stanley M. Bloom, Waban, and Paul S. Huyffer, Lynnfield, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed July 24, 1967, Ser. No. 655,309

Int. Cl. G03c 7/00

U.S. Cl. 96-3 10 Claims

This invention relates to novel immobile reducing agents of the p-aminophenol type which may be defined as Zwitter ionic (inner) salts of p-aminophenols containing an anchoring or immobilizing moiety.

### 3,459,549 BRIDGED DIHYDROXYNAPHTHALENE AND BRIDGED DIHYDROXYANTHRACENE SIL- VER HALIDE DEVELOPING AGENTS AND ANTI-FOGANTS

Clarence E. McBride, David F. O'Brien, and John W. Gates, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 454,700, May 10, 1965. This application July 13, 1967, Ser. No. 653,031

Int. Cl. G03c 5/30

U.S. Cl. 96-66.5 22 Claims

Photographic developing agents and antifogants comprising bridged 1,4- and 1,2-dihydroxynaphthalenes and bridged 9,10-dihydroxyanthracenes.

### 3,459,550 DIAZOTYPE MATERIAL

Johannes Munder, Wiesbaden-Blebrich, Siegfried Scheler, Wiesbaden-Schlerstein, and Richard Brahm, Ingelheim, Germany, assignors to Keuffel & Esser Company, Hoboken, N.J.

No Drawing. Filed June 15, 1966, Ser. No. 557,617

Claims priority, application Germany, June 19, 1965, K 56,433

Int. Cl. G03c 1/54; C07c 113/04

U.S. Cl. 96-91 3 Claims

One-component diazotype material of improved light sensitivity includes a 2-alkylmercapto-4-alkyl amino alkylmercapto-5-alkoxy diazonium compound.

### 3,459,551 DIAZOTYPE MATERIAL

Herbert Rauhut, Wiesbaden-Blebrich, Germany, assignor, by mesne assignments, to Keuffel & Esser Company, Hoboken, N.J.

No Drawing. Filed May 5, 1966, Ser. No. 547,721

Claims priority, application Germany, May 8, 1965, K 56,061

Int. Cl. G03c 1/54; C07c 113/04

U.S. Cl. 96-91 13 Claims

Diazotype material of improved stability and light sensitivity includes a 3-quaternary ammonium-alkoxy substituted p-phenylene diamine derived diazonium compound.

### 3,459,552 SILVER HALIDE EMULSIONS CONTAINING MAGENTA-COLORED CYAN COUPLERS

Makoto Yoshida, Akio Okumura, and Katsuke Shiba, Ashigara-Kamigun, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan

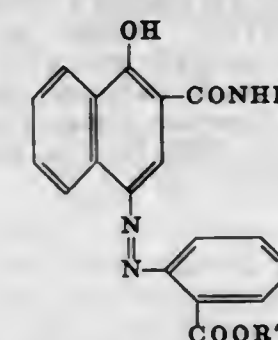
Filed Jan. 28, 1966, Ser. No. 523,686

Claims priority, application Japan, Feb. 3, 1965, 40/5,664

Int. Cl. G03c 1/40

U.S. Cl. 96-100 13 Claims

A color photograph silver halide emulsion containing a magenta-colored cyan coupler represented by the following formula:



wherein R is a mononuclear aryl radical substituted with at least one alkoxycarbonyl group having at least 9 carbon atoms; and R' is a lower alkyl group.

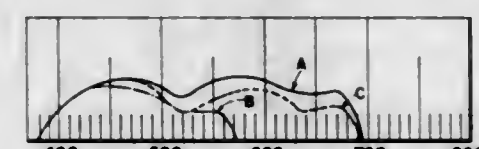
### 3,459,553 PHOTOSENSITIVE ELEMENTS

Vivian K. Walworth, Concord, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Oct. 11, 1965, Ser. No. 494,383

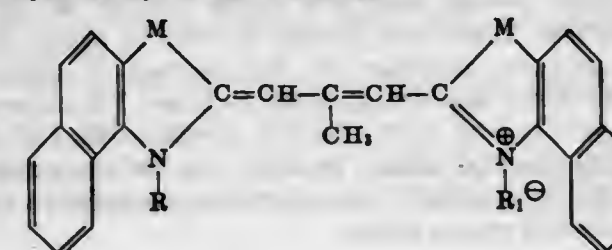
Int. Cl. G03c 1/28

U.S. Cl. 96-104 11 Claims

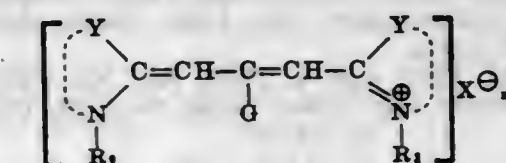


A—Anhydride-methyl-3,3'-bis-(1-sulfo-propyl)-naphthalene-[1,2-d]-thiocarbonyl hydrazide plus anhydride-3,3'-bis-(1-sulfo-propyl)-naphthalene-[1,2-d]-thiocarbonyl hydrazide  
B—Anhydride-3,3'-bis-(1-sulfo-propyl)-naphthalene-[1,2-d]-thiocarbonyl hydrazide  
C—Anhydride-11-methyl-3,3'-bis-(1-sulfo-propyl)-naphthalene-[1,2-d]-thiocarbonyl hydrazide

A photographic emulsion's spectral response characteristics may be extended by incorporating therein a super-sensitizing combination of cyanine dyes comprising a carbocyanine dye of the formula:



wherein M is selected from the group consisting of sulfur and selenium atoms; and R and R<sub>1</sub> are each a sulfoalkyl group; and a carbocyanine dye of the formula:



wherein G is selected from the group consisting of a hydrogen atom, a methyl group and an ethyl group; R<sub>2</sub> and R<sub>3</sub> are each an alkyl group; each Y represents the atoms necessary to complete a heterocyclic ring system of the benzoxazole series; X represents an anion; and n is an integer from 1 to 2.

### 3,459,554

#### PROCESS FOR RIPENING SILAGES

Shogo Hashimoto, Hyogo-ken, Japan, assignor to Kaken Kagaku Kabushiki Kaisha, Tokyo, Japan

No Drawing. Continuation-in-part of application Ser. No. 256,140, Feb. 4, 1963. This application Jan. 26, 1967, Ser. No. 611,820

Int. Cl. A23k 3/03; C12b 1/00

U.S. Cl. 99-8 4 Claims

The ripening of silage is improved by admixing with the green silage an antibiotic substance, a lactic acid bacteria culture resistant to the added antibiotic and an accelerator for the lactic acid fermentation.

### 3,459,555

#### REMOVAL OF MIXED SOLVENTS CONTAINING WATER FROM DEFATTED OILSEED MARC BY MEANS OF TREATMENT WITH A FOOD GRADE ACID

William H. King, Metairie, La., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed May 17, 1966, Ser. No. 550,652

Int. Cl. A23j 1/14, 3/00

U.S. Cl. 99-17 5 Claims

Aqueous-organic solvent mixtures are removed from a marc of protein-bearing comminuted oilseed meats by mixing, with continuous agitation in a dehydrating atmosphere, a select food acid with the marc to obtain a pH of about from 4.0 to 5.5 thereby inhibiting agglutination.

### 3,459,556

#### METHOD OF IMPROVING THE FLAVOR OF COCOA- AND CHOCOLATE-FLAVORED MATERIALS

Tatsuo Moroe, Musashino, and Staohiko Hattori, Akira Komatsu, Akira Saito, and Shigeru Muraki, Tokyo, Japan, assignors to Takasago Perfumery Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Continuation-in-part of application Ser. No. 495,316, Oct. 12, 1965. This application June 27, 1967, Ser. No. 649,101

Claims priority, application Japan, Oct. 17, 1964, 39/58,825

Int. Cl. A23g 1/00; A23l 1/26

U.S. Cl. 99-23 1 Claim

The flavor of vanillin containing cocoa-flavored and chocolate-flavored material is improved by adding tetramethyl pyrazine in an amount effective to improve their flavor.



3,459,557

**PROCESS FOR MANUFACTURE OF READILY DISPERSIBLE COCOA POWDER**

Tamotsu Ohashi, Kotaro Masuda, Masatake Imai, and Takeshi Morishima, Mishima-shi, Japan, assignors to Morinaga Confectionery Co., Ltd., Tokyo, Japan, a company of Japan

No Drawing. Filed Apr. 6, 1966, Ser. No. 540,529  
Claims priority, application Japan, Sept. 28, 1965, 40/59,087

Int. Cl. A23g 1/00

U.S. Cl. 99—26

4 Claims

Cocoa powder is rendered readily dispersible by de-airing powdered cocoa in a vacuum chamber and coating the de-aired particles with a hydrophilic surfactant by spraying same onto the cocoa particles in the form of a solution thereof.

3,459,558

**COFFEE PELLET PROCESS**

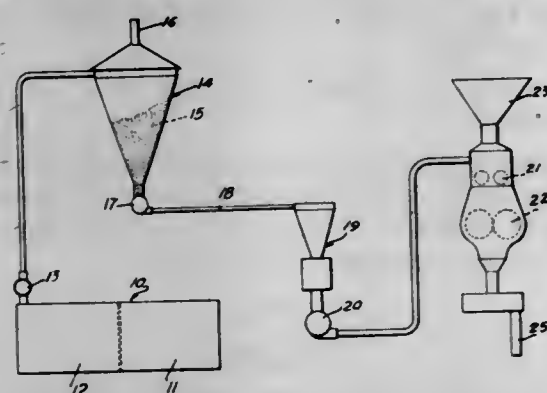
Roy F. Farmer, Los Angeles, and William Lloyd Chandler, Westminster Calif., assignors to Farmer Bros. Co., Torrance, Calif., a corporation of California

Filed Dec. 30, 1965, Ser. No. 517,731

Int. Cl. A23f 1/00, 1/02

U.S. Cl. 99—65

4 Claims



A process of preparing roasted coffee beans wherein the whole coffee beans are roasted, cooled and then cracked or ground to form the finished product including the steps of: removing the coffee chaff from the roasting operation, collecting said chaff, transferring said chaff to a pelletizer for forming into extruded pellets and adding the resulting pellets to the whole roasted coffee beans in the cracking or grinding step to form a finished product containing the treated chaff in a form substantially indistinguishable from the remaining coffee.

3,459,559

**DISPERSIBLE FOOD COMPOSITIONS**

Robert M. Harris, Arlington Heights, Edward A. Knaggs, Deerfield, and John A. Yeager, Winnetka, Ill., assignors to Stepan Chemical Company, Northfield, Ill., a corporation of Delaware

No Drawing. Filed Aug. 9, 1965, Ser. No. 478,463

Int. Cl. A23i 1/34; B01f 17/30; C11d 1/14

U.S. Cl. 99—78

5 Claims

Rapidly-soluble flavor composition of a water insoluble acidulant admixed with a water soluble alpha sulfo anionic surfactant and a water soluble nonanionic surfactant having hydrophobe and hydrophile groups within its molecule.

3,459,560

**SINGLE-STAGE ANGEL FOOD CAKES**

Richard A. Shea, St. Louis Park, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Feb. 7, 1966, Ser. No. 525,354

Int. Cl. A21d 13/08

U.S. Cl. 99—92

13 Claims

Single-stage chemically leavened angel food cake dry mixes which do not necessitate a recipe beating step are

obtained by the utilization of hydrophilic film formers and a leavening acid having a neutralization value of at least 100 as mix ingredients. The leavening acid is present in the mix in an amount sufficient to neutralize at least 90 percent of the leavening base. In combination with leavening acid an effective amount of hydrophilic film former sufficient to provide a viscous batter and entrap the carbon dioxide produced by the leavening system is employed.

3,459,561

**ADDITION OF ANTIOXIDANTS TO FREEZE-DRIED MEAT**

Donald E. Mook, Syracuse, and Patrick L. McRoberts, Camillus, N.Y., assignors to Borden, Inc., New York, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 13, 1965, Ser. No. 487,035

Int. Cl. A23b 1/14

U.S. Cl. 99—157

5 Claims

This invention relates to the method of preparing fat-containing freeze-dried meat products which are substantially free from off-odors and oxidative rancidity which comprises spraying an antioxidant onto a freeze-dried meat product.

3,459,562

**PROCESS FOR PRODUCTION OF INSTANT MASHED POTATO PRODUCTS OF VARIED BULK DENSITIES FROM A FOAMED SLURRY OF COOKED POTATO SOLIDS**

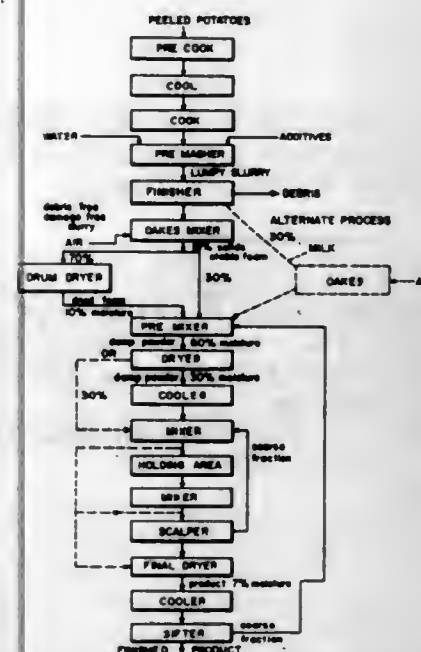
Roderick G. Beck and Joe H. Rainwater, Blackfoot, Idaho, assignors to American Potato Company

Filed Apr. 14, 1966, Ser. No. 542,597

Int. Cl. A23i 1/12

U.S. Cl. 99—207

4 Claims



Roughly peeled potatoes are conventionally precooked, cooled, cooked, and, with the addition of water and desired additives, mashed to a slurry, and passed through a properly-operated finisher to produce a peel- and other debris-free slurry of about 18% essentially unicellular potato cells and the additives in water. This slurry is then foamed to a stable foam by various known methods and about 70% of the resulting foam is dried down to about 10% moisture on a drum drier and fed to a mixer where it is mixed with the balance of the undried foam to produce a fluffy, porous mashable damp powder of about 60% moisture. This damp powder is dried to about 30% moisture and by variation in the manner of holding, cooling, agitating, and drying down to about 7% moisture the bulk density and reconstitution characteristics of the final instant mashed potato product can be controllably varied from substantially that of potato granules to substantially that of potato flakes.

3,459,563

**PROCESS FOR THE PRODUCTION OF BLACK COLLOIDAL-SILVER DISPERSION**

Yahachi Terashima and Yukio Yasuda, Ashigara-Kamigun, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Ashigara-Kamigun, Kanagawa, Japan

No Drawing. Filed Oct. 29, 1965, Ser. No. 505,734  
Claims priority, application Japan, Nov. 9, 1964, 39/63,103

Int. Cl. G03c 1/84

U.S. Cl. 106—1

6 Claims

A process for producing black colloidal-silver dispersions which comprises reacting a silver halide emulsion formed in a hydrophilic protective colloid with 0.0001 to 0.1 mole of borohydride per mole of silver halide in the emulsion, about 0.08 to 80 percent of the equivalent weight of the borohydride required to reduce all of the silver halide being present. A photographic developer is also present as a reactant.

3,459,564

**HIGH DENSITY ALUMINA AND METHOD FOR PRODUCING IT**

Irwin M. Lachman, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 506,121, Nov. 2, 1965. This application Feb. 14, 1967, Ser. No. 615,896

Int. Cl. C04b 35/10

U.S. Cl. 106—39

6 Claims

High density sintered high purity alumina having regular grain growth and improved translucency containing 0.01 to 0.4% by weight of cobalt calculated as cobalt oxide. The alumina is 99.9+% pure and substantially free from a significant amount of siliceous material. Cobalt compound, convertible to cobalt oxide on sintering, mixed with high purity compound. Temporary vehicle may be used in mixing. Composition may be pre-fired at low temperature and then sintered at 1500°–1900° C. Compression glaze applied to surface significantly improves strength of article.

3,459,565

**FOAMABLE GRANULE PRODUCT WITH METHOD OF PREPARATION AND MOLDING**

Giffin D. Jones and William J. McMillan, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 204,048, June 19, 1962, Ser. No. 510,418, Oct. 1, 1965, and Ser. No. 523,528, Jan. 28, 1966. This application Mar. 13, 1967, Ser. No. 622,459

Int. Cl. C03b 19/08; C03c 3/04

U.S. Cl. 106—40

8 Claims

A method of preparing an unfoamed, foamable glass mass containing undissolved, entrapped, compressed gas which comprises melting a glass mass under at least 100 p.s.i. pressure of an inert gas, and maintaining said pressure during cooling until said mass has solidified.

3,459,566

**PROCESS FOR PRODUCING SILICON CARBIDE ARTICLES EMPLOYING PYROMELLITIC DIANHYDRIDE-LIMONENE DIOXIDE MIXTURE**

Bonum S. Wilson, Jr., Youngstown, and Carl von Doenhoff, Niagara Falls, N.Y., assignors to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 3, 1967, Ser. No. 606,563

Int. Cl. C04b 35/56

U.S. Cl. 106—44

11 Claims

Dense, self-bonded articles consisting essentially of silicon carbide may be produced according to prior art meth-

ods by forming a compact, with the aid of a temporary carbonizable binder, of silicon carbide and carbon and siliconizing the same to convert the carbon to silicon carbide. The use of a reactive mixture of limonene dioxide, pyromellitic dianhydride and a suitable catalyst to form the temporary binder in such methods results in an improvement by avoiding the occurrence of cracks which form when the prior processes are employed to make large, intricate articles.

3,459,567

**METHOD FOR PRODUCING PORCELAIN ARTICLES**

Noboru Yamamoto and Noboru Niguchi, Nagoya, Japan, assignors to NGK Insulators, Ltd., Nagoya, Japan

Filed Nov. 8, 1965, Ser. No. 506,754

Claims priority, application Japan, Nov. 16, 1964, 39/64,330

Int. Cl. C04b 33/26

U.S. Cl. 106—46

12 Claims

A porcelain article having higher mechanical strength than that of conventional porcelain articles is disclosed in which the crystalline phase of the porcelain body of the article comprises mullite, cristobalite, corundum, and quartz. A method for producing the porcelain articles is also disclosed wherein 3 to 15 parts by weight of mullite, 3 to 10 parts by weight of cristobalite, and 3 to 10 parts by weight of alumina are added as additives to 100 parts by weight of common porcelain batch mixed thoroughly and fired at a temperature between 1,200° to 1,450° C. so as to produce mullite, cristobalite, corundum, and quartz in crystalline phase in the fired porcelain body.

3,459,568

**HIGH STRENGTH FIBER GLASS**

Dale W. Rinehart, Natrona Heights, Pa., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed June 22, 1965, Ser. No. 466,058

Int. Cl. C03c 13/00

U.S. Cl. 106—52

2 Claims

The instant invention relates to a novel glass composition exhibiting high strength in fibrous form. More particularly, the present invention relates to fibers of a magnesia-titania-alumina-silica glass having high tensile strength and high moduli of elasticity. The invention especially pertains to glass fibers of the following composition.

Component:	Percent by weight
SiO <sub>2</sub>	54–62
Al <sub>2</sub> O <sub>3</sub>	20–27
MgO	5–11
TiO <sub>2</sub>	2–10
Li <sub>2</sub> O	0–2

3,459,569

**GLASS COMPOSITIONS**

James Leslie Ellis, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed Sept. 29, 1966, Ser. No. 583,105

Int. Cl. C03c 1/00, 17/00; C23d 5/00

U.S. Cl. 106—52

7 Claims

1. A solder glass compositions wherein said composition consists essentially of 10 to 22 mole percent Li<sub>2</sub>O, 5 to 12 mole percent Cu<sub>2</sub>O, 0 to 3 mole percent Fe<sub>2</sub>O<sub>3</sub>, 0 to 2.5 mole percent MnO<sub>2</sub>, 6 to 10 mole percent Al<sub>2</sub>O<sub>3</sub>, and 55 to 70 mole percent SiO<sub>2</sub>.



3,459,570

## AMIDE GRINDING AID

Frank G. Serafin, Peabody, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,893  
Int. Cl. C04b 7/02, 7/40

U.S. Cl. 106—90 10 Claims  
Minerals and portland cement are interground with a compound of the formula  $R-\text{CONH}_2$ , wherein R is an alkyl or a phenyl group (e.g. acetamide) to enhance the efficiency of the grinding operation. The mineral can be a naturally occurring inorganic mineral or a partially processed mineral.

3,459,571

## REINFORCED HYDRAULIC CEMENTS AND CASTS THEREFROM

Richard F. Shannon, Lancaster, Ohio, assignor to Owens-Corning Fiberglass Corporation, a corporation of Delaware

No Drawing. Filed Jan. 10, 1966, Ser. No. 519,462  
Int. Cl. C04b 11/14; B32b 17/06; C09d 3/20

U.S. Cl. 106—114 8 Claims  
A reinforced gypsum containing glass fibers surrounded by a non water soluble starch capable of undergoing pyrolysis to provide a cooling action which preserves the fibers when the gypsum material is subjected to fire.

3,459,572

## INTENSIFICATION OF LAKE COLORS

Samuel Lee, Fairlawn, N.J., assignor to Gelgy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 441,361, Mar. 19, 1965. This application Jan. 31, 1968, Ser. No. 701,879

Int. Cl. C09b 63/00

U.S. Cl. 106—289 8 Claims  
The tintorial strength of insoluble coloring agents is increased by incorporation into a non-bleeding lake. The lake is formed by dispersing a water insoluble color agent in a small amount of water with a water soluble anionic or non-ionic surface active agent with an HLB value of 10–25, adding a laking agent to the dispersion, drying, and reducing the dried material to a powder. The particles of the coloring agent and laking agent in the dried material are covered with a layer of the surface active agent.

3,459,573

## NACREOUS PIGMENT OF BLACK PEARL TONE

Yoshio Morita, Tokyo, Takaji Watanabe, Omiya-shi, Saitama-ken, Hisao Suzuki, Tokyo, and Junji Kawamura, Tokorozawa-shi, Saitama-ken, Japan, assignors to Koppers Company, Inc., a corporation of Delaware

Filed Dec. 19, 1966, Ser. No. 602,642  
Claims priority, application Japan, Dec. 28, 1965, 40/80,680

Int. Cl. C09c 1/14; C09d 5/36

U.S. Cl. 106—291 10 Claims  
Iridescent, substantially uniform, light-transmitting crystalline platelets of a lead salt, such as basic lead carbonate, are converted to highly lustrous crystalline platelets of black pearl tone by forming, through chemical reaction, a uniform layer of mixed lead sulfide salts on the surface of the platelets. The iridescent platelets, which have an optical thickness of about 180–2000 m $\mu$ , are treated in aqueous solution with an inorganic sulfide, such as sodium sulfide. The resulting chemical reaction on the surfaces of the platelets provides uniform upper and lower surface layers of mixed lead sulfide salts, the optical thickness of each layer being about 10–30 m $\mu$ . A nacreous pigment made by the conventional dispersion of the novel platelets of black pearl tone is used in the production of

simulated black pearls and as a finish for acrylic and polyester castings.

3,459,574

## OPACIFYING PIGMENT GLASS COMPOSITION

Oswin B. Willcox, Kenneth M. Kolb, and Rajnikant B. Amin, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 412,868, Nov. 20, 1964. This application Feb. 23, 1966, Ser. No. 529,253

Int. Cl. C09c 1/36; C03c 5/02, 3/04

U.S. Cl. 106—300 8 Claims  
On opacifying pigment, the particles composed of a glass matrix having therein 10 to 35 percent by volume of recrystallized, stabilized opacifying oxide of a metal such as titanium, the particle size of the glass and oxide of titanium being, respectively, 1 to 60 microns and 0.01 to 1.0 micron.

3,459,575

## TITANIUM PIGMENT MANUFACTURE

Bertha M. Andrew, Wilmington, Del., and Karl E. Blumenberg, Baltimore, Md., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 5, 1965, Ser. No. 453,485

Int. Cl. C09c 1/36, 3/00; C01g 23/04

U.S. Cl. 106—300 1 Claim  
A process is provided for finishing pigmentary rutile  $\text{TiO}_2$  to improve and enhance the color brightness by incorporating in an aqueous slurry of the  $\text{TiO}_2$  pigment, from about 0.3% to about 20% by weight based on  $\text{TiO}_2$ , of a salt of a metal which deposits as a hydrous oxide onto the rutile when the aqueous slurry is neutralized, and maintaining the slurry subsequent to the incorporation and prior to the neutralization for at least 15 minutes under highly alkaline conditions in the pH range from 10 to 14.

3,459,576

ACID-REACTING CERAMIC GRADE ANATASE  $\text{TiO}_2$  PIGMENT

Donald J. Smith, Sanford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 30, 1966, Ser. No. 597,843

Int. Cl. C09c 1/36; C03c 5/02

U.S. Cl. 106—300 4 Claims  
Pulverulent acid-reacting anatase  $\text{TiO}_2$  product containing 0.1% to 3.0% of adsorbed  $\text{H}_2\text{SO}_4$ , for use in glass (ceramic) formulations, prepared by calcining at low 650–850° C. temperatures a previously washed, salt-free hydrolyzate from the hydrolysis of a concentrated titanium sulfate solution until a portion only of the adsorbed sulfuric acid present in said hydrolyzate is removed.

3,459,577

## PROTECTIVE COATING

Jaques Weibel, Zurich, Switzerland, assignor to Dorit Chemie- und Handels AG, Zurich, Switzerland

No Drawing. Filed Nov. 27, 1962, Ser. No. 240,407

Claims priority, application Germany, Dec. 5, 1961, D 37,607

Int. Cl. C08f 45/30; C23b 7/08

U.S. Cl. 117—6 1 Claim  
1. A method of making a removable protective coating for the protection of surfaces of stairs, platforms, window sills, floors, corridors, sanitary appliances, etc. in buildings for a time of several weeks or months, comprising the steps of preparing 5 to 6 parts by weight of a solvent on the basis of a hydrocarbon at least a portion of the solvent is benzene having a boiling point of 80°–125° C.,

dissolving 1 part by weight of masticated rubber in a portion of the solvent, adding 4 to 5 parts by weight of filler material to the rubber solution and composed of a mixture of siliceous earth with powdered chalk and reduced asbestos, and mixing the entire mass while gradually adding the rest of the solvent to produce a mass that can be spread, coating the surfaces to be protected by at least one layer of said mass, and allowing the layer to dry for 10 to 15 hours, the solvent being a mixture of 27 parts by volume of benzene having a boiling point of 80 degrees–125 degrees C. and a specific gravity of about 0.72, and 3 parts by volume of perchlorethylene having a boiling point of about 120 degrees C. and a specific gravity of about 1.63.

3,459,578

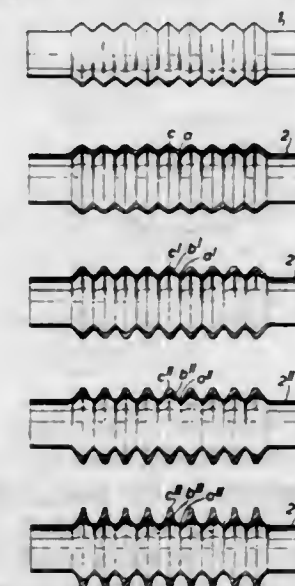
## METHOD OF COATING BODIES BY ROTATION

Jean Michel Lulan, Lyon, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate

Filed Oct. 18, 1965, Ser. No. 497,354  
Claims priority, application France, Oct. 21, 1964, 992,169

Int. Cl. B44d 1/094, 1/02; B44c 1/18

U.S. Cl. 117—18 9 Claims



The invention provides a method of coating an article, e.g. corrugated tubing, in which a body is immersed in a fluidized bed of powdered plastic. The temperature of the article is sufficiently high to cause fusion of the powder particles. The body is then rotated about an axis while within the fluidized bed, is thereafter withdrawn and rotated at a sufficient speed to cause the fused plastic to flow outwardly from the recesses on the surface of the body to projections thereon to form a uniform coating.

3,459,579

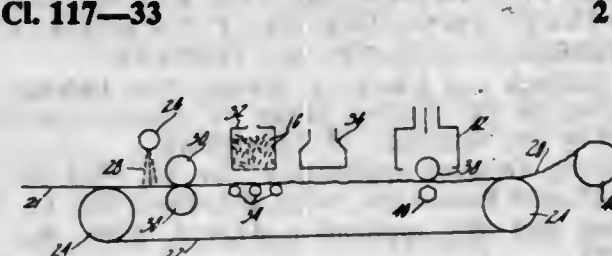
## METHOD OF PRODUCING FLOCKED NONWOVEN FABRIC

Nicholas S. Newman, West Newton, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts

Filed Apr. 1, 1965, Ser. No. 444,536

Int. Cl. B05b 1/02; C09j 5/04

U.S. Cl. 117—33 2 Claims



A flocked and internally-reinforced nonwoven fabric is produced by wetting an unbonded fibrous fleece with a liquid binding agent, and applying flock fibers to the wetted web in such a manner that a portion of the flock

fibers are caused to penetrate into the interior portions of the web. In this manner a flocked fabric is produced in which a single bonding agent serves to unite the fibers of the base fleece and the flock fibers to each other.

3,459,580

## NOVEL PHOTOGRAPHIC PRODUCT, PROCESS AND COMPOSITION

Howard C. Haas, Arlington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Sept. 26, 1966, Ser. No. 581,754

Int. Cl. G03c 11/08

U.S. Cl. 117—34 4 Claims  
1. A process for washing and protecting a diffusion-transfer photographic silver print which includes the steps of: (1) applying to the image-carrying face thereof a layer of an aqueous composition comprising a mixture of a vinylpyridine polymer and a quaternary salt of a vinylpyridine polymer; and (2) drying said layer.

3,459,581

## PROCESS OF PRODUCING PRESSURE-SENSITIVE HECTOGRAPH TRANSFER SHEETS

Douglas A. Newman, Glen Cove, N.Y., assignor to Columbia Ribbon and Carbon Manufacturing Co., Inc., Glen Cove, N.Y., a corporation of New York

No Drawing. Filed Oct. 10, 1966, Ser. No. 585,263

Int. Cl. B41c 1/06; B41m 5/00

U.S. Cl. 117—36.1 4 Claims  
Process for producing pressure-sensitive transfer sheets, for applying images to master sheets capable of being duplicated by heat without volatile solvent, which comprises uniformly distributing undissolved dyestuff and undissolved particulate dye solvent in resinous binder in transfer layer.

3,459,582

## VINYLIDENE CHLORIDE TOP-COATED POLYPROPYLENE PACKAGING FILM

Isadore Swerlick, Amherst, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 7, 1965, Ser. No. 512,210

Int. Cl. B44d 1/24; B32b 27/30

U.S. Cl. 117—68 5 Claims  
A packaging film having a base layer of biaxially oriented polypropylene with at least one surface coated with a subcoat of polyethylene or copolymer of polyethylene and both surfaces top-coated with a polymer of 60 to 95 parts vinylidene chloride and 5 to 40 parts alkyl acrylate, the alkyl group having 1 to 3 carbons, and 1% to 10% acrylic acid based on the weight of previous components. The subcoat can have a thickness of up to 0.8 mil and a density of 0.910 to 0.935 and the top coating can be in an amount up to about 10 grams/square meter. The top coating can contain 2 to 8% of a wax such as carnauba wax.

3,459,583

## BODY OF INDUSTRIAL CARBON WITH AN OXIDATION INHIBITING COATING, AND METHOD OF PRODUCING SUCH BODIES

Ottmar Rubisch, Meltingen uber Augsburg, Germany, assignor to Sigr Elektrographit G.m.b.H., Meltingen uber Augsburg, Germany, a corporation of Germany

Filed Jan. 9, 1967, Ser. No. 608,093

Claims priority, application Germany, Jan. 11, 1966, S 101,382

Int. Cl. B05b 7/20; B44d 1/14, 1/18

U.S. Cl. 117—70 11 Claims  
A body of artificial graphite or other industrial carbon is coated with an oxidation inhibiting metal silicide material consisting substantially of 5 to 45% by weight of iron, 55 to 94.9% of silicon and 0.1 to 10% of one or



more of Na, K, Mg, Ca, B, Al, Ti, Zr, Mn, P, O. The coating is produced by flame-spraying the pulverulent material onto the carbon body or immersing the body in a melt of the coating material. An intermediate bonding layer of Fe-Si-C is produced by heating the coated body to 1000-1400° C.

3,459,584

# ARTICLES PRIME COATED WITH POLYESTERS CONTAINING FREE CARBOXYL GROUPS

John R. Caldwell, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 2, 1966, Ser. No. 546,556  
Int. Cl. B44d 1/36, 1/28; C08d 13/16

U.S. Cl. 117-72 15 Claims  
Polyesters containing free carboxyl groups are useful as prime coating compositions.

3,459,585

# NOVEL REACTION PRODUCT AND USE THEREOF AS A GLASS FIBER SIZE

Charles W. Killmeyer and George E. Ellerman, Pittsburgh, Pa., assignors to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 5, 1966, Ser. No. 599,180

Int. Cl. C03c 25/02; B44d 1/14

U.S. Cl. 117-76 24 Claims  
A size for treating a glass fiber strand, said size consisting of a reaction product which is obtained by reacting on alkoxyated nitrogen containing compound such as an alkoxyated fatty amine or amide with a polycarboxylic acid and then reacting the resulting product with an epoxide compound. The sized strands can be further coated with an aqueous rubber adhesive composition in preparation for use as reinforcement for resins and rubber.

3,459,586

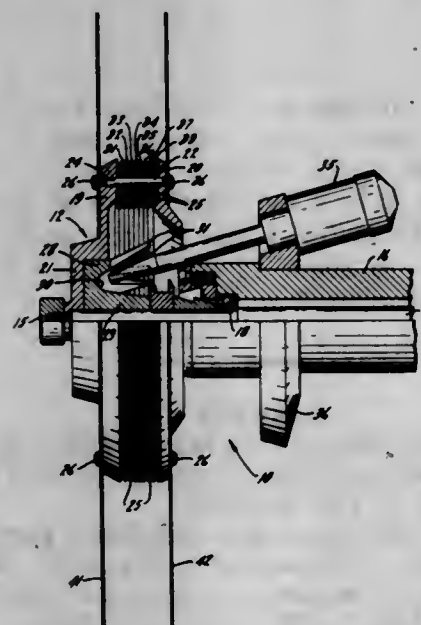
# CENTRIFUGAL SPRAY COATING METHODS AND APPARATUS

Johannes Kiwiet, Riverside, and Arthur W. Virta, Sr., Mount Prospect, Ill., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware

Filed June 2, 1965, Ser. No. 460,798

Int. Cl. B05c 7/02; B05b 3/02

U.S. Cl. 117-96 23 Claims



Centrifugal spray coating methods and apparatus for applying a uniform coating to the internal surfaces of centrifugal shells which utilizes an axially translatable centrifugal spray head having a rotatably driven centrifugal distributor with a centrally disposed charge cavity and a plurality of outwardly flared distributor teeth, a multi-

plicity of coaxial, axial spaced annular discs, concentric with the distributor and rotatably driven simultaneously therewith, wherein the radial gap between the inner marginal edges of the discs and the outer radial extremities of the distributor is sufficiently great to insure uniform application of spray material about the entire innermost marginal edges of all of the discs. Separable axially spaced skirts secured to the spray head and defining an axially enclosed annulus substantially free of air turbulence surrounding the discs. A means is provided for momentarily overcharging the spray head with spray material drawn from a source upon initiation of relative axial translation to bring the spray head to full discharge capacity substantially instantaneously.

3,459,587

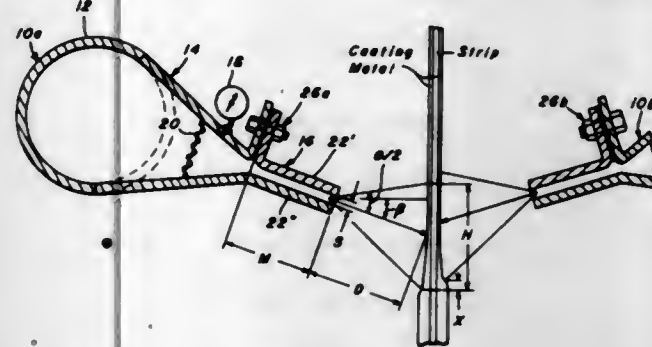
# METHOD OF CONTROLLING COATING THICKNESS

Darrell L. Hunter and James C. Siple, Franklin Township, Westmoreland County, Pa., assignors to United States Steel Corporation, a corporation of Delaware

Filed Feb. 2, 1967, Ser. No. 613,474

Int. Cl. C23c 1/08; B44d 1/34

U.S. Cl. 117-102 5 Claims



A method is described for controlling the weight and distribution of a molten metal coating on a moving or continuous strip substrate by the use of fluid streams directed against each side of the coated strip before the coating solidifies. The fluid streams must be positioned so that they overlap but are displaced from each other by an amount of from 1/20 to 3/4 the impingement height.

3,459,588

# FIRE-RETARDANCY OF LIGNOCELLULOSIC MATERIALS BY PHOSPHORYLATING CHLORINATED OR BROMINATED LIGNOCELLULOSICS

Ralph A. Davis, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 27, 1966, Ser. No. 589,800

Int. Cl. B44d 1/26; C09d 5/18

U.S. Cl. 117-118 6 Claims  
Improving the fire-retardant properties of lignocellulosic materials by chlorinating or brominating said materials and thereafter phosphorylating with a trialkyl or triaryl phosphite or phosphonate.

3,459,589

# PROCESS FOR REDUCING THE FLAMMABILITY AND INCREASING THE WEATHER-RESISTANCE OF FIBROUS ORGANIC MATERIALS

Joel B. Bullock and Clark M. Welch, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Nov. 14, 1962, Ser. No. 237,767, now Patent No. 3,278,497, dated Oct. 11, 1966. Divided and this application May 6, 1966, Ser. No. 560,027

Int. Cl. C09d 5/18, 3/48

U.S. Cl. 117-136 5 Claims  
Flame-proofed fabrics of improved weather-resistance are obtained by applying to the fabrics polymers pro-

duced by a combination of (1) a compound containing two or more aziridinyl groups attached to a nonmetallic atom; (2) a compound containing sulfur atoms having an oxidation number less than +6; and (3) a methylol phosphorus compound.

3,459,590

# PROCESS FOR MODIFYING THE SURFACES OF SHAPED SYNTHETIC FIBRE-FORMING POLYMER ARTICLES WITH COPOLYMER CONTAINING POLYOXY ALKYLENE SEGMENTS HINDERED PHENOL ANTIOXIDANT AND PEROXIDE DECOMPOSER

William Michael Corbett and David Harrison, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Jan. 10, 1966, Ser. No. 519,471  
Claims priority, application Great Britain, Jan. 19, 1965, 2,337/65

Int. Cl. B44d 1/22; C08f 1/00; B32b 5/00  
U.S. Cl. 117-138.8 11 Claims

A process for modifying a shaped synthetic fibre-forming polymer article comprising padding onto the article a dispersion or solution of a copolymer containing repeat units identical with those constituting the crystalline segments of the polymer and also polyoxyalkylene segments which confer hydrophilic properties on the article, to which is added 0.05-5%, preferably 0.2-1.0%, by weight, based on the weight of said copolymer, of a hindered phenol antioxidant together with 0.005 to 5.0%, preferably 0.1-1.0%, by weight, also based on the weight of the said copolymer, of a peroxide decomposer selected from at least one of the following groups: thiophosphate, thiophosphite, and a xanthate.

3,459,591

# PROCESS FOR COATING POLYOLEFINIC FILMS TO MAKE THEM HEAT-SEALABLE AND GAS AND WATER-VAPOR IMPERMEABLE

Hikolchi Konishi and Yuichi Harada, Amagasaki-shi, and Tamotsu Sunahara, Osaka, Yasuhiro Sakaguchi, Sakai-shi, and Tetsuo Ishihara, Itami-shi, Japan, assignors to Daicel Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Nov. 16, 1965, Ser. No. 508,136  
Claims priority, application Japan, Nov. 17, 1964, 39/64,687

Int. Cl. B44d 1/22; C08d 13/24  
U.S. Cl. 117-138.8 2 Claims

A process for the production of a heat-sealable, gas and water-vapor impermeable polyolefinic film which comprises applying a coating on at least one surface of the film, the coating composition consisting essentially of a homopolymer or copolymer of vinylidene chloride, vinyl chloride or ethylene-vinyl acetate copolymers together with a lesser amount of a chlorinated or chlorosulfonated polyolefin having a crystalline structure.

3,459,592

# TEXTURED NON-WOVEN FABRICS

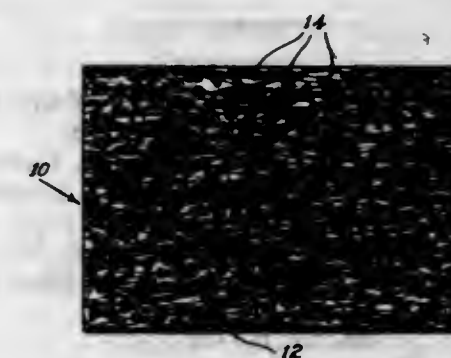
Robert R. Alexander, Sudbury, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts

Filed Mar. 25, 1966, Ser. No. 537,366

Int. Cl. C08c 17/18; D06q 1/00  
U.S. Cl. 117-140 4 Claims

Short fibers of paper-making length are agitated in water to form agglomerates or fibrous aggregates, and

a binder is added to the aqueous suspension. The mixture is then applied to a nonwoven web of textile-length fibers,



resulting a decorative coating of discrete and spaced-apart short-fibered aggregates.

3,459,593

# NONBLOCKING ELECTROSTATIC SHEETS

Albert J. Cole, New Hanover Township, Pa., assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed May 25, 1966, Ser. No. 552,735

Int. Cl. C09d 3/60; C08d 13/16

U.S. Cl. 117-201 12 Claims

A nonblocking sheet for use in electrostatic dry copying has a front coating for receiving the electrostatic image charge consisting of an interpolymer containing a conjugated diolefin in an amount of at least 18% by weight, up to 75% by weight of a monovinyl aromatic compound and 2 to 30% by weight of shellac. Up to about two-thirds of the diolefin may be replaced by vinyl or vinylidene monomers but should comprise no more than about 25% by weight of the total monomer charge. The coating also contains as an antiblocking agent, a microcrystalline addition polymer of ethylenically unsaturated monomers or resol condensation resin, the ratio of antiblocking to coating solids being from 5 to 50%. The reverse side of the sheet may also have a coating containing a water soluble ionizable metal salt and an antiblocking agent to enhance the antiblocking properties of the sheet.

3,459,594

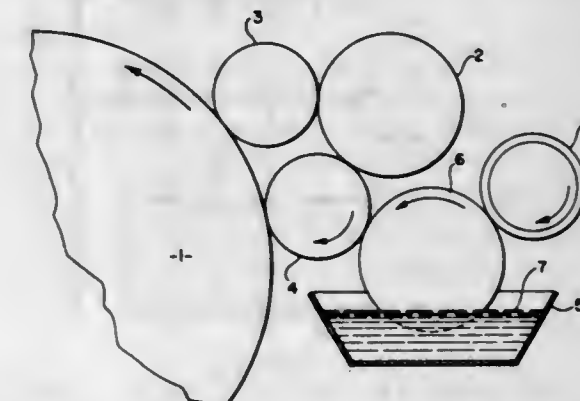
# PROCESS OF CONDITIONING THE SURFACE OF A LITHOGRAPHIC PRESS MEMBER

Dolor N. Adams, Cleveland Heights, Ohio, assignor, by mesne assignments, to Riddet Company, Philadelphia, Pa., a corporation of Illinois

Filed Jan. 28, 1966, Ser. No. 523,615

Int. Cl. B08b 3/08, 9/00

U.S. Cl. 134-42 2 Claims



Conditioning the elastomeric surface of a lithographic press member by treating it with ethylene glycol monoethyl ether acetate not only removes lithographic ink adhered thereto but also causes the surface to be capable of immediately carrying a thin, substantially uniform



film of aqueous lithographic dampening film, without having to wait before use and without resulting in a waste of the first few sheets after such cleaning.

3,459,595

# POSITIVE ELECTRODE FOR LEAD ACID STORAGE BATTERIES

Herbert Haebler, Frankfurt am Main, Germany, assignor to Varta Aktiengesellschaft, Frankfurt am Main, Germany  
No Drawing. Filed Mar. 20, 1967, Ser. No. 630,170  
Claims priority, application Germany, Mar. 19, 1966, V 30,674

Int. Cl. H01m 39/04

U.S. Cl. 136—26

5 Claims

A positive electrode for a lead acid storage battery, the active mass of which includes boric acid in an amount sufficient to prevent the taking up of atmospheric CO<sub>2</sub> by the positive active mass, and the method of producing such electrode by either dusting the positive active mass with pulverulent boric acid or treating the positive active mass with a boric acid solution by immersion or spraying.

3,459,596

# BATTERY INCLUDING FLUORIDE ELECTROLYTE AND SULFUR HEXAFLUORIDE

Albert M. Lord, Lakewood, Thomas J. Walsh, Pepper Pike, and Nicholas Fatka, Cleveland, Ohio, assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio  
Filed Aug. 24, 1965, Ser. No. 482,133

Int. Cl. H01m 27/04

U.S. Cl. 136—86

6 Claims

1. A high energy density battery assembly comprising a consumable anode, a gas permeable, electrically conductive, inert cathode, a fluoride electrolyte between said anode and said cathode, and means for diffusing sulfur hexafluoride through said cathode, said electrolyte being substantially nonconductive at temperatures below its melting point.

3,459,597

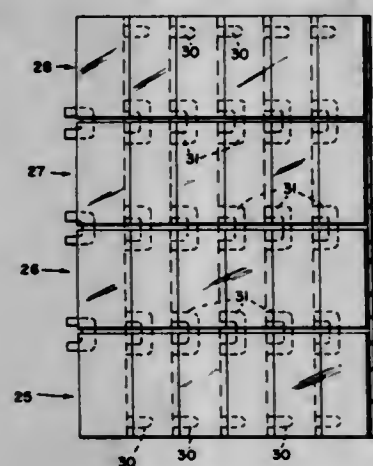
# SOLAR CELLS WITH FLEXIBLE OVERLAPPING BIFURCATED CONNECTOR

Wilfred R. Baron, Palos Verdes Peninsula, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio  
Filed Feb. 4, 1966, Ser. No. 525,096

Int. Cl. H01l 15/04

U.S. Cl. 136—89

4 Claims



A bifurcated clip having the desired thickness and strength is located at the junction of solar cells for mechanically maintaining series cells in an overlapping relationship with respect to each other and adjacent cells. The clip not only mechanically supports overlapping series cells with adjacent cells but also electrically interconnects

mechanically supported cells with each other. Each clip has an expansion joint in a series direction and in a transverse direction thereby providing flexibility in fitting the solar cell module to a complex arcuate form.

3,459,598

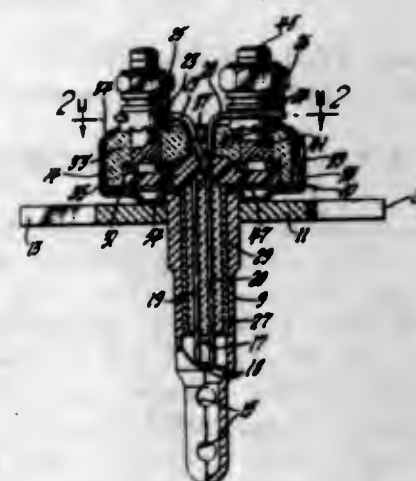
# THERMOCOUPLE HEAD

William C. Cole, Auburn, N.Y., and Frank B. Paul, Flint, and Clifton E. Wood, Fenton, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Mar. 29, 1965, Ser. No. 443,489

Int. Cl. H01v 1/04

U.S. Cl. 136—231

4 Claims



Improvements in the terminal arrangements of thermocouples. The external terminals are mounted on a rigid mounting block of refractory insulating material with a flange on the terminal and the mounting block having splines which lock the terminal against rotation when the nuts for external wiring are torqued. The leads from the thermocouples are wrapped partly around the respective terminals and welded to them.

3,459,599

# METHOD OF THERMOMECHANICALLY ANNEALING STEEL

Raymond A. Grange, Washington Township, Westmoreland County, Pa., assignor to United States Steel Corporation, a corporation of Delaware  
No Drawing. Filed Oct. 17, 1966, Ser. No. 586,967

Int. Cl. C21d 7/14, 7/02

U.S. Cl. 148—12

3 Claims

1. A method of thermomechanically treating steels to provide a product having a spheroidized microstructure, good cold formability and satisfactory ductility, which is particularly suitable for hypereutectoid and alloy steels comprising drastically deforming said steel over a temperature range beginning above the A<sub>1</sub> temperature but not more than 150° F. above the A<sub>1</sub> temperature and finishing at a temperature below the A<sub>1</sub> temperature but not more than 50° F. below the A<sub>1</sub> temperature of said steel to a total reduction in area of more than 50 percent.

3,459,600

# NOVEL ZINC COATING COMPOSITION AND METHOD

Rudolf P. Sedlak, Chicago, Ill., assignor to Todco Chemical Company, Inc., Chicago, Ill., a corporation of Illinois  
No Drawing. Filed Nov. 7, 1966, Ser. No. 592,304

Int. Cl. C23f 7/10, 7/12

U.S. Cl. 148—6.16

7 Claims

1. An aqueous zinc phosphate coating composition having as essential ionic ingredients therein about 0.5%

to 4.0% by weight phosphate ion, about 0.2% to 1.0% nitrate ion, about 0.1% to 1.0% of an ion selected from the group consisting of nickel and cobalt ions, at least a sufficient amount of an ion selected from the group consisting of zinc ion and manganese ions to form zinc or manganese dihydrogen phosphate, about 0.03% to 1.0% fluoride ion, and, as a compound, about 0.125% to 20% amino tri-(methyl phosphonic acid) based on the phosphate ion concentration, and about 0.002% to 0.008% nitrite ion.

3,459,601

# HIGH TEMPERATURE READILY REMOVABLE PROTECTIVE CERAMIC COATING COMPOSITIONS FOR METALS, AND RESULTING COATED METAL ARTICLES

Edward E. Mueller, Baltimore, Md., assignor, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York  
Filed Apr. 3, 1964, Ser. No. 357,135

Int. Cl. C23b 7/08; C23c 1/12; C09d 1/04

U.S. Cl. 148—22

19 Claims

Readily removable temporary coating compositions for metals to be heated to temperatures up to about 2400° F. for hot working are described. The coating compositions consist essentially of:

(A) A comminuted inorganic mixture consisting essentially of about 70 to about 95 weight percent of an alumina/alumino silicate material of the sillimanite minerals group and from about 30 to about 5 weight percent of sodium silicate having an Na<sub>2</sub>O:SiO<sub>2</sub> ratio between about 1:1 and 3:10, by weight, said sodium silicate being calculated upon an anhydrous basis with respect to the foregoing weight proportions and being in a form selected from the group consisting of anhydrous sodium silicate powder, aqueous anhydrous sodium silicate, hydrous sodium silicate powder, aqueous hydrous sodium silicate, and mixtures thereof, and

(B) An innocuous liquid carrier containing an organic polymeric binder material having a Conradson residue of less than about 3.5% by weight. The compositions are advantageous in that they form protective coatings which, when heated, protect metals against oxidation and decarburization during hot working of the metal and which are readily removable from the metal after completion of the hot working and upon cooling of the metal.

Metal articles coated with dry coatings of the compositions are also described.

3,459,602

# HIGH TEMPERATURE TEMPORARY PROTECTIVE CERAMIC COATING COMPOSITIONS FOR METALS, AND RESULTING COATED METAL ARTICLES

Edward E. Mueller, Baltimore, Md., assignor, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York  
Filed Apr. 3, 1964, Ser. No. 357,255

Int. Cl. C23b 7/08; C23c 1/12

U.S. Cl. 148—22

13 Claims

Easily removable protective coating compositions for metals which are to be heated to a temperature of between 2200° and 2400° F. have been formulated and are described. The coating compositions comprise an intimate mixture of finely divided inorganic components suspended in a liquid carrier containing a solidifiable organic resin binder. The inorganic components consist essentially of:

(A) From about 80 to about 95 weight percent of a comminuted mixture composed of from about 50 to about 80 weight percent of alumina, having a purity of at least 95% and from about 50 to about 20 weight percent of titania, having a purity of at least 95%, and

(B) From about 20 to about 5 weight percent of a comminuted vitreous-phase-forming material.

The compositions falling within the scope described are suspended in a liquid medium and are applied to metals which are to be heated at temperatures within the above-described ranges for purposes of forging, rolling, annealing, etc., to form easily removable temporary coatings which protect surfaces of the metal against oxidation, decarburization, and the like.

3,459,603

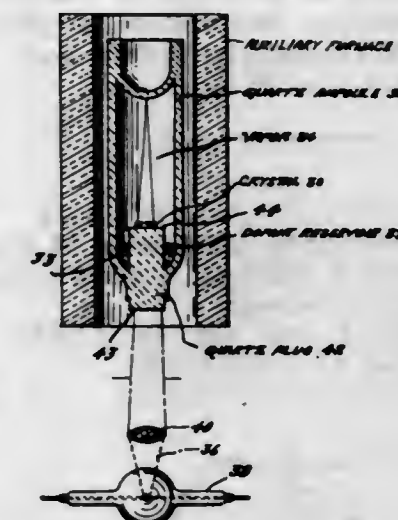
# METHOD FOR PREPARING ELECTROLUMINESCENT LIGHT SOURCES

Leonard R. Weisberg, Princeton, and Albrecht G. Fischer, Trenton, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force  
Filed Jan. 12, 1966, Ser. No. 520,190

Int. Cl. H01l 7/00

U.S. Cl. 148—1.5

4 Claims



A method of fabricating electroluminescent light source utilizing a strong source of radiation to promote the formation of electroluminescent p-n junction in group II-VI semiconductor materials. The source of radiation may be light, gamma rays, high energy electrons, neutrons, etc. The intensity of the irradiation should be strong enough to flood the crystal with holes and elec-group II-VI semiconductor materials. The source of 700-1000° C., and the radiation is continued until the sample has cooled to below 200-300° C.

3,459,604

# METAL SURFACE COATING METHODS

Dennis Brian Freeman, Harrow, Middlesex, and Colm Anthony Gill, London, England, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York  
No Drawing. Filed Apr. 18, 1966, Ser. No. 543,040

Int. Cl. C23f 7/26

U.S. Cl. 148—6.24

7 Claims

A coating composition useful in forming lubricant carrying coatings on chromium-containing metal surfaces which is an aqueous solution containing oxalic acid and citric acid, the weight ratio of oxalic acid to citric acid being at least 0.2:1 but not substantially in excess of about 50:1, and the oxalic acid being present in an amount of from about 10 to 120 grams per liter.

3,459,605

# METHOD OF ANNEALING ALUMINUM

Samuel E. Jolly, Ridley Park, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey  
No Drawing. Filed Jan. 16, 1967, Ser. No. 609,334

Int. Cl. C21d 1/68; C10m 3/48

U.S. Cl. 148—20.6

7 Claims

Reduction in staining of aluminum by rolling oil is obtained by adding 0.02 to 2 weight percent of an organo-



tin compound to the oil. Less than 0.5 weight percent gives as good a result as can be obtained with more of the additive. The oil is one normally used in metal rolling, i.e., viscosity 35-75 SUS at 100° F. An example is an oil having a viscosity of 56 SUS at 100° F. and containing 0.0625 weight percent dibutyltin dilaurate. Diisopropyltin dilaurate also gives very good results. The annealing can be conducted at lower temperatures than before because of the reduced staining.

3,459,606

**FLUXES FOR SOFT SOLDERING**

Hugo H. Becker, Chicago, Ill., assignor to Lake Calumet Smelting Co., Chicago, Ill., a corporation of Illinois  
No Drawing. Filed July 5, 1966, Ser. No. 562,495  
Int. Cl. B23k 35/36

U.S. Cl. 148-23

3 Claims

A soldering flux which contains rosin, and preferably fatty acid in the form of an amine or ammonium soap decomposes at soldering temperature to give volatile amine or ammonia respectively, and to leave a water-imperious, protective film of rosin.

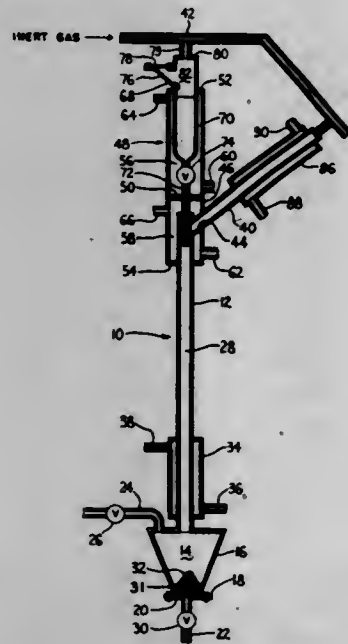
3,459,607

**HIGH-ENERGY PROPELLANT**

John E. Paustian, Whippany, and Marvin M. Fein, Westfield, N.J., assignors to Thiokol Chemical Corp., Bristol, Pa., a corporation of Delaware  
Filed May 12, 1966, Ser. No. 551,838  
Int. Cl. C06b 19/02

U.S. Cl. 149-8

6 Claims



Hydrazinium azide propellants are disclosed having a novel form rendering them useful in guns and the like. In addition, these propellants are coated with burning rate control materials. Methods for making these propellants, which comprise forming the propellant material in spherically shaped particles and thereafter coating the particles with a burning rate control material, are also included.

3,459,608

**WATER-CONTAINING, NITRIC ESTER-FREE AMMONIUM NITRATE EXPLOSIVES**

Erich Ludolph, Leverkusen, Gerhard Martin, Troisdorf, and Adolf Berthmann, Leverkusen, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany, a corporation of Germany  
No Drawing. Filed Jan. 31, 1968, Ser. No. 702,505  
Claims priority, application Germany, Feb. 1, 1967, D 52,156

Int. Cl. C06b 1/04

U.S. Cl. 149-56

8 Claims

Water-containing, nitric ester-free ammonium nitrate

explosives of increased sensitivity composed of water, ammonium nitrate, a brisant explosive, tertiary amines or nitrates thereof, ammonium and/or alkali metal perchlorates, and a swelling agent and/or emulsifier.

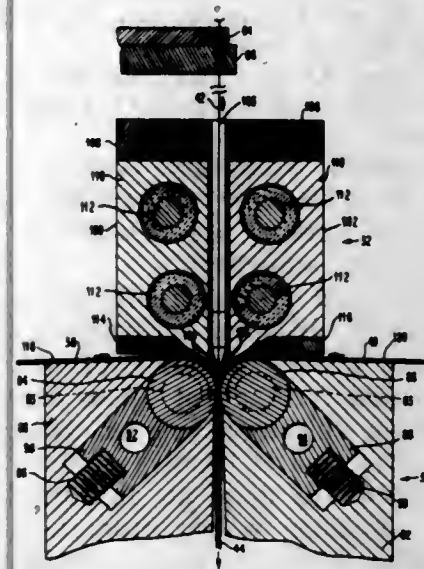
3,459,609

**CABLE FABRICATING METHOD AND APPARATUS**

Barouyr Z. Hairabedian, Lake Katrine, and Russell W. Wasylchak, Red Hook, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed July 2, 1965, Ser. No. 469,112  
Int. Cl. H01b 13/06; C09j 5/06

U.S. Cl. 156-52

11 Claims



A method and apparatus for fabricating flat cable by encapsulating an array of wires between heat bondable dielectric webs. Heat is applied to the mutually facing sides of the webs by a hot blade nesting between the webs as they pass over cooling rollers and into the nip between the rollers, the blade being apertured to pass the wires in a defined configuration through the blade and into the interface between the webs.

3,459,610

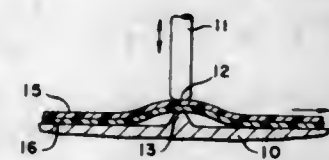
**METHOD AND APPARATUS FOR THE ULTRASONIC WELDING OF THERMOPLASTIC FILMS**

Johannes L. C. Dijkers and Ludovicus Michielsen, Delft, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Filed Aug. 3, 1966, Ser. No. 569,920  
Claims priority, application Netherlands, Aug. 3, 1965, 6510032

U.S. Cl. 156-73

Int. Cl. B29c 27/08

6 Claims



1. A method for the ultrasonic welding of thermoplastic films between an ultrasonically vibrating welding element and a base, characterized in that the films are passed beneath the welding element and over an elevation in the base while in the vicinity of the elevation the films move free from the base, the direction of movement of the films being parallel to a plane in which the upper side of the elevation is curved, and the radius of curvature, measured in this latter plane, or the part of the welding surface of the welding element situated opposite the

upper side of the elevation being equal to at least five times the radius of curvature of the curved upper side of the elevation.

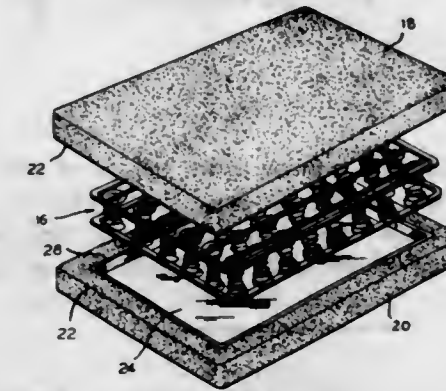
3,459,611

**METHOD OF MAKING A MATTRESS FROM FOAMED PLASTIC MATERIAL**

Guy G. Joseph, Highland Park, and Robert K. Teverbaugh, Chicago, Ill., assignors, by mesne assignments, to Holiday Inns of America, Inc., Memphis, Tenn., a corporation of Tennessee  
Filed July 18, 1966, Ser. No. 565,839  
Int. Cl. B32b 5/18; B29c 17/00

U.S. Cl. 156-78

3 Claims



A mattress is comprised of a pair of cover members made of a compressible material, such as polyurethane foam, mated and joined together to afford a cavity therein and has a compressible support means positioned therein only in frictional contact with said cover member. The invention includes a method for making the aforementioned mattress.

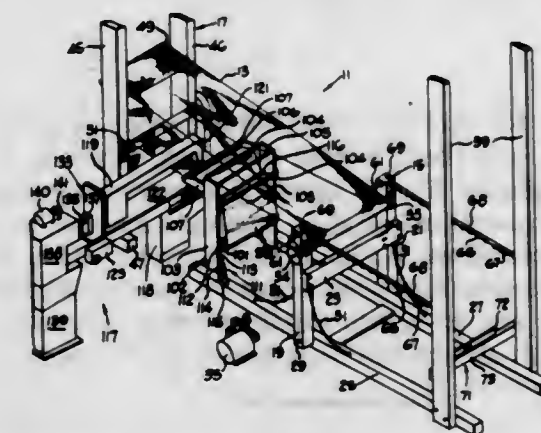
3,459,612

**METHOD AND APPARATUS FOR MAKING ENDLESS SEWN FABRIC**

Charles A. Lee and Warren R. Furbeck, Knoxville, Tenn., assignors, by mesne assignments, to Appleton Wire Works Corporation, Appleton, Wis., a corporation of Wisconsin  
Filed Apr. 29, 1966, Ser. No. 546,380  
Int. Cl. B32b 7/08; D06c 1/00

U.S. Cl. 156-84

24 Claims



16. A method of manufacturing an endless mesh fabric comprising the steps of supporting a plurality of loops of rack filament in spaced relation upon a plurality of elongated support members mounted in fixed spaced relation to form a rack, moving said loops endlessly around a predetermined closed path defined by said members to move successive portions of said loops past a plurality of stations, sewing transversely of said loops of rack filament as successive portions thereof are moved past one of said stations to sew said loops together to form an endless mesh fabric, thereafter gradually heating successive por-

tions of said fabric to a predetermined temperature as they are moved past another one of said stations to heat-shrink said fabric, thereafter adding bonding agent to successive portions of said fabric as they are moved past one of said stations, and thereafter curing said bonding agent on successive portions of said fabric as they are moved past one of said stations.

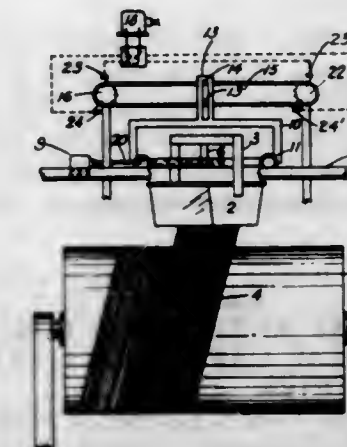
3,459,613

**METHOD AND APPARATUS FOR MAKING FILAMENTOUS MAT**

John E. Copenhefer and George J. Heh, Louisville, Ky., assignors to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware  
Filed July 29, 1965, Ser. No. 475,650  
Int. Cl. D04h 3/16

U.S. Cl. 156-167

5 Claims



A method and apparatus for the manufacture of fibrous mats including selective variation of the spacing between filaments wound on a rotating filament collector drum and apparatus to decrease the amount of material deposited at the ends of a fibrous mat formed on a rotating drum.

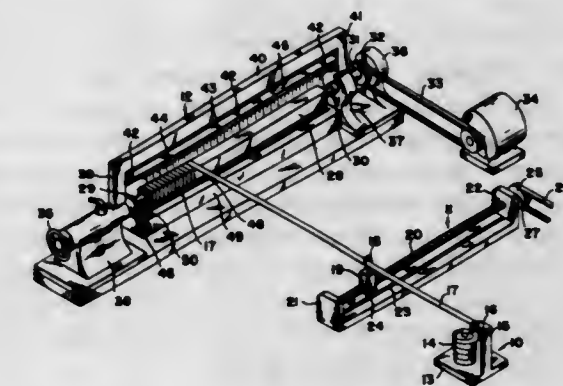
3,459,614

**METHOD FOR MAKING PLASTIC ARTICLES**

Uhel D. Polly, Margate, Fla., assignor to Consolidated Productions, Inc., a corporation of Florida  
Filed Mar. 15, 1965, Ser. No. 439,733  
Int. Cl. B65h 81/00; B31c 13/00; B29b 3/00

U.S. Cl. 156-174

6 Claims



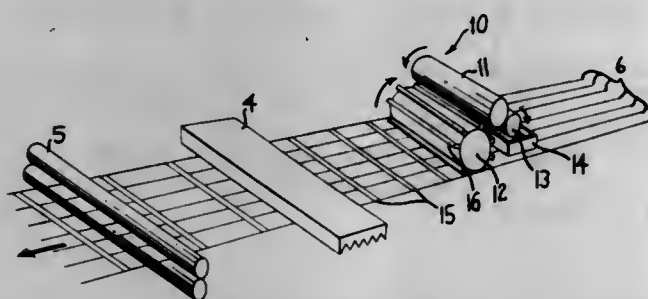
A method for manufacturing plastic articles which consists of twisting a relatively flat strip of plastic so that it is helical in shape, winding the plastic in layers on a holder, sealing the layers together in a narrow longitudinal area while the twisted plastic remains on the holder, adding stiffening means to the plastic while it remains on the holder and passing a cutting element through the plastic in a direction longitudinally along the holder thereby permitting the cut unsealed layers of plastic to flare outwardly so that the stiffening element and heat sealed longitudinal portion constitutes an axis.



3,459,615  
**PROCESS FOR PREPARING REINFORCING FABRIC FOR ELASTOMERIC PRODUCTS**  
 George E. Ellerman, Pittsburgh, Pa., assignor to PPG Industries Inc., Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 26, 1966, Ser. No. 523,182  
 Int. Cl. B29h 9/04  
 U.S. Cl. 156—181

6 Claims

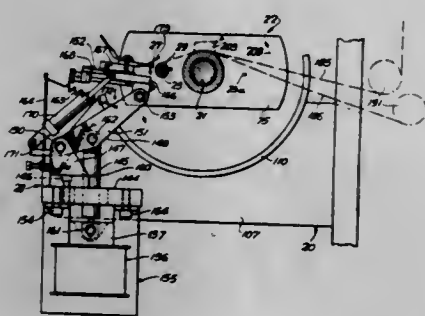


A process for the rapid production of reinforcing fabric for elastomeric products wherein a weftless warp of reinforcing cord ends is provided with spaced bands of an adhesive to maintain the parallel relationship between the individual reinforcing cord ends during fabrication of a fabric-reinforced elastomeric product.

3,459,616  
**METHOD AND APPARATUS FOR MAKING WOUND FILM CAPACITORS FROM CONTINUOUS STRIPS**  
 Jean M. Dupuis, St. Bruno, Quebec, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed May 6, 1965, Ser. No. 453,615  
 Int. Cl. B65h 81/00, 39/16  
 U.S. Cl. 156—184

11 Claims



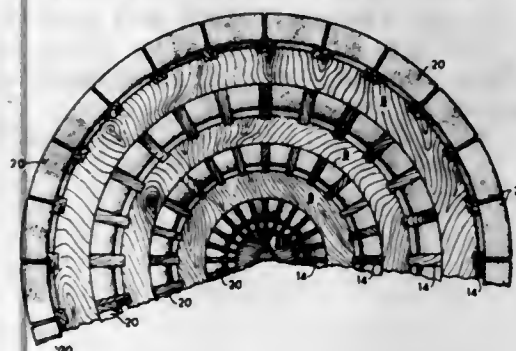
An apparatus and method of producing a capacitor-forming roll from a pair of continuous strips of the type consisting of a dielectric plastic web having a metallic band formed integrally along one surface of the web. The pair of strips is wound on a spinning mandrel to form a roll, and an elongated heating element which extends parallel to the roll is provided on a mounting mechanism adapted to move the heating element into contact with the roll and to draw it a short arcuate distance along the periphery of the roll so that the metallic band is vaporized along the arcuate distance and the webs are severed from the continuous strips and fused onto the roll to thereby seal the capacitor-forming roll.

3,459,617  
**METHOD FOR CONSTRUCTING A BOAT HULL**  
 Ernest B. Dane, Jr., 57 Tyler Road, Belmont, Mass. 02178  
 Original application Sept. 4, 1964, Ser. No. 394,419, now Patent No. 3,268,924, dated Aug. 30, 1966. Divided and this application Feb. 23, 1965, Ser. No. 440,985  
 Int. Cl. B29c 27/22; B32b 15/04  
 U.S. Cl. 156—212

5 Claims

A method for making a sandwiched structural surface on a coarse mold. A substantially continuous layer of

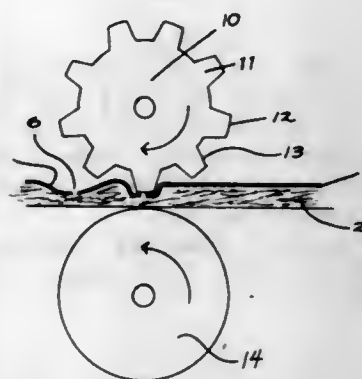
foam plastic blocks is lightly tacked on the mold, higher density blocks being placed in areas where extra strength is sought. The external surfaces of the blocks are rasped until they form the desired curvature, and then an external



skin is laid by bonding one or more layers of overlapping thin metallic strips to the blocks. The mold is removed and an internal skin of overlapping thin metallic strips is laid on the internal surfaces of the blocks in the same manner.

3,459,618  
**METHOD OF MAKING ABSORBENT DRESSINGS**  
 Vernon C. Egler, Palatine, Ill., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts  
 Original application Dec. 6, 1963, Ser. No. 328,553, now Patent No. 3,292,619, dated Dec. 20, 1966. Divided and this application Feb. 7, 1966, Ser. No. 525,645  
 Int. Cl. C09j 5/06; B32b 27/04, 27/12  
 U.S. Cl. 156—219

2 Claims



A method for making absorbent dressings, in particular nonadherent absorbent wound dressings, whereby a flexible thermoplastic film is heat-roller compressed onto a pad of absorbent material in such a way as to form multiple depressions in the film covered surface of the pad, to cause the film to conform to the contour of said pad surface, and to create small openings in those areas of the film which line the depressions on the pad.

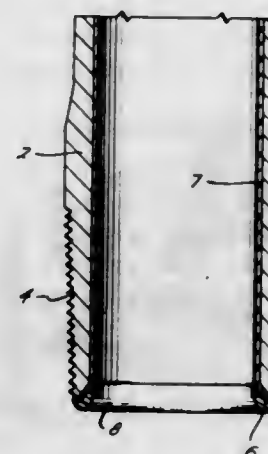
3,459,619  
**METHOD FOR PROTECTING COATED PIPE**  
 Victor W. Maxwell, Houston, Tex., assignor to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey  
 Filed Oct. 25, 1966, Ser. No. 589,333  
 Int. Cl. B32b 1/08, 23/04; B65b 59/06  
 U.S. Cl. 156—293

5 Claims

A protector for the end of a pipe having an internal coating of a corrosion resistant material. The corrosion resistant material is applied in an uncured condition and covers at least one end of the pipe. A protector ring of elastomeric material is applied in circumferential contact

with the pipe end and terminates at the end so as not to interfere with the external threads at the end region of

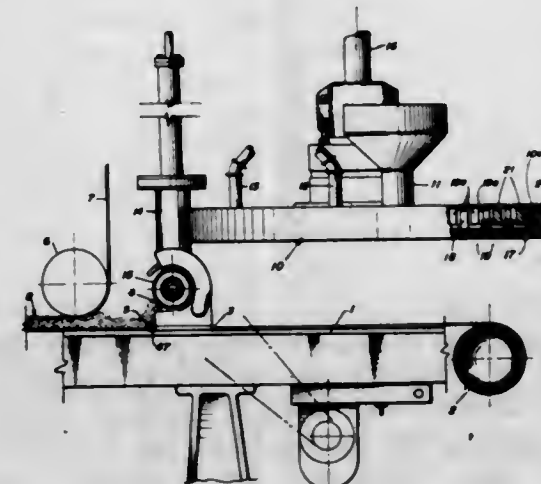
inforsing yarn is continuously formed and fed to a die concurrently with a molding compound. The hose is formed by winding the lateral yarn around a core in a



the pipe. The corrosion resistant material is baked to achieve final curing whereby the protector becomes an integral part of the pipe end.

3,459,620  
**APPARATUS FOR PRODUCING CAST GYPSUM ARTICLES**  
 Robert E. McCleary, Geneva, and Robert L. Decker, Park Forest, Ill., assignors to United States Gypsum Company, Chicago, Ill., a corporation of Delaware  
 Filed Oct. 11, 1965, Ser. No. 494,577  
 Int. Cl. B32b 13/00; B28b 5/02  
 U.S. Cl. 156—346

9 Claims

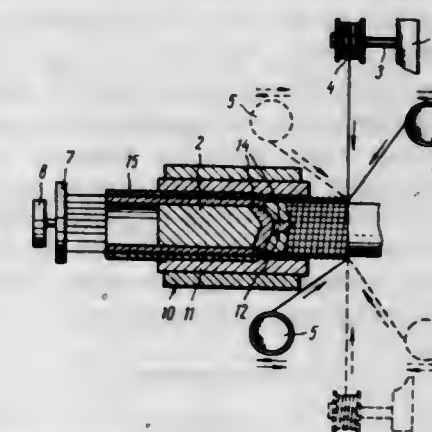


In a gypsum board machine a slurry mixer disposed over a board-forming table discharges slurry into a vertical conduit which in turn feeds a slurry distributor disposed across and parallel to the surface of a board-forming table. The distributor employs a continuous discharge slot and transfer means for laying a uniform, continuous layer of slurry on the table.

3,459,621  
**INSTALLATION FOR MANUFACTURING REINFORCED PLASTIC PIPES**  
 Alexandr Yakovlevich Kamenyazh and Vladimir Lvovich Ryvkin, Odessa, U.S.S.R., assignors to Zavod Stroitelno-Otdelochnykh Mashin, U.S.S.R.  
 Filed Aug. 26, 1965, Ser. No. 482,818  
 Int. Cl. B65h 81/06; B32b 31/30; B29d 23/05  
 U.S. Cl. 156—393

3 Claims

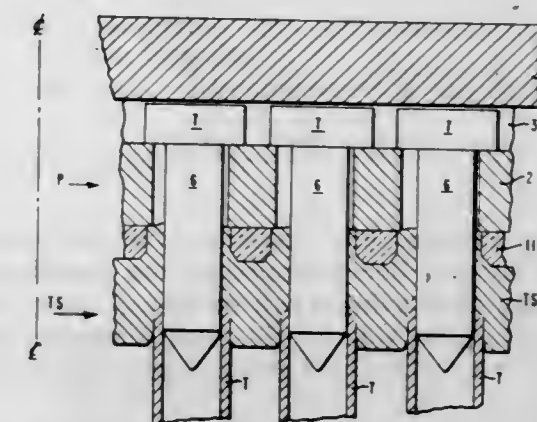
Apparatus for manufacturing reinforced plastic pipe wherein a hose of interwoven longitudinal and lateral re-



plane perpendicular to the longitudinal yarn while the supply spools of the latter are alternately shifted from one side to the other of said plane.

3,459,622  
**APPARATUS FOR THE MANUFACTURE OF PLASTIC TUBE HEAT EXCHANGER UNITS**  
 Richard Gordon Fisher, Dartmouth Woods, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
 Filed Nov. 7, 1966, Ser. No. 592,608  
 Int. Cl. B29d 23/00; B32b 31/26  
 U.S. Cl. 156—423

5 Claims



1. An improved apparatus for the manufacture of plastic heat exchanger units, said apparatus comprising in combination; a first means for supporting an assembly, said assembly comprising a bundle of elongated hollow plastic tubular elements having open end portions, and a tube sheet member cooperating therewith and having a plurality of openings therethrough, the open end portions of said tubular elements each extending through one of said openings in said tube sheet member, the external transverse dimension of said open end portions corresponding closely to the internal transverse dimension of said openings, a second means cooperating with said first means and an assembly of tubular elements and cooperating tube sheet member for heat sealing the exteriors of said open end portions of said tubular elements to the interiors of the openings in said tube sheet member in fluid-tight relationship, said second means comprising a unit cooperating with said first means said unit comprising a plurality of side-by-side substantially parallel pin elements in a substantially planar array, said unit and its pin elements constructed and arranged to cooperate with an assembly of said tubular elements and cooperating tube sheet member supported on said first means such that



each pin can be concurrently slidably received in an open end portion of a tubular element as the end portion is positioned in a passageway in the tube sheet member, heating means cooperating with said first means and said unit, and in operative association with said pin elements to heat the same and cause sufficient heating of engaged open end portions of the tubular elements and the tube sheet member to fuse the same together to form a fluid-tight seal between the engaged tubular element open end portions and the cooperating tube sheet member, said pin elements being freely movably mounted on said unit to permit the spacing of said elements to vary to accommodate thermal expansion of an engaged tube sheet member tending to vary the spacing between its opening without distortion or damage to said pin elements or any engaged tubular element or tube sheet member.

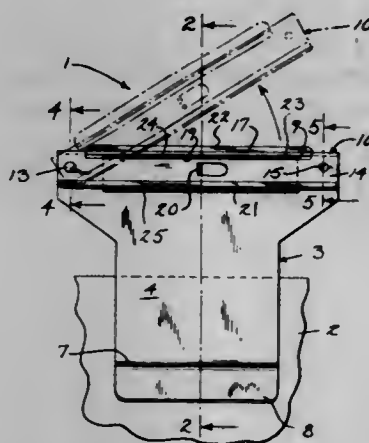
3,459,623

## CLIP-ON LABEL DISPENSER

Burton C. Koenitzer, Wauwatosa, Wis., assignor to W. H. Brady Co., Milwaukee, Wis., a corporation of Wisconsin  
Filed Oct. 24, 1966, Ser. No. 589,048  
Int. Cl. B65c 9/18

U.S. Cl. 156—584

5 Claims



1. A clip mounted label dispenser for removing adhesive labels from a liner comprising the combination of a mounting clip having a pair of spaced apart clamping wings arranged side by side and connected together at one end to receive a supporting member between them;
- a stripping edge supported by said mounting clip and shaped to support a liner passing over it and to cause adhesive labels on said liner to separate from said liner as said liner moves over it;
- and a liner guide shaped to fit over said stripping edge and said liner strip over said stripping edge to force said liner to follow closely over said stripping edge and having a label ejection slot aligned with said stripping edge to permit said labels to eject from said stripping edge as said labels separate from said liner.

3,459,624

## ARTIFICIAL TREE BRANCH

Ammon Baus, Philadelphia, and Frederick C. Keller, Cornwells Heights, Pa., and William B. Reukauf, Haddonfield, N.J., assignors Carey-McFall Company, Philadelphia, Pa., a corporation of Pennsylvania  
Filed May 25, 1966, Ser. No. 552,748  
Int. Cl. A47g 33/06

U.S. Cl. 161—24

7 Claims

1. An artificial tree branch comprising an elongate tube having a longitudinally extending slot, a pair of intumed lips extending along respective edges of said slot in facing spaced relation with each other, a plurality of artificial twigs each having its inner end region frictionally engaged

in said slot and extending outwardly therefrom, said inner twig end regions each having a bend inserted inward through said slot interiorly of said tube, for frictional en-



gement of said lips with spaced portions of each twig, and said lips frictionally engaging said inner twig end regions.

3,459,625

## PACKAGING MATERIAL AND THE PRODUCTION THEREOF

William C. Heller, Jr., 1840 N. Farwell Ave., Milwaukee, Wis. 53202, and Donald W. Davis, Milwaukee, Wis.; said Davis assignor to said Heller

Filed Apr. 21, 1966, Ser. No. 544,140

Int. Cl. B32b 3/24, 31/00

U.S. Cl. 161—114

17 Claims



This invention is directed towards packaging materials which may be used to form containers. The packaging material is supplied with window openings in the base sheet and a plastic film coating which has a greater thickness in the areas which coat the openings in the base sheet.

3,459,626

## LABEL CARRIER AND RELEASE LAMINATE

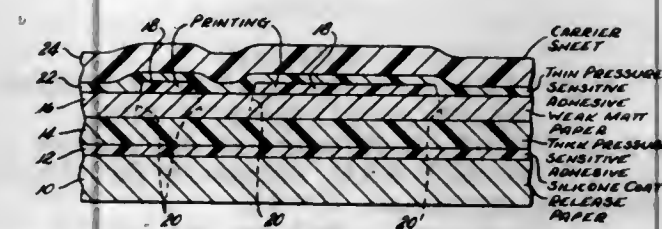
Burton D. Morgan, Hudson, Ohio, assignor to Morgan Adhesives Company, Stow, Ohio, a corporation of Ohio

Filed Nov. 6, 1964, Ser. No. 409,464

Int. Cl. B32b 7/14

U.S. Cl. 161—146

2 Claims



The laminate includes a relatively thick layer of pressure sensitive adhesive on a release paper, a layer of a relatively weak paper on the relatively thick adhesive layer,

printing on the paper in selected areas impregnating and strengthening the paper in such areas, a relatively thin layer of pressure sensitive adhesive covering the printing and engaging the paper between local printed areas and a top carrier sheet. In use, the paper fractures and adheres to the release paper between the printed areas so that the printed areas can be adhered by the relatively thick layer of pressure sensitive adhesive onto a desired deposit area.

3,459,627

## NONWOVEN FABRIC WITH COLUMNAR BONDS

William George Vosburgh, Sr., West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 12, 1964, Ser. No. 374,704

The portion of the term of the patent subsequent to Feb. 13, 1985, has been disclaimed

Int. Cl. D04h 1/06; B32b 7/14

U.S. Cl. 161—148

4 Claims



Strong, conformable, tear-resistant, delamination-resistant and abrasion-resistant nonwoven fabrics comprise continuous synthetic filaments having at least 25 crimps per inch, bonded by from 1 to 20% by weight of a synthetic organic binder which is distributed through the fabric as granule bonds and by from 500 to 1,000 discrete self-bond areas per square inch of fabric surface, said self-bond areas covering between 2 and 12% of the surface area of the fabric.

3,459,628

## URETHANE FOAM CORROSION PROTECTION

Robert R. Dixon, Columbus, Ohio, and Leonard C. Flowers, Murrsville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 18, 1966, Ser. No. 551,070

Int. Cl. B32b 5/18; C08d 13/08

U.S. Cl. 161—161

6 Claims

1. In a thermally insulated structure having an inner cold wall and an outer wall, the inner wall being metal and spaced from the outer wall, and having foamed insulation embodying a volatile halogenated organic compound between and in contact with the walls, the halogenated organic compound tending in the presence of moisture to decompose to form acidic products, the improvement comprising incorporating an effective amount of a finely divided antacid into the foamed insulation to provide for a neutralizing reaction with the acidic products.

3,459,629

## WOOD PARTICLE BOARD CONTAINING VERMICULITE AND METHOD OF MAKING SAME

Antoine Kawam, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed July 1, 1966, Ser. No. 562,195

Int. Cl. B32b 5/16, 13/12, 19/04

U.S. Cl. 161—163

6 Claims

1. A particle board consisting of a mixture of wood

particles and unexpanded vermiculite ore bonded with a suitable binder.

3,459,630

## ARCUATELY SHAPED CELLULAR GLASS ARTICLE AND METHOD OF MAKING THE SAME

Dominic D'Eustachio, Pittsburgh, and Howard E. Johnson, Trafford, Pa., assignors to Pittsburgh Corning Corporation, Port Allegheny, Pa., a corporation of Pennsylvania

Filed Sept. 23, 1965, Ser. No. 489,565

Int. Cl. B32b 17/00, 5/16

U.S. Cl. 161—168

5 Claims

A shaped article having an arcuate surface of cellular glass formed from multicellular glass nodules and a process for making the shaped article. A mixture of particulate glassy materials and a cellulating agent is pelletized and the pellets are thereafter heated to an elevated temperature sufficient to partially cellulate the pellets to form discrete partially cellulated nodules. The partially cellulated nodules are placed in a mold cavity and heated to an elevated temperature to further cellulate the partially cellulated nodules so that the nodules fuse to each other and distort to substantially fill the interstices between adjacent nodules and form a unitary shaped article having an arcuate surface.

3,459,631

## BENDABLE, HIGH LOFT, BONDED, NON-WOVEN, TEXTILE FABRIC

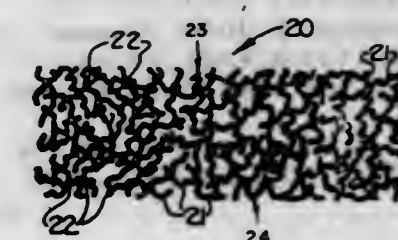
Millon J. Hamilton, Joseph F. Baigas, Jr., John T. Haynes, and Herbert W. Coates, Charlotte, N.C., assignors to Kem-Wove Industries, Inc., Charlotte, N.C., a corporation of North Carolina

Filed Nov. 24, 1965, Ser. No. 509,542

Int. Cl. D04h 1/72

U.S. Cl. 161—170

3 Claims



An improved bendable, high loft, bonded, non-woven, textile fabric adapted particularly for use in the outer wear and insulated garment fields due to improved bending characteristics. The fabric comprises a plurality of elastic fibers disposed in the form of a batt having upper and lower surfaces and being in intermingled third dimensional arrangement. The fibers are bonded together at spaced points by flexible, elastomeric bonding material to form an integral non-woven structure having a network of intercommunicating voids between the fibers. The fibers are of a length of about one-eighth inch to one inch and shorter than the distance between the upper and lower surfaces of the batt and highly crimped to form an elastic fabric structure which may be bent under pressure with resulting smooth curved surfaces on the outer and inner faces thereof, inasmuch as the fibers are capable of expanding on the outer surface and of compressing on the inner surface and inasmuch as the compressing and expanding forces transferred along the lengths of the individual fibers will be shortened.



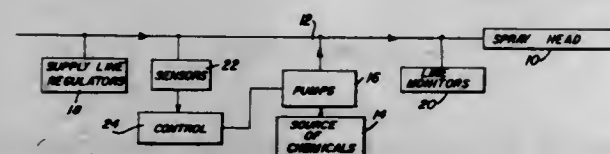
**3,459,632**  
**METHOD OF MAKING PAPER CONTAINING STARCH DERIVATIVES HAVING BOTH ANIONIC AND CATIONIC GROUPS, AND THE PRODUCT PRODUCED THEREBY**  
 Carlyle G. Caldwell, North Plainfield, and Wadym Jarowenko and Irving D. Hodgkin, Plainfield, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 17, 1965, Ser. No. 508,363  
 Int. Cl. D21h 3/20; D21d 3/00

**U.S. Cl. 162—175** **9 Claims**  
 The use in manufacture of paper of novel additives comprising starch derivatives containing controlled proportions of cationic substituent groups as well as anionic phosphate groups. The resulting paper containing the latter additives is characterized by increased strength and improved retention of pigments.

**3,459,633**  
**FELT CONDITIONER CONTROL SYSTEM**  
 Shannon V. West, 8275 Six Pence Drive, Pensacola, Fla. 32504

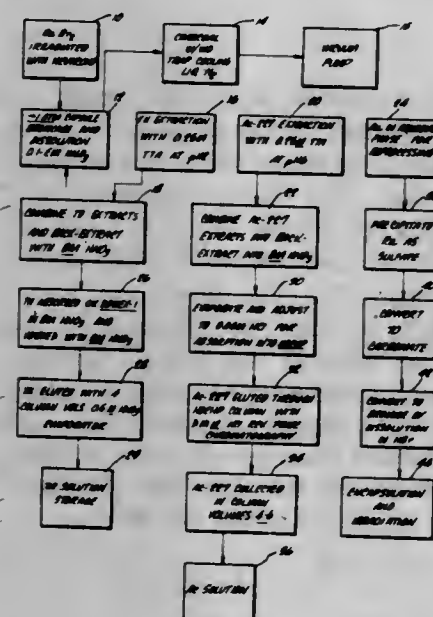
Filed May 4, 1967, Ser. No. 636,110  
 Int. Cl. D21c 1/02; D21f 1/34  
**U.S. Cl. 162—275** **10 Claims**



Apparatus for conditioning felt in the manufacture of paper by application of water in spray form, chemical ingredients being successively introduced into the water by a slug and continuous pumps under control of timers. Water is supplied under a regulated pressure and temperature sensed by a pressure switch preventing operation of the timers and pumps until flow conditions are proper.

**3,459,634**  
**RADIOISOTOPE PROCESSING**  
 Carl P. Ruiz and Benjamin F. Rider, Fremont, and James M. Gerhart, Walnut Creek, Calif., assignors to General Electric Company, New York, N.Y., a corporation of New York

Filed Sept. 19, 1966, Ser. No. 580,476  
 Int. Cl. G21f 1/02; C01f 1/00, 15/00  
**U.S. Cl. 176—16** **23 Claims**



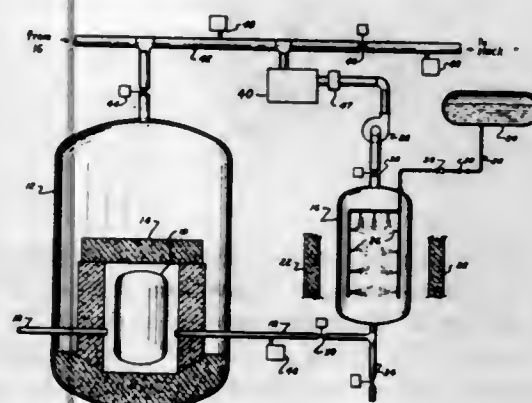
A method of preparing and separating actinium-227 and thorium-228 from radium-226 is disclosed. Basically,

this system consists of irradiating radium-226 with neutrons for a period sufficient to form a mixture of actinium-227, thorium-228 and radium-226, dissolving the mixture in an aqueous acid solution, extracting thorium-228 with an organic solvent, adjusting the pH of the solution and extracting actinium-227 with an organic solvent, drying the resulting organic solution, dissolving the dried material containing actinium-227 in an aqueous acid solution, adsorbing actinium-227 onto a column containing di-(2-ethylhexyl) phosphoric acid or a homolog thereof, then eluting the purified actinium-227 from the column.

**3,459,635**  
**CONTAINMENT PRESSURE REDUCTION SYSTEM AND RADIOACTIVITY REMOVAL SYSTEM FOR NUCLEAR REACTOR INSTALLATIONS**

Frank Bevilacqua, Windsor, and John M. West, West Hartford, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 29, 1966, Ser. No. 606,511  
 Int. Cl. G21c 19/20  
**U.S. Cl. 176—37** **9 Claims**



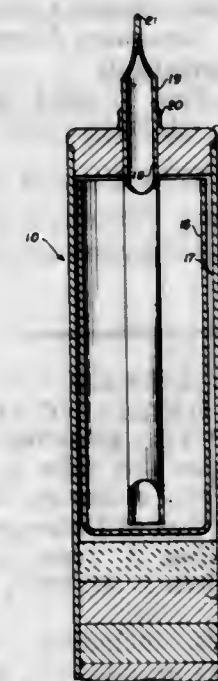
A system for reducing the pressure in the containment facilities for a water type nuclear reactor organization and for removing radioactivity from the containment atmosphere including a plurality of containers which normally form a part of the containment facility for the reactor but which may be separately isolated from the reactor. These containers have a spray type condensing system and by means of the isolation this system can be periodically tested for operability. These containers may also form part of a circulating system which contains purification components to remove radioactivity from the circulated atmosphere and may incorporate other cooling systems, such as heat exchangers, to continue depressurization of the circulating atmosphere.

**3,459,636**  
**VENTED FUEL PIN**  
 John H. Germer, San Jose, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed July 24, 1968, Ser. No. 747,321  
 Int. Cl. G21c 3/04  
**U.S. Cl. 176—68** **6 Claims**

A device incorporated in the upper end of a vented type nuclear fuel element which permits outward leakage of fission product gases and prevents inward leakage of coolant. This is accomplished by venting gases to the upper end of the fuel pin which is at a lower external pressure than in the vicinity of the bottom of the plenum. In addition, venting at the top of the plenum eliminates a coolant level

variation in the plenum caused by pressure variations. the water. Any scale is formed on the metal balls not Also, the device includes means for preventing air and the surfaces of the still. The scale is removed from the



moisture from getting into the fuel element and fuel from escaping during initial handling.

**3,459,637**  
**ENZYME DIGESTION OF NUCLEIC ACIDS**  
 Louis Laufer and Sidney Gutcho, Bronx, N.Y., assignors to Schwarz Bioresearch, Inc., Orangeburg, N.Y.  
 No Drawing. Continuation of application Ser. No. 134,570, Aug. 29, 1961. This application Oct. 30, 1963, Ser. No. 319,955

**U.S. Cl. 195—28** **Inc. Cl. C12b 1/00** **8 Claims**

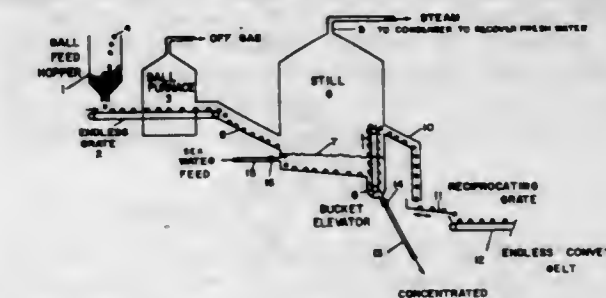
1. A process for hydrolyzing nucleic acids to form primarily 5'-nucleotides which comprises: incubating the nucleic acid to be hydrolyzed for from 2 to 48 hours in a hydrolysis solution containing the substantially solids-free aqueous extract of rapidly proliferating seed-parts selected from the group consisting of substantially seed-free comminuted germinating seed rootlets and substantially seed-free comminuted germinating seed stems; maintaining the temperature of said hydrolysis solution at between 10 and 65° C. and the pH of said solution at between 8.5 and 9.5 during incubation whereby the nucleic acid is hydrolyzed primarily to 5'-nucleotides; and recovering said 5'-nucleotides from the incubated hydrolysis solution.

**3,459,638**  
**DISTILLATION DESALINATION OF SEA WATER USING HEATED METAL BALLS TO VAPORIZE WATER**

Harry W. Nagel, West Chester, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Jan. 24, 1967, Ser. No. 611,465  
 Int. Cl. C02b 1/06; C23f 15/00; B01d 3/32  
**U.S. Cl. 203—7** **9 Claims**

Sea water is distilled in a still by using as the heat transfer medium in the still a moving bed of refractory metal balls. The metal balls are heated then passed into the sea water then removed from the still thus heating

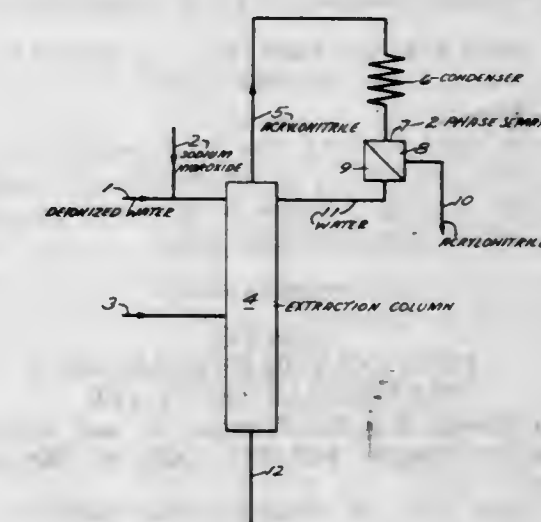


metal balls mechanically and the balls reheated and passed into the solution again.

**3,459,639**  
**SEPARATION OF ACRYLONITRILE FROM VAPOR-PHASE REACTION MIXTURES BY EXTRACTIVE DISTILLATION WITH CONTROLLED pH OF THE MIXTURE**

Marcel Borrel, Oullins, Rhone, and Jean Konareff, Venissieux, Rhone, France, assignors to Ugine Kuhlmann, Paris, France, a French corporation  
 Continuation-in-part of application Ser. No. 334,899, Dec. 31, 1963. This application Apr. 24, 1967, Ser. No. 633,287  
 Claims priority, application France, Jan. 5, 1963, 920,556

**U.S. Cl. 203—37** **Int. Cl. B01d 11/00, 3/34** **7 Claims**



This application describes a process for the purification of the complex mixture of acrylonitrile, acetonitrile and other materials formed in the vapor phase conversion of acrolein or propylene to acrylonitrile over a catalyst in the presence of ammonia and oxygen. The separation of acrylonitrile from acetonitrile is effected by extractive distillation using deionized water at a pH of at least 5 and preferably 5 to 7 and introduction of an alkaline agent to the distillation mixture.

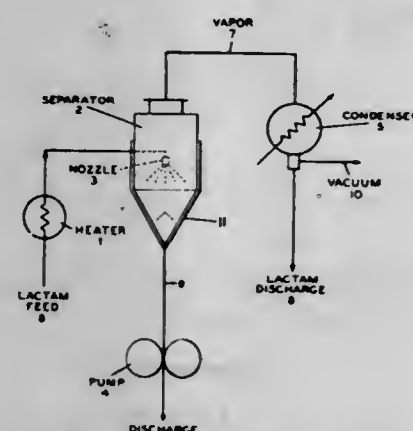
**3,459,640**  
**PROCESS FOR THE PURIFICATION OF LACTAMS**  
 Shigemitsu Tsunawaki, Mihara-shi, and Yutaka Furusawa, Hiroshima-ken, Japan, assignors to Teijin Limited, Osaka, Japan, a corporation of Japan

Filed Apr. 6, 1966, Ser. No. 540,629  
 Claims priority, application Japan, Apr. 8, 1965, 40/20,719  
**Int. Cl. B01d 3/08, 3/06** **3 Claims**

A continuous process for recovering a purified caprolactam from polycaprolactam extraction solutions which



comprises passing crude caprolactam to a heat exchanger and bringing to a temperature of from 100 to 260° C. and subsequently passing said heated stream into a separate vessel operated at a pressure of 10 to 50 mm. Hg



and a temperature of from 150 to 300° C. wherein the purified caprolactam containing less than 0.1% oligomers passes into the overhead as a vapor which is recovered independently from the liquid portion containing up to 85% oligomers.

3,459,641

**METHOD OF MEASURING POTASSIUM ION AND GLASS ELECTRODE THEREFOR**  
Normand C. Hebert, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Feb. 21, 1967, Ser. No. 617,615

Int. Cl. B01k 3/00

U.S. Cl. 204—1 7 Claims  
Glass electrode for and process of selectively measuring potassium ion activity in the presence of sodium ions wherein the sensing portion is a vanadium pentoxide modified sodium aluminosilicate glass.

3,459,642

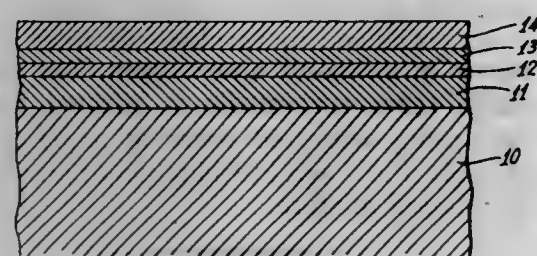
**PROCESS FOR PREPARING A PLANOGRAPHIC PLATE**

Armando Birlain Schaffer, Ganges 73, and Allan Kilroe Lombardo, Dakota 249-503, both of Mexico City, Mexico

Filed Nov. 18, 1966, Ser. No. 595,445

Int. Cl. C23b 5/20, 5/06; B41n 1/08

U.S. Cl. 204—41 5 Claims



1. Process for producing a printing plate, comprising preparing a printing plate base sheet for electroplating, electroplating on at least one side thereof a copper ink adhering layer from an acid bath containing a brightener; electroplating on said copper layer another copper ink adhering layer from an acid bath containing a double metal salt to produce a matte acid copper layer; and electroplating on said copper layer a layer of hard non-porous chromium.

3,459,643

**ALKOXYLATION OF N-METHYL-N-HYDROCARBYLAMIDES**

Sidney D. Ross and Raymond C. Petersen, Williamstown, and Manuel Finkelstein, North Adams, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

No Drawing. Filed Feb. 3, 1967, Ser. No. 613,754

Int. Cl. B01k 1/00

U.S. Cl. 204—59 3 Claims  
A process for the alkoxylation of N-methyl-N-hydrocarbylamides comprising electrolyzing a solution of a nitrate salt, an N-methyl-N-hydrocarbylamide and a lower aliphatic alcohol.

3,459,644

**PROCESS FOR OXIDIZING OLEFINS TO CARBONYL COMPOUNDS**

Alexander F. MacLean and Adin L. Stautzenberger, Corpus Christi, Tex., assignors to Celanese Corporation, a corporation of Delaware

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,959

Int. Cl. C07b 3/00; B01k 1/00

U.S. Cl. 204—80 7 Claims  
Carbonyl compounds, including aldehydes, ketones, and carboxylic acids, are produced by the oxidative cleavage of an unsaturated olefinic hydrocarbon by a process which comprises contacting the hydrocarbon with a neutral to acidic aqueous solution of a catalyst comprising ruthenium together with a cerium salt having an oxidation potential greater than 1.5 volts. In a particular embodiment, the cerium salt oxidizing agent is regenerated electrochemically.

3,459,645

**METHOD OF ELECTROCHEMICALLY MACHINING A WORKPIECE INCREMENTALLY USING A PLURALITY OF ELECTRODES DIMENSIONAL PROGRESSIVELY CLOSER TO THE DESIRED CONFIGURATION**

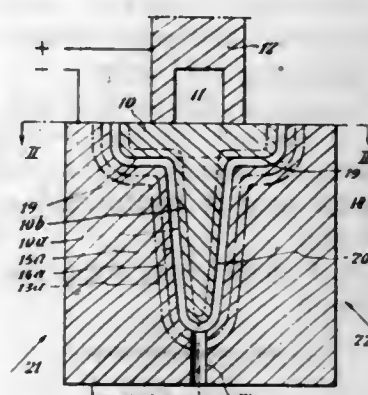
John Francis Wilson, John Goddard, and Derek Aubrey Glew, Bristol, England, assignors to Rolls-Royce Limited, Derby, England, a British company

Filed Dec. 17, 1965, Ser. No. 514,597

Claims priority, application Great Britain, Dec. 22, 1964, 52,381/64

Int. Cl. B23p 1/04, 1/00

U.S. Cl. 204—143 1 Claim



The disclosure of this invention pertains to a method of electrochemical machining of, for example, deep three-dimensional shapes for carrying out the machining. The present method makes possible the machining of the first and opposite second surfaces of the workpiece simultaneously. The workpiece is subjected to a succession of discrete operations in each of which a tool is held in fixed spaced relationship to the workpiece while material is electrochemically removed from the workpiece by passage of an electric current between the tool and the workpiece.

3,459,646

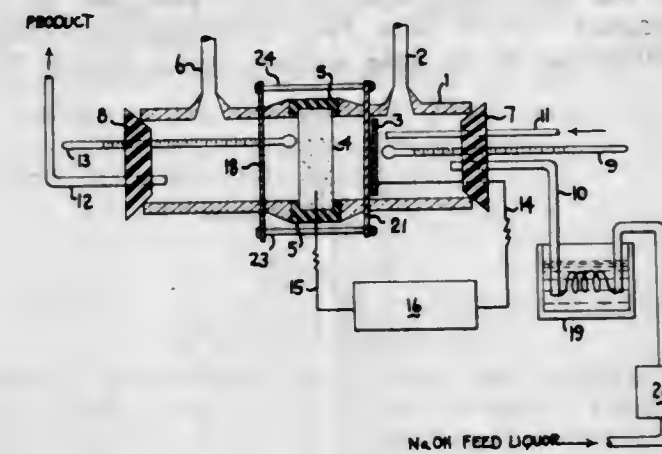
**ALKALI METAL HYDROXIDE PURIFICATION**

Gordon A. Carlson, New Martinsville, W. Va., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

Continuation-in-part of applications Ser. No. 506,101, Nov. 2, 1965, and Ser. No. 561,999, June 30, 1966. This application June 25, 1968, Ser. No. 739,741

Int. Cl. C01d 1/40, 1/04; B01k 3/04

U.S. Cl. 204—153 17 Claims



Aqueous alkali metal hydroxide solution is treated to remove metal ion impurity by passing the solution through a porous cathode, preferably a porous graphite carbon cathode, of an electrolytic cell while electrolyzing the solution.

3,459,647

**PREPARATION OF 1-CYANOBICYCLO[1.1.0]BUTANE AND 1-CYANOCYCLOBUTENE BY PHOTOLYSIS OF β-CYANOPRENE**

David M. Gale, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 7, 1966, Ser. No. 599,730

Int. Cl. B01j 1/10

U.S. Cl. 204—158 9 Claims  
A process for preparing 1-cyanobicyclo[1.1.0]butane and 1-cyanocyclobutene by the photolysis of 2-cyanobutadiene at wave lengths between 150 and 4000 Å. and in an inert organic solvent in which the butadiene is present in amounts of 0.01 to 50.0% by weight. No other additives are necessary. However the process may be carried out in the presence of a catalytic amount of a cuprous salt.

3,459,648

**PHOTOLYTIC PRODUCTION OF CYCLOALKYL KETOXIMES**

John P. Guarino, Trenton, and Robert H. Williams, Pennington, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 569,107, Aug. 1, 1966. This application Apr. 3, 1968, Ser. No. 718,365

Int. Cl. C07c 3/24; B01j 1/10

U.S. Cl. 204—162 10 Claims

A ketoxime of a cycloalkane is produced by a photochemical reaction between a cycloalkane (cyclohexane) and an alkyl nitrite. The initial product is a nitrosocycloalkane which is isomerized to the ketoxime, either in a separate step or preferably, during the photolytic reaction in the presence of a polar material (alcohol, pyridine, etc.) or at moderately elevated temperatures or both. The cyclohexanone oxime is of value as a precursor for making nylon 6, being converted by the Beckmann rearrangement to epsilon-caprolactam, which yields nylon 6 by self-condensation.

3,459,649

**SYLVITE FLOTATION FROM POTASSIUM-CONTAINING CRUDE SALTS**

Heinz Müller and Engelbert Krempel, Burgkirchen (Alz), Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Nov. 2, 1967, Ser. No. 680,018

Claims priority, application Germany, Dec. 24, 1966, F 51,078

Int. Cl. B03d 1/02

U.S. Cl. 209—166 2 Claims

Process for recovering sylvite by flotation from potassium-containing crude salts, wherein alkyl-diamines containing 7 to 22 carbon atoms are used as collectors.

3,459,650

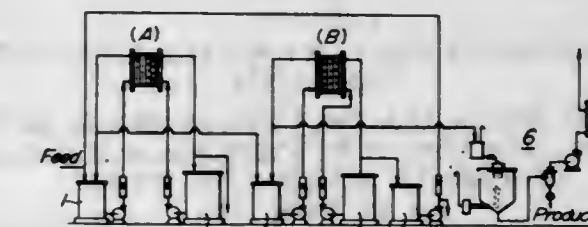
**PROCESS FOR THE PURIFICATION OF AMINO ACIDS**

Masumi Hiraiwa and Tadasu Takahashi, Takarazuka-shi, and Wataru Fokuda, Fuse-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Higashi-ku, Osaka, Japan, a corporation of Japan

Filed Jan. 12, 1966, Ser. No. 520,267

Int. Cl. B01d 13/02

U.S. Cl. 204—180 2 Claims



Purification of a neutral amino acid obtained by the Strecker method or amination of a halogenated carboxylic acid which contains contaminating organic and inorganic materials by passing the same consecutively through two electroanalysis zones at regulated flow rates where strongly acidic cation-exchange membranes and anion-exchange are arranged alternatively between anode and cathode and then spray drying to obtain a purified crystalline neutral amino acid.

3,459,651

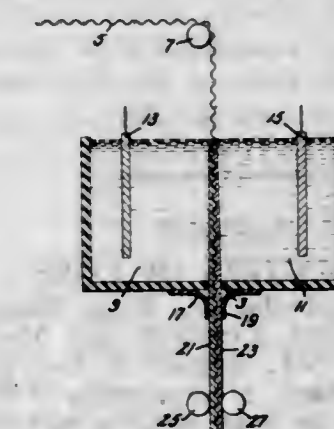
**PROCESS OF CONTINUOUSLY FORMING BIPOLAR ELECTRODES BY THE USE OF ELECTROPHORESIS**

Joseph L. Weininger and Thomas O. Rouse, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed May 2, 1966, Ser. No. 546,769

Int. Cl. C23b 13/00; H01m 35/10

U.S. Cl. 204—181 15 Claims



A method of forming a bipolar Faure-type electrode is described which comprises positioning a conductive substrate having opposite faces within a chamber which has a different dispersion on opposite sides of the substrate.



and counter electrode. One dispersion contains a major amount by volume of a dielectric dispersing medium, a minor amount by volume of a chemically active material, and an activator to produce a negative electrode surface on the substrate. A second dispersion similar to the first dispersion is contained in the chamber on the opposite side of the substrate to produce a positive electrode surface on the substrate. The chemically active materials are deposited electrophoretically on the respective substrate surfaces.

3,459,652

**PARAFFIN-ACTIVE CARBON ELECTRODE**

Donald H. Grangaard, Appleton, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed Dec. 27, 1966, Ser. No. 604,933

Int. Cl. B01k 3/08

U.S. Cl. 204-294 4 Claims  
A porous low cost alkali stable electrode which is resistant to wetting, highly efficient for the electrolytic reduction of oxygen to perhydroxyl ion and formed by cold or hot pressing activated carbon having paraffin intimately adsorbed thereon.

3,459,653

**FILTRATION OF SOLVENT-WATER EXTRACTED TAR SAND**

Arnold M. Benson, Oakland, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed July 18, 1966, Ser. No. 566,039

Int. Cl. C10g 1/04

U.S. Cl. 208-11 6 Claims  
Recovering tar from tar sands employing a solvent extraction process wherein tar sand is slurried in a hydrocarbon solvent with sufficient water added to the slurry to form a grainy slurry, said water being from about 1% to about 7% by weight of the tar sand, and then filtering the slurry, whereby release of fines is controlled to maintain an easily filtered slurry.

3,459,654

**HALOGENATED AROMATIC INHIBITORS**

Zisis Andrew Foroulis, Morristown, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Oct. 16, 1967, Ser. No. 675,401

Int. Cl. C10g 9/10

U.S. Cl. 208-47 12 Claims  
This disclosure relates to the inhibition of corrosion in chemical and petroleum process equipment exposed to acidic environments. In particular, the present disclosure relates to a method of inhibiting acid-induced corrosion in metal vessels exposed to acid environments by adding to the process streams a very small amount of a halogenated aromatic compound. It is believed that the halogenated aromatic forms a thin film over the metal surface and interferes with the diffusion of acid to the metal.

3,459,655

**PRODUCTION OF COKE**

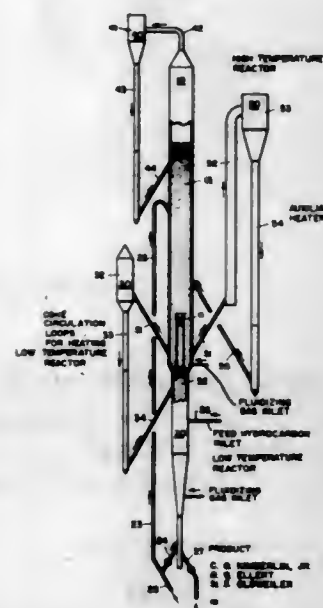
Charles Newton Kimberlin, Jr., Baton Rouge, La., and Henry George Ellert, Cranford, and Morey E. Oldweller, Whippany, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Apr. 20, 1966, Ser. No. 543,956

Int. Cl. C10g 37/06; C10b 55/04

U.S. Cl. 208-53 12 Claims  
The invention described herein relates to a highly flexible endothermic process for forming gaseous and car-

bonaceous products by cracking hydrocarbons by contact with hot fluidized particulate coke solids contained in separate communicating reaction zones at different elevated temperatures. Heat for the total system is supplied by circulating coke solids particles, in dilute solids phase, between the high temperature reaction zone and an auxiliary heating zone, to heat the coke solids particles by direct contact with the combustion products of fuel and oxygen. Heat for the low temperature reaction zone is supplied by circulation of the coke solids particles between the high temperature reaction zone and the low temperature reaction zone. Heat economies are obtained by withdrawal of the coke solids particles directly from



the low temperature reaction zone. Coke is produced, and carbon-black can be co-produced, if desired. A unique coke product can be obtained by co-production of coke and carbon black, and by incorporation of the latter within the coke particles. By contact between the coke and a hydrocarbon-carbon black containing slurry within the low temperature zone, the carbon black is coated upon the coke particles, and by circulation of the product between the low temperature zone and the high temperature zone both the coke and carbon black are converted into a unique form of calcined coke.

3,459,656

**MAKING A WHITE OIL BY TWO STAGES OF CATALYTIC HYDROGENATION**

Maurice K. Rausch, South Holland, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 572,662, Aug. 16, 1966. This application July 20, 1967, Ser. No. 654,716

Int. Cl. C10g 41/00, 23/04

U.S. Cl. 208-57 9 Claims

Technical grade or food grade white mineral oils are directly prepared from lubricating viscosity petroleum fractions by catalytic hydrogenation in two steps. The first hydrogenation step is conducted in the presence of a sulfur-resistant catalyst at relatively severe conditions, while the second hydrogenation is conducted over a supported platinum group metal catalyst at milder conditions. The product recovered from the two step catalytic hydrogenation, depending upon conditions of conversion, is directly usable in white mineral oil applications requiring technical or food grade products.

3,459,657

**PROCESS FOR THE SELECTIVE HYDROGENATION OF PYROLYSIS GASOLINE**

Walter Krönig, Leverkusen, Kurt Halcour, Cologne-Stammheim, and Gerhard Scharfe, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed May 4, 1966, Ser. No. 547,404  
Claims priority, application Germany, May 12, 1965, F 46,027

Int. Cl. C10g 23/02; B01j 11/46

U.S. Cl. 208-143 7 Claims

Improvements in the selective hydrogenation of pyrolysis gasoline or fractions thereof, which include the use of an aluminium spinel catalyst support and hydrogenation of below 100° C.

3,459,658

**REMOVAL OF IRON CONTAMINANTS FROM HYDROCARBON OILS**

Gordon E. Langlois, El Cerrito, and Lloyd J. Olson, Oakland, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed June 28, 1967, Ser. No. 649,450

Int. Cl. C10g 17/02

U.S. Cl. 208-252 7 Claims

A process for the removal of iron contaminants from hydrocarbon oils by contacting the oil at a temperature in the range of 100°-500° F. with at least one acid and at least one reducing agent in an aqueous medium. The reducing agent used must be capable of reducing iron from the ferric to the ferrous state. Organic acids and reducing agents are preferred.

3,459,659

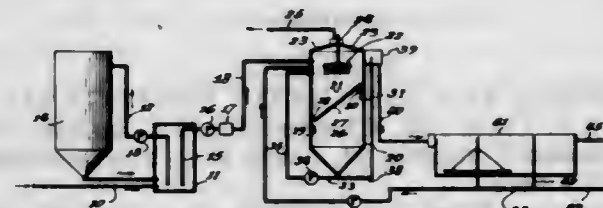
**WASTE TREATMENT PROCESS AND APPARATUS**

Miles P. Bedker, Albert Lea, Minn., assignor to Wilson & Co., Inc., a corporation of Delaware

Filed Mar. 13, 1968, Ser. No. 712,729

Int. Cl. C02c 1/06, 1/02

U.S. Cl. 210-3 12 Claims



This application deals with an anaerobic process for treatment of waste materials wherein raw waste is introduced into the upper mixer-settler portion of a closed holder or tank which is divided into an upper portion and a lower digestion portion by a baffle angled transverse to the vertical axis. Communication is provided between the upper and lower portions at the low end of the baffle and adjacent the tank wall so that solids may move by gravity to the lower digestion portion of the tank. Communication is provided between the upper and lower portions at the elevationally higher end and adjacent the tank wall for degassing the digested liquor which operation serves the additional purpose of transferring floating solids to the upper portion of the unitary structure. Solids removed from the bottom of the lower digestion portion of the unitary tank are either returned to the mixer-settler portion of the unitary structure or to a sludge separator where a clarified supernatant is discharged to waste and the separated solids are either recycled or removed from the system.

3,459,660

**LUBRICATING OIL COMPOSITION**

William T. Shepherd, Port Arthur, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 14, 1966, Ser. No. 586,637

Int. Cl. C10m 1/44

U.S. Cl. 252-37.2 8 Claims

Mineral lubricating oil composition containing a hydrocarbyl phosphite, an aliphatic hydrocarbon-substituted organic tin salt and a trialkylated phenol.

3,459,661

**LUBRICATING COMPOSITIONS CONTAINING METAL SALTS OF PARTICULAR CONDENSATION PRODUCTS**

Roland T. Schlobohm, Bethalto, Ill., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 20, 1967, Ser. No. 610,469

Int. Cl. C10m 1/36, 1/20

U.S. Cl. 252-42.7 11 Claims

A multi-functional lubricating oil composition is obtained by incorporating into a lubricating oil a minor amount of an additive which is prepared by neutralizing the reaction product (1) of amino-amide, (2) an aldehyde and (3) a phenol. The neutralized product may subsequently be carbonated if desired.

3,459,662

**PHOSPHO-SULFURIZED PHOSPHITE ESTERS AND HYDROCARBON COMPOSITIONS CONTAINING THE SAME**

Shih-En Hu, Roselle, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Jan. 31, 1967, Ser. No. 612,794

Int. Cl. C10m 5/24, 7/46; C07f 9/04

U.S. Cl. 252-46.7 11 Claims

Reaction products of organic phosphite esters (mono-, di-, or tri-) with a phosphorus polysulfide are sludge inhibitors and anti-wear agents in lubricating oils or in middle distillate hydrocarbon fuels or residual hydrocarbon fuels, when used in amounts up to 10 wt. percent based on the weight of the compounded compositions.

3,459,663

**ALUMINUM ROLLING OIL**

Howard M. Rue, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Apr. 6, 1967, Ser. No. 628,816

Int. Cl. C10m 1/54

U.S. Cl. 252-46.7 7 Claims

A hot aluminum rolling oil is prepared from 98 wt. percent water and 2 wt. percent of a soluble oil which contains 72-92% of a naphenic oil having viscosity at 100° F. of 35-300 SUS, 1-5% of a trihydrocarbylphosphate such as tricresylphosphate, 0.25-3% of an alkylamine salt of mercaptothiazole such as a nonylamine salt of 2-mercaptobenzothiazole, 2-8% of an ethoxylated fatty amine such as soy bean amine ethoxylated with 15 moles of ethylene oxide, and 4-12% of an unsaturated fatty acid such as oleic acid. This emulsion when used on merchant mills in the hot rolling of aluminum and aluminum alloys prevents "pick-up" and maintains the rolls at lower temperatures than generally possible with other available rolling oils.



3,459,664

**TRITHIONE POLYAMINE REACTION PRODUCTS**  
Donald J. Anderson, San Anselmo, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Apr. 8, 1966, Ser. No. 541,090  
Int. Cl. C10m 1/36

**U.S. Cl. 252-47 8 Claims**  
Lubricating oil compositions are provided by combining a 1,2-dithiol-3-thione of at least 30 carbon atoms at elevated temperatures with an alkylene polyamine, wherein the alkylene polyamine has from 2 to 3 carbon atoms between a primary amine group and a secondary amine group.

3,459,665

# BLEACHING DETERGENTS AND WASHING ADJUVANTS

Joachim Schiefer, Opladen-Lutzenkirchen, and Manfred Dohr, Dusseldorf-Holthausen, Germany, assignors to Henkel & Cie G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany

No Drawing. Filed Apr. 6, 1966, Ser. No. 540,516

**U.S. Cl. 252-95 22 Claims**  
Int. Cl. C11d 7/54

Coated per-oxygen compounds, the coating being water-insoluble at room temperature comprising particles of per compounds coated with an ester of glycerin and at least one member of the group consisting of water-insoluble monocarboxylic acids containing 8 to 26 carbon atoms, water-insoluble hydroxy monocarboxylic acids containing 8 to 26 carbon atoms, aliphatic polycarboxylic acids containing 2 to 10 carbon atoms, phthalic acid and mixtures thereof.

3,459,666

# LIQUID CLEANING COMPOSITIONS

Maria Welchbrodt, Cologne-Flittard, and Wolf-Dieter Willmund, Dusseldorf-Holthausen, Germany, assignors to Henkel & Cie G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany

No Drawing. Filed Mar. 24, 1966, Ser. No. 536,982

**Claims priority, application Germany, Apr. 6, 1965, H 55,714**

**U.S. Cl. 252-137 5 Claims**  
Int. Cl. C11d 3/065

Liquid cleaning compositions comprising an aqueous solution containing 20 to 50% of an alkaline potassium phosphate and 15 to 40% by weight of a water-soluble salt of amino alkane sulfonic acids.

3,459,667

# PHOSPHOR AND METHOD OF PREPARATION THEREOF

Simon Larach and Perry N. Yocom, Princeton, N.J., assignors to RCA Corporation, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 347,353, Feb. 26, 1964. This application Dec. 23, 1966, Ser. No. 604,116

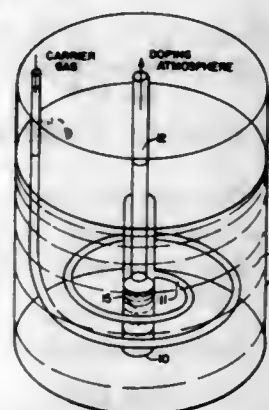
**U.S. Cl. 252-301.6 17 Claims**  
Int. Cl. C09k 1/12, 1/16

Luminescent materials consisting essentially of zinc and/or cadmium chalcogenides containing at least one rare earth activator and at least one alkali metal. The luminescent materials emit light almost entirely in one or a very few narrow spectral bands upon cathode ray excitation.

3,459,668

**SEMICONDUCTOR METHOD AND APPARATUS**  
Francis M. Schmitt, St. Louis Park, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed May 21, 1965, Ser. No. 457,784  
Int. Cl. H01l 7/36, 7/44, 15/00  
**U.S. Cl. 252-62.3 2 Claims**



Impurity control of doping gases for semiconductor processing by use of non-doping solvent liquid with an active doping material dissolved therein as a source of impurity for diffusion in the manufacture of semiconductor devices. A carrier gas is passed over surface of the liquid solution to entrain controlled quantities of doping impurities.

3,459,669

# BLEACHING COMPOSITIONS FOR HARD SURFACES

Balaram Das, Rotterdam, and Karel Gerhard van Senden, Schiedam, Netherlands, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed July 18, 1966, Ser. No. 565,748  
Claims priority, application Great Britain, July 20, 1965, 30,814/65

**U.S. Cl. 252-99 10 Claims**  
Int. Cl. C11d 7/18  
Powdered bleaching compositions for hard surfaces, particularly scouring powder bleaching compositions, containing an inorganic per compound, such as an inorganic perborate, have their bleaching power improved by the incorporation therein of an activator mixture consisting of urea and an alkali metal phosphate.

3,459,670

# BUILDERS FOR SYNTHETIC DETERGENTS

Richard P. Carter, Jr., Chesterfield, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 1, 1966, Ser. No. 562,127  
Int. Cl. C11d 1/04

**U.S. Cl. 252-99 17 Claims**  
A composition useful as a detergent in an aqueous solution includes (1) a surface active compound and (2) as a builder a cycloalkane polycarboxylic acid or a water soluble salt thereof.

3,459,671

# POLYURETHANE PRECURSOR COMPOSITION CONTAINING AN ORGANIC HALOGEN AND TRIALKANOLAMINE

Raymond Joseph Marklow and John Francis Wood, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Apr. 27, 1966, Ser. No. 545,552  
Claims priority, application Great Britain, May 4, 1965, 18,732/65

**U.S. Cl. 252-182 6 Claims**  
Int. Cl. C09k 3/00, 3/28; C08g 22/00  
A mixture of an organic halogen compound and a trialkanolamine having a combined mono- and dialkanol-

amine content expressed as dialkanolamine, less than 5 weight percent based on the weight of the trialkanolamine and a method for preparing the mixture for use in preparing a polyurethane foam which includes reacting a trialkanolamine containing mono- and dialkanolamine with alkylene oxide in amounts sufficient to react substantially with the mono- and dialkanolamines to provide a trialkanolamine having a mono- and dialkanolamine content, expressed as dialkanolamine, less than 5 weight percent based on said trialkanolamine and mixing the resulting trialkanolamine with an organic halogen compound.

3,459,672

# COMPOSITE SPHEROIDAL PHOSPHORESCENT ORGANIC POLYMER ARTICLE AND PROCESS

Albert H. Greer, Haddonfield, N.J., assignor to Sybron Corporation, a corporation of New York

Filed May 18, 1966, Ser. No. 551,071  
Int. Cl. C09k 1/12; C08f 19/20, 19/04

**U.S. Cl. 252-301.3 9 Claims**  
Long-termed phosphorescent spheroidal particles, the individual particles being made of translucent, crosslinked organic polymers having embedded in the surface area particles of a long-termed phosphorescent inorganic compound. Suitable inorganic long-termed phosphors are the sulfides of calcium, strontium, zinc and cadmium. The spheroidal particles are produced by forming suspensions of inorganic phosphorescent particles in the monomer and suspension polymerizing the monomer in an aqueous phase: The pH of the aqueous phase is maintained between 7 and 14.

3,459,673

# PREPARATION OF LUMINESCENT SILICA GLASS MODIFIED WITH A RARE EARTH METAL

William V. Best, Independence, Mo., and Roland L. Hughes, Leawood, Kans., assignors to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 412,866, Nov. 20, 1964. This application Oct. 10, 1967, Ser. No. 674,106

**U.S. Cl. 252-301.4 10 Claims**  
Int. Cl. C09k 1/04

This invention pertains to the preparation of a luminescent silica glass modified with at least one rare earth metal component wherein a hydrolyzable silicon compound such as SiCl<sub>4</sub> is reacted in the vaporous form with a mist or fog of at least one water soluble rare earth metal salt to form silicic acid, the silicic acid then being dried and dehydrated to form silica powder. The silica powder is thereafter fused to obtain a clear transparent, luminescent glass.

3,459,674

# PHOSPHORS

Masayuki Emoto, Kodaira-shi, and Masahiro Nakano, Hachioji-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Continuation-in-part of application Ser. No. 520,765, Jan. 14, 1966. This application Sept. 30, 1968, Ser. No. 763,607

**U.S. Cl. 252-301.6 9 Claims**  
Int. Cl. C09k 1/10

Phosphor compositions most suitable for a color television or high-pressure mercury lamps consists of at least one member selected from the group consisting of calcium, strontium, barium, magnesium and zinc as cations; a tantalate as anions; and in addition at least one rare earth element selected from the group consisting of europium, samarium and terbium, or of such phosphor compositions with further addition of lithium. The phosphor compositions possess characteristics which are body-color-

# REJUVENATION OF CATALYSTS POISONED BY NITROGEN COMPOUNDS

Robert L. Crecelius, Lafayette, and Thomas J. Deahl, Orinda, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 11, 1966, Ser. No. 549,139  
Int. Cl. B01j 11/02; B01d 15/06

**U.S. Cl. 252-411 7 Claims**  
A method for rejuvenating a catalyst containing a nickel component supported on acidic refractory oxide support and deactivated by deposits of carbon and nitrogen-containing compounds by contacting the deactivated catalyst with a gas mixture containing hydrogen and from about 1 to 50% by volume hydrogen sulfide at a temperature of from about 600 to 1200° F.

3,459,676

# SYNTHETIC ZEOLITE AND METHOD FOR PREPARING THE SAME

George T. Kerr, Trenton, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed June 14, 1966, Ser. No. 557,378  
Int. Cl. C01b 33/24; B01j 11/40

**U.S. Cl. 252-430 11 Claims**  
As a new zeolite, ZK-20, characterized by the formula, in terms of oxide mol ratios, as follows: 0.1 to 0.2 R<sub>2</sub>O:0.8 to 0.9 Na<sub>2</sub>O:1.0 Al<sub>2</sub>O<sub>3</sub>:4 to 5 SiO<sub>2</sub>:YH<sub>2</sub>O where R is selected from the group consisting of a nitrogen-containing cation derived from 1-methyl-1-azonia-4-azabicyclo [2.2.2] octane; and Y is any value from 1 to 5.

3,459,677

# PREPARATION OF COBALTOUS ACETATE SOLUTIONS

Max O. Robeson, Salisbury, N.C., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 19, 1966, Ser. No. 551,242  
Int. Cl. B01j 11/82; C07b 3/00

**U.S. Cl. 252-431 4 Claims**  
High concentration solutions of cobaltous acetate in acetic acid, useful as liquid-phase oxidation catalysts after oxidation to the cobaltic state, are prepared by adding cobaltous acetate tetrahydrate to the solvent, gradually with stirring, at a temperature below about 28° C., until about 10 to 30 weight percent cobaltous acetate tetrahydrate based on total weight of the mixture has been added. The mixture is then heated to complete dissolution of the cobalt acetate, temperature being left below 80° C. The dissolved cobaltous acetate can then be oxidized to cobaltic acetate.

3,459,678

# OLEFIN HYDRATION CATALYST

Hugh J. Hagemeyer, Jr., and Max Statman, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,982  
Int. Cl. B01j 11/82, 11/58; C07c 29/08

**U.S. Cl. 252-435 6 Claims**  
An improved catalyst for vapor phase hydration of olefin processes is obtained by soaking a calcined siliceous support in phosphoric acid and then heating the acid impregnated support at a temperature in the range of 220-240° C. in the presence of an oxygen-containing gas for a period of 8-30 hours.



**3,459,679**  
**CATALYST PREPARED BY STEAMING ALKALI METAL ALUMINOSILICATE IN A MATRIX WITH POLYVALENT METAL SALT**  
 Charles J. Plank, Woodbury, and Edward J. Rosinski, Deptford, N.J., assignors to Mobil Oil Corporation, a corporation of New York  
 No Drawing. Continuation-in-part of application Ser. No. 492,309, Oct. 1, 1965. This application Mar. 7, 1967, Ser. No. 621,138

The portion of the term of the patent subsequent to July 2, 198<sup>1</sup> has been disclaimed  
 Int. Cl. B01j 11/58

**U.S. Cl. 252-455** 13 Claims  
 Active catalyst for cracking and other hydrocarbon conversions results from steaming a reaction mixture of alkali metal aluminosilicate with a polyvalent metal compound in a refractory porous oxide matrix. A suitable mixture is a synthetic sodium faujasite and rare earth chloride dispersed in kaolinite.

**3,459,680**  
**CRYSTALLINE ZEOLITE COMPOSITE FOR CATALYTIC HYDROCARBON CONVERSION**  
 Charles J. Plank, Woodbury, and Edward J. Rosinski, Deptford, N.J., assignors to Mobil Oil Corporation, a corporation of New York  
 No Drawing. Continuation of application Ser. No. 471,721, July 13, 1965, which is a continuation-in-part of application Ser. No. 380,986, June 30, 1964. This application Jan. 2, 1969, Ser. No. 796,263

**Int. Cl. B01j 11/40; C07c 3/36; C01b 33/26**  
**U.S. Cl. 252-455** 19 Claims  
 The invention relates to an improved catalyst composition and its method of preparation. The catalyst has a total sodium content of less than about 4 percent by weight and comprises a porous matrix in combination with a crystalline aluminosilicate zeolite, the cations of which consist essentially of metal characterized by a substantial portion of rare earth metal.

**3,459,681**  
**CAUSTIC LEACH TREATMENT OF ALUMINA PARTICLES TO IMPROVE STRENGTH PROPERTIES**  
 William Beveridge Innes, Upland, Calif., and Malden Ward Michael, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
 No Drawing. Filed Feb. 24, 1966, Ser. No. 529,649

**Int. Cl. B01j 11/60** 6 Claims  
 An alumina base catalyst having high reforming activity and good crush strength, formed by caustic leaching of a gamma alumina base, followed by calcining.

**3,459,682**  
**MIXED OXIDE OF THORIUM AND URANIUM MONOPHASED OXYDATION CATALYST**  
 René Bressat, Villeurbanne, Alain De Calmes, Fontenay-aux-Roses, and Bernard Claudel and Yves Trambouze, Villeurbanne, France, assignors to Commissariat à l'Energie Atomique

Filed Dec. 6, 1965, Ser. No. 511,818  
 Claims priority, application France, Dec. 8, 1964, 997,835; Jan. 8, 1965, 1,219

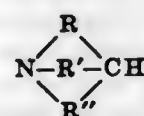
**Int. Cl. B01j 11/50, 11/22, 11/32** 7 Claims  
**U.S. Cl. 252-469**  
 A highly reactive monophased oxidation catalyst is a mixed oxide of thorium and uranium. The process for making this catalyst, includes heating a complex oxalate or mixed oxalate of uranium and thorium up to a decomposition temperature ranging from about 400° C. to about 500° C.

**3,459,683**  
**ADDITION COMPOUNDS OF CERTAIN SODIUM AND LITHIUM SALTS WITH 4,4'-METHYLENEDIANILINE**  
 Frederic C. McCoy, Beacon, and Howard V. Hess, Glenham, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware  
 No Drawing. Filed June 28, 1967, Ser. No. 649,480

**Int. Cl. C10m 7/02** 2 Claims  
**U.S. Cl. 252-49.7**  
 Addition compounds formed by interaction of the nitrates and halides, except the fluorides, of sodium and lithium with 4,4'-methylenedianiline useful in greases, herbicides, and soldering compositions.

**3,459,684**  
**POLYMERIZATION OF 1-AZABICYCLOALKANES**  
 Donald Richard Wilson, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
 No Drawing. Filed Jan. 24, 1967, Ser. No. 611,231

**Int. Cl. C08g 33/08** 5 Claims  
**U.S. Cl. 260-2**  
 Catalytic polymerization of 1-azabicycloalkanes containing from 6 to 8 carbon atoms and having the formula

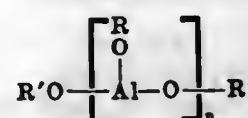


where R, R' and R'' are each divalent alkylene radicals of the group consisting of methylene, ethylene and trimethylene and wherein one of the three carbon atoms adjacent the bridgehead carbon may bear a hydroxyl group yields novel polyamines useful in films, adhesives, finishes and as additives to polymers.

**3,459,685**  
**POLYMERIZATION OF CYCLIC ALKYLENE OXIDES WITH CATALYST SYSTEMS OF A POLYMERIC ALUMINUM ALCOHOLATE AND AN ORGANOMETALLIC**

Hideo Tomomatsu, Austin, Tex., assignor to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware  
 No Drawing. Filed Mar. 28, 1967, Ser. No. 626,391

**Int. Cl. C08g 23/06, 23/14** 8 Claims  
**U.S. Cl. 260-2**  
 High molecular weight polymers having a high degree of crystallinity are obtained from the polymerization of cyclic ethylene and propylene oxides employing a binary catalyst system of an organometallic compound of dialkyl zinc or trialkyl aluminum and a polymeric aluminum alcoholate having the formula:



Cyclic ethylene and propylene oxides employed are those containing oxygen-carbon rings consisting of one oxygen atom in a ring with two or three carbon atoms.

**3,459,686**  
**AZIRIDINE COPOLYMERS**  
 Clarence R. Dick, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
 No Drawing. Filed June 6, 1966, Ser. No. 555,255

**Int. Cl. C08g 33/08** 4 Claims  
**U.S. Cl. 260-2.1**  
 A resinous polymeric composition suitable for use as an ion exchange material which comprises a minor proportion of a 1,1' - (phenylenediethylene)bisaziridine (PDBA) moieties and a major proportion of an N-alkyl-

N-alkaryl-, N-aralkyl- or N-aryl-substituted aziridine, such as phenethyl aziridine moieties. The composition preferably consists of from 1 to 10 percent by weight PDBA, and remainder of the N-substituted aziridine.

**3,459,687**  
**ION EXCHANGE RESINS FROM DIOXA-SPIROHEPTANE CROSS-LINKED OXETANE POLYMERS**  
 Richard G. Bufton, San Jose, Calif., assignor to Diamond Shamrock Corporation, Cleveland, Ohio, a corporation of Delaware  
 No Drawing. Filed May 3, 1967, Ser. No. 635,692

**Int. Cl. C08g 23/04** 4 Claims  
**U.S. Cl. 260-2.1**  
 Ion-exchange resins of high capacity coupled with high thermal and hydrolytic stability have been prepared by introducing into a polymer of a 3,3-disubstituted oxetane functional ion-exchange substituents, e.g., anionic or cationic groups.

**3,459,688**  
**ETHER ADDITIVES IN THE POLYMERIZATION OF ALKENE OXIDES**  
 Henry L. Hsieh, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
 No Drawing. Filed Dec. 27, 1966, Ser. No. 604,567

**Int. Cl. C08g 23/06, 23/14** 9 Claims  
**U.S. Cl. 260-2**  
 The polymerization of epoxide compounds in the presence of a catalyst system comprising (a) an organoaluminum compound, (b) a metal salt of a beta-diketone, and (c) water is improved by conducting the polymerization reaction in the presence of a hydrocarbon diluent containing a saturated ether additive. The polymers produced have wide spread utility in the automobile industry for fabricating such articles as motor mounts, suspension system parts, hoses, tubing, and the like.

**3,459,689**  
**PHOSPHITE ACTIVATORS FOR SULFUR VULCANIZATION OF POLYURETHANES**  
 Ira Starer, Bridgewater Township, Somerset County, and Henry William Cornell, Piscataway, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
 No Drawing. Filed Mar. 14, 1966, Ser. No. 533,785

**Int. Cl. C08g 22/04** 9 Claims  
**U.S. Cl. 260-22**  
 The vulcanization rate in sulfur-vulcanizing olefinic polyurethanes in the presence of zinc chloride complexes of 2,2'-dithiobisbenzothiazole is improved by providing in the vulcanization mixture an alkyl, aryl, aralkyl or alkaryl phosphite such as triphenyl phosphite. Optionally, for improved resistance to yellowing, the vulcanization mixture may additionally contain a stearic acid metal salt such as cadmium stearate.

**3,459,690**  
**UNGELLED, ORGANIC SOLVENT-SOLUBLE INTERPOLYMERS CONTAINING UNSATURATED ALDEHYDES AND COATING COMPOSITIONS MADE THEREFROM**

Robert A. Baugh, Gibsonia, John S. Ostrowski, Pittsburgh, and Robert R. Zwack, New Kensington, Pa., assignors to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania  
 No Drawing. Filed Jan. 24, 1967, Ser. No. 611,259

**Int. Cl. C08f 21/00; C08g 47/10** 20 Claims  
**U.S. Cl. 260-22**  
 Interpolymers useful in air-drying coating compositions are made by the free-radical initiated copolymerization of one or more ethylenically unsaturated monomers and an

acetal-modified polymer comprising a polymer containing hydroxyl groups reacted with an ethylenically unsaturated aldehyde. Polyesters reacted with acrolein or methacrolein are preferred. The interpolymer or composition can be modified with an organosilicon compound, preferably an organopolysiloxane reactive with hydroxy groups. Coatings from the compositions described are fast drying and have exceptionally high gloss.

**3,459,691**  
**UNGELLED, ORGANIC SOLVENT-SOLUBLE INTERPOLYMERS CONTAINING BENZALDEHYDE AND COATING COMPOSITIONS MADE THEREFROM**  
 John S. Ostrowski, Pittsburgh, and Robert A. Baugh, Gibsonia, Pa., assignors to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania  
 No Drawing. Filed Jan. 24, 1967, Ser. No. 611,267

**Int. Cl. C08f 21/00; C08g 47/10** 19 Claims  
**U.S. Cl. 260-22**  
 Interpolymers useful in air-drying coating compositions are made by the free-radical initiated copolymerization of one or more ethylenically unsaturated monomers and an acetal-modified polymer comprising a polyester or other polymer containing hydroxyl groups reacted with benzaldehyde. The preferred procedure includes the benzaldehyde with the polymer components to produce the acetal-modified polymer in a single process. The interpolymer or composition can be modified with an organosilicon compound, preferably an organo-polysiloxane reactive with hydroxyl groups. Coatings from the compositions described are fast drying and have exceptionally high gloss.

**3,459,692**  
**BLENDS COMPRISING CHLORINATED POLY-VINYL CHLORIDE AND CHLORINATED POLYETHYLENE**  
 Robert Büning and Hans-Ewald Konermann, Oberlar, and Karl-Heinz Diessel, and Gerhard Bier, Troisdorf, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany, a corporation of Germany  
 No Drawing. Filed Apr. 21, 1966, Ser. No. 544,092

**Int. Cl. C08f 29/24, 29/14, 29/04** 7 Claims  
**U.S. Cl. 260-23**  
 Blends of chlorinated polyvinyl chloride and chlorinated polyethylene, the polyvinyl chloride having originally been predominantly syndiotactic, are disclosed. The blends are useful as molding compositions.

**3,459,693**  
**PROCESS FOR POLYSTYRENE LATEX AGGLOMERATION**  
 Walter M. Halper, Palos Verdes Peninsula, and Roger F. York, Cypress, Calif., and Fred Dudley Moss, Greenwich, Conn., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed July 18, 1966, Ser. No. 565,855  
**Int. Cl. C08f 33/02** 5 Claims  
**U.S. Cl. 260-23**  
 An improved process for preparing polystyrene latices useful in reinforcing synthetic foam rubber is disclosed comprising (1) shear-homogenizing an agglomerable polystyrene latex to obtain agglomeration of polystyrene particles and (2) concentrating the resulting agglomerated latex to at least 60% by weight solids content.



### 3,459,694 VULCANIZATION OF POLYCHLOROPRENES WITH EPOXIDES AND THIOUREAS

John Michael Bowman, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 451,669, Apr. 28, 1965. This application Oct. 16, 1967, Ser. No. 675,364

Int. Cl. C08c 11/54, 11/72; C08d 9/10  
U.S. Cl. 260—23.7 7 Claims  
A vulcanizable chloroprene polymer composition comprising about 100 parts of a chloroprene polymer, about 0.7 to 7.0 parts of an epoxide and about 0.5 to 5.0 parts of a substituted thiourea.

### 3,459,695 ASPHALTIC LAMINATING COMPOSITION

John A. Hedge, Wilmington, and Lewis W. Hall, Jr., Claymont, Del., and Charles Shore, Chadds Ford, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Apr. 7, 1966, Ser. No. 540,821  
Int. Cl. C08h 13/08; B32b 15/08

U.S. Cl. 260—28.5 2 Claims  
Hot melt laminating compositions are disclosed which comprise asphalt, atactic propylene-ethylene copolymer containing .5 to 20 weight percent ethylene, an elastomer, and a petroleum mineral oil.

### 3,459,696 WATER-REPELLENT COMPOSITIONS

Robert Emms Read, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 466,844, June 24, 1965. This application Aug. 1, 1968, Ser. No. 753,042

Int. Cl. C08f 29/22; C08g 37/32  
U.S. Cl. 260—28.5 3 Claims  
A composition for imparting oil and water repellency to textiles which can be applied to the textile from an aerosol container and which needs no heat cure for optimum results. The composition comprises a mixture of (A) a fluorinated copolymer of



and  $CH_2=C(R)CO_2R'OH$ ,  $CH_2=C(R)CONHCH_2OH$  or  $CH_2=C(R)COOR''$ , and optionally a vinylidene monomer free of nonvinyl fluorine; (B) an ethylene/propylene/-1,4-hexadiene extender terpolymer; (C) a melamine-formaldehyde condensation polymer, (D) a wax; and a selected organic solvent.

### 3,459,697 REACTION PRODUCT OF A POLYAMIDE, A HALOGENATED POLYOXYALKYLENE, AND AN EPIHALOXYDRIN

Alan August Goldberg and Dennis Wray, Ambergate, England, assignors to Precision Processes (Textiles) Limited, Ambergate, Derbyshire, England, a British company

No Drawing. Filed Mar. 22, 1966, Ser. No. 536,277  
Claims priority, application Great Britain, Mar. 24, 1965, 12,567/65

Int. Cl. C08f 30/00; D06m 15/12  
U.S. Cl. 260—29.2 11 Claims  
Process for preparing cationic water-soluble resinous condensation products by reacting a water-soluble polyamide containing free secondary amino groups with a linear polyoxyalkylene compound having terminal reactive groups which react with secondary amino groups, the latter being used in an amount sufficient to react with 5 to 50% of the available secondary amino groups, and reacting the resultant product with epichlorohydrin. The

cationic products are useful (a) to provide an antistatic finish upon artificial materials, more especially textile substrates and (b) to impart a shrink-resistant finish to keratinous materials such as wool.

### 3,459,698 ETHYLENE-N-METHYLOL ACRYLAMIDE-ACRYLIC ESTER TERPOLYMERS AS BONDING AGENTS FOR NONWOVEN FABRICS

Gerald J. Mantell and Arthur F. Helin, Kansas City, Mo., and Adolf A. Wutz, Overland Park, Kans., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 10, 1966, Ser. No. 519,443  
Int. Cl. C08f 15/40; C08g 37/32

U.S. Cl. 260—29.4 36 Claims  
Bonded nonwoven articles are prepared by applying aqueous dispersions of ethylene-N-methylol acrylamide-acrylic acid polymers as a bonding agents to fibrous materials.

### 3,459,699 DICYCLOPENTADIENE MODIFIED POLYMERS

Eli Levine, Hillside, N.J., and Philip C. Reuther, Springdale, Conn., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 29, 1966, Ser. No. 538,235  
Int. Cl. C08f 17/00, 1/60

U.S. Cl. 260—29.7 6 Claims  
A process for increasing the molecular weight of emulsion polymers by emulsion polymerizing unsaturated monomers in the presence of dicyclopentadiene.

### 3,459,700 THERMOSETTING INTERPOLYMERS

Harry F. Richards, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 22, 1964, Ser. No. 405,853  
Int. Cl. C08f 33/08, 45/28

U.S. Cl. 260—33.6 10 Claims  
A thermosetting resinous transparent polymer made by interpolymersing with a free radical catalyst from 20 to 60% of a block copolymer having the general configuration



wherein each A is a polymer block of a monovinyl aromatic hydrocarbon and B is a polymer block of a conjugated diene with from 80–40% by weight of a monomeric monovinyl aromatic hydrocarbon.

### 3,459,701 CERAMIC FILLED PLASTIC SYSTEM

Huel H. Chandler, Jr., Henry P. Morrell, and Paul G. Sayers, Orange County, Fla., assignors to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland

No Drawing. Filed Jan. 7, 1964, Ser. No. 336,118  
Int. Cl. C08g 45/12; C04b 35/14

U.S. Cl. 260—37 13 Claims  
2. A thermally protective and chemically resistant ceramic coating composition comprising about 40 to 65 parts of coarse solid fused silica particles, about 12 to 28 parts of fine solid fused silica particles, about 5 to 16 parts of a solid thixotropic material, and a binder resin for said silica particles and thixotropic materials, comprising the reaction product of a reactive mixture of an epoxy resin containing reactive epoxy groups in terminal locations with a polyamide resin formed by condensing long chain polyvalent aliphatic carboxylic acids and polyamines; said ceramic coating containing about 60 to 75

parts solids and about 25 to 40 parts of said binder resin and said composition being thixotropic and spreadable in thick layers prior to the formation of said reaction product and said reactive mixture being self curing.

### 3,459,702 POLYAMIDES STABILIZED WITH MIXTURES OF MERCAPTOBENZOTHIADIAZOLE AND A SUBSTITUTED PHENYLENEDIAMINE

Joseph H. Tazewell, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Dec. 4, 1967, Ser. No. 687,564  
Int. Cl. C08g 51/60

U.S. Cl. 260—45.8 14 Claims  
This disclosure relates to a combination of stabilizers which have a synergistic effect in stabilizing polymeric linear polyamides, such as polycaprolactam (nylon 6) and polyhexamethylene adipamide (nylon 66), against thermal oxidation. This stabilization is evidenced by the high percentage of retained tenacity of fibers spun from the polymeric polyamides containing the combination as compared with fibers spun from the same material containing the same stabilizers individually. The particular combination of N,N'-di-beta-naphthyl-p-phenylenediamine and 2-mercaptobenzothiazole is found to have a much greater effect in stabilization of polyamide polymers against thermal oxidation than can be attributed to the additive effect of the combination. In fact 2-mercaptobenzothiazole by itself actually has a deleterious effect in this regard. However, in combination with the N,N'-di-beta-naphthyl-p-phenylenediamine it improves the stabilizing effect of the latter well over the effect produced by the latter alone.

### 3,459,703 RESINS STABILIZED WITH A NICKEL, CHROMIUM OR COBALT CHELATE

Peter James Briggs and Ronald James Hurlock, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Oct. 17, 1966, Ser. No. 586,947  
Claims priority, application Great Britain, Oct. 10, 1966, 44,655/65

Int. Cl. C08f 45/62, 51/62  
U.S. Cl. 260—45.75 5 Claims  
Nickel, cobalt and chromium chelate compounds of substituted orthohydroxyphenyl ketoximes, substituted orthohydroxy-alpha-naphthyl and substituted orthohydroxy-beta-naphthyl ketoximes are prepared from the ketoxime in which the oxime group is in the syn-position with respect to the group other than the substituted orthohydroxyphenyl group by reaction with nickel, cobalt and chromium salts. These compounds are of value as stabilizers against degradation in light of polyolefins, especially polypropylene, polyvinyl chloride and polyamides.

### 3,459,704 COMPOSITIONS OF ORGANIC MATERIAL STABILIZED WITH CERTAIN ESTERS OF SUBSTITUTED HYDROQUINONES AND ORGANIC ACIDS

Janet Brooks Peterson, Yonkers, and Martin Dexter, Briarcliff Manor, N.Y., assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Original application Sept. 17, 1962, Ser. No. 224,602, now Patent No. 3,294,836, dated Dec. 17, 1966. Divided and this application Oct. 31, 1966, Ser. No. 590,549

Int. Cl. C08f 45/58; A21d 2/28  
U.S. Cl. 260—45.85 20 Claims  
Unstable organic material is stabilized with certain esters of 2-lower alkyl-1,4-hydroquinone and derivatives thereof. This invention is particularly useful in stabilizing

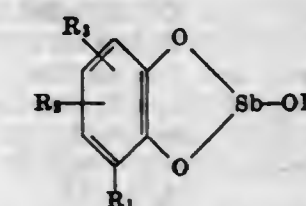
polyolefins such as polypropylene and polyethylene. A particularly preferred stabilizer compound is 3,5-di-t-butyl-4-hydroxyphenyl beta-(n-octadecyl-mercapto) propionate.

### 3,459,705 STABILIZED POLYOLEFINS WITH (1) A THIOBIS COMPOUND AND (2) AN ORGANIC ANTIMONYL COMPOUND

Otto Mauz, Niederhofheim, Taunus, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 16, 1966, Ser. No. 602,169  
Claims priority, application Germany, Dec. 21, 1965, F 47,977

Int. Cl. C08f 45/62, 45/58  
U.S. Cl. 260—45.75 4 Claims  
Homo- and copolymers of olefins stabilized against degradation caused by light and heat containing 0.005 to 5% by weight, referred to the polymer, of a mixture of (a) a compound of the formula



and 0.005 to 5% by weight of (b) a sulfur compound of the formula



wherein R<sub>1</sub> is hydrogen, chlorine, bromine or hydroxyl, R<sub>2</sub> is hydrogen, alkyl having from 1 to 18 carbon atoms or halogen, R<sub>3</sub> is hydrogen, alkyl having from 1 to 5 carbon atoms of —COO.R<sub>4</sub>, R<sub>4</sub> representing an aliphatic radical containing from 1 to 20 carbon atoms, n is a whole number from 1 to 4, m is a whole number from 1 to 19, R<sub>5</sub> is CH<sub>3</sub>— or —COO.R<sub>6</sub>, R<sub>6</sub> representing alkyl having from 1 to 18 carbon atoms and wherein the ratio of the components (a) and (b) to one another is from 1:9 to 9:1.

### 3,459,706 LOW VISCOSITY SOLUTIONS OF POLYMERIC PRECURSORS OF IMIDE CONTAINING POLYMERS AND AROMATIC DIACID DIESTERS

Francis E. Schweltzer, Strafford-Wayne, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 621,795, Mar. 9, 1967. This application Jan. 11, 1968, Ser. No. 697,015

Int. Cl. C08g 20/32  
U.S. Cl. 260—47 10 Claims  
Low viscosity solutions of (1) polymeric precursors of imide-containing polymers, such precursors being amine terminated and including polyamide-acids, polyamide esters, polyamide-amic acids, and the like, and (2) aromatic diacid diesters; convertible to imide-containing polymers of higher viscosity.

### 3,459,707 PROCESS FOR THE DECOMPOSITION OF FORMIC ACID IN MIXTURES OF ACETIC ACID AND FORMIC ACID

Percy Hayden and John Charlton, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Apr. 4, 1966, Ser. No. 539,660  
Claims priority, application Great Britain, May 7, 1965, 19,403/65

Int. Cl. C07c 53/08, 51/42  
U.S. Cl. 260—541 11 Claims  
Formic acid contained in formic acid/acetic acid mixtures is selectively oxidized by contacting the mixture in



the liquid phase with oxygen in the presence of a soluble compound of a platinum group metal and a redox system.

3,459,708

# PHENOL-ALDEHYDE WOOD BONDING ADHESIVES INCORPORATING ORGANIC HYDROPEROXIDES AND HAVING IMPROVED CURING RATES

Malcolm P. Stevens, Bebek, Istanbul, Turkey, assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Jan. 18, 1967, Ser. No. 610,036  
Int. Cl. C08g 51/74, 5/06; B32b 21/14

U.S. Cl. 260—59 4 Claims  
Faster curing rates and shortened press times in the bonding of wood products with phenolic resin adhesives are developed by the addition of small amounts of lower organic peroxy-compounds to the resin.

3,459,709

# METHOD OF STABILIZING POLYOXYMETHYLENES

Jacob Ackermann and Pierino Radici, Milan, Italy, assignors to Società Italiana Resine S.p.A., Milan, Italy  
No Drawing. Filed June 20, 1966, Ser. No. 558,624  
Claims priority, application Italy, July 2, 1965, 15,394/65

Int. Cl. C08g 1/24, 51/58

U.S. Cl. 260—67 1 Claim  
A process for heat stabilizing polyoxymethylene whereby the polymer is esterified with a suitable esterification agent such as acetic anhydride, while in contact with a chain stabilizing agent having at least one element of Group V of the Periodic Table of Elements, such as polylactam, triorgano phosphine, triorgano stibine, triorgano arsine or the quaternary salts of ammonium and phosphonium. A heat stabilized polyoxymethylene resulting from the foregoing method.

3,459,710

# POLYMERIC COMPOSITIONS FROM $\alpha,\beta$ -MONOETHYLENICALLY UNSATURATED ALDEHYDES AND DIAMINES AND METHOD FOR THE PREPARATION THEREOF

Robert J. Caiola, Midland, and Leo F. Rokosz, Linwood, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 9, 1964, Ser. No. 358,644  
Int. Cl. C08g 9/04

U.S. Cl. 260—72 19 Claims  
This invention consists of new polymers useful to make films, shaped articles and coating compositions, and a process of making the polymers. The new polymers are reaction products of an  $\alpha,\beta$ -monoethylenically unsaturated aliphatic aldehyde and an aliphatic, aromatic, or heterocyclic diamine containing at least one hydrogen atom in each amine moiety. The process of making the new polymers consists of reacting substantially equimolar quantities of the reactants in an inert solvent such as benzene or dioxane.

3,459,711

# MANUFACTURE OF LINEAR FIBER-FORMING POLYESTERS

Adolf Hartmann, Gessertshausen, and Peter Schweizer, Augsburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Nov. 18, 1966, Ser. No. 595,345  
Claims priority, application Germany, Nov. 24, 1965, F 47,750

Int. Cl. C08g 17/015

U.S. Cl. 260—75 5 Claims  
A process for the manufacture of linear polyesters

of aromatic dicarboxylic acids by melt condensation of di-glycol esters of dicarboxylic acids in the presence of a germanium compound containing oxygen and phosphorus.

3,459,712

# ISOCYANURATE ELASTOMERS BASED ON FATTY DIMER DIISOCYANATES AND IONIC POLYMERIZATION CATALYSTS

John Mann Butler, Dayton, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 30, 1966, Ser. No. 606,056

Int. Cl. C08g 22/20, 22/36

U.S. Cl. 260—77.5 4 Claims  
An elastomeric polyisocyanurate product obtained from fatty dimer diisocyanates in the presence of an amine-alkylene oxide ionic polymerization catalyst.

3,459,713

# PROCESS FOR THE PREPARATION OF MOLDED PLASTICS BASED ON SOLID TRIGLYCIDYL ISOCYANURATES

Herbert Saran and Manfred Budnowski, Dusseldorf-Holthausen, Germany, assignors to Henkel & Cie GmbH, Holthausen, Germany, a corporation of Germany

No Drawing. Filed July 24, 1967, Ser. No. 655,325  
Claims priority, application Germany, Aug. 18, 1966, H 60,271

Int. Cl. C08g 30/08, 45/06

U.S. Cl. 260—77.5 9 Claims  
A process which comprises the steps of (1) preparing at least one prereaction molded plastic based on solid triglycidyl isocyanurate as a first reactive ingredient and an organic carboxylic acid anhydride epoxide resin hardener as a second reactive ingredient, by reacting from 1% to 25% by weight of the total amount of one of said reactive ingredients with the substantial entirety of the other of said reactive ingredients at elevated temperatures, (2) cooling and subdividing said prereaction molding plastic, (3) adding the remainder of said reactive ingredients and customary epoxide resin adjuvants and (4) recovering a stable molded plastic premix hardenable to a hardened epoxide resin.

3,459,714

# PROCESS FOR THE PREPARATION OF POLYAMIDES IN FINELY GRAINED FORM

Wolfgang Wolfes, Witten-Bommern, Gustav Renckhoff, Witten (Ruhr), and Hans-Leo Huelsmann, Witten-Rudinghausen, Germany, assignors to Chemische Werke Witten GmbH, Witten (Ruhr), Germany

No Drawing. Filed July 9, 1965, Ser. No. 470,873  
Claims priority, application Germany, Aug. 5, 1964, C 33,572

Int. Cl. C08g 20/20

U.S. Cl. 260—78 12 Claims  
The present disclosure is directed to a process for the preparation of polyamides of aliphatic and cycloaliphatic dicarboxylic acids in finely grained form which comprises reacting a diester of an acid selected from the group consisting of aliphatic dicarboxylic acids and cycloaliphatic dicarboxylic acids with an organic primary diamine at a first temperature of from about 20° to 250° C. in the presence of an organic liquid which is a nonsolvent for the resultant polyamide to give a preliminary condensate, and subsequently further condensing said preliminary condensate by heating it to a second temperature between said first temperature and a temperature just below the melting range of the resultant polyamide. The powdery polyamides are useful per se for processing in, for example, injection molding or extrusion machines.

3,459,715

# ALKYL GLYCIDYL MIXED ESTERS AND AMINE REACTION PRODUCTS THEREOF

Van R. Gaertner, Ballwin, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 17, 1965, Ser. No. 514,709  
Int. Cl. C08f 27/12; C07c 69/52

U.S. Cl. 260—78.5 18 Claims  
Mixed alkyl glycidyl esters of polycarboxylic acid or anhydride-containing adducts of olefinically unsaturated natural oils and of polycarboxylic acid or anhydride-containing copolymers with alpha-olefin compounds, and amine reaction products thereof, which are useful in the preparation of sized cellulosic paper substrates and in the preparation of cured films and solid resinous potting compositions.

3,459,716

# POLYALKYLENE GLYCOL ESTER-UNSATURATED ACID-METHYLLALAMIDE TERPOLYMERS

Paul Schaefer, Riehen, Switzerland, Fritz Mayer, Hattlingen, Germany, and Arthur Maeder, Therwil, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Apr. 16, 1968, Ser. No. 721,594  
Claims priority, application Switzerland, Apr. 24, 1967, 5,831/67

Int. Cl. C08f 15/40

U.S. Cl. 260—78.5 10 Claims  
Copolymers containing structural elements of an ester of an alkylpolyethylene glycol and an ethylenically unsaturated polymerizable carboxylic acid, structural elements of an optionally etherified N-methylolamide of an ethylenically unsaturated polymerizable carboxylic acid and structural elements of an ethylenically polymerizable compound which contains at least one acid group. The aqueous solutions and emulsions of these copolymers may be used for the finishing of textiles. In particular these copolymers render textiles hydrophilic, or provide anti-static and antisoiling finishes.

3,459,717

# SULPHUR-BASED PLASTIC COMPOSITION

Jean-Baptiste Signouret, Billiere, France, assignor to Société Nationales des Pétroles d'Aquitaine Sise: Tour Aquitaine, Courbevoile, France

No Drawing. Filed June 26, 1967, Ser. No. 649,045  
Claims priority, application France, June 28, 1966, 67,187

Int. Cl. C08g 33/00

U.S. Cl. 260—79 13 Claims  
The invention relates to a process for the preparation of a plastic composition, comprising incorporating into molten sulphur, at least one diester of dithiophosphoric acid and at least one ethylenic hydrocarbon and heating the product which is formed until a plastic mass is obtained.

3,459,718

# QUATERNARY AMMONIUM HALIDES OR TERTIARY AMINE HYDROHALIDES AS MOLECULAR WEIGHT REGULATORS IN COORDINATION CATALYST POLYMERIZATION SYSTEMS FOR OLEFINS

Frederick C. Loveless, Oakland, N.J., assignor to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Filed Aug. 16, 1965, Ser. No. 480,124  
Int. Cl. C08f 15/40, 1/42, 1/56

U.S. Cl. 260—80.78 14 Claims  
The invention relates to a method of regulating the molecular weight of the product in the solution interpolymerization of ethylene and propylene by use of a soluble catalyst system based on an alkylaluminum sesquichloride and vanadium oxytrichloride and, as a regulator, certain quaternary ammonium halides and tertiary amine hydrohalides wherein from 0.1 to 20 moles of said regulator are used per mole of vanadium.

865 O.G.—7

3,459,719

# PREPARATION OF LOW MOLECULAR WEIGHT VINYL CHLORIDE POLYMERS

Dean E. Richardson, La Marque, and Gordon G. Harkreader, Dickinson, Tex., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 22, 1965, Ser. No. 515,714  
Int. Cl. C08f 3/30, 15/30, 1/11

U.S. Cl. 260—87.1 9 Claims  
Polyvinyl chloride and polyvinyl chloride containing up to 25% vinyl acetate in the form of glassy, spherical, non-porous particles are prepared in an aqueous suspension in the presence of 2,2'-azobisisobutyronitrile initiator and polyvinyl pyrrolidone suspension agent at a temperature from about 75–95° C.

3,459,720

# POLYMERIZATION OF N-VINYL LACTAMS IN PRESENCE OF AZO CATALYST AND HYDROPEROXIDE COMPOUND

Frederick Grosser, Midland Park, N.J., and Eugene V. Hort, Easton, Pa., assignors to GAF Corporation, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 273,299, Apr. 16, 1963. This application May 16, 1966, Ser. No. 558,168

Int. Cl. C08f 1/78, 1/60, 33/04

U.S. Cl. 260—88.3 17 Claims  
Control of the Fikentscher K values of poly N-vinyl lactams to within the range of about 20 to 40 is achieved by carrying out the polymerization of the monomer e.g. N-vinyl pyrrolidone in a solvent, such as water or lower alcohol, in the presence of an azo compound, such as azobisisobutyronitrile, as catalyst, and including a predetermined amount of a hydroperoxide such as hydrogen peroxide, in the system during the entire polymerization.

3,459,721

# DIALKYLALUMINUM ACETYLACETONATE POLYMERIZATION CATALYSTS

Irving Kuntz, Westfield, and Wolfram R. Kroll, Linden, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Oct. 10, 1966, Ser. No. 585,702

Int. Cl. C08g 23/14, 23/06

U.S. Cl. 260—88.3 7 Claims  
Epoxy compounds polymerized with a catalyst consisting of (a) pure dialkyl aluminum acetylacetonate in which the alkyl group contains one to eight carbon atoms, (b) dialkyl zinc or cadmium in which the alkyl group contains one to ten carbon atoms, and (c) H<sub>2</sub>O.

3,459,722

# FLUORINE-CONTAINING POLYMER

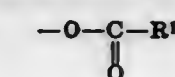
Murray Zanger, 512 Devon Road, Havertown, Pa. 19083

No Drawing. Filed Oct. 26, 1965, Ser. No. 505,241

Int. Cl. C08f 27/02, 27/18

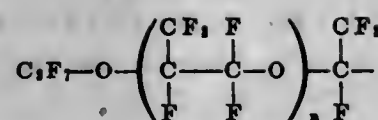
U.S. Cl. 260—89.5 6 Claims  
There is disclosed a new fluorine-containing polymer which is useful for treating fabrics, yarns and the like to render them repellent to oil and water; it is shown that said polymer can be made

(1) by reacting (A) hexafluoropropyleneoxide dimer or similar perfluoro compound with (B) a suitable polymer, for example a polymer of a hydroxyalkyl methacrylate or acrylate so that all or part of the OH groups of (B) become groups having the formula





where R<sup>1</sup> is the radical



or

(2) by reacting (A) with a monomer of said hydroxy-alkyl compound and then polymerizing the resulting compound.

3,459,723

# PROCESS FOR OBTAINING CRYSTALLINE POLY-VINYL METHYL ETHER OF A PREDETERMINED MOLECULAR WEIGHT

Herman S. Schultz, Easton, Pa., assignor to GAF Corporation, New York, N.Y., a corporation of Delaware  
No Drawing. Filed May 17, 1967, Ser. No. 639,061

The portion of the term of the patent subsequent to Apr. 16, 1985, has been disclaimed

Int. Cl. C08f 1/72, 3/38

U.S. Cl. 260—91.1

9 Claims

A polymerization process for preparing homopolymers of methyl vinyl ether of controlled molecular weight and characteristic properties which comprises contacting a liquid solution of purified methyl vinyl ether in a non-reactive aromatic solvent at a temperature of from about -100° C. to about -40° C., preferably below -55° C. and a controlled amount of an appropriate chain transfer agent, and with a catalytic amount of a boron trifluoride catalyst in the presence of dioxane all under essentially anhydrous conditions.

3,459,724

# OXIDATION OF POLYVINYL ALCOHOLS

Heinz Hartel, Oberlar, and Gerhard Bler, Troisdorf, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany

Filed Nov. 26, 1965, Ser. No. 509,902

Claims priority, application Germany, Dec. 19, 1964, D 46,096

Int. Cl. C08f 27/22

U.S. Cl. 260—91.3

11 Claims

Process for oxidizing polyvinyl alcohols to produce polyenols comprising reacting in an alkaline aqueous medium a polyvinyl alcohol with Cu (II) oxide or hydroxide in the presence of a noble metal, its oxide or hydroxide.

3,459,725

# HIGH MOLECULAR WEIGHT UNSATURATED HYDROCARBON HOMOPOLYMERS AND PROCESS FOR PREPARING THEM

Giulio Natta, Gino Dall'Asta, and Giorgio Mazzanti, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Jan. 15, 1965, Ser. No. 425,956

Claims priority, application Italy, Jan. 17, 1964, 1,071/64

Int. Cl. C08f 5/00

U.S. Cl. 260—93.1

24 Claims

New high molecular weight homopolymers of cycloolefins containing from 7 to 12 atoms in the ring (e.g., cycloheptene; cyclooctene; cyclododecene), characterized in having the structure of polyalkenamers in which the double bonds are substantially of the trans type, and in being crystalline under normal conditions without having been mechanically treated to induce crystallization, are obtained by polymerizing the cycloolefins in contact with catalysts

prepared from transition metal salts and organometallic compounds or hydrides of Group II or Group III metals.

3,459,726

# PROCESS FOR POLYMERIZING CONJUGATED DI-OLEFINS WITH A CATALYST CONSISTING OF A COBALT-OR NICKEL-CONTAINING MATERIAL AND AN ORGANOALUMINUM COMPOUND IN THE PRESENCE OF A DIESTER OF THIODI-PROPIONIC ACID

Shotaro Sugura, Fumio Tasaka, Haruo Ueno, Minoru Kono, Nobuyuki Katagiri and Nobumasa Sakinaga, Yamaguchi-ken, Japan, assignors to Ube Industries, Ltd., Yamaguchi-ken, Japan

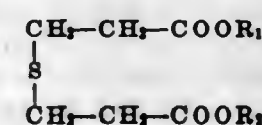
No Drawing. Filed Dec. 22, 1966, Ser. No. 603,740

Int. Cl. C08d 1/18

U.S. Cl. 260—94.3

6 Claims

Conjugated diolefin polymers substantially free from gel and having high cis-1,4-addition contents are produced by polymerizing conjugated diolefins with the use of a catalyst prepared from a material selected from the group consisting of metallic cobalt or nickel, cobalt or nickel compounds, cobalt or nickel complex compounds and a material formed by electrochemically depositing metallic cobalt or nickel on metallic zinc, and an organoaluminum compound in the presence of a diester of thiodi-propionic acid of the formula:



where R<sub>1</sub> and R<sub>2</sub> are each alkyl groups of 8-20 carbon atoms.

3,459,727

# MIXED CHROMIUM-CONTAINING DYESTUFFS CONTAINING A MONOAZO AND A DISAZO DYESTUFF

Eginhard Steiner and Walter Biedermann, Basel, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Filed Aug. 19, 1966, Ser. No. 573,451

Int. Cl. C09b 45/16, 45/26

U.S. Cl. 260—145

3 Claims

Chromium-containing azo dyestuffs which contain an optionally further substituted monosulfonated monoazo dyestuff moiety, obtained from a 6-nitro-2-amino-1-hydroxybenzene diazo component and a 1-phenyl-3-methylpyrazol-5-one coupling component, and a disazo dyestuff moiety free from sulfonic acid groups, which moieties are bonded co-ordinatively to a hexavalent chromium atom, as well as their use for the dyeing of natural and synthetic polyamide fiber materials and also of super polyurethane fibers are disclosed.

3,459,728

# BASIC MONOAZO DYES

Roland Entschel and Curt Mueller, Basel, Switzerland, and Walter Wehrli, Riehen, Switzerland, assignors to Sandoz Ltd., also known as Sandoz A.G., Basel, Switzerland

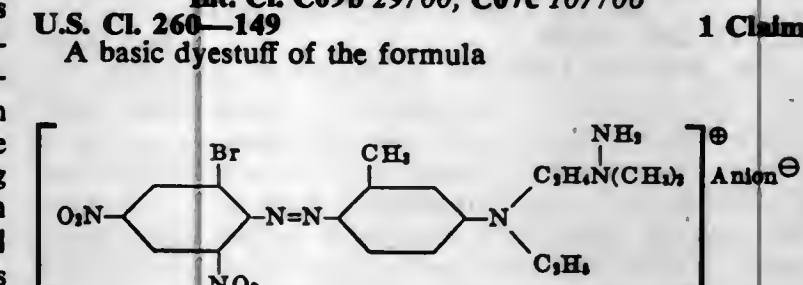
No Drawing. Continuation of application Ser. No. 344,557, Feb. 13, 1964. This application Jan. 20, 1967, Ser. No. 610,718

Int. Cl. C09b 29/00; C07c 107/06

U.S. Cl. 260—149

1 Claim

A basic dyestuff of the formula



3,459,729

# MONOAZO TRIAZINE CONTAINING DYESTUFFS

Argento Crotti, Cogitate, and Fabrizio Merlo, Turin, Italy, assignors to Aziende Colori Nazionali Affini ACNA S.p.A., Milan, Italy, a corporation of Italy

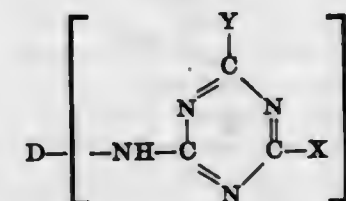
No Drawing. Continuation-in-part of application Ser. No. 337,544, Jan. 14, 1964. This application Apr. 24, 1967, Ser. No. 635,640

Int. Cl. C09b 29/38, 62/08

U.S. Cl. 260—153

10 Claims

Plastosoluble dyestuffs suitable for dyeing polyolefin material having the formula:



wherein D is a residue of a water insoluble monoazo or non-vattable anthraquinone dyestuff, which dyestuff residue is free from both sulfo and carboxy groups and may have one or more halogen, amino, hydroxy, NO<sub>2</sub>, alkyl or alkoxy substituents having up to about 6 carbon atoms thereon; the —NH— bridge is directly bonded to a carbon of an aryl ring of the dyestuff residue, D; n is 1 or 2; and X and Y are each selected from the group consisting of alkylamino, dialkylamino, alkylmercapto and alkoxy radicals having from about 3 to 18 carbon atoms.

3,459,730

# DISAZO PIGMENTS

Ernfred Peer Ottokar Schnabel, Reinach, Basel-Land, and Emil Stocker, Riehen, Switzerland, assignors to J. R. Geigy, A.G., Basel, Switzerland

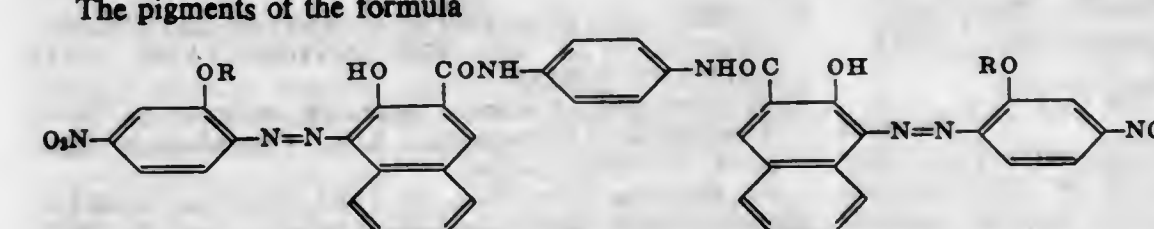
No Drawing. Filed Aug. 9, 1966, Ser. No. 571,184

Int. Cl. C09b 31/02, 33/02, 35/02

U.S. Cl. 260—184

3 Claims

The pigments of the formula



wherein R is methyl or ethyl are claret coloured and where X is useful for the pigmentation of plastics, printing inks, paints and lacquers.

3,459,731

# CYCLODEXTRIN POLYETHERS AND THEIR PRODUCTION

Robert E. Gramera, Hinsdale, and Ronald J. Calmi, Oak Forest, Ill., assignors to Corn Products Company, New York, N.Y., a corporation of Delaware

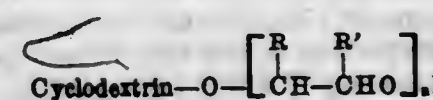
No Drawing. Filed Dec. 16, 1966, Ser. No. 602,145

Int. Cl. C08b 19/08

U.S. Cl. 260—209

14 Claims

1. A cyclodextrin polyether represented by the following formula:



where R and R' are selected from the class consisting of hydrogen, lower alkyl, lower hydroxy substituted alkyl, and monocyclic aryl, and where n represents a molar substitution per anhydroglucose unit which is a number up to about 50.

3,459,732

# CYCLODEXTRIN CARBAMATES

Glenn A. Hull, Oak Park, Earle E. Allen, Jr., Chicago, and Stanley M. Parmerter, Wheaton, Ill., assignors to Corn Products Company, New York, N.Y., a corporation of Delaware

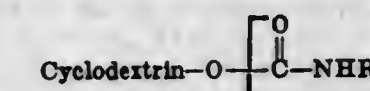
No Drawing. Filed Mar. 22, 1967, Ser. No. 624,985

Int. Cl. C08b 19/08; C08d 9/06

U.S. Cl. 260—209

9 Claims

Compositions of matter which are carbamates of cyclodextrin represented by the formula:



where R may be an alkyl, a cycloalkyl or a hydrogen radical. A method for preparing such carbamates includes reacting a cyclodextrin with an alkyl isocyanate, a cycloalkyl isocyanate, and an alkali metal cyanate salt, or urea. The cyclodextrin carbamates may be used in the various ways in which cyclodextrin is used. New product forms are therefore provided which permit the practitioner to use the products to form various inclusion compounds such as with flavors, aromas and others.

3,459,733

# MONOMERIC POLYESTERS OF POLYHYDROXY COMPOUNDS AND PROCESS FOR PREPARING SAME

Wendell M. Byrd, Jr., and Vasco G. Camacho, Richmond, Va., assignors to Mobil Oil Corporation, a corporation of New York

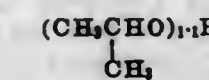
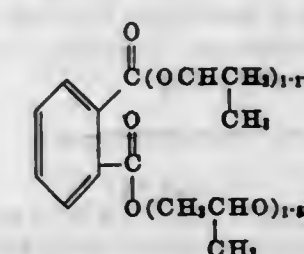
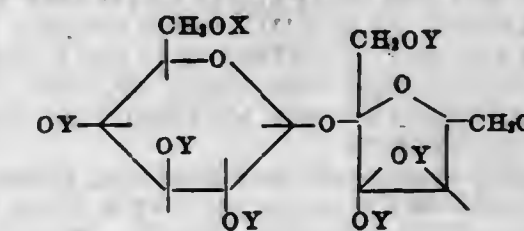
No Drawing. Filed Oct. 15, 1964, Ser. No. 404,165

Int. Cl. C08b 19/00; C07d 7/18; C08g 17/00

U.S. Cl. 260—210

24 Claims

14. The compound of the formula



3,459,734

# N-SUBSTITUTED ANALOGS OF LINCOMYCIN

Barney J. Magerlein, Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 615,364, Feb. 13, 1967. This application Mar. 29, 1968, Ser. No. 717,411

Int. Cl. C07c 95/04, 149/24; C08g 22/16

U.S. Cl. 260—210

17 Claims

N-alkyl derivatives of methyl 6-amino-6,8-dideoxy-1-



thio - D - erythro -  $\alpha$  - D - galacto - octopyranoside, which has been given the trivial name methyl  $\alpha$  - thiolinosaminide (abbreviated to MTL), and of ethyl 6-amino-6,8-dideoxy-1-thio-D-erythro- $\alpha$ -D-galacto-octopyranoside (abbreviated to ETL), intermediates, and processes for producing them exemplified as follows: (1) condensation of MTL with an aromatic aldehyde to form N-arylmethylene-MTL; (2) reduction of N-arylmethylene-MTL to give N-aryl-methyl-MTL; (3) treatment of N-arylmethyl-MTL with a lower aliphatic aldehyde to give an oxazolidine compound; and, (4) hydrogenolysis of the oxazolidine compound to give N-loweralkyl-MTL and N,N-diloweralkyl-MTL. N,N-diloweralkyl-MTL also is obtained by alkylating MTL or N-loweralkyl-MTL. The above compounds are useful for the resolution of racemic acids, as intermediates to form urethanes and ureas, and as mothproofing agents.

3,459,735

**PROCESS FOR THE PREPARATION OF VITAMIN B<sub>12</sub> COENZYME AND DERIVATIVES THEREOF**  
Masuo Murakami, Kozo Takahashi, and Jun Matsumoto, Tokyo, Japan, assignors to Yamanouchi Pharmaceutical Co., Ltd., Tokyo, Japan  
No Drawing. Filed Sept. 13, 1967, Ser. No. 667,348  
Claims priority, application Japan, Sept. 20, 1966, 41/62,179

Int. Cl. C07d 55/62

U.S. Cl. 260—211.7 6 Claims  
By reacting a thiol complex of hydroxocobalamin and sodium sulfide with a 5'-deoxy-5'-halogenoadenosine, vitamin B<sub>12</sub> coenzyme is obtained with a high yield.

3,459,736

**ORGANIC ESTERS PREPARED WITH THE USE OF A TITANIUM PEROXIDE-CONTAINING CATALYST, SAID ESTER BEING SUITABLE FOR USE AS A PLASTICIZER FOR ORGANIC FILM-FORMING MATERIALS AND METHOD OF PREPARING SUCH ESTERS**

Horst Dalibor, Harkshelde, near Hamburg, Germany, assignor to Reichhold Chemicals, Inc., White Plains, N.Y.  
No Drawing. Filed June 26, 1964, Ser. No. 378,427  
Claims priority, application Germany, Sept. 3, 1963, R 36,028

Int. Cl. C07c 67/00; C08g 17/003

U.S. Cl. 260—234 7 Claims  
This application discloses an improved organic ester formed by a process of esterification or re-esterification in the liquid phase in the presence of titanium peroxide catalysts. Such ester has been found to be particularly suitable for use as a plasticizer for organic film-forming materials such as cellulose derivatives, rubber, lacquers, resins, linseed oil and plastics.

3,459,737

**NOVEL 5-SUBSTITUTED 5,6-DIHYDRO-6-OXOPYRIDO[2,3-b][1,4]BENZOXAZEPINES**  
Gunter Schmidt, Biberach an der Riss, Germany, assignor to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany, a corporation of Germany  
No Drawing. Continuation-in-part of application Ser. No. 438,374, Mar. 9, 1965. This application Apr. 6, 1965, Ser. No. 446,085

The portion of the term of the patent subsequent to Apr. 2, 1985, has been disclaimed  
Claims priority, application Germany, Apr. 21, 1964, T 26,051

Int. Cl. C07d 87/54; A61k 27/00

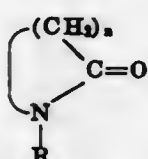
U.S. Cl. 260—239.3 9 Claims  
The present invention relates to novel derivatives of 5,6 - dihydro - 6 - oxo - pyrido[2,3-b][1,4]benzoxazepines. These compounds are useful as antipyretics, sedatives, anticonvulsants, antiphlogistics, analgesics, antitussives and antiemetics in warm-blooded animals.

3,459,738

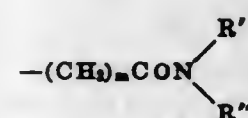
**N-SUBSTITUTED LACTAMS**  
Henri Morrez, Forest, Belgium, assignor to UCB (Union Chimique-Chimische Bedrijven), Saint-Gilles-Brussels, Belgium

No Drawing. Filed Aug. 3, 1965, Ser. No. 477,004  
Claims priority, application Great Britain, Aug. 6, 1964, 32,037/64

Int. Cl. C07d 29/22, 27/08; A61k 25/00 12 Claims  
U.S. Cl. 260—239.3  
Compounds of the formula



wherein  $n$  is 3, 4 or 5, R is



wherein  $m$  is 1 or 2, and R' and R'' are the same or different, each having H, alkyl, cycloalkyl, alkenyl, or phenyl, or R' and R'' together with the N atom, form pyrrolidino, are active in the central nystagmus test but do not possess antihistamine and/or anticholinergic properties; they are therefore useful in the treatment of motion sickness and the like while being free from disadvantages generally bound up with antihistamines and anticholinergics (e.g. drowsiness etc.). Methods of preparing the compounds of the said formula are disclosed.

3,459,739

**3 - SPIRO - 3' - DIAZIRIDINE - AND 3' - DIAZIRINE - DERIVATIVES OF THE ANDROSTANE AND ESTRANE SERIES**

Poul Borrevang, Vanlose, Denmark, assignor to Novo Terapeutisk Laboratorium A/S., Copenhagen, Denmark, a Danish company  
No Drawing. Filed Nov. 27, 1964, Ser. No. 414,445  
Claims priority, application Great Britain, Nov. 28, 1963, 47,061/63; Aug. 12, 1964, 32,814/64

Int. Cl. C07c 173/10, 169/20; A61k 27/00 25 Claims  
U.S. Cl. 260—239.5  
1. 17 $\alpha$  - lower - alkyl - 11 $\beta$ ,17 $\beta$  - dihydroxy - 9 $\alpha$  - fluoro-5 $\alpha$ -androstane-3-spiro-3'-diazirine or-diaziridine.

3,459,740

**STEROID-OXAZOLINES WITH PHARMACOLOGICAL ACTIVITY**  
Giangiacomo Nathansohn and Giorgio Winters, Milan, Italy, and Emilio Testa, Vacallo, Tessin, Switzerland, assignors to Lepetit S.p.A., Milan, Italy

No Drawing. Filed Dec. 30, 1966, Ser. No. 605,984  
Int. Cl. C07c 173/10, 173/00; A61k 27/00

U.S. Cl. 260—239.55 4 Claims  
1,4-pregnadiene-16,17-oxazolines having chlorine at the 11-position and chlorine or bromine at the 9-position, are prepared by treating 1,4,9(11)-pregnatriene-16,17-oxazolines with chlorine in the presence of pyridine, or with an N-haloamide of an aliphatic monocarboxylic acid or an N-haloimide of an aliphatic dicarboxylic acid together with hydrogen-halide in the presence of lithium chloride in a solvent. The compounds have antiinflammatory and hormone-like activity.

3,459,741

**1-CYCLOBUTENO-(3',4':6 $\alpha$ ,7 $\alpha$ ) DERIVATIVES OF THE ANDROSTANE AND PREGNANE SERIES**  
John H. Fried, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama  
No Drawing. Filed Sept. 6, 1966, Ser. No. 577,162  
Int. Cl. C07c 169/34, 169/22, 169/10

U.S. Cl. 260—239.55 23 Claims  
Disclosed are, as new compounds, steroid derivatives of the androstane, 19-norandrostane, pregnane and corticoid series which contain a novel 1'-cyclobuteno grouping at position C-6 $\alpha$ ,7 $\alpha$  of the steroid nucleus. This 1'-cyclobuteno grouping can be mono-substituted on the C-1' or C-2' carbon atoms with cyano, carboxy or carboalkoxy or it can be substituted on both of the C-1' and C-2' carbon atoms with a cyano, carboxy or carboalkoxy group. The steroid nucleus further contains optional substituents and unsaturation. Also disclosed is a process for preparing these 1-cyclobuteno-(3',4':6 $\alpha$ ,7 $\alpha$ ) steroids by irradiating with ultraviolet light a 3-keto- $\Delta^4$  starting steroid and a mono- or di-substituted acetylene in an inert solvent. The product steroids are anabolic, progestational and cortical agents.

3,459,742

**SULFANILAMIDE DERIVATIVES AND PROCESSES**  
Hanns Hanina Lehr, Montclair, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 353,290, Mar. 19, 1965. This application June 1, 1965, Ser. No. 460,489

Int. Cl. C07d 51/44 1 Claim  
U.S. Cl. 260—239.75  
N<sup>1</sup>-methyl, allyl or 2-propynyl substituted N<sup>1</sup>-(6-methoxy-4-pyrimidinyl)-sulfanilamide derivatives, prepared, inter alia, by reacting N<sup>1</sup>-(6-methoxy-4-pyrimidinyl)-sulfanilamide and a methyl halide, allyl halide or propynyl halide, are described. The end products are useful as antibacterial agents.

3,459,743

**BIS-TRIAZINYLAMINOSTILBENE COMPOUNDS**  
Hyman William Zussman, Scarsdale, N.Y., and Heinrich Häusermann, Riehen, near Basel, Switzerland, assignors to Gelgy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 412,845, Nov. 20, 1964. This application Nov. 12, 1965, Ser. No. 507,583

Int. Cl. C09b 23/10; C07d 87/38, 53/12 6 Claims  
U.S. Cl. 260—240  
Certain 4,4' - bis[4'' - (2,6-dimethylmorpholino)-1'',3'', 5''-triazinyl-(2'')-amino]-stilbene-2,2'-disulfonic acids are useful for the optical brightening of washing agents and cellulose material as well as polyamide materials such as nylon. Representative compounds are 4,4'-bis[4''-(2,6-dimethylmorpholino)-6''-phenylamino-1'',3'',5''-triazinyl-(2'')-amino]-stilbene-2,2'-disulphonic acid and 4,4'-bis[4''-(2,6-dimethylmorpholino)-6''-ethoxy-1'',3'',5''-triazinyl-(2'')-amino]-stilbene-2,2'-disulphonic acid.

3,459,744

**v-TRIAZOLE-(2)-STILBENES**  
Alfons Dorlars and Otto Neuner, Leverkusen, and Rolf Pütter, Duesseldorf, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany  
No Drawing. Filed Jan. 6, 1966, Ser. No. 518,991  
Claims priority, application Germany, Jan. 9, 1965, F 44,918

Int. Cl. C07d 55/00, 55/02 6 Claims  
U.S. Cl. 260—240  
Symmetrical and unsymmetrical v-triazole - (2) stilbenes having utility as brightening agents.

3,459,745

**10-AMINO SUBSTITUTED DIBENZOCYCLOHEPTADIENE DERIVATIVES**  
Jean Clement Fouche, 32 Rue Jean Perrin, Seceaux, France

No Drawing. Filed Mar. 22, 1965, Ser. No. 441,866  
Claims priority, application France, Mar. 27, 1964, 969,038; July 23, 1964, 982,796; Feb. 4, 1965, 4,426

Int. Cl. C07d 51/70; C07c 87/40; A61k 27/00 13 Claims  
U.S. Cl. 260—240

The invention provides new dibenzo[a,d]cycloheptadienes substituted in the 10-position by an amino, alkylamino, hydroxyalkylamino, dialkylaminoalkyl, pyrrolidino, piperidino, morpholino, piperazino, or hexahydroazepino radical, and their non-toxic salts, which are useful as sedatives, anti-depressants, antihistaminics, anti-serotonics, analgesics, and spasmolytics.

3,459,746

**7 - HETEROMONOCYCLIC-SUBSTITUTED ACYLAMIDO DERIVATIVES OF DESACETYL CEPHALOSPORANIC ACID**

Edwin H. Flynn, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Continuation-in-part of applications Ser. No. 115,612, June 8, 1961, and Ser. No. 220,855, Aug. 31, 1962. This application Oct. 4, 1965, Ser. No. 492,911  
The portion of the term of the patent subsequent to Nov. 16, 1982, has been disclaimed  
Int. Cl. C07d 99/24; A61k 27/00

U.S. Cl. 260—243 2 Claims  
Derivatives of 7 - heteromonocyclic - substituted acylamido desacetylcephalosporanic acid are disclosed. These compounds are useful antibacterial agents.

3,459,747

**SUBSTITUTED 7-ACETYLAMINO CEPHALOSPORANIC ACIDS**  
Benjamin Arthur Lewis, Suffern, and Martin Leon Sassiver, Pearl River, N.Y., and Robert Gordon Shepherd, Ridgewood, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 15, 1967, Ser. No. 616,168  
Int. Cl. C07d 99/10, 93/06

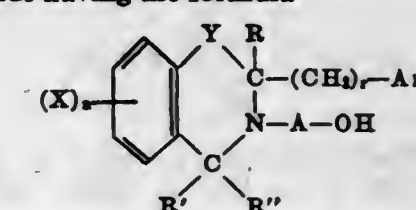
U.S. Cl. 260—243 10 Claims  
This disclosure describes compounds of the class of 7-[5-(carboxymethyl)thiophene-2-acetylaminoc]cephalosporanic acids, 7-[5-(carboxymethyl)furan-2-acetylaminoc]cephalosporanic acids, 7-[5-(carboxamidomethyl)thiophene-2-acetylaminoc]cephalosporanic acids, 7-[5-(carboxamidomethyl)furan-2-acetylaminoc]cephalosporanic acids, 7-[4-(carboxymethyl)thiophene-3-acetylaminoc]cephalosporanic acids, 7-[4-(carboxamidomethyl)thiophene-3-acetylaminoc]cephalosporanic acids, and 7-[4-(carboxamidomethyl)furan-3-acetylaminoc]cephalosporanic acids; useful as anti-bacterial agents.

3,459,748

**HYDROXYALKYLENE-SUBSTITUTED BENZOXAZINES AND BENZOTHAZINES**  
John Krapcho, Somerset, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 28, 1967, Ser. No. 634,492  
Int. Cl. C07d 93/08, 87/16; A61k 27/00

U.S. Cl. 260—243 6 Claims  
Compounds having the formula





and optical isomers thereof, wherein Ar is (X<sup>1</sup>)<sub>n</sub>-substituted aryl; R is selected from the group consisting of hydrogen, lower alkyl and (X<sup>2</sup>)<sub>n</sub>-substituted aryl; R' and R'' taken separately are both hydrogen; R' and R'' taken together is oxo; Y is selected from the group consisting of O, S, sulfone (SO<sub>2</sub>) and sulfoxide (SO); X, X<sup>1</sup> and X<sup>2</sup> may be the same or different and are selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, amino, di(lower alkyl)amino, halo, lower alkylthio, hydroxy, cyano, nitro and trifluoromethyl; n is an integer from one to three; r is an integer from zero to three; and A is lower alkylene. These compounds are useful as intermediates in the preparation of basically-substituted benzoxazines and benzothiazines which in turn possess central nervous system modifying activity (e.g., as depressants which are useful as tranquilizers) and which have also been found to possess antibacterial activity.

### 3,459,749 ORALLY EFFECTIVE CEPHALOSPORIN ANTIBIOTIC

Earle M. Van Heyningen, Charles W. Ryan, and John L. Spencer, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana  
No Drawing. Filed Apr. 25, 1968, Ser. No. 724,246  
Int. Cl. C07d 99/24; A61k 21/00

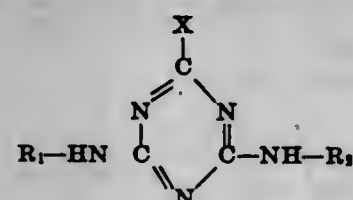
U.S. Cl. 260—243 4 Claims  
3-methyl-7-[2'-(4''-nitrophenyl)acetamido]-3-cephem-4-carboxylic acid and pharmaceutically acceptable salts thereof, useful compounds effective against microbial infections and particularly of interest as oral antibiotics.

3,459,750  
ASYMMETRICAL TRIAZINES  
Goetz E. Hardtmann, Florham Park, N.J., assignor to Sandoz Inc., Hanover, N.J.  
No Drawing. Filed Apr. 20, 1967, Ser. No. 632,204  
Int. Cl. C07d 57/34, 55/10; A61k 27/00

U.S. Cl. 260—248 3 Claims  
The compounds are of the class of 6,7,8,9-tetrahydro-9aH-pyrido[1,2-d]as-triazines, which are substituted at the 1-position by methyl, ethyl, propyl or aryl and may be substituted at the 4-position by methyl or ethyl, e.g., 1-phenyl-6,7,8,9-tetrahydro-9aH-pyrido[1,2-d]as-triazine. The compounds and non-toxic pharmaceutically acceptable acid addition salts thereof are useful as central nervous system stimulants and as hypotensives. The compounds are prepared by reacting the hydrazone of a suitable 2-piperidyl ketone with a suitable carboxylic acid or ortho ester thereof.

3,459,751  
DIAMINO-*s*-TRIAZINE HERBICIDES  
Erwin Nikles, Liestal, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland  
No Drawing. Filed Jan. 12, 1967, Ser. No. 608,746  
Claims priority, application Switzerland, Jan. 28, 1966, 1,173/66

Int. Cl. C07d 55/20; A01n 9/12, 9/22  
U.S. Cl. 260—249.8 3 Claims  
The triazines of the Formula I are especially suitable for controlling weeds in monocotyledonous cultures, without affecting the growth of the culture plants



wherein X represents chlorine, methoxy or methylmercapto, R<sub>1</sub> represents lower alkyl or alkoxy alkyl, and R<sub>2</sub>

represents a doubly branched alkyl of 6 to 8 carbon atoms.

### 3,459,752 NOVEL 2-AZOALKYL-7-CHLORO-1,2,3,4-TETRAHYDRO-4-OXO-6-QUINAZOLINE-SULFONAMIDES

Robert Fitz Randolph Church, Riverside, Conn., and Martin Joseph Weiss, Oradell, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

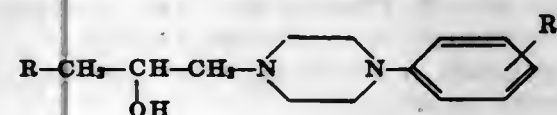
No Drawing. Filed Dec. 30, 1966, Ser. No. 605,940  
Int. Cl. C07d 51/48, 57/00

U.S. Cl. 260—256.5 2 Claims  
The preparation of 2-azoalkyl-7-chloro-1,2,3,4-tetrahydro-4-oxo-6-quinazolinesulfonamides by reacting 2-amino-4-chloro-5-sulfamoylbenzamide with an azodiloweralkoxyalkane, azoketoalkane or azoloweralkylenedioxy alkane, is described. These compounds are useful as diuretics.

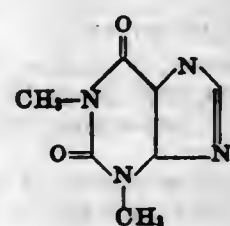
### 3,459,753 THEOPHYLLINE AND THEOBROMINE, THEIR SALTS AND PROCESSES FOR THE PRODUCTION THEREOF

Karl-Heinz Boltze, Bensberg-Klippehausen, and Dietrich Lorenz, Kleinhurden, Germany, assignors to Tropenwerke Dinklage & Co., a corporation of Germany  
No Drawing. Filed Nov. 22, 1967, Ser. No. 686,378  
Claims priority, application Germany, Nov. 25, 1966, T 32,585

Int. Cl. C07d 57/48, 57/42; A61k 27/00  
U.S. Cl. 260—256 1 Claim  
Novel theophylline and theobromine compounds and their acid addition salts having analgesic and anti-tussive activity comprising a compound of the formulae:

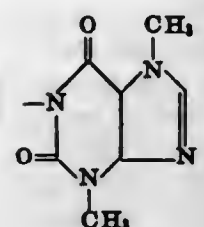


wherein R represents a radical selected from the group consisting of:



(theophylline)

and



(theobromine)

and R<sub>1</sub> represents a member selected from the group consisting of hydrogen, halogen, alkyl, and methoxy.

### 3,459,754 2-ALKANOYLAMIDO-1-HYDROXYPYRROLO [1,2-a]QUINAZOLINES

Stanley C. Bell, Narberth, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 9, 1967, Ser. No. 614,809  
Int. Cl. C07d 51/48; A61k 27/00, 21/00

U.S. Cl. 260—256.4 10 Claims  
By reacting benzoyl acetanilides with cyano compounds, there are formed 2-alkanoylamido-1-hydroxypyrrolo

[1,2-a]quinazolines which are therapeutically efficacious as antibiotics, depressants and mydriatics.

### 3,459,755 PROCESS OF PRODUCING 2-LOWER ALKYL-5,6,7 OR 8-HYDROXY DECAHYDROISOQUINOLINES

Ian William Mathison and Richard Charles Guedner, Memphis, Tenn., assignors to Marion Laboratories, Inc., Kansas City, Mo., a corporation of Delaware

No Drawing. Filed May 8, 1967, Ser. No. 636,611  
Int. Cl. C07d 35/04

U.S. Cl. 260—289 9 Claims  
Disclosed is a process of hydrogenating 2-lower alkyl-5,6,7- or 8-nitroisoquinolinium salts to form 2-lower alkyl-5,6,7- or 8-aminodecahydroisoquinolines and converting such compounds to 2-lower alkyl-5,6,7- or 8-hydroxydecahydroisoquinolines.

### 3,459,756 N-[2',6'-DIMETHYL-PIPERIDYL-(1')]-3-SULFAMYL-4-CHLORO-BENZOIC ACID AMIDE

Ernst Jucker, Ettingen, Basel-Land, and Adolf J. Lindenmann, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Original application June 24, 1966, Ser. No. 560,062. Divided and this application Apr. 17, 1967, Ser. No. 645,082

Claims priority, application Switzerland, Nov. 9, 1960, 12,547/60; June 6, 1961, 6,547/61

The portion of the term of the patent subsequent to May 20, 1986, has been disclaimed

Int. Cl. C07d 29/34  
U.S. Cl. 260—293.4 1 Claim

This invention is directed to a new chemical compound, N-[2',6'-dimethyl-piperidyl-(1')]-3-sulfamyl-4-chlorobenzoic acid amide, a compound having useful diuretic properties.

### 3,459,757 IMIDAZOLIDINES

William Blythe Wright, Jr., Woodcliff Lake, N.J., and Herbert Joseph Brabander, Nanuet, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,436  
Int. Cl. C07d 57/00, 29/02

U.S. Cl. 260—294 7 Claims

The preparation of substituted phenyl imidazolidines by several methods such as cyclization of a straight compound to produce the desired imidazolidinone ring structure with substituents present, are described. The compounds prepared by these methods are useful for their central nervous system activity, such as tranquilizers or muscle relaxants.

### 3,459,758 9,10-DIHYDRO-4H-PYRAZOLO[1',5':1,6]PYRIDO [3,4-b]INDOLE-2,3-DICARBOXYLIC ACIDS AND ESTERS

Hans A. Wagner, Skokie, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Nov. 9, 1967, Ser. No. 681,897  
Int. Cl. C07d 57/00; A61k 27/00

U.S. Cl. 260—295.5 15 Claims

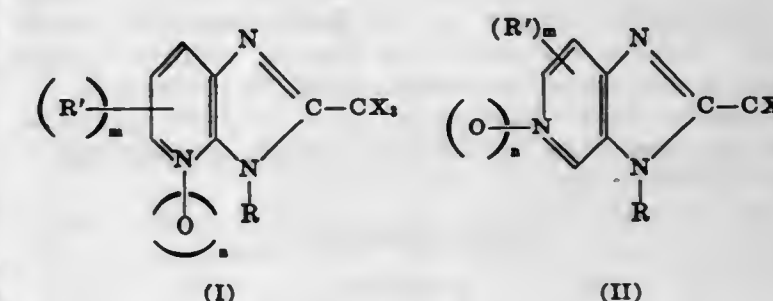
Preparation of the captioned compounds and their valuable pharmacological properties, including pepsin-inhibiting and anti-ulcerogenic activities, are disclosed.

### 3,459,759 CERTAIN SUBSTITUTED IMIDAZO- [4,5-b OR c]PYRIDINES

Hans F. W. Röchling, Karl-Heinz Büchel, and Friedrich W. A. G. Korte, Hangelar, Germany, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 9, 1966, Ser. No. 592,982  
Claims priority, application Germany, Nov. 24, 1965, S 100,642

Int. Cl. C07d 57/04, 49/36; A01n 9/22  
U.S. Cl. 260—296 3 Claims  
1. A member selected from the group consisting of an imidazopyridine having one of the formulae:



wherein R is hydrogen or carboalkoxy having 2-5 carbon atoms, nitro, trifluoromethyl, methylthio, methylsulfinyl or methylsulfonyl, X is halogen, n is zero or one, m is 1 or 2.

### 3,459,760 HALOMERCURI DERIVATIVES OF 2,5-OXADI- AZOLIDINEDIONES OF BASIC AMINO ACIDS AND THEIR USE IN PEPTIDE SYNTHESIS

John B. Conn, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 28, 1966, Ser. No. 545,857  
Int. Cl. C07d 49/30; C07f 3/10; C07g 7/04

U.S. Cl. 260—299 6 Claims  
The invention disclosed herein is generally concerned with methods of preparing peptides containing basic amino acids and with novel compounds used in such preparations. More particularly it is concerned with the preparation of novel halomercuri N-carboxy anhydrides of basic amino acids such as arginine, histidine, lysine and ornithine, and with the utilization of these compounds in the preparation of peptides. These new halomercuri N-carboxy anhydrides are conveniently prepared by first forming a halomercuri salt of the desired basic amino acid, and reacting the latter with phosgene.

### 3,459,761 MONOHYDRATE OF EQUIMOLECULAR COM- PLEX OF ASCORBIC ACID AND PYRIDOXINE BASE

Claude Jeantils, Neuilly-sur-Seine, France, and Etienne Grosclaude, Casablanca-Anfa, and Christian Garlot and Nicolino Petrucci, Casablanca, Morocco, assignors to Les Laboratoires Dausse, Paris, France, a French body corporate

No Drawing. Filed July 8, 1965, Ser. No. 470,586  
Claims priority, application France, July 15, 1964, 981,725

Int. Cl. C07d 99/04; A61k 25/00  
U.S. Cl. 260—297.5 4 Claims

The monohydrate of the complex between equimolar amounts of ascorbic acid and pyridoxine, is prepared at low temperature in a solvent containing at least sufficient water for the formation of the monohydrate. The substance is crystalline, non-hygroscopic and melts at 84-85° C. The substance may be administered for instance,



in tablets or capsules, is more stable than the solution of the complex and is more acceptable to the patient.

3,459,762

### THIOETHERS DERIVED FROM POLYHALOGENATED ALKYLENE OXIDES

Michael Kokorudz and William K. Langdon, Grosse Ile, and William W. Lewis, Jr., Wyandotte, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed Mar. 31, 1966, Ser. No. 538,988

Int. Cl. C07c 149/10, 149/30; C07d 91/44  
U.S. Cl. 260—306 5 Claims

Thioethers are prepared by the reaction of 3,3,3-trichloropropylene oxide or 3,3-dichloropropylene oxide with a compound containing at least one sulfhydryl group such as thiophenol or ethanedithiol. The thioethers are extremely stable plasticizers, have selective pesticidal activity, and may be employed in the preparation of non-burning foams.

3,459,763

### CERTAIN AMINO IMIDAZOLE DERIVATIVES

Norbert Gruenfeld, Bronx, N.Y., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 25, 1966, Ser. No. 522,829

Int. Cl. C07d 49/36; C07c 157/14; A61k 27/00  
U.S. Cl. 260—309 17 Claims

The compounds are of the class of 2-amino imidazole derivatives which are useful as cardiovascular, analgesic, and anti-inflammatory agents and which inhibit gastric secretion. Illustrative embodiments are 1-(4-methoxyphenyl)-5-methyl-2-aminoimidazole and 2-(o-chlorophenylamino)imidazole.

3,459,764

### PREPARATION OF NITROIMIDAZOLE CARBAMATES

Janos Kolonitsch, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 27, 1966, Ser. No. 589,826

Int. Cl. C07d 49/36; A01n 9/22. A61k 25/00  
U.S. Cl. 260—309 9 Claims

Nitroimidazole carbamates are prepared by transesterification of hydroxylalkyl or hydroxylalkylidene nitroimidazoles with carbamic acid esters in the presence of certain organotin compounds. The carbamates have activity against the protozoal parasitic diseases trichomoniasis and enterohepatitis.

3,459,765

### CHRYSENO[5,6-d]IMIDAZOLES AND PROCESS FOR THEIR MANUFACTURE

Adrian Marxer, Muttentz, Switzerland, assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,958  
Claims priority, application Switzerland, Oct. 13, 1964, 13,302/64

Int. Cl. C07d 49/36; A61k 27/00  
U.S. Cl. 260—309.2 15 Claims

Process for the manufacture of chryseno[5,6-d]imidazoles in free form or in the form of an acid addition salt thereof, wherein a 5:6-chrysenoquinone is reacted with formaldehyde and ammonia; and the products obtained thereby, useful as tumour inhibitors.

### 2,2,5,5-TETRAKIS(POLYFLUOROMETHYL)IMIDAZOLIDINES AND THEIR PREPARATION

William J. Middleton, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 439,476, Mar. 12, 1965, which is a continuation-in-part of application Ser. No. 461,151, June 3, 1965. This application Feb. 9, 1966, Ser. No. 521,317

Int. Cl. C07d 49/36; A61k 25/00

U.S. Cl. 260—309.6 16 Claims

Described and claimed are the 4-imino-2,2,5,5-tetrakis (polyhalomethyl)imidazolidines and/or their isomers or tautomers, the 4-amino-2,2,5,5-tetrakis (polyhalomethyl)-3-imidazolines, e.g., 4-[1-amino-2,2,2-trifluoro-1-(trifluoromethyl)ethylamino]-2,2,5,5-tetrakis(trifluoromethyl)-3-imidazoline, selected derivatives, and their preparation from alkali metal cyanides and polyhaloalkylidenimines, e.g., hexafluoroisopropylidenimine. All the claimed compounds are useful for plasticizing polymers and some are muscle relaxants.

3,459,767

### AMINOMETHYLLINDOLES

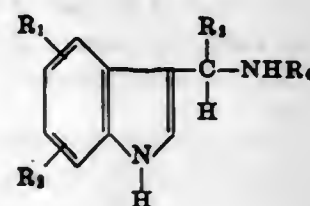
James M. McManus, Old Lyme, and Billie Kenneth Koe, Gales Ferry, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 10, 1965, Ser. No. 478,759

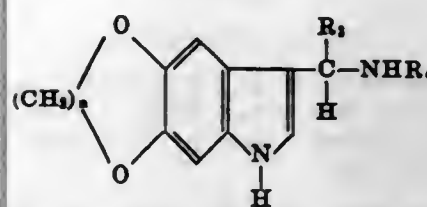
Int. Cl. A61k 27/00; C07d 27/56, 99/04

U.S. Cl. 260—326.15 12 Claims

Compounds of the formula



and



and their acid addition salts wherein  $R_1$  and  $R_2$  may be hydrogen, hydroxy, fluorine, chlorine, alkyl and alkoxy;  $n$  is 1 or 2 and  $R_1$  and  $R_2$  are alkyl, cycloalkyl, alkoxyalkyl or alkylthioalkyl, each of the aforesaid alkyl moieties being of specified carbon atom content, and the utility thereof as oral hypoglycemic agents.

3,459,768

### PYRROLIDINE-2,2-DIMETHANOLS AND METHODS OF PREPARING THE SAME

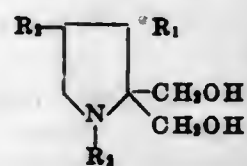
Harold G. Monsimer, Moorestown, N.J., and Philip P. Grous, Philadelphia, Pa., assignors to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 24, 1966, Ser. No. 552,398

Int. Cl. C07d 27/04

U.S. Cl. 260—326.5 6 Claims

Compounds having the formula:



in which  $R_1$  and  $R_2$  are members of the group consisting of hydrogen and lower alkyl, and  $R_3$  is a member of the group consisting of hydrogen, lower alkyl, acetyl, benzyl, trimethoxybenzyl, phenethyl, diphenylloweralkyl, formyl, allyl, propargyl, phenyl, phenoxyloweralkyl, di-loweralkylaminoloweralkyl, and phenylsulfonyloweralkyl, and the therapeutically acceptable acid addition salts thereof have useful anti-inflammatory activity. They may be prepared by reducing an appropriate 5,5-dicarboxy-2-pyrrolidinone with lithium aluminum hydride.

3,459,769

### 3-AMINO-A-NOR-B-HOMO-STERIODS

Georg Anner and Jaroslav Kalvoda, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,116

Claims priority, application Switzerland, Nov. 12, 1964, 14,633/64

Int. Cl. C07c 169/54, 173/00; A61k 27/00

U.S. Cl. 260—326.14 11 Claims

3-amino-A-nor-B-homo-steroids, aliphatic-hydrocarbon-substituted in the 17-position. The compounds are useful as tumour inhibiting agents and are also useful as intermediates.

3,459,770

### INDOLEGLYOXYLOL PYRROLES

Meier E. Freed, Philadelphia, Pa., and John Leheup Archibald, Slough, England, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 7, 1966, Ser. No. 599,726

Int. Cl. C07d 27/70, 27/74

U.S. Cl. 260—326.15 5 Claims

This invention relates to indoleglyoxylopyrroles which possess central nervous system activity, specifically depressant and anticonvulsant action.

3,459,771

### 2,2,5-TRISUBSTITUTED-5-ISONITRILE-1,3-DIOXOLANES

Erwin Nikles, Allschwil, and Hans-Rudolf Hitz, Muttentz, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

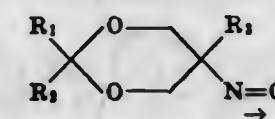
No Drawing. Filed Oct. 12, 1965, Ser. No. 495,338

Claims priority, application Switzerland, Oct. 14, 1964, 13,358/64

Int. Cl. C07d 15/04, 21/00; A01n 9/20

U.S. Cl. 260—340.7 2 Claims

New compounds are provided which are represented by the formula



in which  $R_1$  and  $R_2$  each represents hydrogen or an unsubstituted or substituted alkyl, alkenyl, alkylene, cycloaliphatic, aromatic or heterocyclic group, and  $R_3$  represents lower alkyl.

The compounds of this invention are especially useful as biocides more particularly, as insecticides, acaricides, ovicides, herbicides, fungicides bactericides and molluscicides.

3,459,772

### ETHYLENEDIOLY SUBSTITUTED BENZ[e]INDENES

Alan Martin Krubiner, Cedar Grove, and Eugene Paul Oliveto, Glen Ridge, N.J., assignors to Hoffmann-La Roche, Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed July 1, 1965, Ser. No. 468,928

The portion of the term of the patent subsequent to May 28, 1985, has been disclaimed

Int. Cl. C07c 49/30, 167/02; C07d 13/04

U.S. Cl. 260—340.9 8 Claims

Synthesis of 3 $\beta$ -derivatives of 3 $\alpha\beta$ -methyl-benz[e]indene tricyclic compounds by a process which comprises the steps of reacting a 3-oxo or 3-hydroxy 3 $\alpha\beta$ -methyl-benz[e]indene with ethylenetriphenylphosphorane and treating the so-obtained 3-ethylidene-3 $\alpha\beta$ -methyl-benz[e]indene sequentially with hydroboron and hydrogen peroxide. The tricyclic compounds can be converted to pharmaceutically useful steroids of the 17 $\beta$ -pregnane series.

3,459,773

### PROCESS FOR PRODUCING $\alpha$ -TOCOPHEROL AND ITS ESTERS

Tatsuo Moroe, Musashino, and Satoshi Hattori, Akira Komatsu, Takeshi Matsui, and Haruki Kurihara, Tokyo, Japan, assignors to Takasago Perfumery Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Dec. 27, 1966, Ser. No. 604,566

Int. Cl. C07d 7/22

U.S. Cl. 260—345.5 4 Claims

$\alpha$ -Tocopherol is produced by reacting phytol or isophytol with trimethylhydroquinone in an inert solvent using a macroreticular strongly acid sulfonic type cation exchange resin, produced by suspension polymerization of a styrene-divinyl enzyme copolymer in the presence of a substance which is a good solvent for the monomers but a poor swelling agent for the polymer and sulfonating of the resulting polymer, as a catalyst.

3,459,774

### METHOD OF PRODUCING $\alpha$ -TOCOPHERYL ACID SUCCINATE

Tetsuya Nakamura, Saitama, and Shizumasa Kijima, Tokyo, Japan, assignors to Eisai Co., Ltd., Tokyo, Japan

No Drawing. Filed Feb. 6, 1967, Ser. No. 613,994

Int. Cl. C07d 7/22

U.S. Cl. 260—345.5 3 Claims

A method of making  $\alpha$ -tocopheryl acid succinate in which  $\alpha$ -tocopherol is reacted with succinic anhydride in the presence of anhydrous sodium acetate, as a catalyst, and a metal, such as zinc, and an organic acid, such as acetic acid, so that the reaction is carried out under a reductive condition.

3,459,775

### BICYCLO[2.2.1]HEPT-5(6)-YL COMPOUNDS

Edward A. Rick and Samuel W. Tinsley, Jr., Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 16, 1964, Ser. No. 404,474

Int. Cl. C07c 13/42; C07d 1/00

U.S. Cl. 260—348 15 Claims

2-vinylbicyclo[2.2.1]hept-5(6)-yl and 2-epoxyethylbicyclo[2.2.1]hept-5(6)-yl compounds, wherein the vinyl compounds are prepared by the addition of active hydrogen-containing compounds to the strained-ring double bond of the bicycloheptene ring in 2-vinylbicyclo[2.2.1]hept-5-ene and the epoxy compounds are prepared by the epoxidation of the vinyl compounds. The compounds find utility as solvents for resins and oils, monomers for preparing synthetic waxes and resins, chemical intermediates



for pharmaceuticals, wetting agents, insecticides, emulsifying agents, detergents, bactericides and fungicides.

3,459,776

# PROCESS FOR THE PRODUCTION OF METAL SOAPS OF EPOXYDIZED FATTY ACIDS

Alfred Szczepanek and Margarete Szczepanek, Duren, Germany, assignors, by mesne assignments to Hoesch-Chemie Gesellschaft mit beschränkter Haftung Duren-Chemie, Duren, Rhineland, Germany, a corporation of Germany

Continuation-in-part of application Ser. No. 114,293, June 2, 1961. This application Apr. 1, 1964, Ser. No. 356,473

Claims priority, application Germany, June 3, 1960, C 21,597

Int. Cl. C07f 7/24, 5/06, 3/00

U.S. Cl. 260—348 8 Claims

1. Process for the production of polyvalent metal soaps of epoxidized fatty acids, which comprises:

- contacting epoxidized fatty acid in an aqueous, alcoholic, alkaline medium with a monovalent metal cation for saponification to form the salt of the epoxidized fatty acid and said cation, said medium being a solvent for the epoxidized fatty acid and said salt, and containing about 10–70% alcohol based on the alcohol and water present therein, and
- contacting said salt with an aqueous solution of a water soluble salt of the said polyvalent metal to form said polyvalent metal soap.

3,459,777

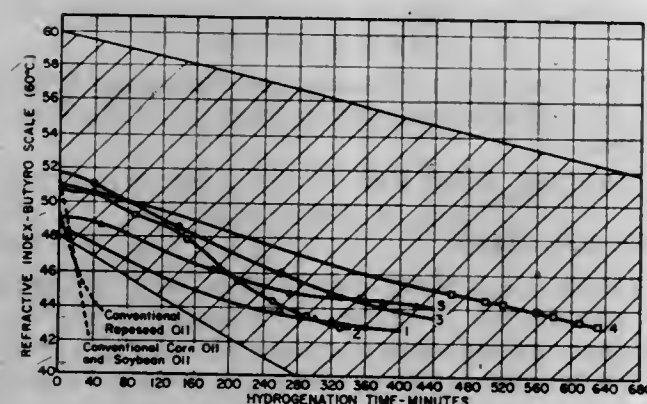
# CATALYTIC HYDROGENATION OF OILS FOR EDIBLE PRODUCTS

Paul Selden, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Mar. 13, 1967, Ser. No. 622,821

Int. Cl. C11c 3/12

U.S. Cl. 260—409 5 Claims



In a process for catalytically hydrogenating vegetable oils and marine oils to an iodine value greater than 60, the steps of adding catalyst at the beginning of the reaction in an amount sufficient only to start the hydrogenation and subsequently incrementally adding catalyst, at a minimum prescribed frequency designed to cause the reaction to follow a predetermined, substantially straight Refractive Index/Time curve.

3,459,778

# 8,14-SECOGONA-1,3,5(10),6,8-PENTAEN-14-ONES

Gordon Alan Hughes, Haverford, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 540,857, Apr. 7, 1966. This application Apr. 12, 1967, Ser. No. 630,210

Int. Cl. C07c 171/07, 167/02

U.S. Cl. 260—397.45 10 Claims

This invention is concerned with 8,14-secogona-1,3,5

(10),6,8-pentaen-14-ones which are useful intermediates in the preparation of known gonapentaenes which possess estrogenic activity. Further, this invention is concerned with the process of preparing these compounds by the dehydrogenation of appropriate 8,14-secogona-1,3,5(10),9-tetraen-14-ones and their subsequent cyclization to afford the corresponding gona-1,3,5(10),6,8,14-hexaenes.

3,459,779

# PROCESS FOR THE PRODUCTION OF ALKYLITIN TRIHALIDES

Wilhelm Paul Neumann, Giessen (Lahn), Germany, assignor to Studiengesellschaft Kohle m.b.H., a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 331,097, Dec. 17, 1963. This application June 7, 1967, Ser. No. 644,103

Claims priority, application Germany, Dec. 18, 1962, St 20,095

Int. Cl. C07f 7/22

U.S. Cl. 260—429.7 10 Claims

A process is disclosed for preparing alkyltin trihalides by comproportionation of dialkyltin dihalides, trialkyltin halides, tetraalkyltin and tin tetrahalides in the presence of polar substances, which in particular increase the polarity of the reaction medium, such as phosphorus oxychloride or other phosphorus-halogen compounds, preferably in admixture with phosphorus pentoxide, hydrochloric acid and the like, which are not irreversibly reacted with the reactants and reaction products.

3,459,780

# ORGANOMETALLIC COMPOUNDS FORMED BY REACTIONS OF RHODIUM MONOHALIDE COMPOUNDS

Geoffrey Wilkinson, London, England, assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

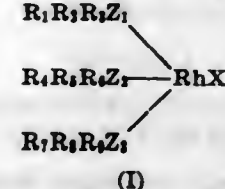
No Drawing. Filed Feb. 15, 1967, Ser. No. 616,207

Claims priority, application Great Britain, Feb. 21, 1966, 7,532/66

Int. Cl. C07f 15/00, 9/02, 9/66

U.S. Cl. 260—429 5 Claims

The rhodium monohalides having the formula



wherein  $R_1$ – $R_9$  are organic radicals either alike or different, preferably having six to ten carbon atoms,  $Z_1$ – $Z_3$  are either alike or different and selected from phosphorus, arsenic, and antimony, and  $X$  is a halogen, are reacted with alkyl halides, allyl halides, aldehydes, arylacyl halides, aliphatic acyl halides, hydrogen chloride, and oxygen, to yield novel compounds. The compounds of this invention find use as chemical intermediates, oxidation catalysts and metal plating compounds.

3,459,781

# LIQUID POLYISOCYANATES AND THEIR STEPWISE PREPARATION

Guenther Kurt Hoeschele, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 381,573, July 9, 1964. This application Nov. 22, 1965, Ser. No. 599,157

Int. Cl. C07c 119/04

U.S. Cl. 260—453 7 Claims

Liquid polyisocyanates of high isocyanate content and low viscosity are produced by phosgenating an amine mixture prepared by (1) reacting formaldehyde with at

least about one mole per mole of formaldehyde of an aromatic monoamine; (2) then reacting the reaction product of step 1 with about 0.15 to 1.2 moles per mole of formaldehyde of an aromatic diamine; (3) both of the above steps occurring at a temperature below about 50° C.; (4) then heating the reaction product of step 2 to at least 60° C. to completion of the reaction; the mole ratio of total amines to formaldehyde ranging from about 1.5:1 to 4.5:1.

3,459,782

# 1-SUBSTITUTED PHENOXY-2-HYDROXY-3-ISOPROPYLAMINO-PROPANES

Herbert Koppe, Ingelheim, Albrecht Engelhardt, Mainz, Gerhard Ludwig, Wedel, and Karl Zelle, Ingelheim, Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 391,012, Aug. 20, 1964. This application Feb. 28, 1967, Ser. No. 619,141

Claims priority, application Germany, Aug. 26, 1963, B 73,262; June 24, 1966, B 87,707; Dec. 30, 1966, B 90,543; Feb. 6, 1967, B 91,070

Int. Cl. C07d 13/10; C07c 91/16

U.S. Cl. 260—465 10 Claims

1-substituted phenoxy-2-hydroxy-3-N-isopropyl-amino-propanes and acid addition salts thereof, possessing bradycardia activity and N-isopropyl-nor adrenaline antagonistic activity.

3,459,783

# METHOD OF PREPARING MALONONITRILE

Edward George Budnick, Scotch Plains, N.J., assignor to Plains Chemical Development Co., Garwood, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 31, 1966, Ser. No. 590,461

Int. Cl. C07c 121/12, 121/22

U.S. Cl. 260—465.2 9 Claims

Malononitrile is prepared by reacting cyanoacetamide with phosphorus oxychloride in the presence of an alkaline earth metal salt. Preferred salts are calcium carbonate and calcium chloride. If an excess of phosphorus oxychloride is employed no solvent is required. Otherwise conventional solvents, e.g., ethylene dichloride, are employed.

3,459,784

# AMALGAM HYDRODIMERISATION OF UNSATURATED COMPOUNDS

John David Littlehales and John Robin Paul Clarke, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Oct. 19, 1966, Ser. No. 587,649

Claims priority, application Great Britain, Nov. 1, 1965, 46,131/65

Int. Cl. C07c 121/02, 67/00

U.S. Cl. 260—465.8 7 Claims

A process for the reductive dimerisation of an alpha, beta olefinically unsaturated ester or nitrile by means of an alkali- or alkaline-earth metal amalgam reduction system wherein the dimerizing nitrile or ester is contained in a polar aprotic organic solvent system that incorporates a minor proportion of a proton source and a quantity of halide ions, furnished by an anion-exchange resin bearing quaternized amine groups, the measured pH of the organic medium being controlled at a value not less than 7 by supplying hydrogen chloride gas.

3,459,785

# HYDROGENATION OF DICYANOBUTENE WITH SELECTED RHODIUM(I) CATALYSTS AND A BASIC PROMOTER

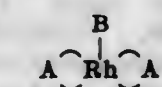
Frank N. Jones, Shellburne, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 21, 1966, Ser. No. 595,584

Int. Cl. C07c 121/26, 121/02; C07b 1/00

U.S. Cl. 260—465.8 9 Claims

A process for preparing adiponitrile from 1,4-dicyanobutenes by hydrogenation between 0° C. and 175° C. in the presence of 0.0001 to 5% by total weight of a rhodium(I) catalyst of the formula  $R_3PRhXYZ$  or



where  $X$  is an anion;  $B$  is a halogen anion or hydrogen,  $R$  is aryl,  $Z$  is  $R_3P$  or dicyanobutene,  $Y$  is  $R_3P$ , dicyanobutene or  $CO$ , and  $A$  is  $R_3P-R'-PR_3$ , where  $R'$  is a divalent hydrocarbon group; in the presence of a base promoter. Preferred promoters are inorganic bases such as alkali metal hydroxides, carbonates, phosphates, etc. The process is operable in the presence of impurities present in most commercial dicyanobutenes.

3,459,786

# PREPARATION OF AMINO ESTERS OF UNSATURATED POLYCARBOXYLIC ACIDS

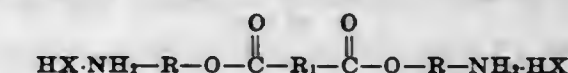
Thomas K. Brotherton and John W. Lynn, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 212,481, July 25, 1962. This application Aug. 9, 1965, Ser. No. 478,440

Int. Cl. C07c 93/24, 93/00, 93/16

U.S. Cl. 260—468 15 Claims

1. The salts of the diamines represented by the following formula:



wherein  $R$  represents a divalent hydrocarbon radical of the group consisting of an aliphatic group of 2 to 10 carbon atoms and a cycloaliphatic group of 4 to 10 carbon atoms; wherein  $R_1$  represents a divalent olefinically unsaturated hydrocarbon radical of 2 to 24 carbon atoms selected from the group consisting of aliphatic, cycloaliphatic, and bicycloaliphatic groups; and wherein  $HX$  is of the group consisting of hydrogen chloride, hydrogen bromide, sulfuric acid, and phosphoric acids.

3,459,787

# SULPHUR CONTAINING POLYESTERS

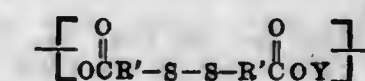
William E. Weesner, Dayton, Ohio, assignor, by mesne assignments, to Research Corporation, New York, N.Y., a nonprofit corporation of New York

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,888

Int. Cl. C08g 17/06; C07c 149/40, 149/20

U.S. Cl. 260—470 2 Claims

1. A thiopolyester consisting essentially of the reaction product obtained by heating a glycol and a dithiodicarboxylic acid, said thiopolyester being made up of the following repeating unit



wherein  $R'$  is a hydrocarbon radical selected from the group consisting of alkyl of from 2 to 12 carbon atoms, or monocyclic or dicyclic aryl of from 6 to 10 carbon atoms and  $Y$  is selected from the group consisting of hydrocarbon and hydrocarbon-X-hydrocarbon where  $X$



stands for a member of the group consisting of oxygen and sulphur, and being further characterized by a specific viscosity of 0.2 to 0.4 in 1% concentration in ethylene dichloride and where hydrocarbon is selected from the group consisting of alkyl of from 2 to 12 carbon atoms, aryl containing 6 to 10 carbon atoms, alkaryl containing 8 to 15 carbon atoms or aryalkyl containing from 7 to 15 carbon atoms.

3,459,788

# PROCESS FOR PREPARATION OF BIS-( $\beta$ -HYDROXYETHYL)-BENZENE DICARBOXYLATE

Kichiji Enoki, Susumu Adachi, Shigeo Sakata, Mitsuo Kumaki, and Eiichi Ikari, Takaoka-shi, Hiroshi Takakura, Imizu-gun, Nobuyasu Takahashi and Komei Takashima, Takaoka-shi, and Munemasa Yamamoto, Tonami-shi, Japan, assignors to Nippon Soda Kabushiki Kaisha, Tokyo-to, Japan, a company of Japan

No Drawing. Filed Feb. 23, 1965, Ser. No. 434,671  
Claims priority, application Japan, Feb. 25, 1964, 39/9,356; Mar. 30, 1964, 39/17,354; Aug. 7, 1964, 39/44,312; Nov. 11, 1964, 39/63,420  
Int. Cl. C07c 67/00, 69/82

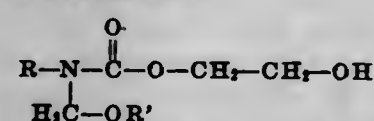
U.S. Cl. 260—472 7 Claims  
Ethylene oxide and terephthalic acid are reacted in a molar ratio of the former to the latter of at least 1.3 and in the presence of at least one catalyst and an amount of solvent no greater, by weight, than the weight of the terephthalic acid to produce bis-( $\beta$ -hydroxyethyl) terephthalate. The products are useful as intermediates for fiber-forming polymers.

3,459,789

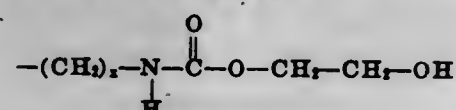
# URETHANE METHYLOL ETHERS CONTAINING HYDROXYL GROUPS

Erwin Müller and Dieter Dieterich, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany  
No Drawing. Filed Apr. 19, 1966, Ser. No. 543,528  
Claims priority, application Germany, May 3, 1965, F 45,948  
Int. Cl. C07c 101/26, 101/30; D06m 13/40

U.S. Cl. 260—482 3 Claims  
Compounds of the formula:



wherein R is hydrogen, alkyl of 1 to 18 carbon atoms, alkenyl of 1 to 18 carbon atoms or



wherein x is 0 to 6 and R' is alkyl having 1 to 12 carbon atoms, process of producing the same and their utility in the production of polyurethane resins, as auxiliary agents for paper and textiles and as age resistors and stabilizers for resins including polyoxymethylenes.

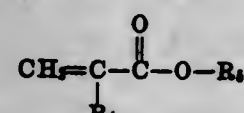
3,459,790

# POLYMERIZABLE ACRYLIC ACID ESTERS CONTAINING ACTIVE METHYLENE GROUPS

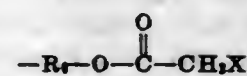
Donald Arthur Smith, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 20, 1965, Ser. No. 525,272  
Int. Cl. C07c 69/66, 69/54; C08f 3/66

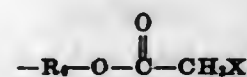
U.S. Cl. 260—483 8 Claims  
Compounds having the formula:



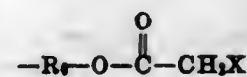
wherein R<sub>4</sub> is hydrogen, alkyl or



where R<sub>4</sub> is alkylene and X is aliphatic acyl or cyano; and R<sub>5</sub> is alkyl, cycloalkyl, aryl or



where R<sub>4</sub> is alkylene and X is aliphatic acyl or cyano, provided that one and only one of R<sub>4</sub> and R<sub>5</sub> is always



In one aspect, polymers containing units of monomers of the above formula can be utilized to provide improved photographic compositions.

3,459,791

# PROCESS FOR DEHYDROGENATING A-NOR-B-HOMO-STERIODS

Georg Anner and Jaroslav Kalvoda, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 429,659, Feb. 1, 1965. This application July 9, 1968, Ser. No. 743,277

Claims priority, application Switzerland, Feb. 7, 1964, 1,504/64; Mar. 25, 1964, 3,832/64  
Int. Cl. C07c 171/06, 171/02, 173/00

U.S. Cl. 260—488 23 Claims  
3,6-dioxo-A-nor-B-homo-steroids, their enolesters and enolethers, as well as the 1-dehydro derivatives thereof add on halogen or hypohalous acids to the  $\beta$ -diketone system in an extremely easy and selective manner. The resulting halogenation product is easy to dehydrohalogenate to yield the  $\Delta^1$ - and  $\Delta^7$ -3,6-dioxo-A-nor-B-homo-steroids or  $\Delta^{1,7}$ -3,6-dioxo-A-nor-B-homo-steroids. The  $\Delta^7$ - and  $\Delta^{1,7}$ -3,6-dioxo-A-nor-B-homo-steroids are new.

3,459,792

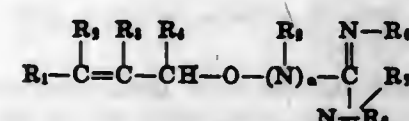
# CINNAMYLOXY GUANIDINES AND THE SALTS THEREOF

Robert Paul Mull, Florham Park, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 603,749, Dec. 22, 1966. This application Aug. 9, 1967, Ser. No. 659,341

Int. Cl. C07c 129/12 10 Claims  
U.S. Cl. 260—501.12

Aralkenyloxy-guanidines having the formula



R<sub>1</sub>=carbocyclic aryl  
R<sub>2</sub>-R<sub>4</sub>=H or lower alkyl  
R<sub>5</sub>, R<sub>6</sub>=also amino  
R<sub>7</sub>+R<sub>8</sub>=also lower alkylene  
n=integer 1 or 2

and acid addition salts thereof exhibit anorexigenic effects.

3,459,793

# PREPARATION OF METHYL AMINO DI(METHYLENE PHOSPHONIC ACID)

Chung Yu Shen, St. Louis, Mo., and Steven J. Fitch, Baltimore, Md., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 4, 1966, Ser. No. 531,754  
Int. Cl. C07f 9/08

U.S. Cl. 260—502.5 4 Claims  
The present invention relates to and covers a process for preparing methyl amino di(methylene phosphonic acid) by reacting in an aqueous medium formaldehyde, orthophosphorous acid, ammonia at a temperature above about 90° C. and a pH below about 3. The particular ammonia to orthophosphorous acid molar ratio is 0.5:1 to 5:1 and the molar ratio of formaldehyde to orthophosphorous acid is 1:1 to 2.5:1. The resultant reaction medium is relatively free of halide ions and contains less than about 60% by weight of water.

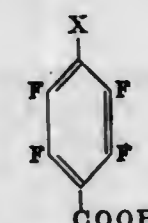
3,459,794

# 4-THIOL-2,3,5,6-TETRAFLUOROBENZOIC ACID

Christ Tamborski, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed Jan. 11, 1966, Ser. No. 520,317  
Int. Cl. C07c 149/40, 149/34

U.S. Cl. 260—516 1 Claim  
Polymerizable compounds useful as lube additives having the structure



where X is a functional group selected from methyl, trifluoromethyl, carboxy, hydroxy, amino, thiol and 2,3,5,6-tetrafluorophenyl.

3,459,795

# NOVEL QUATERNARY PHOSPHONIUM SALTS

Arlen W. Frank, Grand Island, and Irving Gordon, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed May 26, 1966, Ser. No. 553,023  
Int. Cl. C07f 9/54

U.S. Cl. 260—526 5 Claims  
Quaternary phosphonium salts of the formula



wherein R is a lower alkyl, R<sup>1</sup> is higher alkyl, R<sup>2</sup> is lower alkylene and X is a halogen, are novel compounds, useful as detergents, surface active agents, sequestrants, emulsifiers, plasticizers and thickeners.

3,459,796

# PRODUCTION OF ACETIC ACID

Leonard Andrew Duncanson and Hans Werner Walter Ehrlich, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Aug. 19, 1965, Ser. No. 481,063  
Claims priority, application Great Britain, Aug. 21, 1964, 34,254/64

Int. Cl. C07c 51/32, 51/24, 51/16 14 Claims  
U.S. Cl. 260—533

Acetic acid is produced by contacting ethylene in the presence of oxygen and an aldehyde with a solution con-

taining a salt or co-ordination compound of palladium and a salt of at least one of the metals iron, cobalt and manganese.

3,459,797

# PROCESS FOR THE PRODUCTION OF ACETIC ACID BY CATALYTIC GAS-PHASE OXIDATION OF BUTENES

Rudolf Brockhaus, Marl, and Erich Berger, Recklinghausen, Germany, assignors to Chemische Werke Huls A.G., Marl, Germany

No Drawing. Filed Mar. 3, 1966, Ser. No. 531,344  
Claims priority, application Germany, Mar. 13, 1965, C 35,308

Int. Cl. C07c 51/20 15 Claims  
U.S. Cl. 260—533

Acetic acid is produced by reacting a butene with oxygen at 200–300° C. in the presence of a tin vanadate catalyst, the reaction being preferably conducted in the presence of steam.

3,459,798

# PROCESS FOR PREVENTING CAKING OF ADIPIC ACID, AND PRODUCT

James Turnley Lassiter, Orange, Tex., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 23, 1966, Ser. No. 559,715  
Int. Cl. C07c 55/14, 55/04

U.S. Cl. 260—537 6 Claims  
Adipic acid is rendered free flowing by the addition of

25–200 p.p.m. of an anticaking agent which is an acyclic saturated monobasic acid containing 10–22 carbon atoms or an acyclic saturated dibasic acid containing 10–14 carbon atoms or mixture of the aforesaid acids.

3,459,799

# CARBONYL CONTAINING 1-METHYL-2-BENZYL-HYDRAZINE COMPOUNDS

Hugo Gutmann, Reinach, Basel-Land, Roland Jaunin, Basel, Ado Kaiser, Neu-Frenkendorf, and Paul Zeller, Allschwil, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 9, 1964, Ser. No. 350,564  
Claims priority, application Switzerland, Mar. 13, 1963, 3,169/63

Int. Cl. C07c 109/04 8 Claims  
U.S. Cl. 260—558

Cytostatic 1-methyl-2-benzylhydrazine compounds having a carbonyl-containing substituent on the phenyl nucleus and intermediates therefor are described.

3,459,800

# PHENOLSULFONIC ACID DERIVATIVES OF TETRACYCLINE ANTIBIOTICS

Carlos Ferrer Salat, Jorge Ferrer Batlle, and Juan Colome Riera, all of 304 calle Diputacion, Barcelona, Spain

No Drawing. Filed Aug. 3, 1965, Ser. No. 477,032  
Claims priority, application Spain, Aug. 8, 1964, 302,954

Int. Cl. C07c 143/46, 143/42 7 Claims  
U.S. Cl. 260—559

Phenolsulfonic acid derivatives of tetracycline antibiotics are disclosed. The compounds are of particular usefulness in the treatment of infections of the respiratory tract.



3,459,801

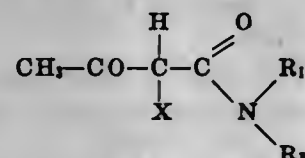
**PROCESS FOR THE MANUFACTURE OF MONO-HALOGENO-N-ALKYL-ACETOACETAMIDES**  
Ernst Beriger, Allschwil, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland  
No Drawing. Filed Jan. 31, 1967, Ser. No. 612,804  
Claims priority, application Switzerland, Feb. 15, 1966, 2,169/66

Int. Cl. C07c 103/02, 103/12

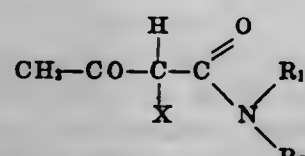
U.S. Cl. 260—561

2 Claims

A process for the manufacture of a compound of the formula



in which X represents a member selected from the group consisting of chlorine, bromine and iodine, R<sub>1</sub> represents a member selected from the group consisting of lower alkyl, lower alkoxyalkyl and benzyl and R<sub>2</sub> represents a member selected from the group consisting of hydrogen, lower alkyl, lower alkoxyalkyl and benzyl, which process comprises replacing one of the radicals X in a compound of the formula



in which X, R<sub>1</sub> and R<sub>2</sub> have the significance given above, by hydrogen, by means of selective hydrogenolysis.

3,459,802

### TRIOXIMINOPOLYHALOCYCLOALKANES AND PROCESS

Earl T. McBee, 420 Forest Hills Drive, West Lafayette, Ind. 47906, and John J. Turner, 2219 Brookline Road, Wilmington, Del. 19803

No Drawing. Filed Nov. 3, 1966, Ser. No. 591,710

Int. Cl. C07c 131/02

U.S. Cl. 260—566

8 Claims

Trioximinopolyhalocycloalkanes, such as 1,2,3-trioximinotetrafluorocyclobutane and 1,2,3-trioximinotetrafluorocyclopentane are new compounds, which have been found useful in the preparation of chelating agents for metal ions. The novel compounds are made by reaction of cyclic halogenated olefins, such as hexafluorocyclobutene or octafluorocyclopentene, with a lower alcoholic solution of hydroxyl amine.

3,459,803

### β-ALKOXY-TRIFLUOROMETHYL-PHENALKYLAMINES

John A. Faust, Santa Ynez, and Melville Sahyun, Santa Barbara, Calif., assignors to Melville Sahyun, doing business as Sahyun Laboratories, Santa Barbara, Calif.  
No Drawing. Continuation-in-part of application Ser. No. 467,759, June 28, 1965. This application Sept. 8, 1967, Ser. No. 666,457

Int. Cl. C07c 93/02

U.S. Cl. 260—570.6

7 Claims

Alkoxy-trifluoromethylphenalkyl amines useful to reduce nausea and to depress appetite.

3,459,804

**TRIORGANOPHOSPHORANYLIDENEKETENES**  
Clifford N. Matthews, St. Louis, and Gail H. Birum, Kirkwood, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
No Drawing. Filed July 22, 1966, Ser. No. 567,066

Int. Cl. C07f 9/50

U.S. Cl. 260—585.5

7 Claims

Triorganophosphoranylideneketenes, new compounds of the formula R<sub>3</sub>P=C=C=O wherein the R substituents

are certain aromatic hydrocarbon radicals, are synthesized by decomposition of [(carboxy)(triorganophosphoranylidenemethyl)triorganophosphonium inner salts. Also disclosed are the sulfur and imine analogs of said ketenes and reaction of the ketenes or said analogs with organic mercaptans to yield 1:1 adducts. The triorganophosphoranylideneketenes have utility as insecticides and in flameproofing polymers.

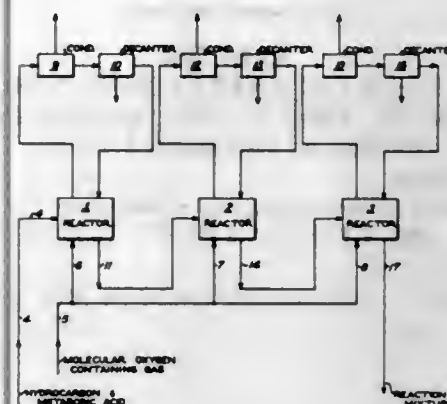
3,459,805

**HYDROCARBON OXIDATION PROCESS**  
Joseph L. Russell, Ridgewood, N.J., assignor to Halcon International, Inc., a corporation of Delaware  
Continuation-in-part of application Ser. No. 392,263, Aug. 26, 1964. This application May 12, 1966, Ser. No. 549,607

Int. Cl. C07c 45/00, 29/00

U.S. Cl. 260—586

5 Claims



1. In a continuous process for the partial oxidation of a saturated hydrocarbon having 4 to 20 carbon atoms in the liquid phase with molecular oxygen at a temperature in the range 100 to 300° C. in a series of separate oxidation stages with the reaction mixture from a stage passing to the next in the series of stages and the reaction mixture from the last stage passing to product recovery, the improvement which comprises carrying out the oxidation in the presence of a boron adjuvant selected from the group of orthoboric acid, metaboric, tetraboric acid, pyroboric acid and boron oxide and reacting at least A percent of the total oxygen reacted in said stages with liquid saturated hydrocarbon having 4 to 20 carbon atoms containing a molar concentration of oxidized saturated hydrocarbons having 4 to 20 carbon atoms of at least 1.5% wherein

$$A = \frac{x - 1.5}{x} (100)$$

and x is the percent total hydrocarbon conversion in said process.

3,459,806

### BENZOBENZAZULENES

Albert J. Frey, Essex Fells, and Eugene E. Galantay, Morristown, N.J., assignors to Sandoz Inc., Hanover, N.J.  
No Drawing. Original application Dec. 30, 1966, Ser. No. 606,007. Divided and this application Feb. 7, 1968, Ser. No. 724,653

Int. Cl. C07c 49/76; A61k 27/00

U.S. Cl. 260—590

3 Claims

The title compounds are 2-amino-1,2,6,7-tetrahydro-(11bH)-benzo[j]benz[c,d]azulenes and are useful as anti-hypertensives and useful as sedative-tranquillizers. The title compounds are prepared from suitable 10,11-dihydro-5H-dibenzo[a,d]cyclohepten-5-ones or suitable 1,2-diphenylethanes, e.g., by conversion thereof to the corresponding 1,2,6,7-tetrahydro-(11bH)-benzo[j]benz[c,d]azulen-2-one which is then converted to the corresponding title compound.

3,459,807

**CATALYST FOR PREPARING FORMALDEHYDE FROM METHANOL**  
Giancarlo Aglietti, Pietro Baratella, Cesare Reni, and Luigi Lugo, Milan, Italy, assignors to Societa Italiana Resine S.p.A., Milan, Italy

No Drawing. Filed Nov. 18, 1966, Ser. No. 595,367

Claims priority, application Italy, June 4, 1966, 12,690/66

Int. Cl. B01j 11/84; C07c 47/04, 45/10

U.S. Cl. 260—603

5 Claims

A method of preparing a catalyst of high specific area and high mechanical properties comprising mixing an ammonium heptamolybdate solution and a ferric chloride solution, reducing the ammonium ion content of the resulting precipitate to a value lower than 0.2% by washing, reducing the water content of the washed product to below 40% by squeezing and forming a product containing molybdenum and iron oxides in a molar ratio of between 10:1 and 5:1, heating said product to a temperature of less than 420° C. The catalyst so produced is useful in the oxidation of methanol to produce formaldehyde.

3,459,808

### PROCESS FOR THE PREPARATION OF PHOSPHONIUM SALTS AND PHOSPHINE OXIDES STARTING WITH ALUMINUM TRIALKYL

Robert E. Hall, Wyoming, Adrian Kessler, Cincinnati, and Aubrey R. McLain, Wyoming, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed June 24, 1966, Ser. No. 560,108

Int. Cl. C07f 9/54, 9/52, 9/50

U.S. Cl. 260—606.5

11 Claims

A novel process for preparing quaternary phosphonium salts, precursors for tertiary phosphine oxide detergents, comprising the steps of forming alkylchlorophosphine from aluminum trialkyl and phosphorous trichloride, hydrogenating the alkylchlorophosphine to form alkylphosphine, and methylating the alkylphosphine to obtain a quaternary alkyltrimethyl phosphonium salt.

3,459,809

### METHOD OF PRODUCING MERCAPTANS

Shiro Ishida and Tokiyuki Yoshida, Amagasaki, Japan, assignors to Nippon Oil and Fats Company Limited, Tokyo, Japan

No Drawing. Filed Dec. 23, 1966, Ser. No. 604,196

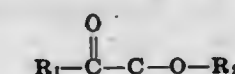
Claims priority, application Japan, Jan. 14, 1966, 41/1,803

Int. Cl. C07c 149/12

U.S. Cl. 260—609

8 Claims

A method of producing a mercaptan by reacting hydrogen sulfide with an aliphatic olefin in an anhydrous liquid phase in the presence of a peroxyester having the formula



in which R<sub>1</sub> is a member selected from the group consisting of alkyls of 1-10 carbon atoms and benzyl, and R<sub>2</sub> is t-butyl.

3,459,810

### PROCESS FOR THE PREPARATION OF ETHYLBENZENE HYDROPEROXIDE

Chai Y. Choo, Westwood, and Richard L. Golden, Oradell, N.J., assignors to Halcon International, Inc., a corporation of Delaware

No Drawing. Filed Dec. 30, 1965, Ser. No. 517,821

Int. Cl. C07c 3/00, 73/06

U.S. Cl. 260—610

2 Claims

The invention relates to an improved process for the preparation of ethylbenzene hydroperoxide via the liquid phase oxidation of ethylbenzene with molecular oxygen.

The inventive features reside in the provision of step-down temperature conditions wherein a higher temperature is maintained during the earlier part of the reaction than during the later part of the reaction. Practice of the invention is attended by new results and advantages comprising reduced reaction time without a yield penalty or alternatively increased yield without a reaction time penalty.

3,459,811

**SOLUBLE, READILY POLISHABLE HARD WAXES**  
Kurt Blaettner and Gunther Nowy, Gersthofen, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Nov. 29, 1967, Ser. No. 686,681

Claims priority, application Germany, Dec. 16, 1966, F 50,969

Int. Cl. C07c 69/26, 69/52

U.S. Cl. 260—613

6 Claims

Soluble, readily polishable hard waxes obtained by copolymerizing glycidyl ethers of aliphatic fatty alcohols with 16 to 30 carbon atoms with diglycidyl ethers of dihydric phenols with 6 to 15 carbon atoms.

3,459,812

### PREPARATION OF HYDROQUINONE

Piero Pino, Pisa, Giuseppe Braca, S. Frediano a Settimo, and Glauco Sbrana, Pisa, Italy, assignors to Lonza Ltd., Gampel Valais, Switzerland

No Drawing. Filed Aug. 8, 1967, Ser. No. 659,022

Int. Cl. C07c 37/00, 39/08

U.S. Cl. 260—621

7 Claims

Hydroquinone is prepared by reacting acetylene and carbon monoxide in the presence of an organic solvent which contains 0.5 to 5 moles of water per 1 mole of acetylene and trimeric ruthenium tetracarbonyl as catalyst.

3,459,813

### CONVERSION OF DISULFIDES TO ALCOHOLS

Robert A. Dombro, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 508,583, Nov. 18, 1965, and Ser. No. 513,098, Dec. 10, 1965. This application Dec. 28, 1967, Ser. No. 694,100

Int. Cl. C07c 31/02

The portion of the term of the patent subsequent to Dec. 24, 1985, has been disclaimed

U.S. Cl. 260—632

10 Claims

Preparation of an alcohol by heating a dihydrocarbyl disulfide, particularly a dialkyl disulfide, in alcoholic solution with a molar excess of a cleaving agent, such as sodium hydroxide, at a temperature of at least about 100° C. the disulfide being characterized in that at least one of the hydrocarbyl substituents thereof has a hydrogen atom attached to the carbon atom which is bonded to the disulfide group.

3,459,814

### HYDROGENATION OF HYDROXY-CONTAINING DIENE POLYMERS

Stephen M. Kovach, Highland, Ind., and Robert A. Sanford and David W. Young, Homewood, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 17, 1967, Ser. No. 631,179

Int. Cl. C07c 29/04, 29/00

U.S. Cl. 260—635

9 Claims

Hydroxy-containing diene polymer (e.g. hydrogen peroxide-polymerized polybutadiene) is hydrogenated using, as a catalyst, platinum supported on a large pore alumina,



i.e., an alumina having at least 0.22 cc./g. of pore volume in pores above about 500 Å. in size; preferably the polymer, which may have a molecular weight of about 400 to 25,000, is in solution in an inert solvent such as a hydrocarbon of about 5 to 10 carbon atoms, e.g., n-heptane.

3,459,815

# CHROMIC ION CONTAINING CLAY CATALYST AND PROCESS FOR PRODUCING ALCOHOLS FROM OLEFINS

Charles R. Noddings and Robert D. Cleary, Midland, and Ronald G. Gates, Breckenridge, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed May 4, 1966, Ser. No. 547,443  
Int. Cl. C07c 29/04; B01j 11/06, 11/58

U.S. Cl. 260—641 9 Claims  
1. In a method for the production of a non-primary alcohol containing from 3 to 5 carbon atoms per molecule from the corresponding mono-olefin which comprises bringing a vapor mixture containing the mono-olefin and water vapor in contact with a solid catalyst the improvement which consists of employing as the catalyst a mineral acid treated montmorillonite clay containing chromium in the chromic ion form replacing at least a portion of the exchange sites of said clay at a temperature between 50° C. and 230° C.

3,459,816

# DINITRODIALKYL BENZENE

William A. Pritchett, Rochester, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 597,531, Nov. 29, 1966. This application Dec. 14, 1967, Ser. No. 690,427  
Int. Cl. C07c 79/10, 87/28, 119/04

U.S. Cl. 260—645 6 Claims  
Dinitro-dialkyl benzenes are prepared by nitrating a dialkylbenzene with  $\text{N}_2\text{O}_4$  in a halogenated hydrocarbon solvent at a temperature of about 90 to 160° C. The obtained compounds are useful as solvents and also as chemical intermediates. For example, the nitrated products can be reduced to the corresponding amines.

3,459,817

# 1,1-DIFLUORO-2-DIFLUOROMETHYL-2-FLUORO-4-CHLORO-3-BUTYNE

Robert E. A. Dear, Convent Station, and Everett E. Gilbert, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York  
No Drawing. Filed Feb. 24, 1967, Ser. No. 618,327  
Int. Cl. C07c 21/22; A01n 9/30

U.S. Cl. 260—653.3 1 Claim  
The new compound 1,1-difluoro-2-difluoromethyl-2-fluoro-4-chloro-3-butyne, useful as a pesticidal fumigant.

3,459,818

# PROCESS OF PRODUCING TETRAFLUOROETHYLENE AND HEXAFLUOROPROPYLENE

Hiroshi Ukihaashi, Tokyo, and Michio Hisasue, Yokohama, Japan, assignors to Asahi Glass Co., Tokyo, Japan, a corporation of Japan  
No Drawing. Filed May 22, 1967, Ser. No. 640,348  
Claims priority, application Japan, May 28, 1966, 41/32,439  
Int. Cl. C07c 21/18, 17/26

U.S. Cl. 260—653.3 8 Claims  
Chlorodifluoromethane is partially pyrolyzed in a tube reactor and hydrogen chloride by-product is eliminated, and the resulting mixture of chlorodifluoromethane and

more than 10% tetrafluoroethylene is again pyrolyzed in the tube reactor to give a gas mixture consisting principally of tetrafluoroethylene and hexafluoropropylene. Proportions of tetrafluoroethylene and hexafluoropropylene in said gas mixture can be controlled by adjusting the conditions of pyrolysis.

3,459,819

# 8-CHLORO-1-OCTENE

Shigeto Suzuki, San Francisco, Calif., assignor to Chevron Research Corporation, a corporation of Delaware  
No Drawing. Continuation of application Ser. No. 336,386, Jan. 8, 1964. This application Sept. 26, 1966, Ser. No. 582,160  
Int. Cl. C07c 21/04

U.S. Cl. 260—654 5 Claims  
This invention relates to the composition 8-chloro-1-octene and to a method for its production from the catalyzed reaction of 8-bromo-1-octene with lithium or a lower alkyl quaternary ammonium chloride.

3,459,820

# METHODS OF OBTAINING CHLORINATED ORGANIC COMPOUNDS

Jean Charles Eugène Bolle, Vert-le-Petit, France, assignor to Institut National de Recherche Chimique Appliquée, Paris, France, and Institut du Génie Chimique de Toulouse, Empalot, Haute-Garonne, France  
No Drawing. Filed Oct. 11, 1966, Ser. No. 585,724  
Claims priority, application France, Oct. 18, 1965, 35,315  
Int. Cl. C07c 17/02, 19/02

U.S. Cl. 260—660 5 Claims  
The chlorination of ethylene by addition to produce dichloroethane selectively is carried out in a liquid solvent medium of dichloroethane using a mixture of gaseous chlorine and gaseous sulphurous anhydride as the chlorination agent.

3,459,821

# HYDROCRACKING PROCESS

Robert M. Engelbrecht, St. Louis, James C. Hill Chesterfield, and Richard N. Moore, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
No Drawing. Filed Dec. 27, 1966, Ser. No. 604,589  
Int. Cl. C07c 15/02, 3/40

U.S. Cl. 260—668 10 Claims  
Ethyl substituted aromatic compounds are made by subjecting alkyl substituted aromatic compounds having an alkyl substituent of at least three carbon atoms to elevated temperatures in the presence of hydrogen and a modifying agent. The modifying agent is hydrogen bromide or a component that forms hydrogen bromide under the reaction conditions.

3,459,822

# PREPARATION OF NORMAL MONO-OLEFINS

Herman S. Bloch, Skokie, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
No Drawing. Filed Dec. 27, 1966, Ser. No. 604,565  
Int. Cl. C07c 11/00, 7/02, 15/02

U.S. Cl. 260—671 11 Claims  
1. A method for eliminating a conjugated diolefin from a mixture of a conjugated diolefin, having at least 9 carbon atoms, and of a normal mono-olefin, having at least 9 carbon atoms, which comprises contacting said mixture with ethylene at condensation conditions effecting adduct formation between said conjugated diolefin and said ethylene.

3,459,823

# FUEL NOZZLES FOR HIGH TEMPERATURE FURNACE AND METHOD OF OPERATING

Clarence J. Coberly, San Marino, and Val Kogut, Long Beach, Calif., assignors to Union Carbide Corporation, New York, N.Y., a corporation of New York  
Filed Mar. 7, 1967, Ser. No. 621,331  
Int. Cl. C07c 3/30, 11/24

U.S. Cl. 260—679 7 Claims  
A method of operating a regenerative furnace having nozzles for intermittently introducing fuel gas into a high temperature zone of the furnace, in which the nozzles are kept substantially below the temperature of the zone at all times by passing cooling fluids, usually gases, therethrough substantially continuously.

3,459,824

# REMOVAL OF CONTAMINANTS FROM UNSATURATED HYDROCARBON-CONTAINING MIXTURES

William T. Nelson and Marvin M. Johnson, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware  
No Drawing. Filed Mar. 4, 1968, Ser. No. 709,949  
Int. Cl. C07c 7/02, 11/00

U.S. Cl. 260—681.5 6 Claims  
Alkenic and acetylenic compounds are removed from conjugated diene mixtures containing same by hydration in vapor phase at 600–850° F. with a copper phosphate-zinc oxide catalyst.

3,459,825

# CATALYST AND PROCESS FOR DIMERIZATION OF OLEFINS

Gert G. Eberhardt, Philadelphia, Pa., and William P. Griffin, Jr., Wilmington, Del., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey  
No Drawing. Filed Oct. 26, 1967, Ser. No. 678,211  
Int. Cl. C07c 3/10

U.S. Cl. 260—683.15 40 Claims  
Monoolefins are dimerized by contact at a temperature in the range of –100° C. to 200° C., preferably –50° C. to 100° C., with novel catalyst systems formed by combining (1) a trihalonickelate complex having the formula  $(\text{R}_4\text{Q})+(\text{R}_3\text{PNiX}_3)^-$  wherein Q is phosphorous or nitrogen with (2) a Lewis acid which is  $\text{RAlX}_2$ ,  $\text{R}_2\text{AlX}_3$ , or  $\text{R}_3\text{AlX}_4$ . The proportions of the catalyst components are such that the atomic ratio of Al:Ni is in excess of 2:1. The catalysts are used in solution in a suitable liquid medium, e.g., toluene or chlorobenzene.

3,459,826

# OLEFIN OLIGOMERIZATION

Kenneth W. Barnett, San Leandro, and John H. Raley, Walnut Creek, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware  
No Drawing. Filed Apr. 9, 1968, Ser. No. 719,857  
Int. Cl. C07c 3/20, 3/10

U.S. Cl. 260—683.15 5 Claims  
An improved olefin oligomerization process employs a heterogeneous catalyst composition produced by contacting nickelocene and elemental hydrogen in the presence of an inorganic oxide catalyst support.

3,459,827

# POLYMERIZATION PROCESS

Edward T. Child, Fishkill, N.Y., and George F. Pezdirtz, Newport News, Va., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Filed July 8, 1965, Ser. No. 470,568  
Int. Cl. C07c 3/18; C08f 1/72, 3/14

U.S. Cl. 260—683.15 5 Claims  
Continuous liquid phase process for polymerizing 100% isooctene to 800 to 4000 molecular weight polyisooctene

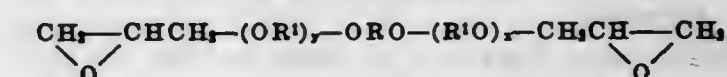
with titanium tetrachloride at 35 to 175° F. in a coil reactor.

3,459,828

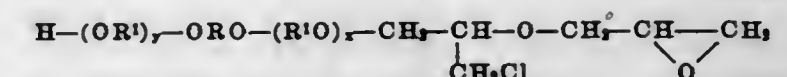
# EPOXY RESINS CONTAINING A POLYGLYCIDYL ETHER AND THE REACTION PRODUCT OF AN HYDROXY TERMINATED MONOGLYCIDYL ETHER WITH A DIISOCYANATE

Francis W. Michelotti and Morris Zief, Easton, Pa., assignors to J. T. Baker Chemical Company, Phillipsburg, N.J., a corporation of New Jersey  
No Drawing. Filed Mar. 13, 1967, Ser. No. 622,410  
Int. Cl. C08g 30/00, 45/06

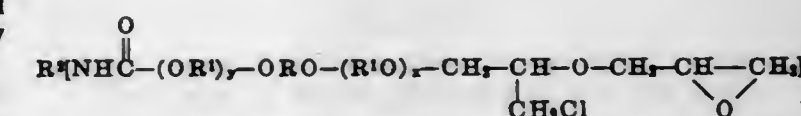
U.S. Cl. 260—830 9 Claims  
In the preparation of diepoxides of the following Formula I there is inherently produced minor quantities of the monoepoxy compounds of the following Formula II which have a free hydroxyl group. Reaction in situ of the free hydroxyl with a diisocyanate produces diepoxides of Formula III. This mixture of diepoxides, on subsequent curing, has a lower water absorption while retaining desirable properties of cured compositions of the mixture of the Formulae I and II compounds:



Formula I



Formula II



Formula III

wherein each R is the organic residue of a diphenol,  $\text{R}^1$  is 1,2-ethylene or alkyl-substituted 1,2-ethylene having a total of not more than 4 carbon atoms, each of y and x is an integer of 1 to about 20, and  $\text{R}^2$  is the organic residue of a diisocyanate.

3,459,829

# POLYESTER IMIDE RESINS FROM IMIDE GROUP CONTAINING POLYVALENT CARBOXYLIC ACIDS CONTAINING AT LEAST THREE CARBOXY GROUPS

Karl Schmidt and Ferdinand Hansch, Hamburg, and Hans-Malte Rombrecht, Hamburg-Altona, Germany, assignors to Dr. Beck & Co. GmbH, a corporation  
No Drawing. Continuation of application Ser. No. 371,093, May 28, 1964. This application Aug. 2, 1967, Ser. No. 658,008  
Claims priority, application Germany, June 1, 1963, B 72,145  
Int. Cl. C08g 39/10, 20/30

U.S. Cl. 260—850 20 Claims  
Production of ester imide resins from polyvalent carboxylic acids and polyhydric alcohols wherein the polyvalent carboxylic acid is the reaction product of trimellitic acid and a condensate of an aromatic amine, e.g. aniline, and an aldehyde or ketone, e.g. formaldehyde, said condensate having more than two primary amino groups. The reaction product of trimellitic acid and said condensate contains at least three carboxyl groups. The resins are useful as wire insulation and in such service have unusually high resistance to overload currents.



3,459,830

**BLOCK COPOLYMER-POLYETHYLENE COMPOSITIONS**

Norman R. Legge, Huntington Beach, and John L. Snyder, Long Beach, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 24, 1965, Ser. No. 490,098

Int. Cl. C08f 29/10; C08d 9/08

U.S. Cl. 260—876

4 Claims

A block copolymer blend is provided having improved resistance to oxidation, weathering, ozone and solvents by blending a block copolymer such as polystyrene-polybutadiene-polystyrene with polyethylene having a melt index between about 0.2 and 30.

3,459,831

**BLOCK COPOLYMER-POLYETHYLENE FILMS**

Murray A. Luftglass and Willis R. Hendricks, Palos Verdes Peninsula, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 24, 1965, Ser. No. 490,065

Int. Cl. C08f 29/10, 29/12, 47/14

U.S. Cl. 260—876

3 Claims

A transparent film is provided of a blend of a high molecular weight block copolymer such as styrene-butadiene-styrene with a polyethylene having a melt index between about 0.2 and 30.

3,459,832

**CRYSTALLINE POLYSTYRENE HAVING ACTIVITY AS A POLYMERIZATION CATALYST**

Roland J. Kern, Dayton, Ohio, assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 502,209, Apr. 18, 1955. This application May 25, 1960, Ser. No. 31,531

Int. Cl. C08f 1/28, 7/04, 19/02

U.S. Cl. 260—881

13 Claims

Crystalline polymers, and block copolymers of polystyrene are prepared by polymerizing styrene using alkyl lithium catalyst in the absence of polar solvents at a temperature about 25 centigrade degrees above the freezing point of the polymerization system.

3,459,833

**COMPOSITION COMPRISING A THERMOPLASTIC POLYMER AND THE REACTION PRODUCT OF PHOSPHORUS AND A POLYAMINE**

Martin Epstein, Norwalk, Conn., Sheldon A. Buckler, Lincoln, Mass., and Allan Ellis Sherr, Martinsville, and Helen Currier Gillham, Princeton, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application Feb. 17, 1964, Ser. No. 345,073, now Patent No. 3,332,889, dated July 15, 1967. Divided and this application Mar. 21, 1967, Ser. No. 624,713

Int. Cl. C08f 29/10, 43/06; C09k 3/28

U.S. Cl. 260—893

10 Claims

This invention relates to various flame-retardant compositions comprising thermoplastic polymers containing a flame retarding amount of a polymeric material produced from elemental phosphorus and a polyamine.

**3,459,834  
TRANSPARENT MOLDING COMPOSITIONS COMPRISING METHACRYLATE POLYMERS BLENDED WITH A MINOR AMOUNT OF POLY(VINYLIDENE FLUORIDE)**

Joseph Michael Schmitt, Ridgefield, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Continuation-in-part of application Ser. No. 432,839, Feb. 15, 1965. This application Sept. 21, 1966, Ser. No. 581,044

Int. Cl. C08f 37/18

U.S. Cl. 260—898

10 Claims

Compositions of matter having physical properties superior to those of the compositions of the prior art and composed of a blend of from about 65% to about 95% of a methyl methacrylate or ethyl methacrylate polymer and from about 5% to about 35% of poly(vinylidene fluoride) are disclosed.

3,459,835

**CYCLIC PHOSPHORUS ESTERS AND PROCESS FOR THE PREPARATION THEREOF**

James L. Dever, Lewiston, and James J. Hodan, Williams-ville, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

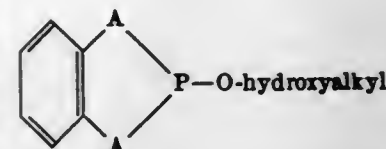
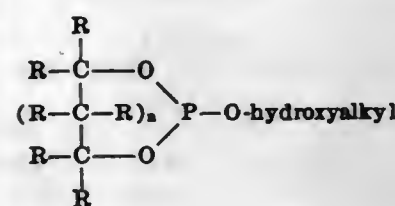
No Drawing. Filed July 27, 1966, Ser. No. 568,117

Int. Cl. C07d 105/04; C08g 45/50; C10m 7/44

U.S. Cl. 260—927

10 Claims

Cyclic esters of phosphorus of the formula



wherein A is a chalcogen, and corresponding polyesters and derivatives are made by reacting cyclic phosphorohalidites with hydroxyaliphatic compounds. The products resulting are useful as stabilizers for polyolefins, plasticizers, gasoline or lubricating oil and are fire retardants.

3,459,836

**O-(METHYL OR ETHYL)-O-2,5-DICHLORO-4-BROMOPHENYL PHENYLPHOSPHONATES**

Sidney B. Richter, Chicago, Ill., assignor to Velalco Chemical Corporation, a corporation of Delaware

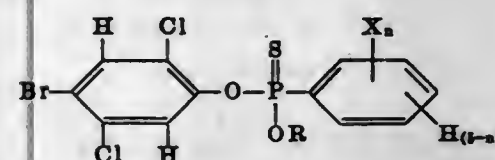
No Drawing. Filed Oct. 11, 1965, Ser. No. 494,909

Int. Cl. C07f 9/40; A01n 9/36

U.S. Cl. 260—961

3 Claims

A compound of the formula



wherein R is alkyl; X is selected from the group consisting of alkyl, alkoxy, alkylthio, halogen, nitro and mixtures thereof; and n is an integer from 0 to 5, provided that a maximum of three X's are nitro. These compounds are useful as insecticides.

**3,459,837  
PROCESS FOR PREPARING ALIPHATIC TERTIARY PHOSPHITES**

James L. Dever, Lewiston, and James J. Hodan, Williams-ville, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed July 27, 1966, Ser. No. 568,134

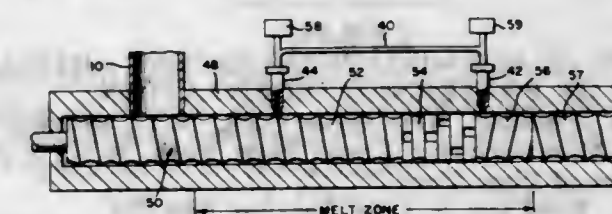
Int. Cl. C07f 9/08; C07c 53/28

U.S. Cl. 260—972

10 Claims

Tertiary aliphatic phosphites are made by reaction of a phosphorus trihalide with a carboxylic acid salt and then, an aliphatic alcohol. For example, tributylphosphite is made by reacting anhydrous phosphorus trichloride with anhydrous sodium acetate, followed by normal butanol, in anhydrous tetrahydrofuran, at an elevated temperature.

material from a vented screw extruder wherein a portion of the melt is recycled from a high pressure point to a low pressure point in the melt zone of the extruder. The high



pressure is built up by restraining the flow of polymer in the melt zone. The extruder is preferably vented at a point beyond the limits of the pressure buildup.

**3,459,841  
CONTAINER FORMING METHOD AND APPARATUS**

Bernhard Selter, Zurich, Switzerland, assignor of one-half to Emil Hartmann, Zurich, Switzerland

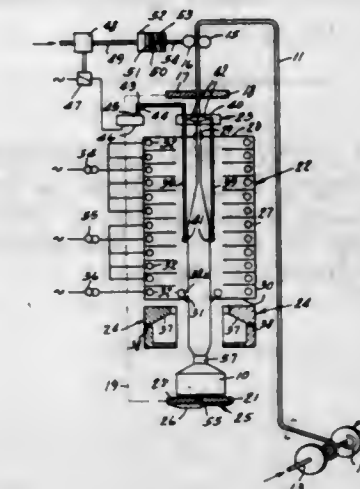
Filed Dec. 20, 1966, Ser. No. 603,337

Claims priority, application Switzerland, Dec. 22, 1965, 17,722/65

Int. Cl. B29c 17/07

U.S. Cl. 264—40

18 Claims



The disclosure relates to a method and means for forming containers on like hollow objects from flattened tubular stock wherein a flattened plastic tube is for instance uncoiled from a reel by a feeding apparatus and wherein the portion of the tubular stock only which is being worked is heated in a heating apparatus until a plastic condition of the stock is attained, the tube is flared into a desired form in a mold and the finished part thus molded is then cut off from the tubular stock.

3,459,842

**METHOD OF PREPARING A SILICON CARBIDE WHISKER REINFORCED SILICON COMPOSITE MATERIAL**

Gene F. Wakefield, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

No Drawing. Filed Dec. 18, 1967, Ser. No. 691,202

Int. Cl. C04b 35/64

U.S. Cl. 264—56

4 Claims

A method of preparing a composite material consisting of a silicon matrix having embedded therein silicon carbide whiskers by admixing particulate silicon with silicon carbide whiskers, placing the mixture in a quartz mold and elevating the temperature of the silicon and silicon carbide mixture to a temperature slightly above the melting point of silicon followed by cooling of the silicon and silicon carbide mixture. The method may include the step of using an elongated quartz vessel as the mold to permit drawing of the elongated quartz vessel after elevating the temperature of the quartz vessel to a temperature slightly below the melting point of the

**3,459,839  
METHOD OF MAKING AND REPRODUCING SURFACES CAPABLE OF ORIENTING NEMATIC DICHOIC MATERIALS**

Lawrence H. Hutches, Hamilton, Ohio, assignor to

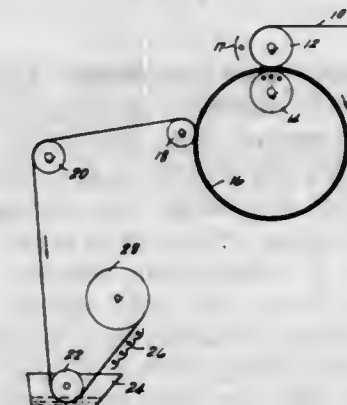
John F. Dreyer, Blue Ash, Ohio

Filed Oct. 14, 1964, Ser. No. 403,753

Int. Cl. B29d 7/20, 11/00; G02b 1/08

U.S. Cl. 264—2

6 Claims



A method and apparatus for establishing transmitting light polarization patterns upon and transmitting to receptor surfaces; by softening a receptor material; contacting the receptor material to a matrix so that the molecules thereof respond to orienting forces of a matrix; and removing from the support leaving the orientation pattern on this matrix undisturbed.

3,459,840

**PROCESS FOR MELT EXTRUSION OF POLYAMIDE MATERIAL**

Stanley David Wood, Kingston, Ontario, Canada, assignor, by mesne assignments, to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 21, 1966, Ser. No. 603,524

Int. Cl. B29f 3/06, 3/08; B29b 5/04

U.S. Cl. 264—37

3 Claims

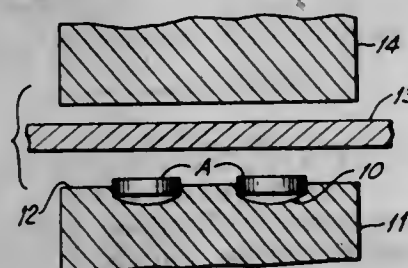
A process of the melt extrusion of a polyamide ma-



quartz to thereby produce an elongated or filamentary shaped silicon and silicon carbide composite material.

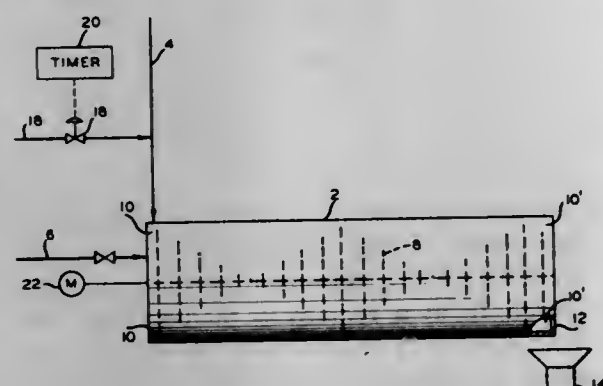
treated filaments are fed directly to a staple cutter and cut to staple fibers without mechanical crimping, in order to avoid heat-relaxation of the filaments. If the staple

**3,459,843**  
**METHOD OF FORMING PEARLESCENT ARTICLES OF PATTERNED ORIENTATION**  
Daniel A. Fischler, New Hyde Park, N.Y., assignor to Emsig Manufacturing Corp., New York, N.Y., a corporation of New York  
Filed Oct. 5, 1966, Ser. No. 584,478  
Int. Cl. B28b 1/30; B29b 19/02, 19/04  
U.S. Cl. 264—108 3 Claims



A method of forming patterned orientation in articles having integral sheen comprising subjecting a substantially hardened pearlescent article to pressure exerted through a heterogeneously compressible structure which thereupon acts as a carrier for the articles.

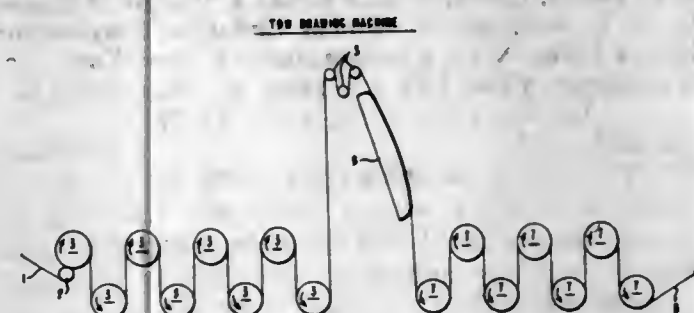
**3,459,844**  
**WET PELLETING OF CARBON BLACK**  
Cline E. Cole, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed Aug. 16, 1967, Ser. No. 660,972  
Int. Cl. C09c 11/58  
U.S. Cl. 264—117 7 Claims



In the wet pelleting of carbon black, a small quantity of liquid hydrocarbon material is periodically added to the carbon black pelleting zone to dislodge the build-up of carbon black in the pelleting zone.

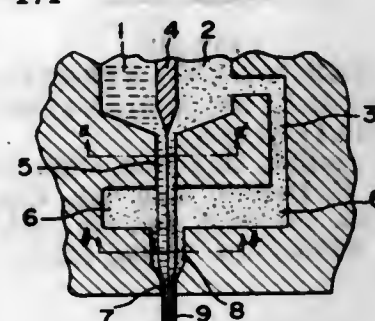
**3,459,845**  
**PROCESS FOR PRODUCING POLYAMIDE STAPLE FIBERS**  
Harold H. Hebel, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
Original application Sept. 16, 1965, Ser. No. 491,500, now Patent No. 3,321,448, dated May 23, 1967. Divided and this application Apr. 3, 1967, Ser. No. 628,035  
Int. Cl. D01d 5/12; D01f 7/06  
U.S. Cl. 264—168 3 Claims

In the process for producing this nylon staple, continuous filaments are drawn and heat-treated under dry conditions, using substantially the maximum operable draw ratio within the range of about 3 to 5 which can be used without excessive filament breakage. The filaments are heat-treated under drawing tension at 165° to 200° C. for a length of time which gives about 1000 to 6000 degree-seconds exposure (product of the average treatment temperature and the exposure time). The drawn and heat-



fibers are then packed into bales under customary pressure, sufficient crimp is acquired for conventional processing into yarn and the fibers are characterized by the properties indicated above.

**3,459,846**  
**METHOD AND SPINNERET DEVICE FOR SPINNING TWO-COMPONENT FILAMENTS**  
Masao Matsui, Takatsuki, Osaka-fu, and Tsuyoshi Nakamori, Kobe, Japan, assignors to Kanegafuchi Boseki Kabushiki Kaisha, Tokyo, Japan, and SNIA Viscosa Società Nazionale Industria Applicazioni Viscose S.p.A., Milan, Italy  
Filed Nov. 15, 1966, Ser. No. 594,467  
Claims priority, application Japan, Dec. 1, 1965, 40/74,165  
Int. Cl. B32b 31/30  
U.S. Cl. 264—171 16 Claims

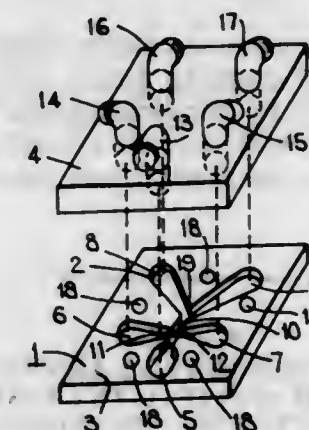


Two-component core-and-sheath type filaments in which the core is disposed eccentrically in relation to the sheath are prepared from two kinds of thermoplastic synthetic polymers by simultaneously extruding the two synthetic polymers in laminar flow through a single spinneret thereby forming a filament in which the components extend linearly in side-by-side relation. This two-component filament is extruded into and through a body of one of these polymers and thence in laminar flow through a second spinneret along with a further amount of one of the polymers thereby forming a two-component filament having an eccentrically disposed core of one of these polymers in a sheath of the other polymer.

**3,459,847**  
**METHOD FOR MOULDING FLUID-OPERATED CONTROL DEVICES**  
Brian John Steptoe, Hitchin, and David Hawgood and Sidney Ties, Stevenage, England, assignors to International Computers and Tabulators Limited, London, England, a British company  
Filed Dec. 6, 1966, Ser. No. 599,593  
Claims priority, application Great Britain, Dec. 7, 1965, 51,759/65  
Int. Cl. B29c 1/02  
U.S. Cl. 264—219 4 Claims

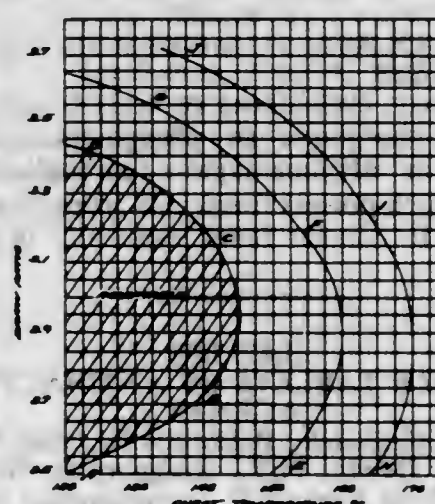
Fluid logic amplifier elements having optimum operating characteristics are produced by making an element by etching or machining from a block of material, then connecting the element to fluid sources and measuring the operating characteristics of the element. The element

is then modified to improve its characteristics and it is then retested. This modification and retesting of the element is repeated until the desired characteristics are obtained. An inverse copy of the element, having the desired characteristics, is produced by a moulding process or by plating the element with a layer of metal, reinforcing the metal layer and then dissolving away the element. The inverse copy is utilised as a pattern from which a plurality of elements, identical in configuration and operating characteristics to the tested and modified element, are produced by a moulding process.



An interconnected array of amplifiers is produced by assembling a plurality of reproductions of the elements in a plate having the required channels for the passage of fluid and producing an inverse copy of the assembly for which reproductions of the assembly are produced by a moulding process. Alternatively, the inverse of the required assembly may be formed by assembling a plurality of inverse copies of the element in a plate carrying an inverse pattern of the required connecting channels.

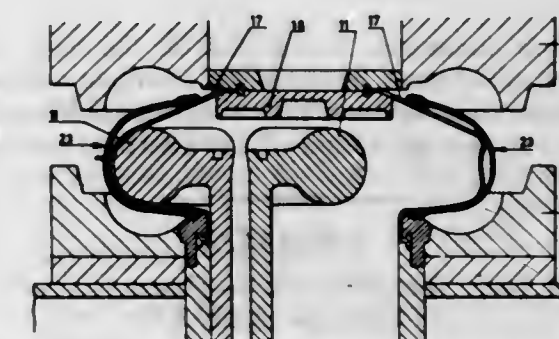
**3,459,848**  
**PROCESS FOR TREATING NYLON YARNS FOR KNITTING**  
Harry D. Storer, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
Filed Jan. 25, 1967, Ser. No. 611,620  
Int. Cl. D01d 7/06; B29c 25/00  
U.S. Cl. 264—235 6 Claims



Freshly spun nylon yarn is drawn to a draw ratio of about 2.5 to about 3.5, annealed at substantially constant length at a temperature from about 125° C. to about 150° C. for a time of about 0.1 to about 0.5 second. The hot yarn is then allowed to relax from about 2%

to about 3% and wound to a package. The process provides a method of preparing nylon yarn used in knitted fabric which is essentially free from edge curling.

**3,459,849**  
**METHOD FOR THE MANUFACTURE OF A TIRE**  
Willem de Ronde, Heer, Netherlands, assignor to N.V. Rubberfabriek Vredestein, The Hague, Netherlands, a corporation of the Netherlands  
Filed Jan. 12, 1967, Ser. No. 608,819  
Claims priority, application Netherlands, Jan. 17, 1966, 6600590  
Int. Cl. B29h 5/02, 17/06; B29f 1/10  
U.S. Cl. 264—255 4 Claims



A method for the manufacture of a tire in a two-piece mould with the aid of a bladder. A form retaining core consisting of a number of segments is introduced into the bladder while it is in place within the pre-shaped tire carcass and the shaping of the carcass is completed by closing the mould over the bladder and subsequently injecting the outer covering of the tire into the mould under pressure. The carcass and covering are then cured and the mould is opened to remove the tire.

**3,459,850**  
**SUSTAINED-RELEASE TABLETS, A PROCESS AND A COMPOSITION FOR THEIR PREPARATION**  
Aldo Riva, Bern, Switzerland, assignor to Dr. A. Wander, S.A., Bern, Switzerland, a corporation of Switzerland  
Filed Aug. 26, 1965, Ser. No. 482,820  
Int. Cl. A61k 27/12, 9/00  
U.S. Cl. 424—22 5 Claims

A sustained-release pharmaceutical tablet formed by integrally mixing a drug component with a digestible fat, an indigestible wax, and a solid polymer which swells when ingested and tableting the resulting mixture. In the preferred embodiment the drug component is intimately mixed with the digestible fat and indigestible wax forming granules with the granules uniformly dispersed throughout the solid polymer which forms a sparingly water soluble carrier for the granules.

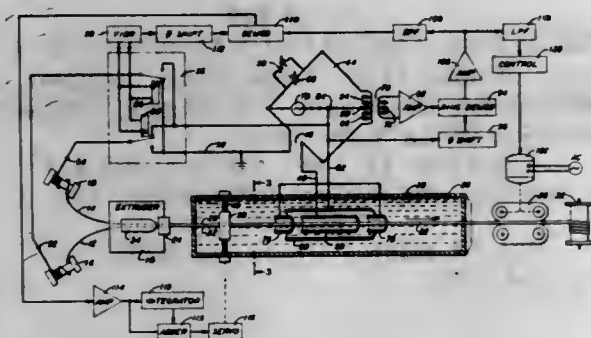
A sustained-release tablet having ephedrine hydrochloride as the drug ingredient intimately mixed with hydrogenated castor oil as the digestible fat and carnauba wax or white wax as the indigestible wax to form the granules with the granules dispersed through a minor proportion of "Carbopol 934" as the solid polymer provides a prolonged high level therapeutic activity level for ephedrine.

**3,459,851**  
**METHOD OF MANUFACTURING INSULATED WIRES**  
William F. MacPherson, South Plainfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York  
Filed Sept. 16, 1966, Ser. No. 580,995  
Int. Cl. B29f 3/10  
U.S. Cl. 264—40 4 Claims

Extrusion of plastic insulation about two conductors simultaneously to form an "insulated pair," is controlled



by alternately comparing an index capacitance to the respective capacitances between each conductor and an electrolytic liquid contacting a predetermined portion of the outer insulating surface. The relative rate of extrusion



about each conductor is changed on the basis of time-integrated differences between the alternate comparisons. At the same time the total extrusion rate is changed on the basis of the average values of the alternate comparisons.

# ERRATUM

For Class 424—22 see:  
Patent No. 3,459,850

## 3,459,852 DEODORIZING TREATMENT OF AQUEOUS SOLUTIONS

Dan Christian Roehm, 11 SE. 12th Ave.,  
Fort Lauderdale, Fla. 33304

No Drawing. Continuation-in-part of application Ser. No. 507,250, Nov. 10, 1965. This application Mar. 31, 1966, Ser. No. 538,952

Int. Cl. C02c 5/02, 1/40

U.S. Cl. 424—76 18 Claims  
There is provided a process for deodorizing and reducing the biochemical demand of an aqueous solution which contains at least one compound of hydrogen sulphide and compounds containing the —SH group. The process comprises mixing with the solution a sulphide-active alpha, beta unsaturated aldehyde or ketone in an amount sufficient to form sulphur-containing reaction product of the sulphide active aldehyde or ketone.

3,459,853  
O-MYCAMINOSYL TYLONOLIDE AND A PROCESS  
FOR THE PREPARATION THEREOF  
Marvin Gorman and Robert B. Morin, Indianapolis, Ind.,  
assignors to Eli Lilly and Company, Indianapolis, Ind.,  
a corporation of Indiana

Filed Aug. 5, 1964, Ser. No. 387,692  
Int. Cl. A61k 21/00; C07g 11/00

U.S. Cl. 424—121 6 Claims  
O-mycaminosyl tylonolide and the dihydro derivative thereof, prepared by controlled acid hydrolysis of tylosin, desmycosin, macrocin and lactenocin and the dihydro derivatives thereof.

3,459,854  
TETRACYCLINE CYCLOHEXYL SULPHAMATE  
AND PROCESS FOR PREPARATION  
Jacques Robert Boissier, Paris, and Georges Andre  
Combes, Versailles, France, assignors to Societe anony-  
me dite: Societe Industrielle pour la Fabrication des  
Antibiotiques (S.I.F.A.), Paris, France, a French  
company  
No Drawing. Original application Jan. 13, 1964, Ser. No. 337,138, now Patent No. 3,299,124, dated Jan. 17, 1967.  
Divided and this application June 9, 1966, Ser. No. 574,840

Int. Cl. A61k 21/00; C07c 103/19  
U.S. Cl. 424—128 5 Claims  
A pharmaceutical composition comprising the cyclo-

hexyl sulphamate salt of tetracycline and a pharmaceutical excipient, said composition being useful as an antimicrobial agent and having a substantially less disagreeable taste than the base, tetracycline.

3,459,855  
HYDROXOCOBALAMINE COMPLEXES  
Yvonne Thuillier, Paris, France, assignor to Laboratoires  
Albert Rolland, Paris, France, a French society  
Filed Feb. 6, 1967, Ser. No. 614,138  
Claims priority, application France, Feb. 10, 1966,  
49,062

Int. Cl. A61k 25/02; C07d 55/62  
U.S. Cl. 424—201 3 Claims  
The invention provides complexes formed by the interaction of iodo-aryl-aliphatic amino-acids such as 3,5-diiodo-tyrosine with hydroxocobalamine, useful as anti-anemia agents, stimulators of the central nervous system, stimulators of basal metabolism, and agents for lowering cholesterolaemia.

3,459,856  
CONTROLLING MOSQUITO LARVAE AND OTHER  
INSECTS WITH O,O,O',O'-TETRAMETHYL O,O'-  
THIODI-P-PHENYLENE PHOSPHOROTHIOATE  
James Byron Lovell, Pennington, N.J., and Ronald Wil-  
lam Baer, White Plains, N.Y., assignors to American  
Cyanamid Company, Stamford, Conn., a corporation of  
Maine  
No Drawing. Original application Jan. 10, 1964, Ser. No. 336,876, now Patent No. 3,317,636, dated May 2, 1967.  
Divided and this application Feb. 28, 1967, Ser. No. 619,178

Int. Cl. A01n 9/36, 17/00 3 Claims  
U.S. Cl. 424—206  
This invention relates to an insecticidal composition of the compound O,O,O',O'-tetramethyl O,O'-thiodi-p-phenylene phosphorothioate, and its use in controlling insect pests including mosquito larvae.

3,459,857  
PHOSPHO-ACID ESTERS AS FUNGITOXIC AGENTS  
Hans Schelapflug, Leverkusen, Germany, Herbert Ferdi-  
nand Jung, Tokyo, Japan, and Gerhard Schrader,  
Wuppertal-Cronenberg, Germany, assignors to Farben-  
fabriken Bayer Aktiengesellschaft, Leverkusen, Ger-  
many, a corporation of Germany  
No Drawing. Filed Oct. 21, 1964, Ser. No. 405,871  
Claims priority, application Germany, Nov. 7, 1963,  
F 41,214

Int. Cl. A01n 9/36; C07f 9/16, 9/32 19 Claims  
U.S. Cl. 424—215  
(Alkyl, alkoxy, cycloalkoxy or aryl)-O-alkyl-(thio- or thiono-)-phosphoric or phosphonic-S-[alkyl mercapto alkyl or alkylmercapto- $\alpha$ -(carboalkoxy) alkyl] acid esters, which possess fungicidal properties and which may be used to combat fungi, especially in diseases of rice plants.

3,459,858  
CHEWABLE TABLETS OF ANTIBACTERIAL  
AGENTS  
Alphonse P. Granatek, Baldwinville, and Michael P.  
De Murio, Dewitt, N.Y., assignors to Bristol-Myers  
Company, New York, N.Y., a corporation of Delaware  
No Drawing. Continuation-in-part of applications Ser. No. 368,991, and Ser. No. 368,992, May 20, 1964. This ap-  
plication Sept. 5, 1967, Ser. No. 665,297

Int. Cl. A61k 21/00, 9/00 10 Claims  
U.S. Cl. 424—227  
Pleasant tasting, chewable tablets of certain antibac-  
terial agents such as ampicillin are prepared by the use  
in the formulation of both mannitol and solid polyethyl-

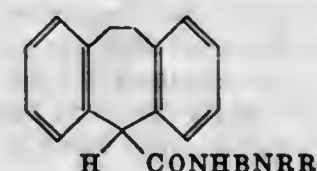
ene glycol, e.g. about 300 mgm. mannitol and 1.0 to 20 mgm. "Carbowax 6000" per tablet.

## 3,459,859 DIHYDRODIBENZOCYCLOHEPTENE CAR- BOXYLIC ACID AMIDES USEFUL AS ANTICONVULSANTS

Frederick Leonard, 14103 Gaines Ave.,  
Rockville, Md. 20853

No Drawing. Original application July 30, 1962, Ser. No. 213,156. Divided and this application Oct. 20, 1965, Ser. No. 498,996

Int. Cl. A61k 27/00 4 Claims  
U.S. Cl. 424—246  
1. A pharmaceutical composition in dosage unit form comprising 2 to 500 mg. of a compound of the formula



wherein:

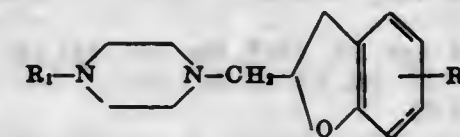
B represents lower alkylene  
R and R<sub>1</sub> are hydrogen, lower alkyl or when taken to-  
gether with the adjacent nitrogen, piperidino, pyrrolidino,  
piperazino, N-(lower)alkylpiperazino, morpholino  
or thiomorpholino,  
the pharmaceutically acceptable acid addition salts or the  
pharmaceutically acceptable quaternary ammonium salts  
thereof, and a pharmaceutical carrier.

## 3,459,860 2-AMINOMETHYL-2,3-DIHYDROBENZOFURANS AS ANTIHYPERTENSIVE AGENTS

Charles Ferdinand Huebner, Chatham, and Lincoln  
Harvey Werner, Summit, N.J., assignors to Ciba  
Corporation, New York, N.Y., a corporation of  
Delaware

No Drawing. Continuation of application Ser. No. 640,845, May 24, 1967, which is a continuation-in-  
part of application Ser. No. 580,880, Sept. 21,  
1966. This application June 9, 1967, Ser. No. 644,793

Int. Cl. A61k 27/00; C07d 99/04 2 Claims  
U.S. Cl. 424—250  
2-(4-arylpiperazino)-methyl - 2,3 - dihydrobenzofurans  
of the formula



R<sub>1</sub>=iso- or heterocyclic aryl  
R<sub>2</sub>=H, alkyl, alkoxy, alkylmercapto, halogen, CF<sub>3</sub> or  
alkanoyl  
quaternaries and salts thereof exhibit hypotensive effects.

## 3,459,861 METHOD OF TREATING INFLUENZA VIRAL INFECTION

Robert Bruce Angler and Keith Chadwick Murdock,  
Pearl River, N.Y., and Joe Haller Clark, Woodcliff  
Lake, N.J., assignors to American Cyanamid Company,  
Stamford, Conn., a corporation of Maine  
No Drawing. Continuation-in-part of application Ser. No. 575,260, Aug. 26, 1966. This application Mar. 19, 1968,  
Ser. No. 714,344

Int. Cl. A61k 27/00; C07d 39/00, 43/00 8 Claims  
U.S. Cl. 424—263  
This invention describes compositions of substituted  
azabicyclo-octane and azabicyclo-nonane compounds with  
pharmaceutically acceptable carriers. These compositions  
are useful in treating influenza viruses in warm-blooded  
animals.

## 3,459,862 ISOXAZOLE DERIVATIVES AND PROCESSES FOR MAKING THEM

André Gagneux and Franz Häfner, Basel, Switzerland,  
and Conrad Eugster, Wallisellen, Zurich, Switzerland,  
assignors to Geigy Chemical Corporation, Ardsley,  
N.Y., a corporation of New York  
No Drawing. Original application May 31, 1966, Ser. No. 553,674. Divided and this application Dec. 12, 1967,  
Ser. No. 707,906

Int. Cl. A61k 27/00 2 Claims  
U.S. Cl. 424—272  
Pharmaceutical compositions containing amino-(3-hy-  
droxy-5-isoxazolyl)acetic acid have been found to poten-  
tiate anesthesia, reduce motility, have catatonic and seda-  
tive effects, inhibit tremorin and tremor and possess  
antiemetic activity.

3,459,863  
COLOR-STABLE ASCORBIC ACID TABLET  
Henry M. Apellan, Clark, and Jack Blodinger, Westfield,  
N.J., assignors to Merck & Co., Inc., Rahway, N.J., a  
corporation of New Jersey  
No Drawing. Filed Oct. 14, 1966, Ser. No. 586,652

Int. Cl. A61k 15/00 1 Claim  
U.S. Cl. 424—280  
1. A color-stable ascorbic acid tablet prepared by a  
process comprising milling 50 to 80 parts of ascorbic acid,  
5.5 to 16 parts of starch and 2.5 to 5 parts of hydroxy-  
propyl methylcellulose having a viscosity of 20 to 4000  
cps., adding to and mixing therewith from 0.25 to 0.35  
liter of an alcohol per kilogram of ascorbic acid to form  
wet granules, adding thereto 5.5 to 16 parts of starch, dry-  
ing the granules, passing the dried granules through a  
No. 10 to No. 16 mesh screen, adding to said granular  
screened composition and mixing therewith a previously  
blended lubricant comprising 0.25 to 2 parts of colloidal  
silica, from 0.5 to 2 parts of hydrogenated vegetable oil,  
from 0.1 to 0.5 part of zinc stearate, and from 2.8 to 8.8  
parts of starch, and compressing this mixture into a tablet.

## 3,459,864 N<sup>6</sup>-BENZYL AND ALKYL URETHANE DERIVA- TIVES OF BENZYL AND ALKYL ESTERS OF LYSINE IN COMPOSITIONS AND METHODS FOR TREATING INFLAMMATION

Albert Jöhl, Basel, Switzerland, Albert Hartmann, Grenz-  
ach, Germany, and Hans Rink, Riehen, Switzerland,  
assignors to Geigy Chemical Corporation, Greenburgh,  
New York, a corporation of Delaware  
No Drawing. Filed Feb. 21, 1966, Ser. No. 528,827  
Claims priority, application Switzerland, Feb. 25, 1965,  
2,579/65

Int. Cl. A61k 27/00 5 Claims  
U.S. Cl. 424—300  
N<sup>6</sup>-benzyl and alkyl urethane derivatives of benzyl and  
alkyl esters of lysine are anti-inflammatory agents.



**3,459,865**  
**ANALGESIC COMPOSITIONS AND METHODS**  
**CONTAINING 2-CYCLOHEXEN-1-YLAMINE**  
**OR 3-CYCLOHEXEN-1-YLAMINE**  
 William Taub, Zurich, Rolf Dens, Basel, and Franz Ostermayer, Riehen, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York  
 No Drawing. Filed July 21, 1967, Ser. No. 654,971  
 Claims priority, application Sweden, July 26, 1966, 10,811/66

Int. Cl. A61k 27/00, 9/00  
 U.S. Cl. 424—325 10 Claims  
 Therapeutical compositions containing 2-cyclohexen-1-ylamine and/or 3-cyclohexen-1-ylamine and/or at least one pharmaceutically acceptable acid addition salt thereof in combination with a pharmaceutical carrier, and a method for the treatment of pain comprising the admin-

istration of said compositions to mammals requiring such treatment.

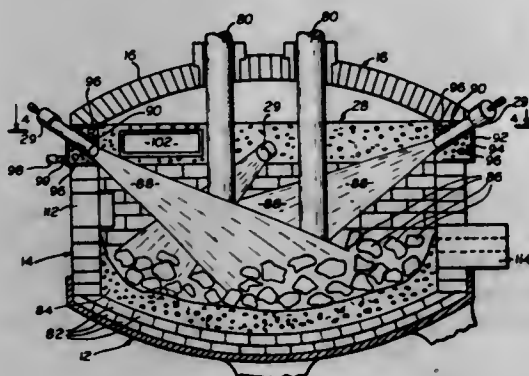
**3,459,866**  
**HYDROXAMATE CARBAMATES AS**  
**NEMATOCIDES**  
 James B. Buchanan, 599 Rockland Road, Wilmington, Del. 19803  
 No Drawing. Continuation-in-part of application Ser. No. 484,121, Aug. 31, 1965. This application Aug. 31, 1967, Ser. No. 664,632

Int. Cl. A01m 9/12; C07c 125/02  
 U.S. Cl. 424—327 6 Claims  
 O-carbamylhydroxamate esters such as methyl O-(methoxycarbonyl)thiolacetohydroxamate are effective in protecting a variety of plants from attack by plant-parasitic nematodes.

## ELECTRICAL

**3,459,867**  
**DIRECT ARC FURNACE**  
 James W. Estes, Piscataway, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York  
 Filed Aug. 10, 1967, Ser. No. 659,797  
 Int. Cl. H05b 7/18

U.S. Cl. 13—9 14 Claims

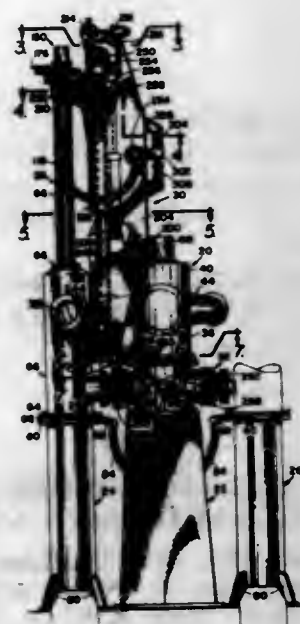


A direct arc furnace having a side wall supporting a roof through which electrodes extend down to the material that is to be heated and melted in the furnace. Without requiring any other changes in this conventional construction, this invention elevates the roof and places a ring at the top of a wall and on which the roof rests at a slightly higher level. The ring, which may be steel with a refractory lining, has angularly spaced openings in which oxy-fuel burners are held for the initial heating, and there is a flue in the ring for escape of products of combustion from the furnace. The burners are water-cooled and the ring and flue may also be water-cooled. The burner flames are directed downward but in directions to avoid striking the electrodes.

**3,459,868**  
**ARC FURNACE WITH ADJUSTABLE**  
**ELECTRODE SUSPENSION**  
 Max P. Schlenger, 19 Rollingwood Drive, San Rafael, Calif. 94901  
 Filed June 27, 1967, Ser. No. 649,266  
 Int. Cl. H05b 7/10, 7/18

U.S. Cl. 13—14 20 Claims  
 An arc furnace having a pair of crucibles and an electrode holder movable from a position aligned with one of the crucibles to a position aligned with the other crucible. The holder has an electrode suspension unit which is adjustable in position to compensate for dimensional irregularities in an electrode suspended thereby.

Vacuum means carried by the support evacuates impurities from a crucible during an electrode melting operation and the suspension unit advances the electrode progressively into the crucible as the electrode melts. Attachment means on the suspension unit becomes automatically

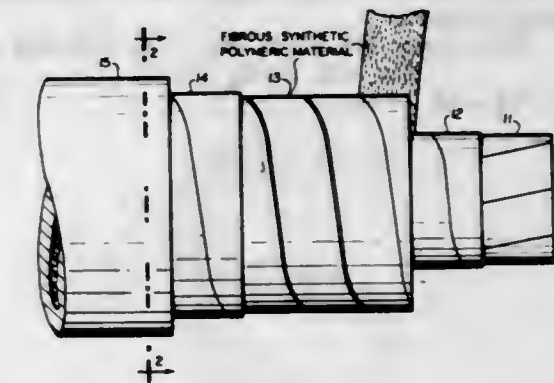
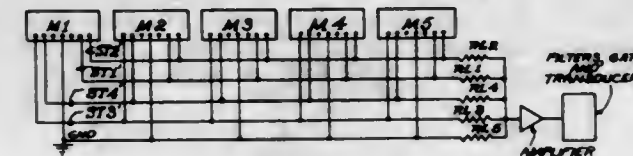


coupled to an electrode as the suspension unit is moved at a predetermined direction relative to the support. An electrical power lead is releasably coupled to the holder by fastening means which allows shifting of the holder while the power lead remains stationary.

**3,459,869**  
**ELECTRONIC ORGAN WITH LOCK-IN CIRCUIT**  
**FOR TONE-SIGNAL GENERATORS THEREOF**  
 Robert L. Eby, Altadena, Calif., assignor to Electronic Organ Arts, Inc., Altadena, Calif., a corporation of California  
 Filed Apr. 29, 1965, Ser. No. 451,871  
 Int. Cl. G10h 1/06

U.S. Cl. 84—1.01 9 Claims  
 An electronic organ having a plurality of tone-generating devices for generating octavely-related signals wherein each generating device is independently keyable and including means for interlocking concurrently keyed octavely-related generating devices to prevent undesirable octave-interval beat effects. The interlocking function is performed by means responsive to operation of the circuit to produce in the output line a signal of the fundamental

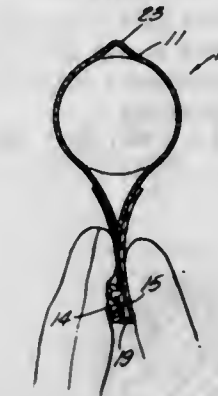
frequency of the oscillatory circuit which signal includes a sharp, high-amplitude, short-duration peak during each oscillation. Additionally, the output lines of a plurality of the octavely-related generating devices are interconnected in such manner that the related generating devices are beneficially influenced by the harmonic-rich signal of another operating generating device to maintain the octavely-related generating devices functioning free of octave-interval beating.



**3,459,870**  
**HIGH DIELECTRIC PROTECTIVE JACKET FOR**  
**TEMPORARY ASSEMBLY ABOUT HIGH TENSION CONDUCTORS**  
 Walter A. Plummer, 3546 Crownridge Drive, Sherman Oaks, Calif. 91403  
 Filed Apr. 10, 1967, Ser. No. 629,506  
 Int. Cl. H01b 17/38, 17/56

U.S. Cl. 174—5

3 Claims



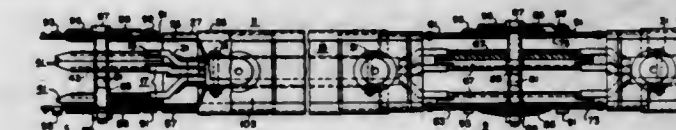
A lineman's protector designed for assembly about and removable from a live power conductor by a lineman wearing thick, protective gloves. The protector is formed of high dielectric strength supple sheet material formed with a permanent longitudinal fold to aid in supporting the protector astride a power conductor during closure of its seam which includes interlocking tongues and grooves held in mating position by the permanent fold. Straggered pull tabs installed at one end facilitate opening the seam by a gloved lineman.

**3,459,871**  
**HIGH VOLTAGE CABLE**  
 George S. Eager, Jr., Upper Montclair, and Julius A. Szilard, Westfield, N.J., assignors to General Cable Corporation, New York, N.Y., a corporation of New Jersey  
 Filed Oct. 21, 1966, Ser. No. 588,565  
 Int. Cl. H01b 7/02

U.S. Cl. 174—25 6 Claims  
 Insulated electric power cable for transmitting power at extremely high voltages with very low energy dissipation in the insulation. The conductor insulation is an oil-impregnated wall of overlying helical wrappings of fibrous tapes comprising randomly arranged, highly dispersed, continuous filament fibers of synthetic polymeric material, specifically high density polyethylene, bonded

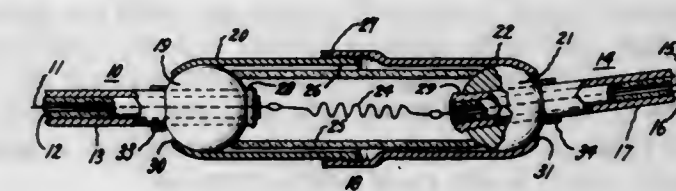
Also disclosed is a method of evacuating and impregnating such insulation with oil at a temperature not exceeding about 50° C.

**3,459,872**  
**BUS DUCT WITH IMPROVED**  
**CONNECTING MEANS**  
 Charles L. Weimer, Beaver Falls, and Bill M. Shannon, Rochester, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
 Filed June 24, 1966, Ser. No. 560,277  
 Int. Cl. H02g 3/00, 5/00, 15/08  
 U.S. Cl. 174—71 10 Claims



The invention provides bus duct comprising a unitary bus duct section having improved means for connecting a branch take-off intermediate the ends of the section.

**3,459,873**  
**SHIELDED CONNECTOR FOR MOVABLE LINES**  
 Lawrence A. Harris, Schenectady, and Arthur N. De Tommasi, Newtonville, N.Y., assignors to General Electric Company, a corporation of New York  
 Filed Feb. 16, 1967, Ser. No. 616,687  
 Int. Cl. H02g 15/18 3 Claims



To provide a shielded flexible connection for two coaxial lines, two conductive balls with diametrical apertures are inserted over each of the two coaxial lines, a wire is connected between the inner conductors of each of the two coaxial lines, conductive tubular members form a socket for each of the conductive balls and are engaged with screw threads to shield the connecting wire, and a tubular insulator within the tubular members encircles the wire and separates the conductive balls.



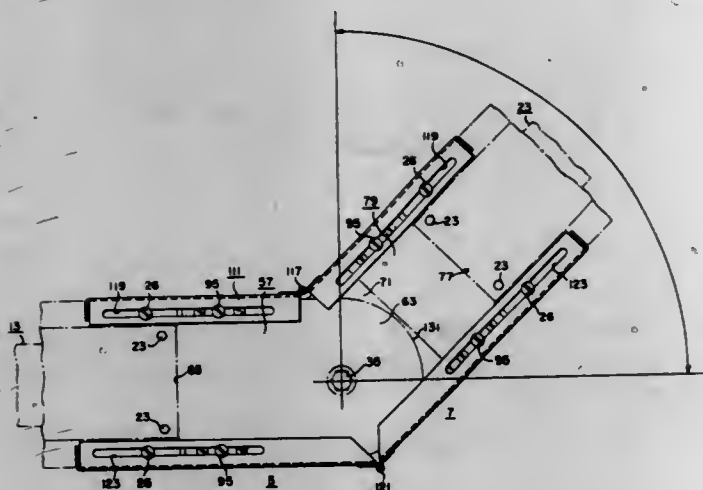
### 3,459,874 BUS DUCT HAVING ANGULARLY ADJUSTABLE SECTIONS

Samuel S. Fouse, Aliquippa, and Charles L. Weimer,  
Beaver Falls, Pa., assignors to Westinghouse Elec-  
tric Corporation, Pittsburgh, Pa., a corporation of  
Pennsylvania

Filed June 24, 1966, Ser. No. 560,304  
Int. Cl. H02g 15/08

U.S. Cl. 174—86

8 Claims



Bus duct is constructed such that a section can be con-  
nected to a similar section as either a straight length  
connection or angle-type connection.

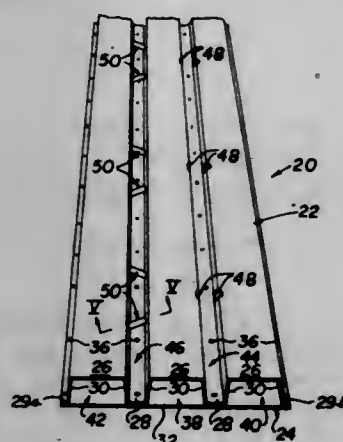
### 3,459,875 METAL CELLULAR SECTION

Frank William Fork, Allison Park, Pa., assignor to H. H.  
Robertson Company, Pittsburgh, Pa., a corporation of  
Pennsylvania

Filed Mar. 24, 1967, Ser. No. 630,783  
Int. Cl. H02g 3/28, 3/04; B23p 19/04

U.S. Cl. 174—97

12 Claims



A metal cellular section having plural spaced parallel  
cells adapted for use as electrical raceways for different  
electrical services including, for example, power, tele-  
phone and signal services. In accordance with the present  
invention, the metal cellular section includes preformed  
conduit means providing communication between the in-  
teriors of selected adjacent cells whereby availability to  
three types of electrical service is provided at a single  
access location in the metal cellular section.

### 3,459,876 SUPPORT STRUCTURE INCLUDING CRISS-CROSS TIE RODS FOR ISOLATED PHASE BUS BAR SYSTEM

Joseph A. Turgeon, Toronto, Ontario, Canada, assignor  
to I-T-E Circuit Breaker (Canada) Limited, Port Credit,  
Ontario, Canada, a limited-liability company of Canada

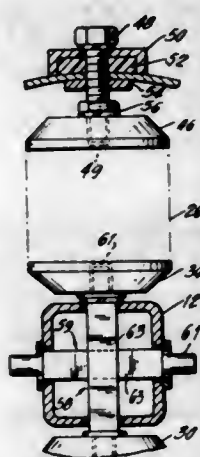
Filed Mar. 7, 1968, Ser. No. 711,247  
Int. Cl. H02g 5/00; H01b 17/18

U.S. Cl. 174—99

13 Claims

Support structure for carrying a bus bar within an as-

sociated housing. The support structure includes a bolt  
and nut arrangement which is initially secured to the  
housing whereupon the insulator associated therewith can  
be subsequently threaded onto the bolt without subject-



ing either the insulator or housing to compression or ten-  
sion forces, respectively. In addition a novel criss-cross  
tie rod construction is utilized to connect pairs of op-  
positely disposed insulators to the bus bar and to one  
another.

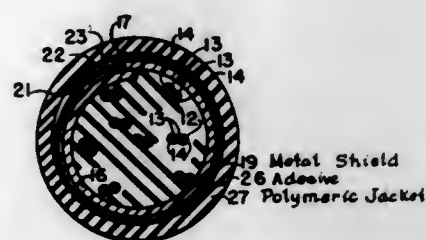
### 3,459,877 ELECTRIC CABLE

Kenneth R. Bullock and Harry M. Tomlinson, Sycamore,  
Ill., assignors to Anaconda Wire and Cable Company,  
a corporation of Delaware

Filed Jan. 18, 1965, Ser. No. 426,140  
Int. Cl. H01b 7/18, 11/06

U.S. Cl. 174—107

6 Claims



1. A large-diameter, straight-t-surfaced, communication  
cable comprising:

- (A) a core substantially circular in section,
  - (a) said core comprising a plurality of insulated  
electrical conductors, and
  - (b) said core having a diameter of at least 0.75  
inch,
- (B) a metallic shield surrounding said core,
  - (a) said shield being formed from unsupported  
metal strip no greater than 0.015 inch thick,
  - (b) said shield having edges parallel to the axis  
of said cable,
  - (c) said edges overlapping to provide a double  
thickness of said shield lengthwise of said cable,  
and
  - (d) said shield being straight-surfaced and free  
from corrugations,
- (C) an adhesive coating bonded to the outer surface  
of said strip,
  - (a) said coating sealing together said double  
thickness of said shield, and
- (D) a tubular protective jacket surrounding said  
shield,
  - (a) said jacket being at least 0.03 inch in wall  
thickness, and
  - (b) said jacket having substantially its entire  
inner surface bonded to said shield by means of  
said coating,

(E) said cable being bendable around a mandrel 6  
times its own diameter without cracking said shield.

3,459,878  
CABLE IDENTIFICATION AND SPACING SYSTEM  
Tillman J. Gressitt, Lutherville, and Raymond B. Ramsey,  
Towson, Md., assignors to Bell Telephone Laboratories,  
Incorporated, Murray Hill, N.J., a corporation of New  
York

Filed May 23, 1967, Ser. No. 640,568  
Int. Cl. H01b 7/36, 11/02

U.S. Cl. 174—112

20 Claims



Groups of individual conductors in an electrical cable  
structure are maintained in a desired spaced sequence by  
periodically placed flexible strips that surround each  
conductor of a given group. Such strips may be polyethylene  
applied in two lays: an overlay and an underlay, for ex-  
ample. The combination of known conductor sequence  
within the groups and color coding of the strips makes  
possible a coding scheme without resort to color-coded  
insulation.

3,459,879  
FLEXIBLE MULTIFLAT CONDUCTOR CHARAC-  
TERISTIC IMPEDANCE CABLE  
Burton A. Gerpheide, Pacific Palisades, Calif., assignor to  
Hughes Aircraft Company, Culver City, Calif., a cor-  
poration of Delaware

Filed May 29, 1967, Ser. No. 642,046  
Int. Cl. H01b 7/04, 7/08

U.S. Cl. 174—117

7 Claims



A flexible cable assembly, having controlled and uni-  
form electrical characteristics, comprises a pair of in-  
dividual adjacent thin flat electrical cables which are  
flexibly affixed together only at their longitudinally ex-  
tending edges. One of the cables comprises several signal  
and ground conductors which are alternately placed and  
precisely spaced from one another throughout the width  
of the cable. The other conductor may comprise several  
similar conductors or, alternatively, a single wide conduc-  
tor. The width of the ground conductors is greater than  
the width of the signal conductors and the ground con-  
ductors of one cable overlap the signal conductors of  
the other cable.

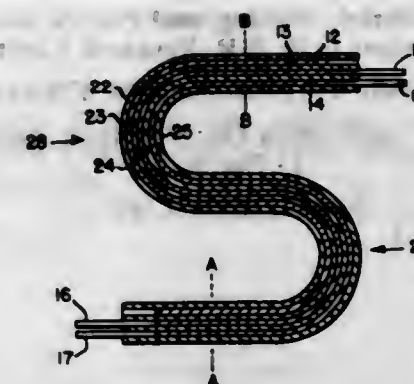
3,459,880  
FLEXIBLE BUS BAR  
Jack A. Erdle, Brighton, N.Y.  
(221 Georgian Court Road, Rochester, N.Y. 14610)  
Filed Sept. 19, 1967, Ser. No. 668,904  
Int. Cl. H01b 7/08, 11/02

U.S. Cl. 174—117

5 Claims

This flexible bus bar is used for connecting, for ex-  
ample, circuitry on a cabinet door to circuitry within the  
cabinet. It is generally S-shaped intermediate its ends,

so that it can be stretched, when the door is opened, with-  
out changing its capacitance appreciably. The bar com-  
prises alternating superposed, thin layers of copper and  
dielectric insulating material which are secured to one  
another at opposite ends only of the bar, and are free



to slide relative to one another intermediate these ends.  
The bar is first formed in flat form, and opposite ends  
of the flat bar are held while forming dies which have  
cylindrical arcuate active surfaces are moved toward one  
another to bend the bar into S-shape.

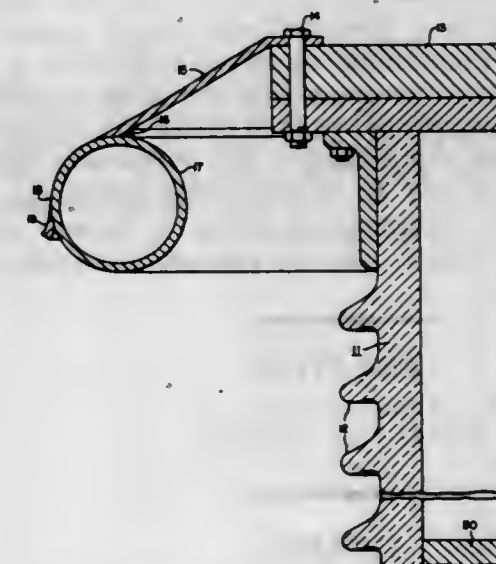
3,459,881  
PROTECTIVE RAIN SHIELD AND ELECTRIC  
FIELD GRADING APPARATUS FOR USE ON  
A HIGH VOLTAGE INSULATOR

Charles F. Sonnenberg, Monroeville, Joseph J. Whiteside,  
Pittsburgh, and Dennis G. Painter, Jeannette, Pa., as-  
signors to Westinghouse Electric Corporation, Pitts-  
burgh, Pa., a corporation of Pennsylvania

Filed Nov. 16, 1967, Ser. No. 683,557  
Int. Cl. H01b 17/44

U.S. Cl. 174—144

8 Claims



The electrically conductive device has a portion thereof  
forming a substantially smooth frusto-conical surface  
sloping downward away from the insulator on which it is  
mounted, and an annular portion forming at least a sub-  
stantially arcuate cross-section of a toroidal ring, the  
toroidal ring shaping the electric field in the area adjacent  
the outside circular edge of the frusto-conical portion  
whereby corona producing stresses are avoided; in some  
embodiments the circular edge extends radially from the  
insulator beyond the outside diameter of the ring portion  
whereby rain running off of the frusto-conical portion  
runs freely downwardly beyond the ring portion. Other



embodiments employ specially shaped run-off lips which may be secured to, or form part of, the toroidal ring.

3,459,882

# **PAY BROADCAST RECEPTION APPARATUS WITH BATTERY POWERED DEBIT MEANS**

Ralph Parton Gabriel, Woking, and Patrick Bass, London, England, assignors to R. & R. Research Limited

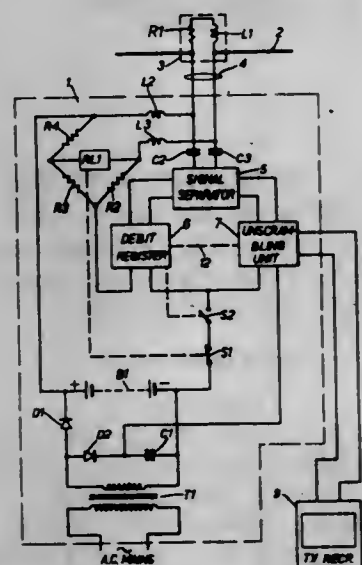
Filed July 26, 1965, Ser. No. 474,611

Claims priority, application Great Britain, Aug. 18, 1964, 33,766/64

Int. Cl. H04n 1/44

U.S. Cl. 178-5.1

15 Claims



The invention relates to apparatus for receiving pay-broadcast programme signals transmitted together with fee-demand signals. The apparatus comprises a battery-powered debit means operated by the fee-demand signals to establish a corresponding debit condition. The apparatus also includes A-C powered reproducing means responding to the programme signals to reproduce a programme. Payment or acceptance of the debit established by the debit means may be required before the reproducer becomes operative. For example, the programme signals may be scrambled and an unscrambling device may be made-operative by accepting the debit. The battery which powers the debit means may be charged from the A-C mains.

## **ERRATUM**

For Class 178-5.1 see:  
Patent No. 3,460,161

3,459,883

# **VIDEO SWITCHING CIRCUIT FOR LINE-SEQUENTIAL COLOR TELEVISION**

Robert E. Smith, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 1, 1966, Ser. No. 598,302

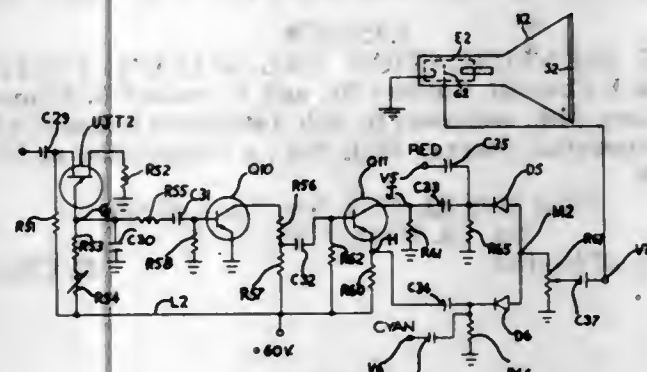
Int. Cl. H04n 9/22, 9/44

U.S. Cl. 178-5.4

11 Claims

This specification discloses a switching circuit for applying a line-sequential color signal to the electron gun of a penetration-type color display tube. A relaxation oscillator has a frequency which is an integral submultiple of the rate at which the video lines are displayed, and is

synchronized with the line display frequency. Voltage level detectors provide gating signals to video signal gating circuits when the voltage on the timing capacitor in the



oscillator reaches specified levels. As a result, the parallel lines of video information are sequentially applied to the cathode ray tube.

3,459,884

# **SIGNAL SEPARATING CIRCUIT UTILIZING ALTERNATELY BALANCED AND UNBALANCED BRIDGE CIRCUIT**

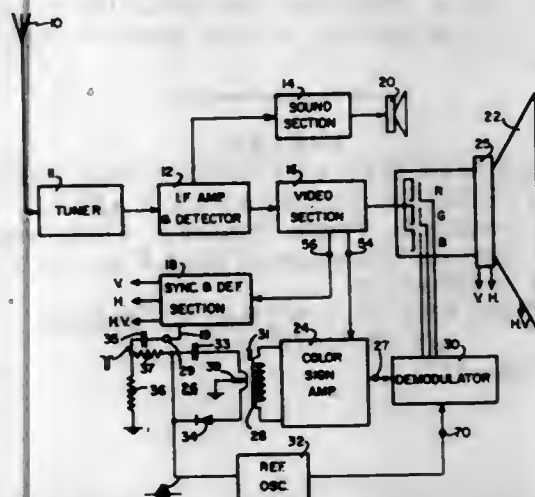
Rolf E. Spies, Lyons, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed May 19, 1966, Ser. No. 551,383

Int. Cl. H04n 5/38, 5/44

U.S. Cl. 178-5.4

16 Claims



In a circuit for time separating color control signals from a composite television signal for a color television receiver, a bridge circuit having first and second diagonals and four branches is provided with one of the branches comprising a diode which is driven between conductive and non-conductive states by gating signals applied thereto. As long as the diode is non-conductive, the bridge is balanced so that no signal appears across the output diagonal. When the diode is rendered conductive by a gating signal, however, the bridge is unbalanced and the composite color television signal appearing at the bridge input is coupled to the output diagonal of the bridge.

3,459,885

# **COLOR PICTURE INFORMATION RECORDING AND REPRODUCING SYSTEM**

Peter C. Goldmark, Stamford, Conn., and Dennis Gabor, London, England, assignors to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York

Continuation of application Ser. No. 375,469, June 16, 1964. This application Oct. 26, 1967, Ser. No. 678,452

Int. Cl. H04n 5/38, 1/46, 5/44

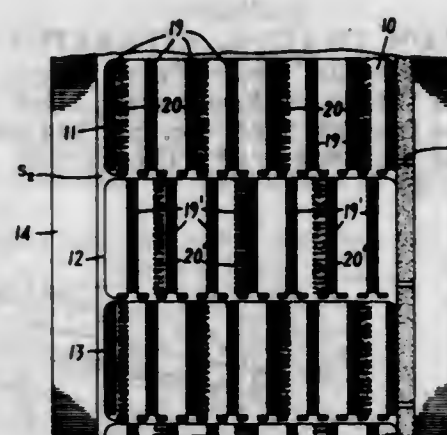
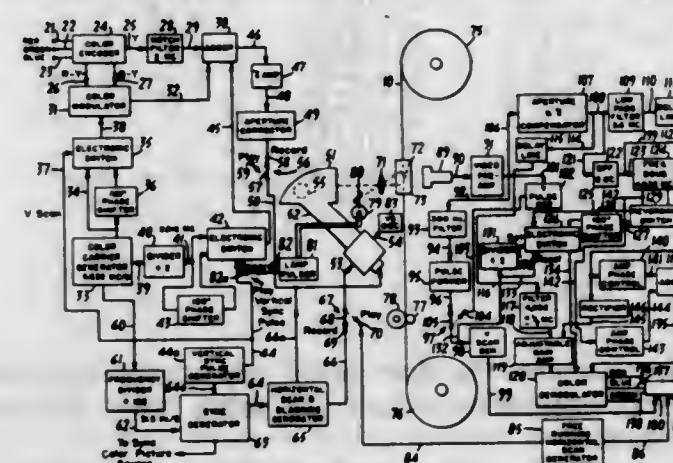
U.S. Cl. 178-5.4

51 Claims

Apparatus and methods related to the recording and reproduction of color picture information on monochrome photographic film. Frames of the film are record-

ed in a succession of transverse lines each containing a record of a color carrier signal modulated in amplitude and phase according to the color content along a corresponding line of the original scene and a superimposed record of a reference carrier at a different frequency that is related to the color carrier frequency by an integer multiple. The frequencies of both carriers are multiples

tional signal corresponding to the intensity of the image stored in the first tube, and a third storage tube storing the retardation signal corresponding to the difference in intensity between the image stored in the first storage tube and the intensity of the previous image; and a cyclic counter serving to control which lines are to be transmitted to produce the television image utilizing a reduced frequency bandwidth.



of the line recording rate, so that the cyclic variations of the recorded carriers tend to be in longitudinal alignment throughout each frame. During reproduction, the frames are scanned in a similar manner to derive a composite signal containing components at both carrier frequencies, which are extracted and applied to a synchronous detector to recover modulation of the color carrier.

3,459,886

# **TRIPLE STORAGE TUBE NARROW BAND TELEVISION**

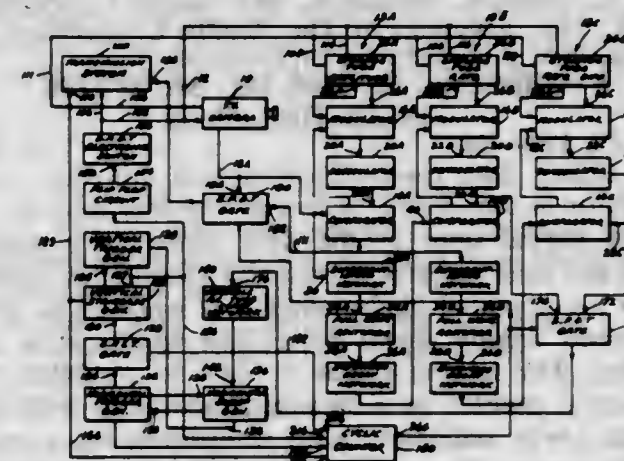
George J. Doundoulakis, 2498 Kayron Lane, North Bellmore, N.Y. 11710

Filed Oct. 20, 1965, Ser. No. 498,465

Int. Cl. H04n 3/16, 7/00, 5/00

U.S. Cl. 178-6.8

18 Claims



A television system having a television camera for scanning an image to be reproduced including three storage tubes, a first storage tube storing the intensity of an image as it is, a second storage tube storing a retarda-

Apparatus for selectively masking graphic material to be recorded on photographic film wherein masking is performed by using a cathode ray tube (CRT) to generate

3,459,887

# **AUTOMATIC FREQUENCY CONTROL SYSTEM**

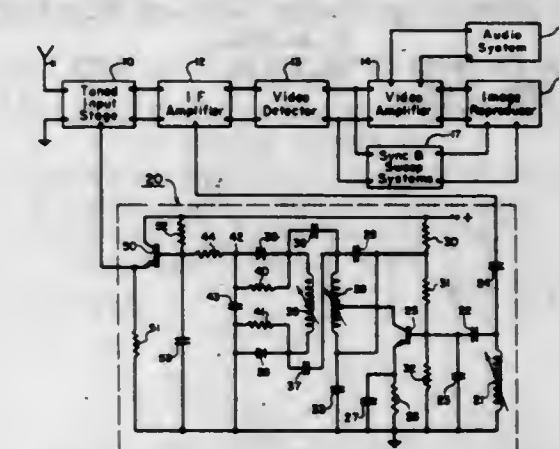
Roy F. Baker, Chicago, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Apr. 11, 1966, Ser. No. 541,624

Int. Cl. H04n 3/16, 5/50

U.S. Cl. 178-7.5

9 Claims



The automatic frequency control of a television receiver includes the usual discriminator and a pair of diodes with their load circuits, operating in conventional manner over a small range of frequency deviations centered about the desired mean frequency. Extended pull-in is achieved by biasing one diode forwardly and the other reversely so that for conditions of gross mistuning control voltages are obtained from the two diodes that are of the same polarity and aid one another in obtaining an augmented frequency correcting effect.

3,459,888

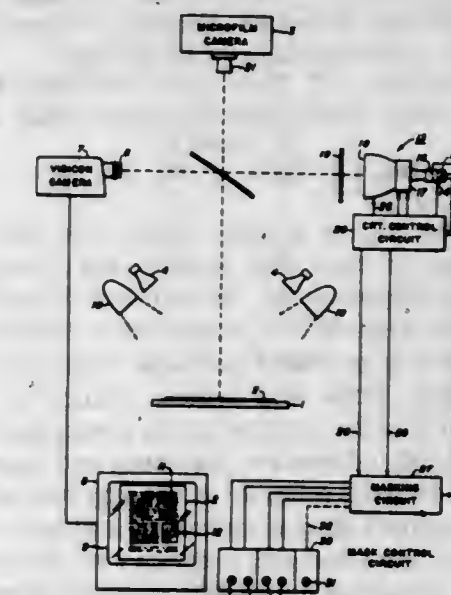
# **SELECTIVE PHOTOCOPIER**

David A. Sokolov, Fairport, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York  
Continuation-in-part of application Ser. No. 532,289, Mar. 7, 1966. This application Jan. 2, 1968, Ser. No. 700,317

U.S. Cl. 178-7.7

Int. Cl. H04n 3/16

10 Claims



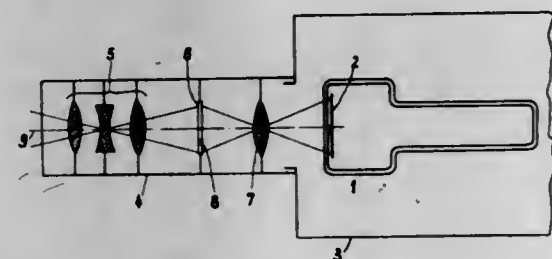


and position a light pattern over an area of the graphic material to be masked thereby overexposing the film in the area of the light pattern when the graphic material is imaged onto the film and wherein a light pattern is formed by selectively blanking the CRT electron beam in one embodiment by a circuit operating on the CRT horizontal and vertical deflection signals and in another embodiment by a circuit operating on the CRT horizontal and vertical synchronization pulses.

### 3,459,889 ARRANGEMENT FOR PROTECTION OF A CAMERA TUBE

Friedrich Michels and Horst Zachau, Darmstadt, Germany, assignors to Fernseh G.m.b.H., Darmstadt, Germany

Filed July 20, 1966, Ser. No. 566,673  
Claims priority, application Germany, July 21, 1965,  
F 46,663  
Int. Cl. H01J 29/89; H04n 5/38; G02f 1/36  
U.S. Cl. 178-7.92 11 Claims

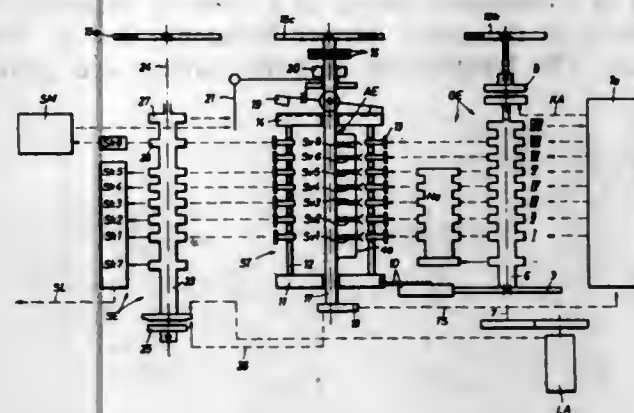


An arrangement for preventing high intensity illumination reaching the light-sensitive element of a television camera tube. The object to be picked up by the camera tube is imaged by an optical imaging system onto the light-sensitive tube element. A photochromic light filter is arranged between the optical imaging system and the television camera tube. The photochromic filter automatically diminishes the amount of light transmitted through the filter, when a high intensity area becomes illuminated on the filter. The process is reversible and such that only the high intensity illuminated area on the filter decreases the proportion of light transmitted, whereas the remaining filter area not subjected to high intensity illumination transmits a greater proportion of the impinging light.

3,459,890  
**STORAGE DEVICE FOR USE IN TELEPRINTERS**  
Johann Augustin, Joachim Wenger, Manfred Reichardt, and Ewald Spiegler, Pforzheim, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware  
Filed May 17, 1966, Ser. No. 550,803  
Claims priority, application Germany, May 20, 1965,  
St 23,853  
Int. Cl. H04l 15/00, 17/16  
U.S. Cl. 178-17 20 Claims

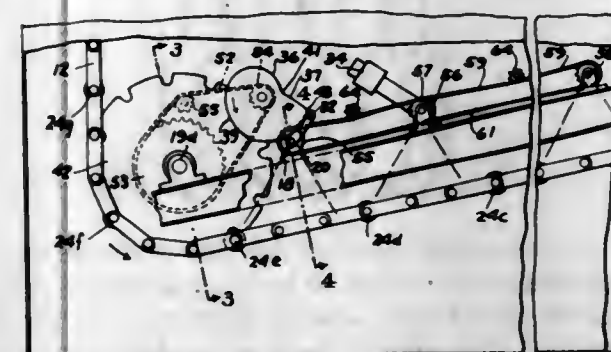
A teleprinter signal storage device for effecting automatic insertion of case shift signals, the storage capacity of which is independent of the number of said case shift signals. The storage device comprises a rotatable storage drum on which is provided paraxial rows of radially adjustable storage studs and which rotates in a stepped manner relative to the rhythm of the input, and a touching device, detachably coupled to the drum and urged to rotate in opposition thereto relative to the rhythm of the transmitter, the touching device including a plurality of storage contacts which are arranged in series with the transmitting contacts, and mounted on a shaft running axially through the drum so as to be in alignment with corresponding storage studs. The transmitter-controlled rearward rotation of the touching device is effected each time in two

partial steps of a half drum stepping division, the first being performed during transmission of the telegraphic code start element while the second is performed during



the stop element. The first partial step is concerned with case shift identification and the latter with character identification.

3,459,891  
**FLOW COATING APPARATUS**  
Michael Ladney, Jr., Grosse Pointe Shores, Mich. (18125 E. 10 Mile Road, East Detroit, Mich. 48021)  
Filed Dec. 20, 1965, Ser. No. 514,849  
Int. Cl. B05c 5/02, 11/14, 11/06  
U.S. Cl. 118-63 7 Claims

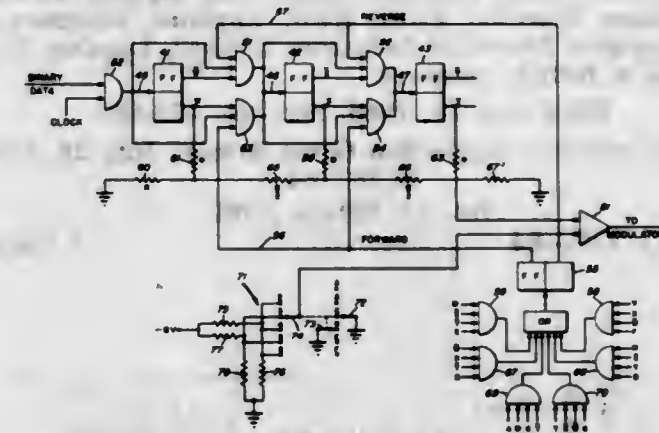


Apparatus for flow coating articles including conveyor means for rotating articles about a horizontal axis while passing the articles below a plurality of rows of oscillating nozzles. The oscillation of the nozzles is synchronized with the rotation of the articles moving on the conveyor.

3,459,892  
**DIGITAL DATA TRANSMISSION SYSTEM WHEREIN A BINARY LEVEL IS REPRESENTED BY A CHANGE IN THE AMPLITUDE OF THE TRANSMITTED SIGNAL**  
Jack L. Shagena, Baltimore, and Joseph C. Kvarda, Bel Air, Md., assignors to The Bendix Corporation, Towson, Md., a corporation of Delaware  
Filed Sept. 14, 1965, Ser. No. 487,148  
Int. Cl. H04l 15/00  
U.S. Cl. 178-68 10 Claims

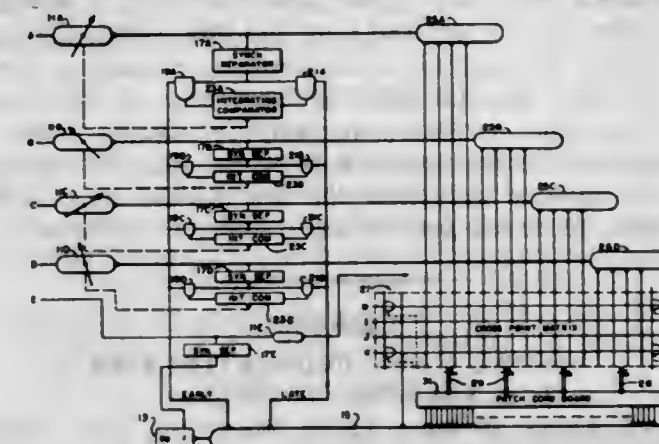
A binary data transmission system utilizing a coding generator in the form of a forward-reverse counter, which counts logical ones in the data signal to a maximum count and then reverses to count to a minimum count. The count accumulated in the counter is weighed to generate a stepped analog signal correlative to the state of the counter. The analog signal is used to modulate a low frequency counter in a balanced modulator with the resultant lower sideband being transmitted to a receiver. At the receiver the received signal is detected and shaped to reconstitute the analog signal which is applied to a plurality of parallel connected Schmitt triggers which fire in accordance with the analog signal level. Schmitt trigger firings are sensed and applied to a phase locked clock to

regenerate clock pulses at the original binary bit rate. The a source of gating pulses, producing a "reduced" version of clock pulses are mixed with the Schmitt trigger outputs to the information signal from which certain frequency regenerate the original binary data signal.



Means are also provided for increasing or decreasing the total count excursion of the coding generator and hence the peak to peak analog voltage and the number of voltage steps therebetween.

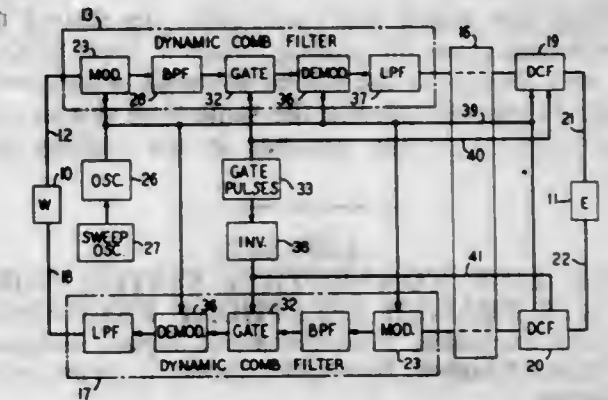
3,459,893  
**MULTIPLE TRUNK DIGITAL SWITCHING SYNCHRONIZATION**  
George W. Thomas, Keyport, N.J., assignor to the United States of America as represented by the Secretary of the Army  
Filed Apr. 25, 1966, Ser. No. 546,136  
Int. Cl. H04l 7/06  
U.S. Cl. 178-69.5 2 Claims



Multiple input line signals having slightly different synch pulse frequency or phase are all re-timed to a strobe pulse generator which may be synchronized by one of the input lines. The generator produces early and late gates which are compared by means of integrating comparators with the synch pulse of each incoming line and an error signal is produced which adjusts a delay line in its line so that the output of each delay line matches the timing of the generator and that of every other line output.

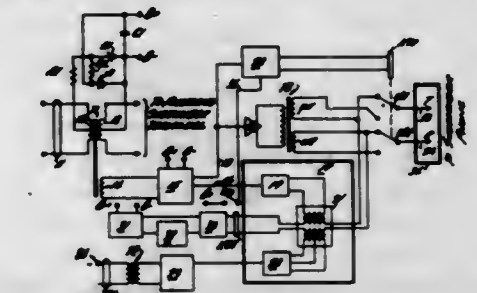
3,459,894  
**DYNAMIC COMB FILTER**  
Robert C. Hoyler, New Shrewsbury, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Mar. 3, 1966, Ser. No. 531,468  
Int. Cl. H04m 1/00; H03k 7/00  
U.S. Cl. 179-1 16 Claims

A dynamic comb filter for use as an echo suppressor in four-wire transmission systems includes a frequency spectrum analyzer, sampling means and means for reconstructing the envelope of the signal applied to the analyzer. The frequency spectrum analyzer produces a recurrent frequency analysis of an information signal. The analyzed signal is then sampled by means of a gate and



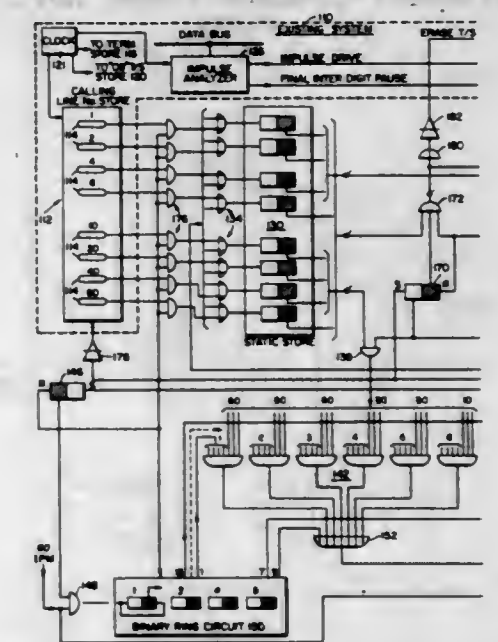
components have been removed. The reduced signal is then demodulated to reconstruct the input signal envelope.

3,459,895  
**CENTRALLY POWERED SUBSCRIBER CARRIER SYSTEMS**  
Carl A. Ebhardt, Raleigh, N.C., assignor to International Telephone and Telegraph Corporation  
Filed May 19, 1966, Ser. No. 551,332  
Int. Cl. H04h 1/08  
U.S. Cl. 179-2.5 10 Claims



A D.C. power transfer system is used in a subscriber carrier system. The subscriber set is isolated from high D.C. voltages present on the carrier line. A D.C. to D.C. converter is used to supply subscriber power.

3,459,896  
**CODE CALL FACILITY FOR ELECTRONIC TELEPHONE EXCHANGE**  
William F. Bartlett, Monroe County, N.Y., assignor to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware  
Filed June 13, 1966, Ser. No. 557,042  
Int. Cl. H04j 3/12  
U.S. Cl. 179-15 3 Claims



A code call, or paging system for a TDM telephone exchange of the kind in which the calling and called num-

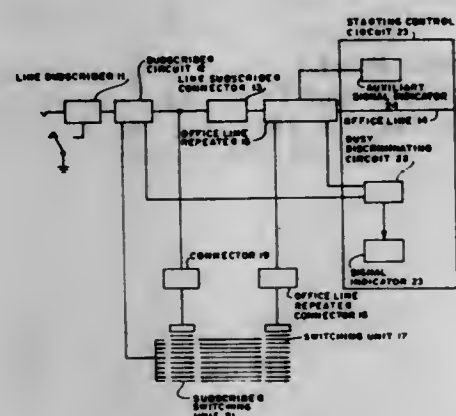


bers are stored in separate dynamic stores. A static store is used to receive the code call signals from the called dynamic store and to control operation of the annunciator. When the paged party responds, his station number is transferred from the calling dynamic store to the static store, and thence to the called dynamic store, ending in the called dynamic store in the same time slot as occupied by the original calling number in the calling dynamic store.

**3,459,897**  
**OFFICE LINE CONNECTION SYSTEM FOR PRIVATE BRANCH TELEPHONE EXCHANGE**  
Junichi Terasaka, Yokohama-shi, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan  
Filed Dec. 27, 1965, Ser. No. 516,309  
Int. Cl. H04m 3/54

U.S. Cl. 179-18

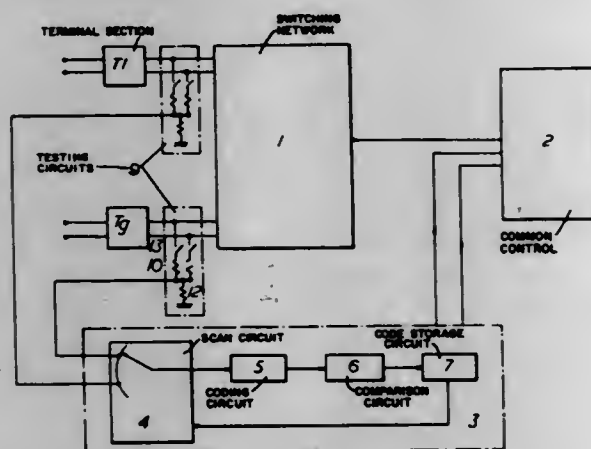
7 Claims



A private branch telephone exchange includes routing equipment connected between an office line and a plurality of subscribers' lines. The routing equipment selectively routes incoming calls on the office line to the subscribers and includes starting control equipment for routing an incoming call to the first free subscriber's line in a predetermined switching pattern.

**3,459,898**  
**TRAFFIC DISTRIBUTION BY THE BUSINESS RATE OF LINE GROUPS**  
Jacques Henri Dejean, Ris-Orangis, and Charles Henri Emile Grandjean, Villejuif, France, assignors to International Standard Electric Corporation  
Filed July 26, 1966, Ser. No. 567,995  
Claims priority application France, July 27, 1965, 26,091  
Int. Cl. H04m 3/00  
U.S. Cl. 179-18

1 Claim



Testing circuits indicate the amount of traffic in each line group. The call is routed to the group which has the lowest traffic rate.

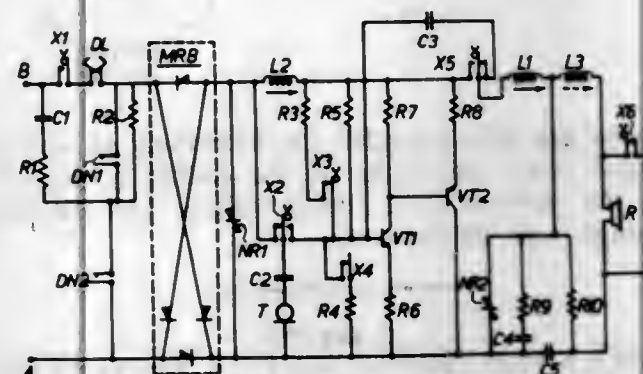
**3,459,899**  
**PHONE SUBSTATION CIRCUITS**

Peter John Lane, Dartford, Kent, and Rodney Edward William Wheeler, Erith, Kent, England, assignors to Associated Electrical Industries Limited, London, England, a British company

Filed July 21, 1965, Ser. No. 473,683  
Claims priority, application Great Britain, July 28, 1964, 29,967/64

Int. Cl. H04m 1/00  
U.S. Cl. 179-84

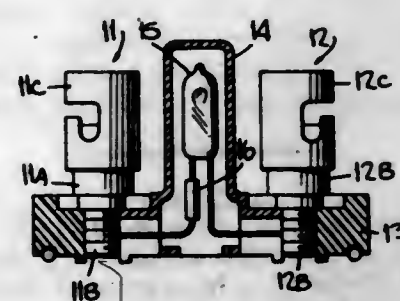
2 Claims



A telephone substation arrangement in which the microphone transducer is also utilized for emitting tone calling signals when the handset is in the rest position on the base, the tone calling signals being derived from a transistor oscillator at the substation that is energized by ringing signals received over the line. When the handset is lifted the gravity switch contacts connect a transistor amplifier incorporating at least one of the transistors from the oscillator to amplify signals from the microphone for transmission over the line. Windings of the anti-sidetone induction coil are utilized to provide a positive feedback path in the transistor oscillator.

**3,459,900**  
**VISUAL CALL INDICATOR FOR TELEPHONE SETS**  
David I. Alster, 19 Barry Drive, Westbury, N.Y. 11590, and Jacob H. Eggert, 211 Golf Road, Deal, N.J. 07723  
Filed Nov. 1, 1966, Ser. No. 591,187  
Int. Cl. H04m 1/00  
U.S. Cl. 179-84

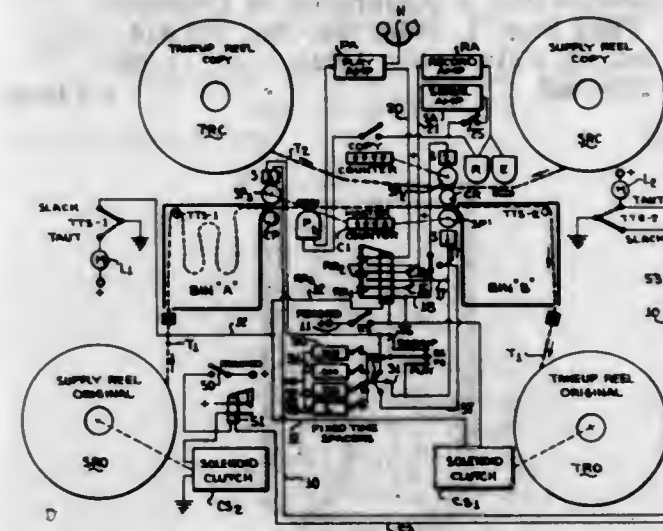
4 Claims



An auxiliary visual indicator which is attachable to a standard telephone set and which is activated only when the ringing bell is activated to afford concurrent visual and sound signals, thereby making it possible to properly identify the set having an incoming call. The indicator includes an electric lamp in series with a current-limiting resistor connected across the terminal binding posts of the set.

**3,459,901**  
**MAGNETIC TAPE EDITING MACHINE**  
James N. Cooper, Hyattsville, Md., assignor of one-third to Hyman Hurvitz, Washington, D.C.  
Filed Oct. 22, 1965, Ser. No. 501,173  
Int. Cl. G11b 5/48  
U.S. Cl. 179-100.2

7 Claims



A recorded magnetic tape is driven from a supply reel to a take up reel via a first storage bin, a first tape drive, a play head, a second tape drive, a second storage bin. The second drive forces the tape into the second bin, while it is being reviewed. If perfect, it is fed back into the first bin and then transcribed while being fed out of the first bin. If imperfect, deletions are made in the course of the latter transcription.

**3,459,902**  
**PRESSURE GRADIENT MICROPHONE WITH TWO DIAPHRAGMS**  
Paul-Friedrich Warning, Mellendorf, Germany, assignor to Firma Sennheiser Electronic, Bissendorf, Germany  
Filed Oct. 24, 1966, Ser. No. 588,875  
Claims priority, application Germany, Oct. 25, 1965, S 100,186, S 100,187, S 100,189, S 100,190, S 54,637, S 54,640  
Int. Cl. H04r 17/02, 19/04, 21/02  
U.S. Cl. 179-121

17 Claims

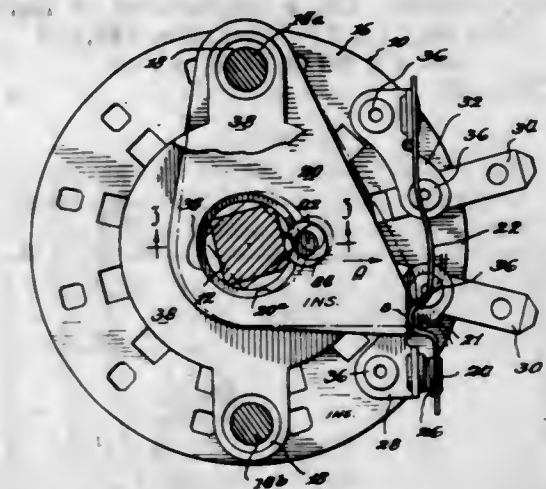


A pressure gradient microphone having both a high and low frequency system. The microphone has two diaphragms facing in opposite directions. Each diaphragm has its own voice coil and is activated through main and auxiliary sound inlets.

865 O.G.-8

**3,459,903**  
**ROTARY CAM ACTUATED SWITCH OPERATING PLATE IN A HIGH CURRENT SWITCHING DEVICE**  
Lonnie J. Richardson, Elgin, Ill., assignor to Oak Electro-Netics Corp., a corporation of Delaware  
Filed Sept. 7, 1967, Ser. No. 666,191  
Int. Cl. H01h 21/00, 3/42, 19/62  
U.S. Cl. 200-6

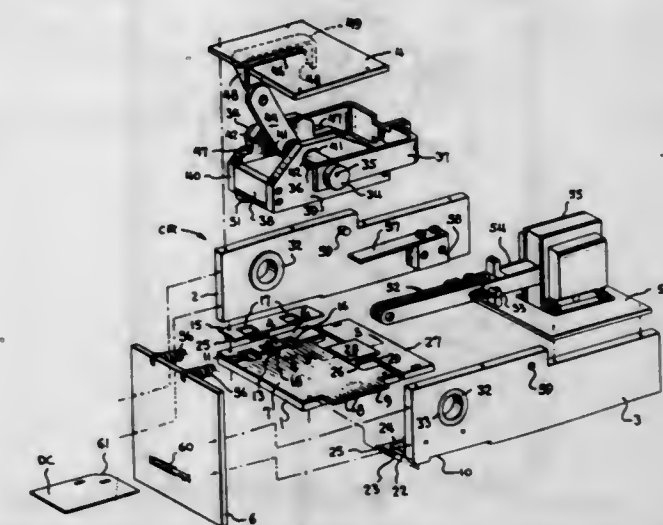
7 Claims



A high current sequential switching device for use in a rotary switch in which a shaft for operating the rotors of a plurality of switch sections is rotatably mounted in a frame. A fixed contact member is mounted on the frame radially outwardly from the shaft and a contact carrying leaf spring is spaced radially from the shaft and is biased into engagement with the fixed contact member. A cam member is pivotally mounted on the frame at a point spaced radially from the shaft and angularly from the contact carrying leaf spring. Detent means is carried by the shaft for intermittently pivoting the cam member against the leaf spring in response to rotation of the shaft to intermittently move the contact on the leaf spring out of engagement with the fixed contact member.

**3,459,904**  
**CARD READER HAVING CARD-ALIGNING MEANS AND WIPING-CONTACT MEANS**  
Lindsay Carlton Friend, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.  
Filed Sept. 22, 1966, Ser. No. 581,349  
Int. Cl. H01h 43/08; G06k 7/06  
U.S. Cl. 200-46

7 Claims

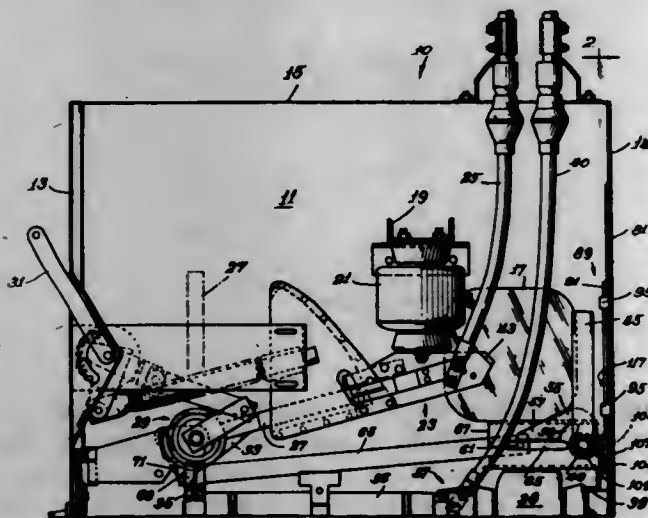


A card reader comprises a movable reader head and a stationary contact assembly between which a data card is received to read coded information therefrom. The reader head is moved toward the stationary contact assembly and in so doing, it aligns the data card in position along the



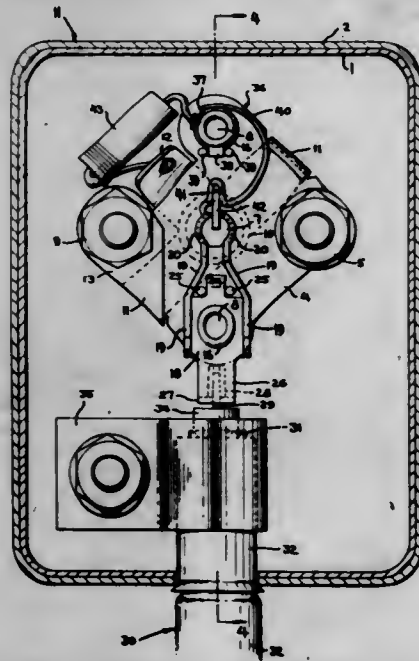
stationary contact assembly in proper alignment with contact sensing springs of the movable reader head so that the coded information of the data card can be read therefrom.

**3,459,905**  
**SWITCHGEAR WITH PANELS OVERLYING ACCESS OPENINGS INTERLOCKED WITH GROUNDING SWITCHES BY MEANS OF J-SHAPED LATCHES**  
James E. Jeffries, Chicago, Ill., assignor to S & C Electric Company, Chicago, Ill., a corporation of Delaware  
Filed July 13, 1967, Ser. No. 653,133  
Int. Cl. H01h 9/20, 33/46  
U.S. Cl. 200—50 6 Claims



The panels overlying access openings to energizable parts of metal enclosed switchgear are interlocked with grounding switches.

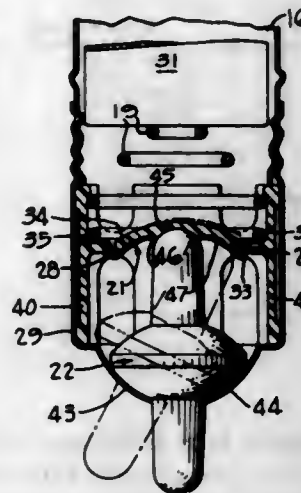
**3,459,906**  
**COAXIAL CONNECTOR HAVING SWITCHABLE LOAD MEANS**  
Michael Francis O'Keefe and Robert Stanley Stull, Mechanicsburg, Pa., and Loy Richard Greene, Shiremanstown, Pa., assignors to AMP Incorporated, Harrisburg, Pa.  
Continuation of application Ser. No. 488,180, Sept. 17, 1965. This application Feb. 28, 1968, Ser. No. 711,465  
Int. Cl. H01r 33/30, 33/54  
U.S. Cl. 200—51.1 9 Claims



A coaxial connector is provided with inner and outer contacts mounted on a dielectric mounting member in coaxial relationship. The inner and outer contacts are

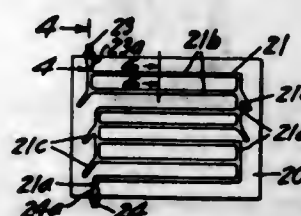
in normal electrical engagement and are interconnected via a resistor. A coaxial connector means is adapted to electrically engage the inner and outer contacts and to disconnect the resistor from the inner and outer contacts.

**3,459,907**  
**FLASHLIGHT SWITCH**  
Edward J. Garland, Shrewsbury, Mass., assignor to ESB Incorporated, a corporation of Delaware  
Filed Mar. 1, 1968, Ser. No. 709,614  
Int. Cl. F21v 23/04; H01h 1/36, 21/04  
U.S. Cl. 200—60 6 Claims



A toggle actuated switch for use in flashlights, especially the "penlight" type flashlight in which the switch mechanism is mostly inside a metal end cap which can be attached to one end of the flashlight casing. When in place on the flashlight the switch has a conductive spring in contact at one end with a battery terminal and at the other end in contact with a conductive contact ring. The contact ring covers a portion of a dish shaped switch platform made of a resilient insulating material which keeps both the conductive spring and the contact ring from contacting the flashlight casing. A metallic switch toggle has one end projecting externally of the end cap, a middle section in contact with the end cap, and the other end is located in the center of the switch platform when the switch is at "off." When the one end of the switch toggle is displaced a certain distance from the "off" position, the other end is removed from the center of the switch platform and comes into contact with the contact ring causing an electrical circuit to be completed from the flashlight casing to the battery terminal through the circuit path consisting of the end cap, the switch toggle, the contact ring and finally the conductive spring.

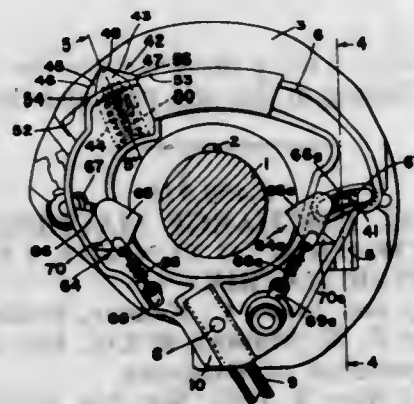
**3,459,908**  
**DEFORMATION RESPONSIVE INDICATING PANEL**  
John E. Eichenlaub, 9321 Franklin Ave. W., Minneapolis, Minn. 55426  
Filed Oct. 12, 1966, Ser. No. 586,174  
Int. Cl. H01h 35/00, 35/24  
U.S. Cl. 200—61.08 9 Claims



A panel highly transmissive of radiant heat and infrared for a gas fired radiant heater and including fluid filled

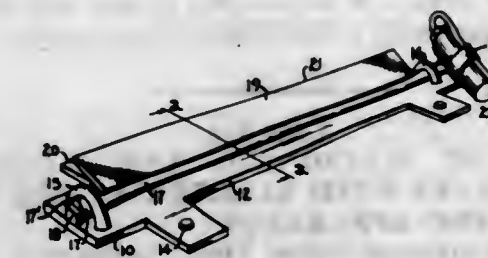
veins in the panel to produce an indication of panel rupture.

**3,459,909**  
**VEHICLE DIRECTION SIGNALING APPARATUS WITH ABUTMENT MEANS RELEASABLY ARRESTING THE APPARATUS IN AN INTERMEDIATE POSITION**  
Ray F. Winogrocki, East Detroit, Stephen Brzozowski, Jr., Detroit, and Gerald L. McClure, Warren, Mich., assignors to Essex International, Inc., a corporation of Michigan  
Filed Sept. 18, 1967, Ser. No. 668,573  
Int. Cl. H01h 3/18  
U.S. Cl. 200—61.34 15 Claims



A direction signaling apparatus for a vehicle having left and right turn indicators operated by an actuator movable from a neutral position to a left or right operating position and in which a single, reciprocable pawl latches the actuator in its neutral and operating positions, assists in the return of the actuator to its neutral position from either operating position, and is operable to arrest movement of the actuator in an intermediate position between its neutral and operating positions in which the left or right turning indicators are actuated and from which intermediate position the pawl automatically restores the actuator to its neutral position. The turn indicators are connected to fixed contacts forming an integral part of a printed circuit board, and movement of the actuator from neutral toward either of its operating positions causes relative movement of a switching member and the fixed contacts.

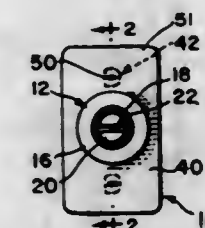
**3,459,910**  
**ACTUATOR MECHANISM FOR VEHICLE WASHING CONTROLS**  
Gordon V. Lieffring, Kansas City, Mo., assignor to Robo-Wash, Inc., Kansas City, Mo., a corporation of Missouri  
Filed Nov. 17, 1966, Ser. No. 595,202  
Int. Cl. H01h 3/16  
U.S. Cl. 200—61.41 6 Claims



An actuator mechanism operable by a vehicle wheel when the vehicle is in a washing position of apparatus wherein a mobile mechanism moves about the vehicle position to wash same and includes an electric circuit controlling the operation of the mobile mechanism. The

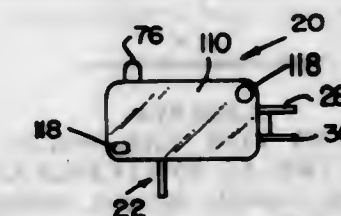
actuator mechanism includes a base with an actuator plate in and transversely of the path of a vehicle wheel and swingably mounted by bearings on the base to be moved from a first position to a second position by engagement of the vehicle wheel. A weight member is connected to the actuator plate and operates to move the same from a second position to the first position when the wheel is moved from the actuator plate engaged position. A gravity type switch is arranged in the weight member to move therewith to make a circuit and permit operation of the vehicle washing mechanism only when the actuating plate is in the second position.

**3,459,911**  
**INERTIA SWITCH WITH MAGNETIC SHUNTING**  
Murry Fischer, Spring Valley, N.Y., assignor to Inertia Switch, Inc., New York, N.Y., a corporation of New York  
Filed Jan. 16, 1968, Ser. No. 698,170  
Int. Cl. H01h 35/02  
U.S. Cl. 200—61.45 10 Claims



The disclosure describes an inertia operated switch in which is a magnetic ball held in a magnetic field and displaced therefrom when a force is applied to the switch. The switch has a plurality of switch contacts including springy magnetic reeds disposed in the magnetic field including the magnetic ball. The magnetic reeds are deflected laterally by the magnetic field. When the ball is displaced the magnetic field affecting the magnetic reeds contracts. The reeds are then magnetically released and move laterally with respect to their associated stationary contacts. Replacement of the ball in its initial position restores the magnetic reeds to their magnetically deflected state.

**3,459,912**  
**SWITCH WITH STRAIGHT COMMON TERMINAL HAVING PLURAL PIVOTS**  
Werner Robert Bauer and George Mack Hipple, Columbus, Ohio, assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware  
Continuation of application Ser. No. 688,622, Dec. 6, 1967. This application Aug. 19, 1968, Ser. No. 769,463  
Int. Cl. H01h 21/40, 21/44  
U.S. Cl. 200—67 5 Claims



This application discloses a switch structure with a straight common terminal bar with an actuating plunger on one side of such bar, and with stationary and movable contact structures on the other side of said bar. A relatively short switch actuating lever is on one side of said bar at a relatively sharp angle to said vertical bar in one position and at a substantially horizontal right

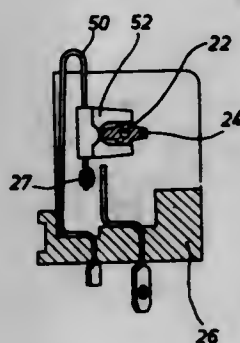


angle in another position. Vertical movement of a plunger on one side of said bar causes an effective wipe action between said movable and stationary contact structures on the other side of said bar.

**3,459,913**  
**STEERING POST MOUNTED AUTOMOTIVE VEHICLE LAMP CONTROL SWITCH WITH SLIDABLY ADJUSTABLE CONTACT CONTROL CAMMING AND LOCATING MEANS**  
 Erich Mutschler, Bietigheim, and Franz Schreiber, Kirchheim (Neckar), Germany, assignors to SWF-Specialfabrik für Autoteilebau Gustav Rau G.m.b.H., Bietigheim, Germany  
 Filed Mar. 15, 1967, Ser. No. 623,273  
 Claims priority, application Germany, May 13, 1966, S 103,783

Int. Cl. H01h 3/04  
 U.S. Cl. 200—166

10 Claims

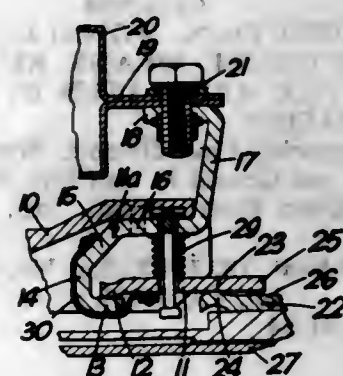


This is an improvement in a steering column mounted automotive vehicle lamp control switch having a lever oscillatable to signal turns and an operating member swingable by the lever and operable, on each complete swing, to switch head lamps between high beam and low beam and having an intermediate position for flashing the high beam head lamps. In each cycle of oscillation of the operating member, a square switch cam is rotated 90° and releasably latched. The switch cam is secured to a shaft and a pair of control cams are also secured to the shaft. One control beam controls a switch in the high beam head lamp circuit and the other controls a switch in the low beam head lamp circuit, the control cams being displaced by an angle of 90°. An abutment on the operating member normally maintains a third switch open. When the operating member is moved to an intermediate position, the third switch closes a circuit for the high beam head lamps and which by-passes the usual on-off head lamp switch. The improvement includes a pair of contact control parts each freely slidable longitudinally along a free leg of a respective one of a pair of U-shaped contact springs. Each control part includes a bifurcated arm for embracing a shaft to locate the associated control part. Each control part is formed with a transverse protrusion engageable by the associated control cam.

**3,459,914**  
**CONTACTS FOR THE POLES OF ELECTRICAL SWITCHGEAR**  
 Fredrik Gustavson, Lahall, Sweden, assignor to Aktiebolaget Peritus Enköping, Sweden, a Swedish body corporate  
 Filed Sept. 27, 1967, Ser. No. 670,996  
 Int. Cl. H01h 1/50

U.S. Cl. 200—170  
 A contact system for one pole of electrical switchgear. The contact system has a fixed contact and a further contact which is resiliently mounted on a movable contact bridge. The current path through the system bends back on itself and has a part in anti-parallel relationship to the two contacts so that the movement of the resiliently mounted contact away from the fixed contact is assisted by a force derived from the interaction of the currents flowing in the said part and the contacts.

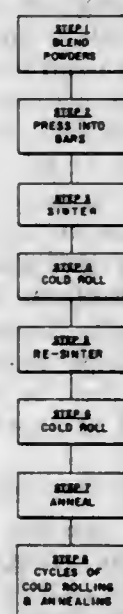
tionship to the two contacts so that the movement of the resiliently mounted contact away from the fixed contact is assisted by a force derived from the interaction of the currents flowing in the said part and the contacts.



**3,459,915**  
**ELECTRICAL DISCHARGE MACHINING ELECTRODE COMPRISING TUNGSTEN PARTICLES IN A SILVER MATRIX**  
 Earl F. Swazy and James C. Kenney, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware  
 Filed May 3, 1967, Ser. No. 635,744  
 Int. Cl. B23k 9/16

U.S. Cl. 219—69

11 Claims



An electrical discharge machining electrode material consisting of a thin cold rolled material constructed of silver and a refractory material wherein the refractory particles are from 4 to 20 microns in size and are in immediate contact with a continuous silver matrix.

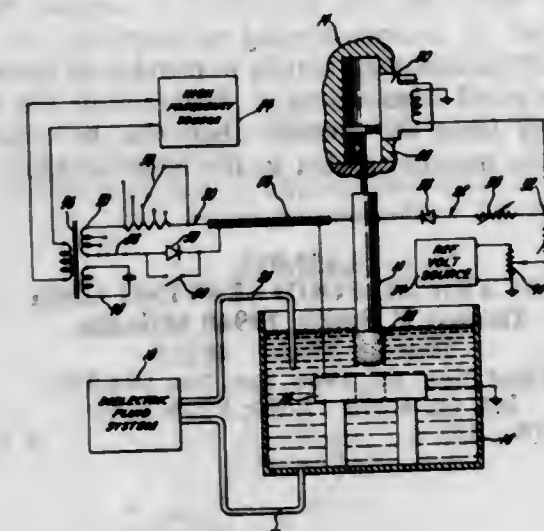
**3,459,916**  
**METHOD OF MACHINING AND HARDENING WORKPIECES WITH ELECTRICAL DISCHARGE MACHINING APPARATUS**  
 Millard A. Ferguson, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
 Filed Sept. 1, 1965, Ser. No. 484,305  
 Int. Cl. B23k 9/16

U.S. Cl. 219—69

10 Claims

A method whereby a part is machined by the electrical discharge machining process and then the machined surfaces of the part are coated with an alloying material,

after which the electrical discharge machining process is when welding is avoided by arranging the positive and repeated to melt the alloying material and produce proper negative welding electrodes on a line which is perpendicular to the lengthwise axis of the overlying connector strip of the module to the strip terminal of the substrate.

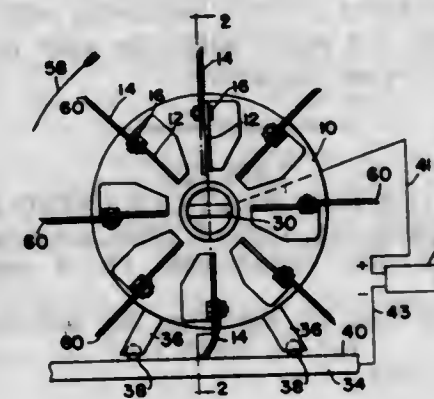


erly sized finished surfaces with a hard wear inhibiting coating.

**3,459,917**  
**SPARK HARDENING METHOD AND APPARATUS**  
 Robert Felts, Union Lake, Mich.  
 (Rte. 1, Box 591, Clarksburg, Md. 20734)  
 Filed Oct. 23, 1965, Ser. No. 503,533  
 Int. Cl. B23k 9/04

U.S. Cl. 219—76

24 Claims



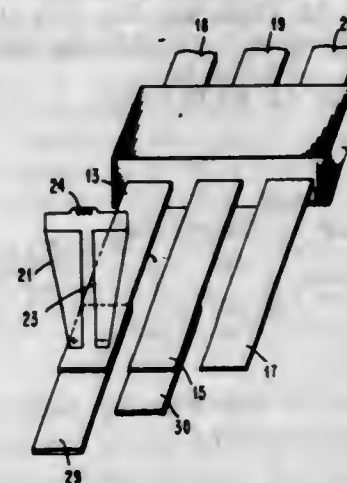
The surface of a workpiece is hardened by sweeping a plurality of flexible graphite electrodes across the workpiece surface while maintaining a spark generating potential between the electrode and the workpiece so that during electrode contact sparks are drawn and electrode material is vaporized and absorbed into the workpiece.

**3,459,918**  
**WELDING OF ELECTRICAL ELEMENTS HAVING VOLTAGE SENSITIVE COMPONENTS**  
 Adolph W. Rzant, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
 Filed Jan. 13, 1967, Ser. No. 609,081  
 Int. Cl. B23k 35/06, 11/10

U.S. Cl. 219—91

7 Claims

In the resistance welding of the connector strips of an integrated circuit module or chip to the strip terminals of the substrate which supports the chip, the possibility of back voltage damage to a voltage sensitive element

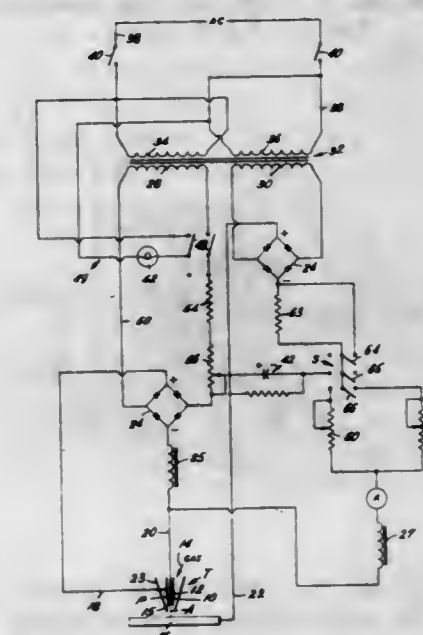


ular to the lengthwise axis of the overlying connector strip of the module to the strip terminal of the substrate.

**3,459,919**  
**MULTIARC TORCH ENERGIZING METHOD AND APPARATUS**  
 August F. Manz, Union, and Thomas M. Steinert, West Orange, N.J., assignors to Union Carbide Corporation, a corporation of New York  
 Filed Apr. 19, 1966, Ser. No. 543,746  
 Int. Cl. B23k 9/10

U.S. Cl. 219—131

7 Claims



A power supply system for a combined gas-shielded transferred and non-transferred arc welding system includes a current responsive switch. A means is provided for supplying individual currents to each of the arcs which operates in combination with the switch to adjust the current supplied to one of the arcs. At the same time, the switch operates to inversely adjust the current supplied to the other arc for the combined purpose of reducing objectionable heating of the torch upon an increase in current and for sustaining the arc upon a decrease in current.

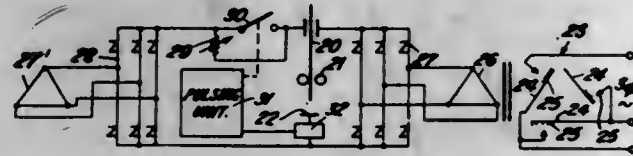


### 3,459,920 DIP TRANSFER WELDING METHOD AND APPARATUS

Alexander Jura Sevenson, Burlington, Ontario, Canada, assignor to Lincoln Electric Company Limited, Welwyn Garden City, England, a British company  
Filed Mar. 10, 1966, Ser. No. 533,318  
Claims priority, application Great Britain, Mar. 11, 1965, 10,438/65

Int. Cl. B23k 9/10  
U.S. Cl. 219—131

8 Claims



A control circuit for dip transfer welding includes two current sources connected to a consumable electrode. One of the current sources continuously supplies current to the electrode and the other source supplies a pulse of current at the end of each short circuit period. A switching device, preferably a solid state switch, is used to control the operation of the current pulse source. A sensing device is connected in the welding circuit to sense the point at which the electrode tip melts off causing an arc to be struck. A trigger circuit having a variable time delay means is activated by the sensing means upon the striking of the arc which then activates the switch at the end of the period of delay. This allows for different current characteristics to be selected for consumable electrodes of different compositions and properties.

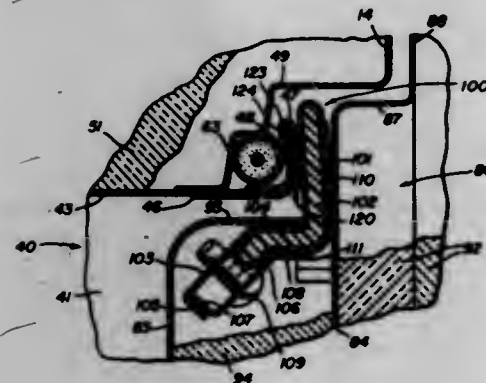
### 3,459,921 ELECTRIC AND ELECTRONIC OVEN WITH A HEATED DOOR STRUCTURE

Lynn E. Fussell, Richardson, Tex., and Robert D. Ogburn, Louisville, Ky., assignors to General Electric Company, a corporation of New York

Filed Jan. 2, 1968, Ser. No. 694,956  
Int. Cl. F27d 11/12

U.S. Cl. 219—396

19 Claims



There is disclosed a combination electric and electronic oven of the self-cleaning type including a metallic shell defining an oven cavity, means for supplying microwave energy to the oven cavity and resistive heating means in the oven cavity, control means for selecting either microwave heating or resistive heating, the shell having an opening therein providing access to the oven cavity and including an outwardly facing flange surrounding the opening, a coating of protective porcelain enamel on the inner surface of the shell and substantially covering the front surface of the outwardly facing flange, a metallic door for closing the opening, a continuous layer of electrically conductive ceramic carried by the porcelain enamel coating on the outwardly facing flange surrounding the opening and being in electrical connection with the metallic shell, the layer being chemically inert at

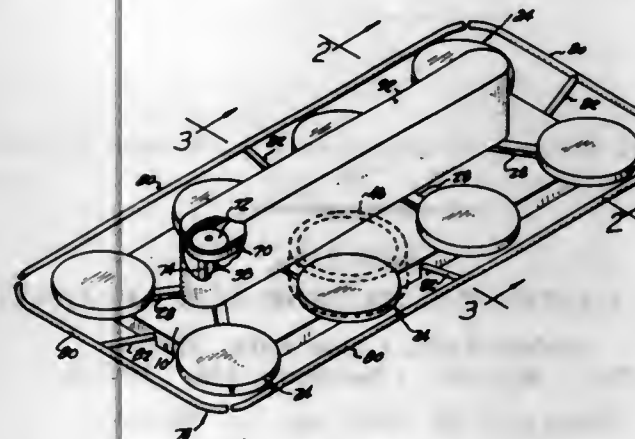
elevated temperatures while retaining the electrically conductive properties thereof and generally matching the appearance of the porcelain enamel coating, a metallic gasket mounted on the metallic door and in electrical connection therewith and positioned to contact the conductive layer of enamel around substantially the entire perimeter of the opening, thereby to provide an electrically conductive panel constituting a short circuit for microwave energy from the metallic shell via the conductive layer and the metallic gasket to the metallic door.

### 3,459,922 ELECTRICAL FOOD SERVING UNIT

Thomas F. Smith, 19940 Stahelin, Detroit, Mich. 48219  
Filed Nov. 16, 1966, Ser. No. 594,792  
Int. Cl. F27d 11/00; F27b 7/00

U.S. Cl. 219—433

6 Claims



A self-serving food warming apparatus having a plurality of hot plates mounted on a supporting base so as to be movable about a closed horizontal path, and means for moving the hot plates about the path to advance a selected plate to a serving station.

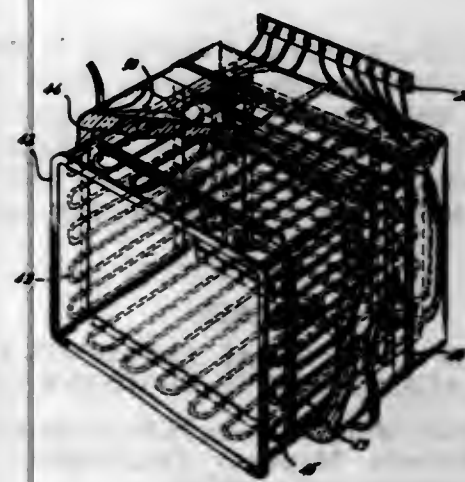
### 3,459,923 APPARATUS FOR HEAT-CLEANING OVENS

Joseph Earl Harris, Jr., Oxford, Ohio, assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Sept. 27, 1965, Ser. No. 490,583  
Int. Cl. H05b 3/02

U.S. Cl. 219—480

2 Claims



A cooking oven comprising an outer shell, and an oven liner housed within the outer shell and having top, bottom, side, and rear walls, and a forward opening. A heat insulated door is operably associated with the opening. A plurality of wall heating means are provided, each of which is individual to and associated with a corresponding one of the liner walls, and adapted to

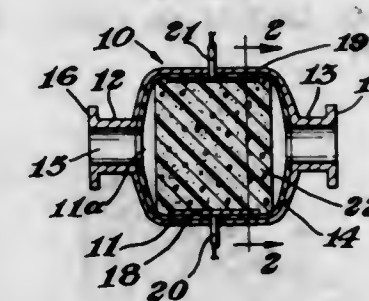
bring the temperature of the associated wall within the self cleaning range. Energization of the individual heating means provides for cleaning of the associated walls selectively.

### 3,459,924 ELECTRICAL OPEN CELL HEATING ELEMENT

Wallace T. McMichael, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Continuation-in-part of application Ser. No. 595,744, Nov. 21, 1966. This application Sept. 25, 1968, Ser. No. 762,395

Int. Cl. H05b 3/16  
U.S. Cl. 219—543

7 Claims



Electrical heating elements are disclosed which are prepared from open cell plastic foam, the heating elements having a continuous electrically conductive coating over the surface of the cells and electrodes in contact with spaced apart portions of the coating to permit the passage of an electrical current therethrough. The open-celled heating elements permit the passage of liquids and gases therethrough.

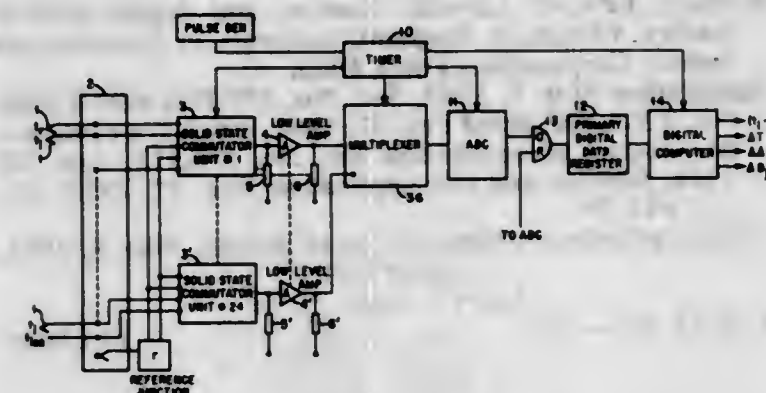
### 3,459,925 HIGH SPEED TEMPERATURE MONITOR

Malcolm H. Goosey, Arthur H. Dexter, and John N. Wilson, Aiken, S.C., Richard W. Leep, Los Alamos, N. Mex., and Wayne K. Hodder, Glendora, Edward R. Brady, Sierra Madre, and Lewis C. Page, Santa Ana, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 21, 1965, Ser. No. 500,452  
Int. Cl. G06f 15/36

U.S. Cl. 235—151

1 Claim



A high speed temperature monitor has been provided which scans a large number of thermocouple inputs to provide essentially a continuous monitoring with a minimum of data channels. The monitor reads sequentially the output from as many as 2,500 reactor thermocouples ten times each second. These readings are amplified and translated into machine language. These machine signals next enter a special purpose digital computer whose operation is carefully synchronized to the scanning rate so as to

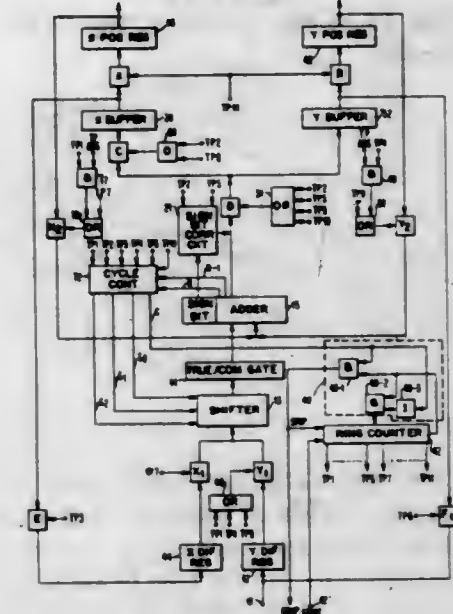
minimize memory requirements. Readouts are incorporated to permit surveillance of the temperature distribution in the reactor and control of the reactor.

### 3,459,926 GRAPHIC VECTOR GENERATOR

Melvin F. Heliwell and Gerald A. Maley, Poughkeepsie, and Gilbert R. Muhlenbruch, Wappingers Falls, N.Y., and Stewart Ogden, Louisville, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Oct. 18, 1965, Ser. No. 497,152  
Int. Cl. G06f 1/02

U.S. Cl. 235—152

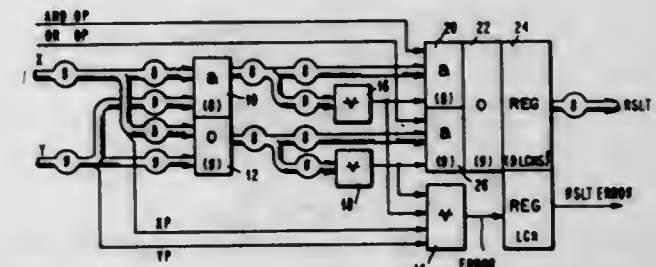
6 Claims



A vector generator for drawing a long vector as a series of digitally computed short vectors includes a register for storing the current position of the vector drawing device, on input for receiving new position data, an adder for determining the length of a vector to be drawn from the current to the new position, digital means for subdividing the determined vector length integrally according to its magnitude, and means for cumulatively adding in time sequence a quantity, equal to the subdivided part, to the current position storing register.

### 3,459,927 APPARATUS FOR CHECKING LOGICAL CONNECTIVE CIRCUITS

Alan R. Geller, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Oct. 18, 1965, Ser. No. 497,257  
Int. Cl. G06f 11/08



Disclosed is a logical unit which generates, at all times, the logical AND and the logical OR of a pair of operands applied thereto. The results of the AND or the OR so generated are selectively manifested in a result register only when a corresponding AND operation or OR operation is selected, respectively. Error checking is performed on the selected AND or OR operation by

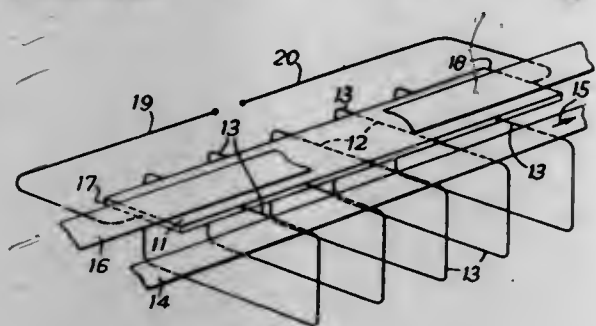


examining the outputs of the logical AND circuitry and the outputs of the logical OR circuitry to determine the parity thereof, and each of these parities is combined in an EXCLUSIVE OR circuit with a parity bit for each of the operands. When the EXCLUSIVE OR circuit has an output, that output is indicative of an error.

### 3,459,928 CORRELATION OF VARIABLES NOT PREVIOUSLY KNOWN

William Edward Lerwill, Keston, Kent, and Nigel Allister Anstey, Orpington, Kent, England, assignors to Seismograph Service Corporation, Tulsa, Okla.  
Filed Sept. 15, 1964, Ser. No. 396,763  
Claims priority, application Great Britain, Sept. 16, 1963, 36,352/63

Int. Cl. G06f 15/34; G06g 7/19  
U.S. Cl. 235—181



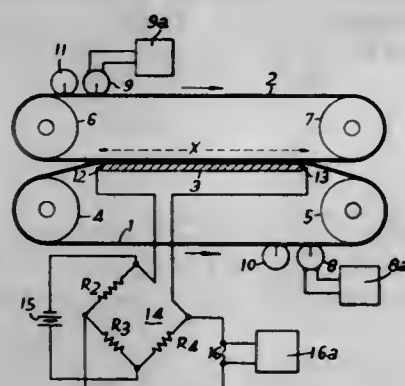
A method and apparatus for correlating two variables wherein two energy fields of extended length respectively representing the variables interact in a single elongated correlating medium. One of the two fields is maintained in fixed position relative to the medium while a second field is moved along the medium to produce simultaneously a plurality of electrical variations each representing the combined effect of the two fields upon an elemental portion of the medium. An output signal is derived by measuring the total effect of the variations along the entire length of the medium.

### 3,459,929 METHODS OF AND APPARATUS FOR THE CORRELATION OF VARIABLES

William Edward Lerwill, Keston, Kent, and Nigel Allister Anstey, Orpington, Kent, England, assignors to Seismograph Service Corporation, Tulsa, Okla.

Filed Apr. 21, 1965, Ser. No. 449,789  
Claims priority, application Great Britain, Apr. 24, 1964, 17,061/64

Int. Cl. G06f 15/34; G06g 7/19  
U.S. Cl. 235—181

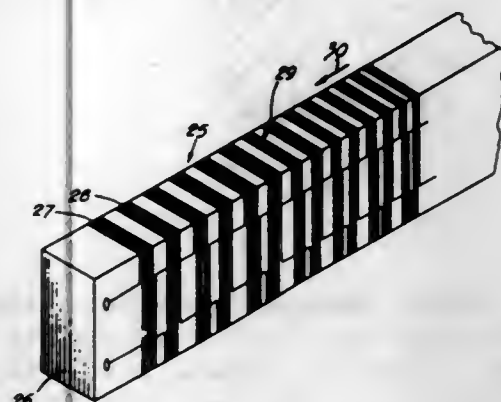


A method and apparatus for correlating two variables by recording each of the variables longitudinally along an elongated recording medium such as a magnetic tape. The two tapes are then moved so that energy fields created by the recording act upon a correlating head having a property, such as its electrical resistance, directly affected by the energy fields. The changes in the property of the

correlating head as one of the recording media is moved relative to the other and past the head are used to produce an output signal representing the correlation between the two energy fields as a function of delay between the two variables.

3,459,930  
METHODS AND APPARATUS FOR THE  
CORRELATION OF TWO VARIABLES  
William E. Lerwill, Keston, and Nigel Allister Anstey, Orpington, England, assignors to Seismograph Service Corporation, Tulsa, Okla.  
Continuation of application Ser. No. 190,912, Apr. 30, 1962, now abandoned. This application Feb. 10, 1966, Ser. No. 526,596  
Claims priority, application Great Britain, May 8, 1961, 16,687/61

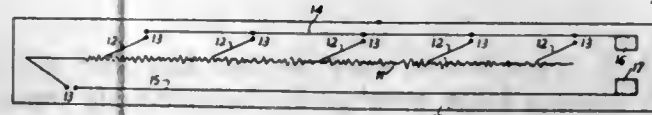
Int. Cl. G06f 15/34; G06g 7/19  
U.S. Cl. 235—181



A first variable is recorded upon a magnetizable medium so as to produce a magnetic field having a spatial distribution corresponding to the variable. A detector is then constructed which includes a plurality of individual detecting elements whose spacing and sensitivity is adjusted to represent a second variable. The signals generated by the individual detecting elements are combined to form a correlation signal. When the magnetizable medium is passed over the detector, the variations in the correlation signal with respect to time is the correlation function of the two variables.

3,459,931  
METHODS OF AND APPARATUS FOR THE  
CORRELATION OF TWO VARIABLES  
William Edward Lerwill, Keston, and Nigel Allister Anstey, Chelsfield, England, assignors to Seismograph Service Corporation, Tulsa, Okla.  
Application May 1, 1963, Ser. No. 277,211, now Patent No. 3,371,196, dated Feb. 27, 1968, which is a continuation-in-part of application Ser. No. 190,912, Apr. 30, 1962. Divided and this application Dec. 27, 1967, Ser. No. 693,799  
Claims priority, application Great Britain, May 8, 1961, 16,687/61

Int. Cl. G06f 15/34  
U.S. Cl. 235—181

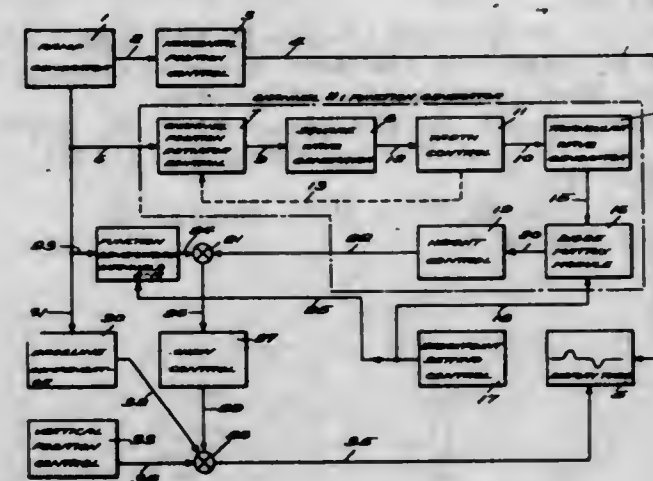


A method and apparatus for correlating two variables using a printed circuit having a waveform corresponding to one of the two variables. The other variable, which may be recorded along a magnetic tape or the like, is compared with the first variable, for example, by moving the tape past the printed circuit. The total voltage induced

in the waveform of the printed circuit is measured continuously to determine the correlation between the variables.

3,459,932  
CURVE RESOLVER  
Abram D. Huey III, East Bradford Township, and John D. McGhee, Plymouth Meeting, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
Filed Oct. 7, 1966, Ser. No. 585,138  
Int. Cl. G06f 15/34; G06g 7/28  
U.S. Cl. 235—197

23 Claims

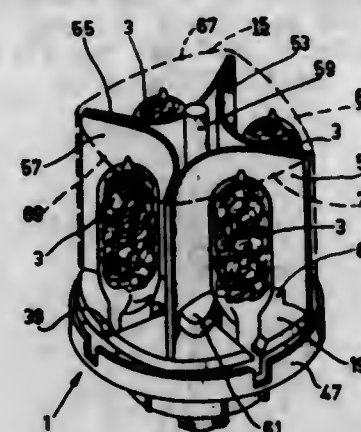


An analog system involving primarily a number of function generating circuits operably coupled to a display tube through diode matrix circuits so that a visible curve trace of variable shape can be generated and matched with an experimental curve plot by using a mirror system to superimpose the images of both and by varying the shape of the curve trace to coincide with that of the experimental plot. Each function generating circuit generates a triangular wave and each diode matrix circuit adjustably varies the slope of that wave at a predetermined breakpoint along the triangular wave. Providing a number of such circuits allows substantially complete resolution of the components of the experimental plot.

3,459,933  
FLASH LAMP HOLDER FOR USE WITH A CAMERA  
Cornelis Prijs, Emmasingel, Eindhoven, Netherlands, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware  
Filed Nov. 30, 1966, Ser. No. 597,969  
Claims priority, application Netherlands, Nov. 30, 1965, 6515520

Int. Cl. G03b 15/05  
U.S. Cl. 240—13

8 Claims



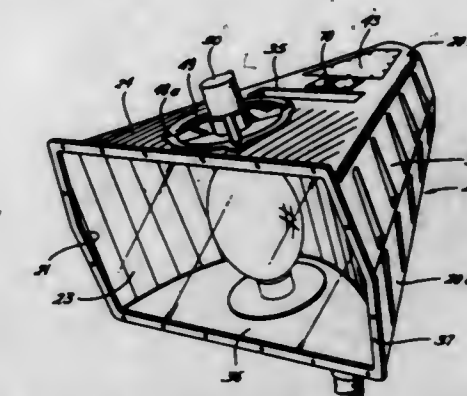
A device for holding a plurality of flash lamps is rotatably secured to a camera for successive firing of the lamps. The device has radial slots, and an annular member with recesses, the member being rotatable to a first position

where its recesses are aligned with the slots permitting insertion of the lamps, or to a second position where the recesses and slots are unaligned for locking the lamps in the slots. Electrical connection means are provided for successively firing the lamps.

3,459,934  
LIGHT FIXTURE  
Buell Moore, Houston, Tex., assignor to Esquire Inc., New York, N.Y., a corporation of Delaware  
Filed Jan. 12, 1967, Ser. No. 608,830  
Int. Cl. F21p 5/00

U.S. Cl. 240—3

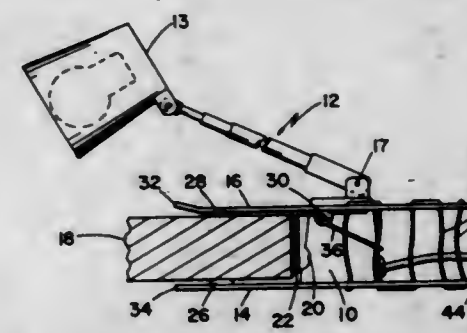
19 Claims



A light fixture which is divided into front and rear compartments by a flue extending through an intermediate portion of it. A socket mounts a lamp between a reflective surface and a window in one side of the front compartment, a ballast and capacitor are in the rear compartment, and the housing is prewired between the socket and the ballast and capacitor. There are parts opposite the socket for alternately closely fitting either about a protuberance on or a depression within the opposite end of the lamp. The housing comprises identical sections releasably connected along edges lying in a plane transverse to the lamp. Both the socket and the parts closely fitting the opposite end of the lamp are mounted on identical covers for openings in the housing of a size to pass the lamp.

3,459,935  
LIGHTING  
John M. R. Bruner, 4 School St., Groton, Mass. 01450  
Filed Apr. 6, 1967, Ser. No. 629,017  
Int. Cl. F21v 21/02, 21/06  
U.S. Cl. 240—52

3 Claims



A portable light comprising a lamp, a base and three clamping members. One clamping member is firmly secured to the base and another is pivotally mounted above it. A third member extends from this second member toward the first and cooperates with the base to provide a second clamp. The base houses a step-down transformer and the fulcrum of the second clamping member is directly above the center of gravity of this base. Laces between the clamping members serve as portions of a cord spool.



3,459,936

**LUMINAIRE FIXTURE**

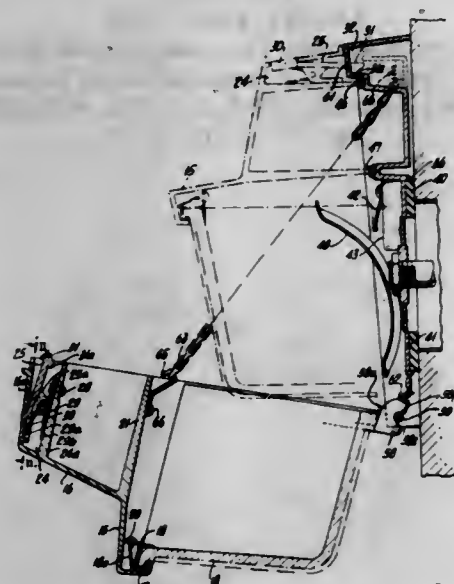
Kenneth F. Miller, Newark, Ohio, assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 25, 1966, Ser. No. 545,074

Int. Cl. F21v 3/00, 21/02, 21/00

U.S. Cl. 240—73

8 Claims



A luminaire fixture is provided with ballast and other electrical components being housed in a sealed compartment separate from a compartment which houses the lamp and reflector which latter compartment is also sealed. A separate sealed compartment is also provided for the latching mechanism. The compartments are formed by juxtaposed mounting and door portions with the door portion having a refractor in an aperture thereof, the peripheral portions of the refractor and aperture also being sealed. Hinging, latching and refractor mounting elements are also provided.

3,459,937

**SELF-CHECKING SYSTEM FOR A VEHICLE SEPARATION SYSTEM**

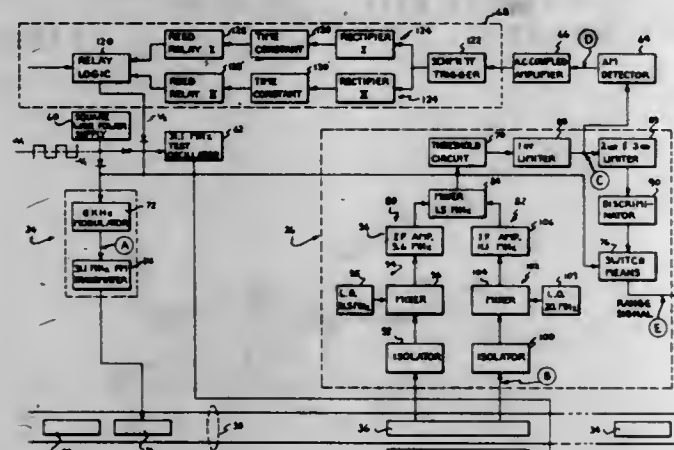
Norman C. Gittinger, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed May 19, 1967, Ser. No. 639,838

Int. Cl. B61l 21/00; G01s 7/40

U.S. Cl. 246—34

20 Claims



A vehicle separation ranging system, employing a way-side transmission line from which transmitted and reflected energy is coupled to separate channels of a range receiver by a directional signal extracting device, has a self-checking system incorporated therewith arranged to provide for two modes of operation—a normal ranging mode and a checking mode—which occur alternately at a preselected repetition rate. During one mode, modulated carrier energy is supplied to the transmission line and during the other mode, unmodulated test carrier energy

(of same frequency) is supplied to the reflected energy end of the directional signal extracting device. An amplitude modulation detector is provided in the reflected signal channel of the receiver and arranged in combination with an A-C amplifier and a logic arrangement so that in the absence of an actual reflected signal in excess of a preselected level, the transmitted energy is caused to be modulated continuously rather than alternately to create a simulated range signal.

3,459,938

**METHOD AND APPARATUS FOR DETERMINING THE INORGANIC CARBON CONTENT IN A LIQUID**

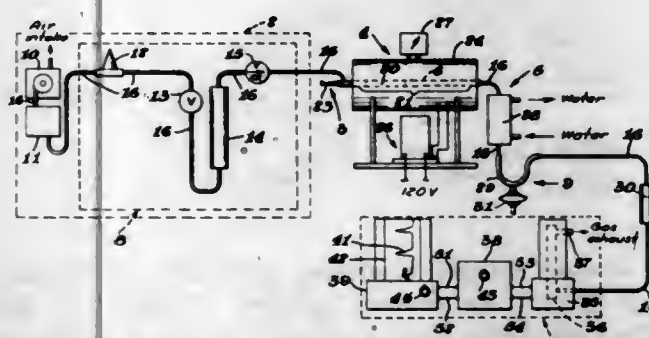
Vernon A. Stenger and Clayton E. Van Hall, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Continuation-in-part of application Ser. No. 489,252, Sept. 22, 1965. This application Feb. 1, 1968, Ser. No. 709,157

Int. Cl. G01n 21/26; H01j 37/24

U.S. Cl. 250—43.5

21 Claims



This invention relates to an analytical method and apparatus for determining the inorganic carbon content of a liquid, usually by passing a carrier gas stream substantially free of carbon dioxide through a heating conduit having a heating zone at a temperature above about 100° C. and below that temperature at which organic components of the liquid undergo decomposition, within which heating zone there is an acid-surfaced, carbonate-reactive body, forcibly injecting a small predetermined amount of the liquid to be analyzed onto the carbonate-reactive body, and then sweeping the gaseous product formed in the heating zone into an analyzer for quantitatively indicating the carbon dioxide content of a gas stream alternatively, the carrier gas may be used only to sweep the gaseous reaction products and un-reacted sample from the conduit to the analyzer.

3,459,939

**RADIATION THERAPY OPERATING TABLE WITH MOVABLE HALF SECTIONS**

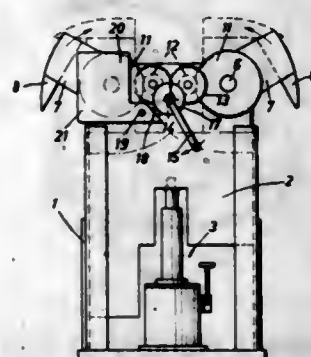
Hans Wallachmiller, 8 Am Furstenhaule, 7758 Meersburg, Germany

Filed Oct. 3, 1967, Ser. No. 672,536

Int. Cl. G01n 23/00

U.S. Cl. 250—54

6 Claims



An operating table, particularly for radiation therapy which comprises a frame, and an end plate guided along

the frame. A table is divided along its central longitudinal axis to form two table halves supported by the end plate. Means for moving the two table halves in crosswise direction are arranged in order to move laterally the table halves and to move a patient to a rollable support disposed below the table halves.

3,459,940

**PORTABLE ELECTROSCOPE TYPE DOSIMETER**

Robert George Bryer, Ashted, Surrey, England, assignor to R. A. Stephen & Company, Limited

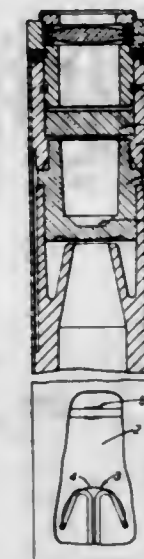
Filed Nov. 30, 1965, Ser. No. 526,919

Claims priority, application Great Britain, Dec. 1, 1964, 48,867/64

Int. Cl. G01t 1/16

U.S. Cl. 250—83.3

11 Claims



There is disclosed a portable dosimeter of the electroscope type in which an electroscope having a movable member responsive to an electric charge, a translucent member bearing a graticule and a lens system imaging the movable member on the graticule are disposed in optically aligned relationship in a sealed tubular member. An eyepiece for viewing the image is exchangeably insertable into the end of the tubular member adjacent to the translucent member therein so as to engage wall surfaces of the tubular member in sealing engagement. Locating means including mating surfaces are provided for limiting the depth of insertion of the eyepiece into the tubular member to an axial portion in which the eyepiece is focused upon the image of the movable member. Due to the exchangeable mounting of the eyepiece, the same eyepiece can be used for reading any number of dosimeters. As the eyepiece is an expensive component of a dosimeter, the possibility of using the same eyepiece for a plurality of dosimeters represents a considerable saving.

3,459,941

**INSTANTANEOUS OVERLOAD PROTECTOR FOR AN X-RAY TUBE RESPONSIVE TO A COMBINATION OF TUBE FACTOR SETTINGS**

Gilbert E. Redzinski and Joseph P. Soltis, Jr., Milwaukee, Wis., assignors to General Electric Company, a corporation of New York

Filed Oct. 24, 1966, Ser. No. 588,829

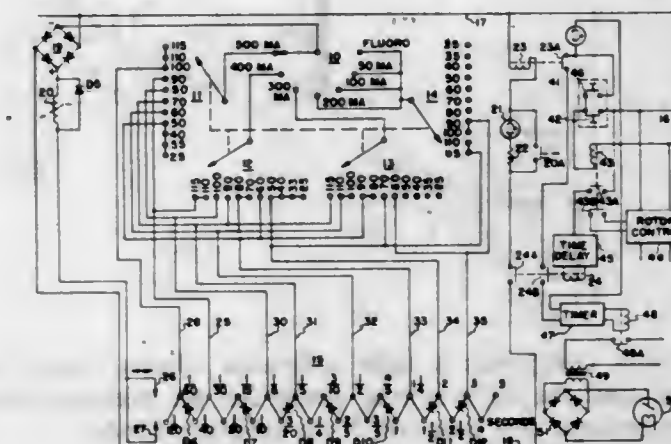
Int. Cl. H05g 1/28

U.S. Cl. 250—95

5 Claims

In a system for prohibiting energization of an X-ray tube, if the combination of the tube factor settings would constitute an instantaneous overload on the tube, a time selector switch is provided having an open ended series of spaced apart stationary contacts with diodes connected between certain of the stationary contacts in a common

direction and direct connections between the other contacts and a movable contact for supplying a D-C voltage selectively to the stationary contacts. The system includes tube factor selector switches which are connected in series



with the time selector switch in certain positions of said movable contact. An overload responsive means is energized when a series circuit is completed through all of said switches.

3,459,942

**HIGH FREQUENCY LIGHT SOURCE**

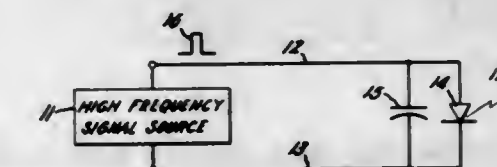
Jon E. Anderson, Madison, Wis., assignor to General Electric Company, a corporation of New York

Filed Dec. 5, 1966, Ser. No. 599,272

Int. Cl. H04b 9/00; H01s 3/00

U.S. Cl. 250—199

1 Claim



A high frequency pulse light communication system includes a low impedance transmission line having a source of high frequency pulse signals driving it at one end and a light emitting semiconductor laser diode shunted by an impedance matching capacitor terminating the other end of the line.

3,459,943

**SILICON CONTROLLED RECTIFIER GATING CIRCUITS WITH A HIGH FREQUENCY TRIGGERING VOLTAGE AND PHOTOCELLS**

John D. Harnden, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Feb. 6, 1967, Ser. No. 614,122

Int. Cl. H01j 39/12

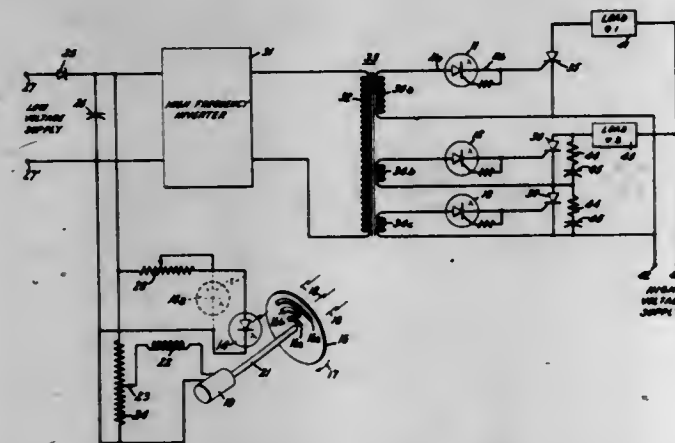
U.S. Cl. 250—208

7 Claims

A family of low cost, light activated gating circuits are described for gating on power semiconductor of the thyristor type. The gating circuits include a light source for emitting light within the portion of the spectrum to which the light activated control elements respond together with means such as a fiber optic element for directing light from the light source onto the light sensitive surface of the light activated control element. Variable light interrupting means, such as a rotating apertured disk, are interposed in the light path between the light

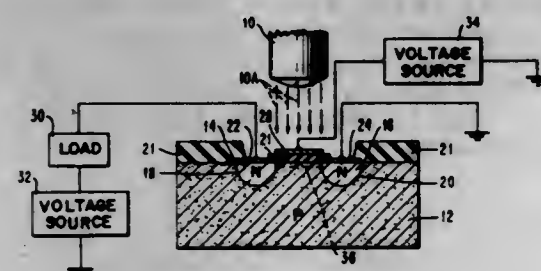


source and the light sensitive surface of the light activated control element for controlling turn on of the light activated control circuit. The light activated control element



preferably comprises a light activated silicon controlled rectifier and the light source comprises an injection electroluminescent p-n junction light emitting diode.

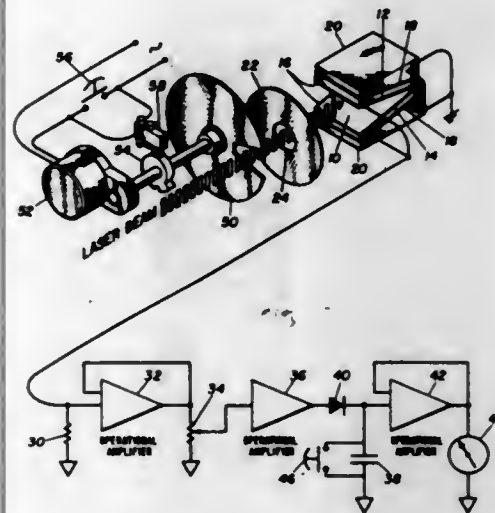
**3,459,944**  
**PHOTOSENSITIVE INSULATED GATE FIELD EFFECT TRANSISTOR**  
Sol Triebwasser, Peekskill, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Jan. 4, 1966, Ser. No. 518,643  
Int. Cl. H01J 11/14, H01J 39/12  
U.S. Cl. 250-211 1 Claim



A photosensitive field effect device is formed of a body of p type silicon with two separated n regions at one surface of the body, which are connected to source and drain electrodes for the device. A gate electrode is affixed to the body bridging the area between the two n regions and this gate electrode is separated from the silicon by a layer of insulating material. The device is prepared so that a channel extending between the two n regions beneath the gate electrode is in the form of an inversion layer which is n type so that there is normally a current path from the source to drain. Radiant energy is applied to this channel through the gate electrode which is transparent to the radiant energy. The device is controlled by the combination of the input radiant energy and the input voltage applied to the gate electrode. These inputs control the conductivity of the channel and modulates the current through a load which is connected in a source and drain circuit. In the preferred mode of operation, the voltage at the gate electrode is maintained sufficiently high so that the channel is rendered nonconductive. The channel remains nonconductive even when a signal is applied by a signal source to the gate electrode to lower the voltage at that electrode. Conduction through the channel and, therefore, through the load is produced only when radiant energy is also applied in combination with the application of the signal to the gate electrode. The radiant energy, of and by itself, is not sufficient to produce conduction in the presence of bias voltage on the gate unless the signal source is also activated to apply a

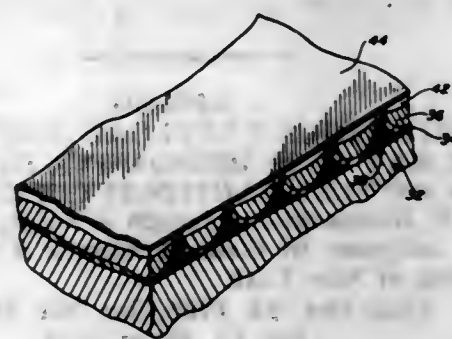
signal to the gate at the same time that the radiant energy is applied. Since the gate is insulated from the body, the control circuit for the gate does not produce any continuous current in the device.

**3,459,945**  
**LASER CALORIMETER WITH CAVITATED PYRO-ELECTRIC DETECTOR AND HEAT SINK**  
Robert W. Astheimer, Westport Township, Fairfield County, and Robert E. Buckley, Norwalk, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware  
Filed Nov. 7, 1966, Ser. No. 592,534  
Int. Cl. G01J 5/12  
U.S. Cl. 250-211 2 Claims



A laser calorimeter is formed from pyroelectric material in the shape of a cavity and having electrodes on both the inside and outside. The inside electrode is blackened so as to better absorb radiation while the outside electrode is in good thermal contact with a heat sink to dissipate thermal energy. A shutter is provided when it is desired to measure continuous wave lasers.

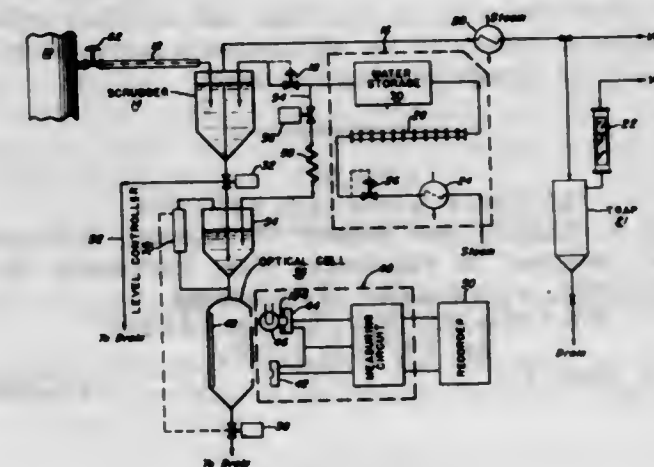
**3,459,946**  
**SOLID STATE STORAGE DEVICE**  
Roy J. Lahr, Penfield, Paul F. Evans, Pittsford, and Harold D. Lees, Henrietta, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York  
Continuation-in-part of application Ser. No. 692,049, Dec. 20, 1967. This application July 5, 1968, Ser. No. 747,043  
Int. Cl. H01J 31/58  
U.S. Cl. 250-213 12 Claims



A method of producing a solid state image pick-up and storage device is disclosed herein. This method involves positioning a plurality of fine conductive wire on an adhesively-coated supporting substrate, each of said wires being coated with an insulative material, abrading the surface of the wires to expose the conductive portions

thereof, etching away a portion of the conductive material of each wire while leaving the insulative material intact, filling the space between the insulative material with an electroluminescent phosphor, and coating the phosphor-insulative material surface with a field-effect semiconductor layer. The supporting substrate can take numerous configurations, for example, a cylindrical drum, an endless flexible belt, a flat plate, etc. When the storage device is produced on a flexible, non-planar surface, it may be utilized in that configuration or may be cut parallel to the axis thereof and opened up to form a flat storage panel. Individual conductive wires may be exposed to allow for suitable electrical connections. A keyboard input display device utilizing this storage device configuration is also described.

**3,459,947**  
**RADIATION SENSITIVE APPARATUS FOR ANALYZING GAS**  
Wendell P. Cropper, Olympia Fields, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana  
Continuation-in-part of application Ser. No. 468,750, July 1, 1965. This application July 17, 1968, Ser. No. 745,395  
Int. Cl. G01n 21/26, 21/22; B01d 53/00  
U.S. Cl. 250-218 18 Claims

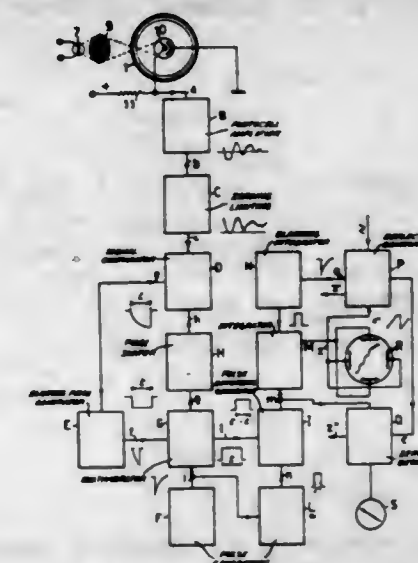


A method and apparatus for determining the concentration of solid particulate matter suspended in a carrier gas where the carrier gas is contacted with water to scrub the solid particulate matter from the gas to form an aqueous suspension thereof. The amount of light transmitted through a sample of the aqueous suspension is then compared with the amount of light transmitted through an identical sample of pure water. The difference in light transmission is a measure of the amount of solid particulate matter in the aqueous suspension. The concentration of solid particulate matter in the carrier gas can then be determined from the quantity of gas contacted with the water.

**3,459,948**  
**PROCESS FOR QUANTITATIVELY MEASURING THE COLOR DENSITY OF STAINED STRIPS**  
Gino Cosci, % Dr. Mario Piana, Corso Venezia 35, Milan, Italy  
Filed Apr. 14, 1965, Ser. No. 448,140  
Claims priority, application Italy, Apr. 30, 1964, 46,720/64; Mar. 4, 1965, 1,952/65  
Int. Cl. G01n 21/30  
U.S. Cl. 250-219 6 Claims

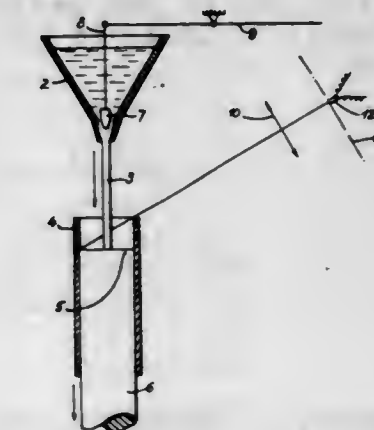
A process for the quantitative evaluation of the relative amounts of color deposited in bands on a strip such as is produced by several electrophoretic separation systems or other chromatographic processes. The operating principle of the process is the cyclic optical analysis of

the strip, the results of the analysis being continuously available. A curve related to the color distribution along the strip is projected on the screen of a cathode ray tube



enabling the operator to set suitable integration limits. An electronic computer gives directly the relative amounts of color of the bands of stain, without auxiliary calculations.

**3,459,949**  
**DETECTION OF THE LEVEL OF THE METAL BATH IN THE MOULDS FOR CONTINUOUS CASTING**  
Pierre Poncet, 54 Rue du Professeur Florence, Lyon, France  
Filed Dec. 1, 1964, Ser. No. 415,100  
Int. Cl. H01J 39/12  
U.S. Cl. 250-222 4 Claims



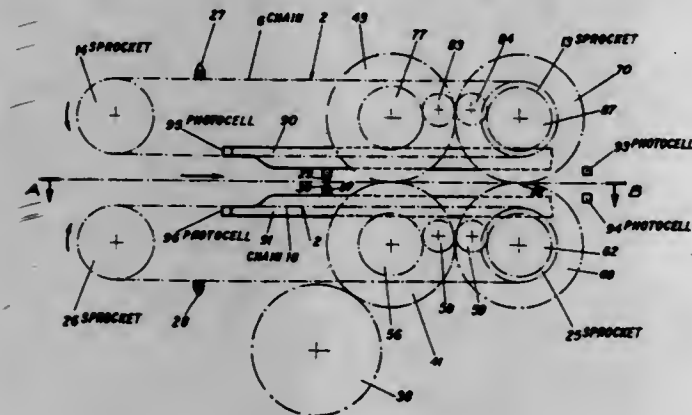
In the photo-electric detection of level variations within the mould of a continuous casting machine, there is formed an optical image of the upper surface of the molten bath within the mould, as for instance by means of an objective lens, and the cell is disposed on a spot of this image, as far as possible from the image of the jet of molten metal flowing into the mould, so as to be exclusively influenced by level variations and not by the jet itself.

**3,459,950**  
**APPARATUS FOR A STOPPAGE-FREE PROCESSING OF WEBS OR FOR A STOPPAGE-FREE PROCESSING OR HANDLING OF WORKPIECES**  
Horst Schneider, Lengerich, Germany, assignor to Windmoller & Holcher  
Filed July 24, 1964, Ser. No. 384,938  
Claims priority, application Germany, June 2, 1964, W 36,909  
Int. Cl. H01J 39/12; G06m 7/00  
U.S. Cl. 250-223 4 Claims

An apparatus for a stoppage-free processing of webs in adjustable processing stations or for a stoppage-free processing or handling of workpieces, which are set in



variable lengths or with variable spacings. The apparatus comprises at least two conveyor elements arranged parallel to one another and means driving said elements at different speeds in such a manner that the conveyor elements are driven at an increased follow-up speed after



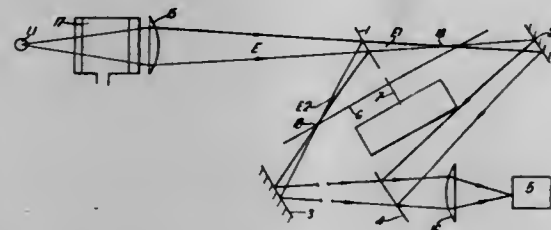
completing the processing or handling operation performed by the respective tool and are retarded to the speed of the web or workpieces when the tool has the desired spacing from the tool of the respective other conveyor element.

3,459,951

#### PHOTOMETRIC ANALYZER FOR COMPARING ABSORPTION OF WAVELENGTH OF MAXIMUM ABSORPTION WITH WAVELENGTH OF MINIMUM ABSORPTION

John Joseph Howarth and Harold Meredith Stanler, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed Sept. 15, 1965, Ser. No. 487,445  
Claims priority, application Great Britain, Sept. 15, 1964, 37,623/64; May 17, 1965, 20,734/65  
Int. Cl. H01j 5/16; G01d 5/36; G01j 3/48  
U.S. Cl. 250—226 7 Claims



There is provided a photometric analyzer wherein radiation from a single source traverses a single optical path through a single absorption cell which is adapted to contain the sample to be analyzed and is received by a single detector. The radiation from the single source is divided into two beams, each of which traverse different preselected wavelengths by passing through appropriate filters. After acquiring the different wavelengths the two beams are combined and passed along a single optical path through the sample to be analyzed. A shutter causes the two beams to be alternately received by the detector.

3,459,952

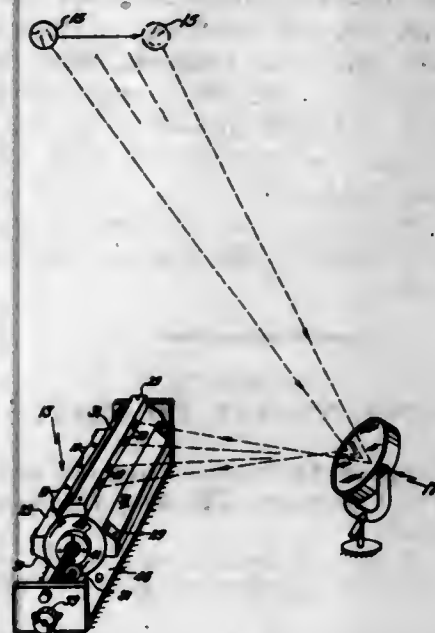
#### ROTATING DRUM SCANNER HAVING SCANNING BLOCKS ON SURFACE

Mahlon S. Hunt, Framingham, Michael S. Tavenner and Theodore E. Wirtanen, Chelmsford, and Robert L. Iliff, Canton, Mass., assignors to the United States of America as represented by the Secretary of the Air Force

Filed June 21, 1967, Ser. No. 648,540  
Int. Cl. H01j 39/12

U.S. Cl. 250—236 3 Claims  
A scanning device including a constant speed rotating drum having a plurality of aiming blocks attached to the outer surface thereof with longitudinally coplanar open-

ings therein for receiving light from an image and mirrors for reflecting the image toward corresponding fixed photosensors within the rotating drum, each photosensor



producing a signal to indicate when the image is in optical alignment with the openings and auxiliary equipment to supply power to the photosensors and to amplify and record the signals from each channel.

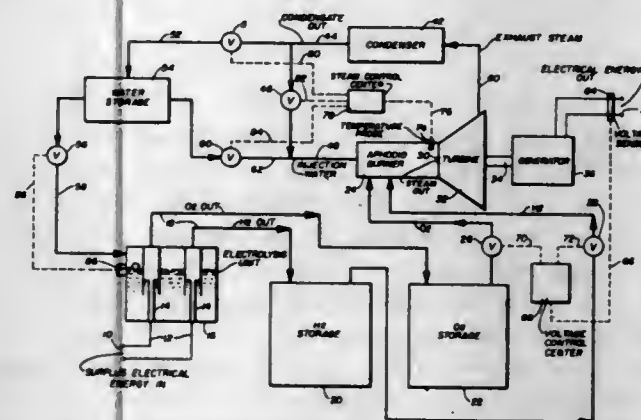
3,459,953

#### ENERGY STORAGE SYSTEM

William L. Hughes and Stanley O. Brauser, Stillwater, Okla., assignors to Oklahoma State University, Stillwater, Okla., a corporation of Oklahoma

Filed Mar. 20, 1967, Ser. No. 624,276  
Int. Cl. F01k 17/02

U.S. Cl. 290—2 8 Claims



This invention provides a system for storing surplus electrical energy and for generating electrical energy from such stored surplus as conditions require. The system includes an electrolysis unit wherein surplus electrical energy is utilized to generate hydrogen and oxygen from water. The hydrogen and oxygen are separately stored under pressure. When energy is required from the system the hydrogen and oxygen are reacted to produce superheated steam in an aphodid burner. Steam from the burner is connected directly to a turbine which drives a generator. By a condenser system the exhaust steam from the turbine is condensed into water and a portion of the water reinjected into the aphodid burner to control the temperature of the steam entering the turbine. The other portion of the water from the condenser is being returned to a water storage container for usage to maintain the water level in the electrolysis unit. The system may be arranged to be completely closed.

3,459,954

#### DEVICE FOR INTERRUPTING THE FLOW OF ELECTRICAL CURRENT IN MOTOR VEHICLES

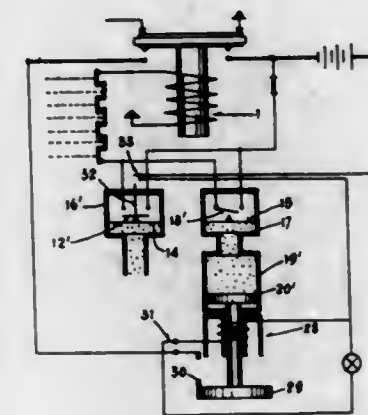
Ero Sgorbani, 40 Via XX Settembre, Florenzuola, d'Arda, Piacenza, Italy

Filed Apr. 6, 1966, Ser. No. 540,637

Claims priority, application Italy, Apr. 10, 1965, 757,360

Int. Cl. H02j 1/04

U.S. Cl. 307—10 3 Claims



An on-off electrical switch opens and closes the circuit from the positive terminal of the battery used with an internal combustion engine. An electromagnet, that is connected to the positive terminal of the battery, is energized by the passage of electrical current which is determined and controlled by the switch. In one embodiment, the switch is first actuated by the fluid of a manually operated auxiliary pump and then by the pressure of the oil circulating in the engine.

3,459,955

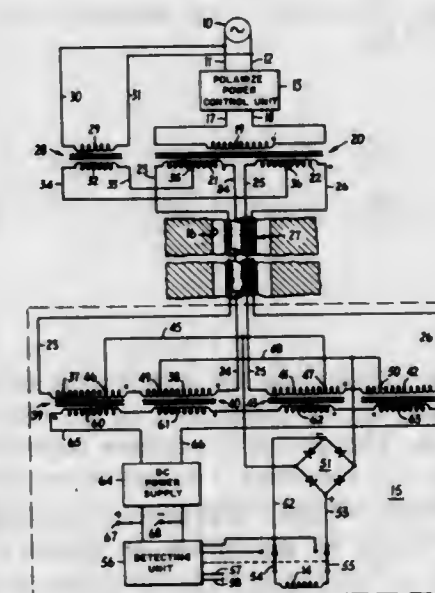
#### ELECTRIC POWER TRANSMISSION SYSTEM FOR WELL LOGGING

Loyal L. Hurlbert, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Aug. 2, 1966, Ser. No. 569,722

Int. Cl. H02j 3/02

U.S. Cl. 307—12 3 Claims



In the particular embodiment of the invention described herein, two different types of electrical power are supplied through a four-conductor cable by connecting two secondary coils of a first transformer to two pairs of cable conductors, respectively, and the secondary coil of another transformer between center taps on the two secondaries of

the first transformer. At the other end of the cable, the pairs of conductors are each connected across the primaries of a pair of transformers and the oppositely wound secondaries of both pairs of transformers are connected in series to produce one type of electrical power. Appropriately positioned taps on the primaries of the transformer pairs provide the other type of power.

3,459,956

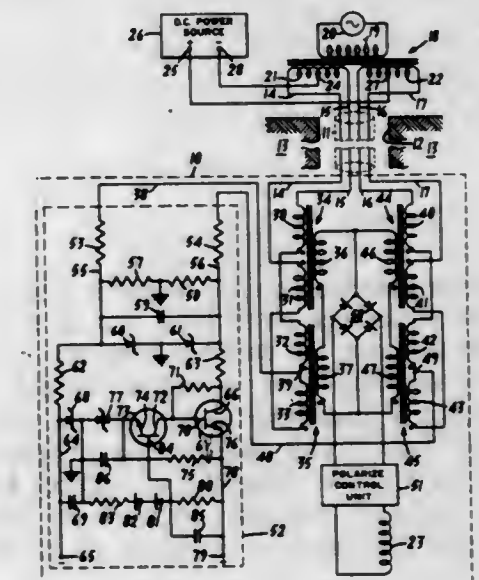
#### POWER SUPPLY SYSTEM FOR WELL LOGGING

George W. Brock, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Aug. 25, 1966, Ser. No. 575,035

Int. Cl. H02j 3/02

U.S. Cl. 307—22 5 Claims



In the particular embodiment of the invention described herein, alternating current is transmitted to an instrument in a well bore over two pairs of conductors connected to two transformer secondaries and a direct current source is connected between center taps on the transformer secondaries. Within the instrument four transformers have windings with taps arranged to separate the alternating current power and the direct current power.

3,459,957

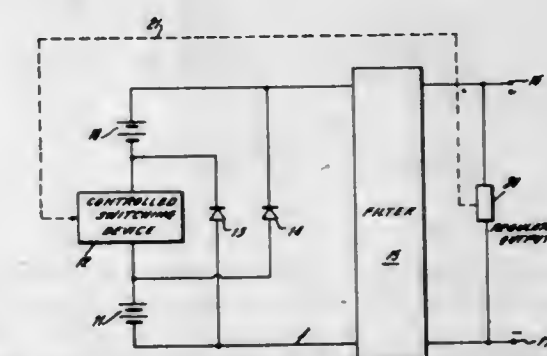
#### VOLTAGE REGULATOR CIRCUIT

Thomas Ray Kelley, Audubon, N.J., assignor, by mesne assignments, to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware

Filed July 19, 1967, Ser. No. 654,617

Int. Cl. H02m 3/08

U.S. Cl. 307—71 5 Claims



This invention relates to a novel voltage regulator circuit for regulating the output voltage of a plurality of



D-C power sources, and more specifically relates to a novel voltage regulator circuit for a plurality of D-C power sources which synchronously rearranges the power sources from series to parallel circuit connections to obtain a desired average D-C voltage output.

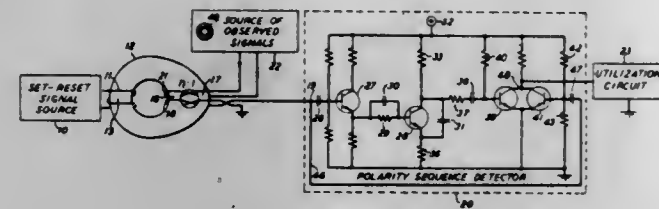
3,459,958

**TRANSFLUXOR CURRENT DETECTING CIRCUIT**  
Robert R. Schulz, Red Bank, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 30, 1966, Ser. No. 538,742  
Int. Cl. H01f 27/42, 35/00

U.S. Cl. 307—88

8 Claims



A transfluxor detecting circuit includes a biasing circuit to change the reluctance of at least one of two magnetic path sections defining the smaller aperture of the transfluxor. These sections have a known normal switching sequence when the transfluxor is set without bias. Current applied to the bias circuit changes the reluctance of the two sections so that the sequence of section switching is reversed. A polarity detector coupled to the sections responds to and indicates the sequence of section switching.

3,459,959

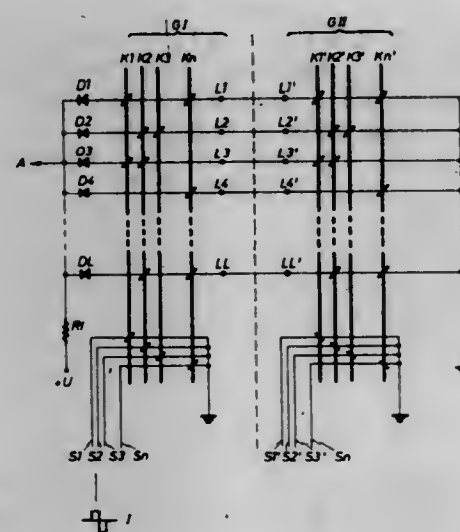
**INFORMATION COMPARING CIRCUITRY**  
Friedrich Ulrich, Stuttgart-Wellmendorf, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 27, 1965, Ser. No. 451,292  
Claims priority, application Germany, Apr. 28, 1964, St 22,043, St 22,044, St 22,045

Int. Cl. H03k 5/20

U.S. Cl. 307—88

16 Claims



An information comparing circuitry utilizing magnetic crosspoint elements wherein one of the information items is used to control the comparing circuitry, thereby eliminating costly external control circuitry in the comparison of the information items.

**HIGH ENERGY PULSE GENERATOR UTILIZING A DECOUPLING TRANSFORMER**

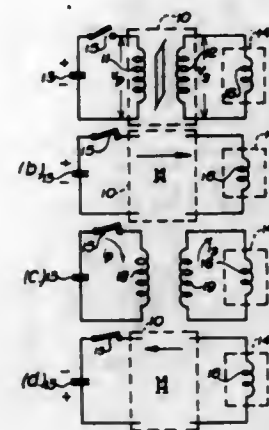
Kristian Asland and Oved S. Zucker, Livermore, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed May 2, 1967, Ser. No. 635,985

Int. Cl. H03k 3/64

U.S. Cl. 307—108

13 Claims



A high energy pulse generator is disclosed wherein a unique saturable core transformer featuring enhanced decoupling during saturation is arranged between a charged capacitor and a load for automatically producing time-separated rectangular voltage pulses of alternately opposing polarity across the load. Furthermore, an embodiment of the invention is described in which a short duration, high energy trapezoidal current pulse is generated in an inductive load.

3,459,961

**MOVEMENT RESPONSIVE LIGHT CONTROL MEANS**

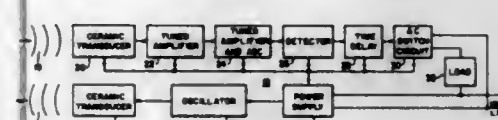
Richard J. Ravas, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 17, 1967, Ser. No. 631,455

Int. Cl. H02b 1/24; H03k 17/02

U.S. Cl. 307—116

7 Claims



A device for controlling the application of power to a load in response to the movement of an object within a prescribed area. The device comprises transmitter means for generating and radiating a sound wave having a substantially constant carrier frequency, means for receiving the sound wave and for producing an output signal in response thereto, a detector circuit connected to produce an output signal in response to doppler shifts in the frequency of the received sound wave caused by the object movement, a time delay circuit connected to produce a switching voltage in response to the detector circuit output signal, and to remove the switching voltage at a predetermined time after cessation of the movement causing the doppler shifts, and a switching circuit connected to apply and remove power to the load in respective response to the production and removal of the switching voltage.

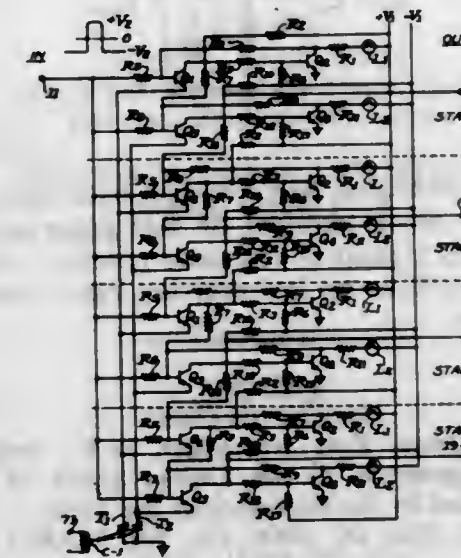
**n-STAGE COUNTER CIRCUIT FOR COUNTING n INPUT PULSES**

Norton W. Bell, Pasadena, Calif., assignor to Bell and Howell Company, Chicago, Ill.  
Filed Dec. 28, 1966, Ser. No. 605,477

Int. Cl. H03k 21/00, 23/08, 23/14

U.S. Cl. 307—220

13 Claims



There is herein disclosed a multi-stage parallel connected n-stage pulse counter for counting n input pulses and wherein each stage includes two bistable circuits. A single input terminal is resistively connected to all of the stages which are themselves resistively interconnected. A reset terminal is also connected to all of the stages each of which is selectively connected to a plurality of output terminals. The resistive connections between the stages are such that a pulse which turns on a prior stage also sets up the subsequent stage to be turned on by the next pulse.

3,459,963

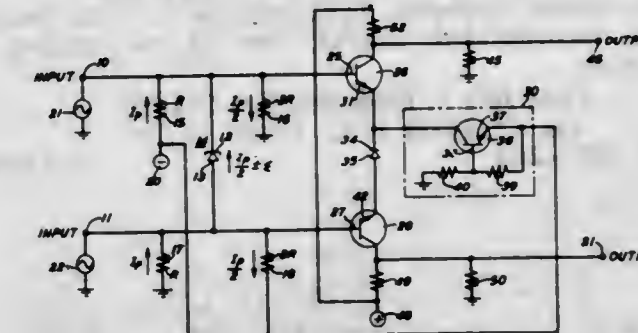
**BISTABLE DIFFERENTIAL CIRCUIT**  
Veikko R. Saari, Old Bridge, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 25, 1966, Ser. No. 537,404

Int. Cl. H03k 5/20

U.S. Cl. 307—235

1 Claim



1. A differential bistable circuit comprising, in combination, a tunnel diode having an anode and a cathode, a biasing network connected to said anode and cathode of said tunnel diode to maintain a predetermined current flow in said tunnel diode, two current input terminals a first connected to the cathode of said tunnel diode and the second connected to the anode of said tunnel diode, a difference circuit comprising two transistors each transistor having base, emitter and collector electrodes, a PN diode connecting the emitter electrodes of said transistors, means connecting the base electrode of a first and said transistors to the anode of said tunnel diode, means connecting the base electrode of the second and said transistors to the cathode of said tunnel diode, and means connecting the collector electrodes of said transistors to the output terminals.

base electrode of the second of said transistors to the cathode of said tunnel diode, a source of collector-emitter bias voltage connected to said collector electrodes of said transistors, a source of voltage connected to said emitter electrode of said second transistor and said cathode of said PN diode so that said first transistor is conducting when said tunnel diode is in its low voltage state and said second transistor is conducting when said tunnel diode is in its high voltage state.

3,459,964

**DETECTING SYSTEM FOR A TRANSMITTED TELEGRAPH SIGNAL**

Kazuo Yoshida, 188 3-chome, Koenji, Suginami-ku, and Shinsuke Fukuiage, 1125 Matsumoto-cho, Suginami-ku, both of Tokyo-to, Japan

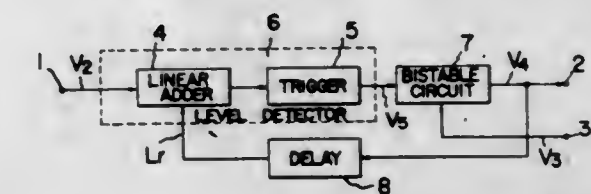
Filed Jan. 20, 1966, Ser. No. 521,871

Claims priority, application Japan, Jan. 25, 1965, 40/3,651

Int. Cl. H03k 5/20

U.S. Cl. 307—236

5 Claims



A detecting system for a telegraph signal transmitted through a telegraph pass-band narrower than twice the highest telegraph modulation frequency of the telegraph signal by use of a level detector for detecting the polarity of the difference between a level of each code element of the transmitted telegraph signal and a reference level, where the reference level is deviated upwardly or downwardly so as to assume one of two possible predetermined levels in accordance with the polarity of only the just preceding code element detected by the level detector. Alternatively, the reference level may be determined so as to assume one of three possible levels in accordance with the detected polarity of the just preceding code element and the previously detected polarity of the just succeeding code element.

3,459,965

**DIRECT COUPLED TRANSISTOR AMPLIFIER-LIMITER**

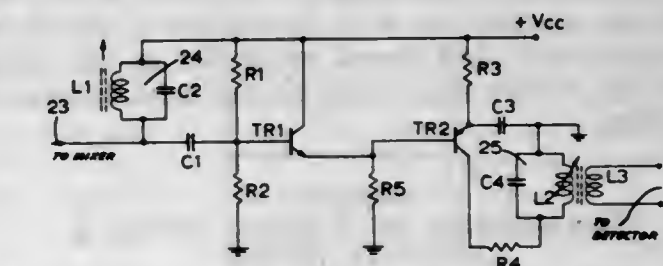
James E. McTaggart, Waterloo, Ontario, Canada, assignor to Electrohome Limited, Kitchener, Ontario, Canada

Filed May 9, 1966, Ser. No. 548,657

Int. Cl. H03k 5/08

U.S. Cl. 307—237

7 Claims



A direct coupled transistor amplifier-limiter for an F.M. receiver includes an NPN and a PNP transistor, the emitter of the first transistor being direct coupled to the base of the second. Input signals are applied to the base of the first transistor, and it is forward biased under no signal conditions, as is the base-emitter junction of the second transistor. Parallel tuned circuits are connected between the base and collector of the first transistor and the base-emitter junction of the second transistor.



between the emitter and collector of the second transistor. A tuned interstage coupling circuit is eliminated.

3,459,966

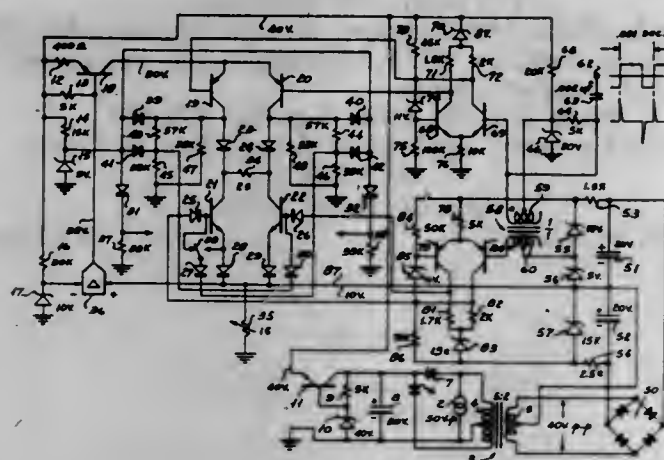
## LEAKAGE CURRENT ELIMINATION

Charles B. Brahm, Ellington, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed May 27, 1964, Ser. No. 370,550  
Int. Cl. H03k 17/16

U.S. Cl. 307—239

11 Claims



1. A switching circuit including in combination a first and a second transistor of one conductivity type, a third and a fourth transistor of the opposite conductivity type, each transistor having an emitter and a collector, a first and a second and a third and a fourth and a fifth and a sixth unilateral impedance each having a high back resistance, means connecting the four transistors in a bridge circuit having a first and a second input terminal and a first and a second output terminal, the emitters of the first and second transistors being connected to the first input terminal, the emitters of the third and fourth transistors being connected to the second input terminal, the collectors of the third and fourth transistors being connected to the respective first and second output terminals, the collectors of the first and second transistors being connected through the respective first and second impedances to the respective first and second output terminals, a load, means connecting the load between the output terminals, a resistor, means connecting the resistor to the second input terminal, a constant-current source, means connecting the source to the first input terminal, means including a transformer and the third and fourth impedances for selectively rendering the third and fourth transistors conductive, means including the fifth and sixth impedances for selectively rendering the third and fourth transistors nonconductive, means selectively rendering conductive and nonconductive the respective first and second transistors in synchronism with the respective fourth and third transistors, and means responsive to the voltage across the resistor for controlling the output current of the source.

3,459,967

## TRANSISTOR SWITCHING USING A TUNNEL DIODE

Leonard Johan Tummers and Adrianus Johannes Wilhelmus Marie van Overbeek, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 23, 1960, Ser. No. 71,344

Claims priority, application Netherlands, Dec. 11, 1959, 246,345

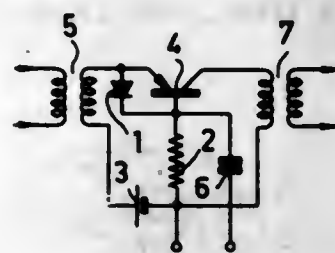
Int. Cl. H03k 17/58

U.S. Cl. 307—258

8 Claims

1. An electrical circuit comprising: a two-terminal device whose volt-ampere characteristic has two regions of

positive resistance separated by a region of negative resistance; an output terminal; a transistor connected in the common base configuration and having a collector-emitter path connected between said output terminal and one



3,459,968

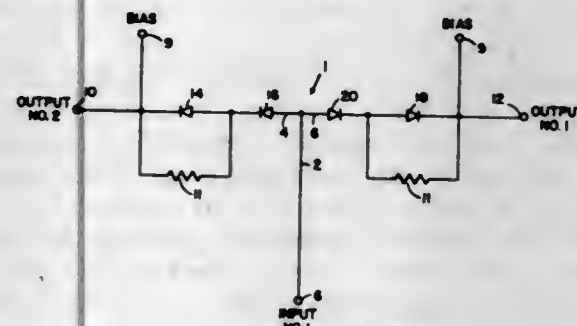
## DIODE SWITCH

Charles P. Kraus, East Northport, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed May 26, 1966, Ser. No. 553,611  
Int. Cl. H03k 17/56

U.S. Cl. 307—259

3 Claims



A single pole, double throw switch wherein pairs of diodes in the output arms of the switch are biased on and off to make circuit connections. One diode in each arm is shunted with a resistor thereby decreasing the loss in that particular arm when the diodes therein are biased off.

3,459,969

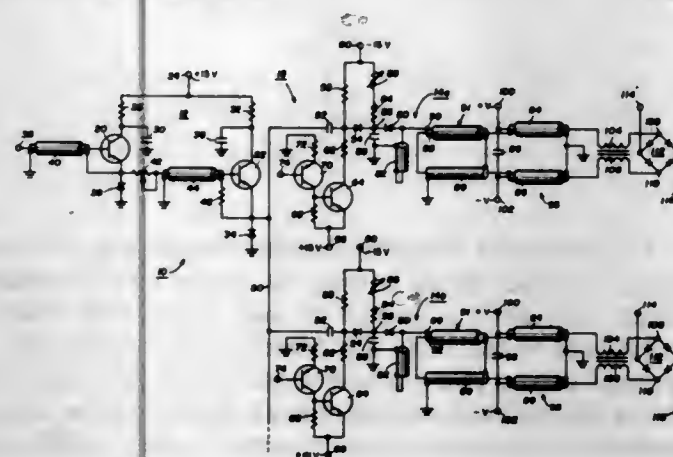
## SYSTEM FOR PRODUCING EQUAL AND OPPOSITE PULSES ON SELECTED CHANNELS

Leslie L. Jasper, Houston, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed July 1, 1966, Ser. No. 562,190  
Int. Cl. H03k 1/12, 17/00, 17/26

U.S. Cl. 307—262

7 Claims



A system including a plurality of voltage sampling diode bridges each having separate D.C. inputs for normally reverse biasing the diodes of each of the respective bridges 'off.' A separate pulse generator is coupled to each bridge

by a separate transformer. Equal and opposite pulses are applied to the respective D.C. inputs of the bridges to forward bias the diodes 'on' whenever the respective pulse generator is enabled by a logic level. Another pulse generator is coupled to all of the logically controlled pulse generators to operate the pulse generator that is logically enabled in synchronism with a timing pulse.

3,459,970

## TIMING NETWORK

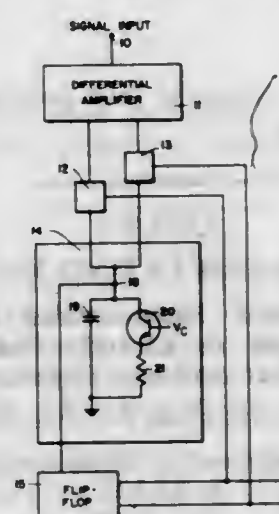
Hans R. Camenzind, Lexington, Mass., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed Feb. 2, 1966, Ser. No. 524,544

Int. Cl. H03k 1/14

U.S. Cl. 307—265

6 Claims



A circuit means for providing a pulse-width modulated output waveform from an input waveform including, in combination, a single timing network, a differential amplifier, a bi-stable multivibrator and a reset means.

3,459,971

## ADJUSTABLE PULSE GENERATING CIRCUIT INCLUDING PULSE SHAPING MEANS TO DECREASE PULSE RISE AND DECAY TIMES

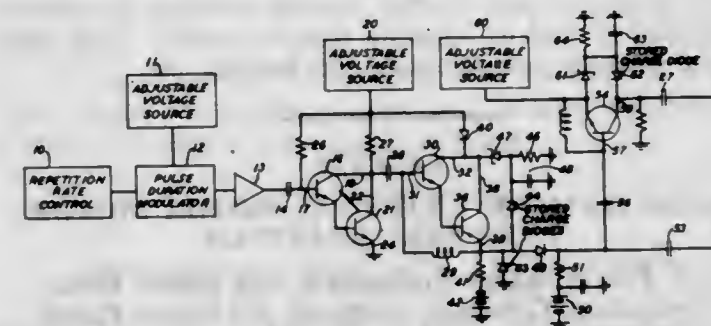
Ernam F. King, Allentown, Pa., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Mar. 22, 1967, Ser. No. 625,068

Int. Cl. H03k 5/02, 5/04

U.S. Cl. 307—268

7 Claims



A pulse generator, which permits the independent adjustment of pulse parameters including the pulse duration, repetition rate and amplitude, has pulse shaping circuitry utilizing stored charge diodes to reduce the pulse rise and decay time. The stored charge diode, used to reduce the pulse decay time, is clamped to a potential level differing from the adjustable potential level of the energizing source of the pulse shaping circuit by a fixed amount. This pre-

vents attenuation of the pulse output and readily permits the adjustment of the pulse amplitude through adjustment of the energizing potential.

3,459,972

## THYRISTOR SWITCH PULSE GENERATING CIRCUIT HAVING MEANS TO IMPROVE SHAPE OF OUTPUT PULSE

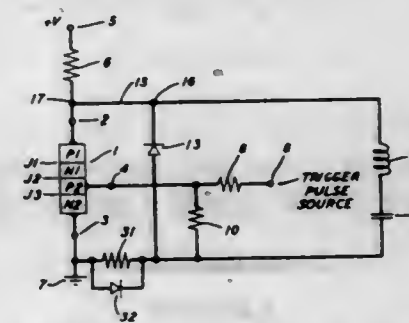
William B. Harris, Bernardsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Apr. 10, 1967, Ser. No. 629,711

Int. Cl. H03k 3/26

U.S. Cl. 307—284

10 Claims



The step voltage that appears at the top of a rectangular pulse produced by a switch circuit employing a single thyristor can be materially reduced by connecting a circuit comprising a resistor in parallel with a diode between the grounded cathode of the thyristor and the turn-off circuit.

3,459,973

## HIGH-SPEED BINARY COUNTER

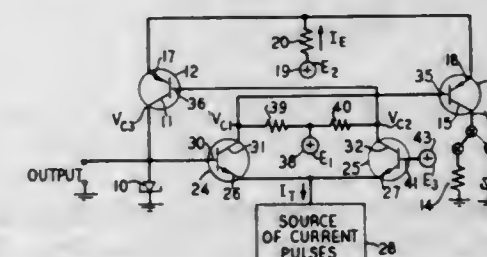
Werner Bleickardt, Red Bank, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Apr. 28, 1967, Ser. No. 634,536

Int. Cl. H03k 3/335

U.S. Cl. 307—286

1 Claim



A high-speed binary counter using a tunnel diode in the collector circuit of one transistor of an emitter coupled transistor pair which sets and resets the tunnel diode in accordance with the signals received from a second emitter coupled transistor pair, of complementary conductivity type with respect to said first transistor pair, acting as a gate and connected between the input signals and the base electrodes of the first transistor pair.

3,459,974

## HIGH SPEED BINARY FLIP-FLOP

George A. May, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Oct. 21, 1965, Ser. No. 500,000

Int. Cl. H03k 3/286

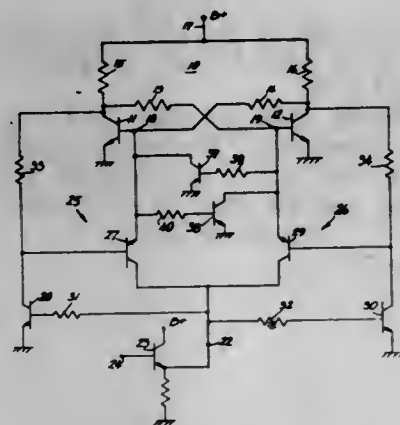
U.S. Cl. 307—292

4 Claims

A transistor flip-flop circuit in which trigger pulses are supplied to the bistable circuit through steering gates. Additional transistors are connected between the base of



each transistor in the bistable circuit and ground. These additional transistors are enabled selectively by the trigger pulse to provide a low impedance path to ground and assist in turning off the related transistor in the bistable pair.



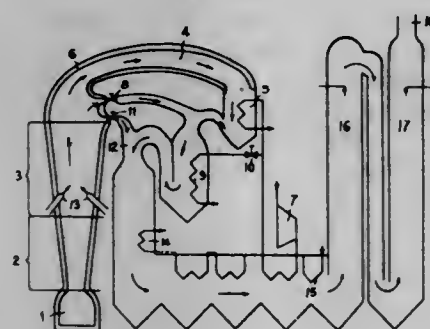
ger pulse to provide a low impedance path to ground and assist in turning off the related transistor in the bistable pair.

3,459,975

**METHOD FOR LOAD REGULATION OF MAGNETOHYDRODYNAMIC (MHD) POWER PLANTS**  
Manfred Rosner, Wettingen, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company  
Filed June 5, 1967, Ser. No. 643,569  
Claims priority, application Switzerland, June 29, 1966, 9,444/66

Int. Cl. G21d 7/02; H02k 45/00  
U.S. Cl. 310—11

5 Claims



A power plant system comprising in succession a combustion chamber, MHD converter, diffuser, two combustion air preheater units, with valve controlled by-pass ducts for decreasing the air preheat temperature with deviation from normal load, steam heating and seed reclaiming sections and a stack. The burners in the combustion chamber are distributed over its cross section with burners near the chamber wall operated with an air ratio greater than one and secondary air inlets are provided in the converter and diffuser walls.

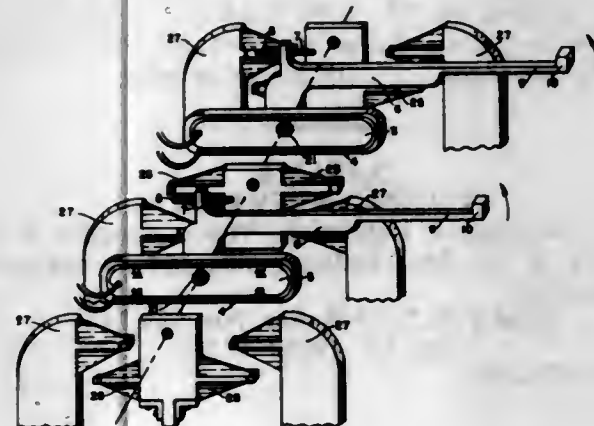
3,459,976

**ROTARY ELECTRODYNAMIC DRIVER**  
Alexander Nyman, Dover, Mass., assignor, by mesne assignments, to Mohawk Data Sciences Corporation, East Herkimer, N.Y., a corporation of New York  
Filed July 5, 1966, Ser. No. 566,703  
Int. Cl. H02k 35/04

U.S. Cl. 310—36

6 Claims

A flexible-shaft print hammer is arranged to pivot about a single axis and is actuated for printing by a coil connected to the hammer and wound to enclose the axis. The coil is suspended in two pairs of magnetic fields, each field running parallel to the axis and cutting a portion of the coil. Each pair of fields coats with a pair of



3,459,977

**VIBRATION-INSULATING MOUNTING**

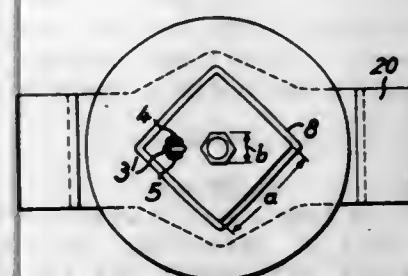
Hans-Joachim Janssen, Hundsmühlen über Oldenburg, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed July 26, 1966, Ser. No. 568,007

Claims priority, application Germany, July 26, 1965, L 51,223

Int. Cl. H02k 5/24, 5/00  
U.S. Cl. 310—51

5 Claims



Vibration-insulating mounting for the center point coupling of a fractional horsepower motor having a hub and a holding pin. The mounting has a flat, elastic, rubber motor support and coupling element with a polygonal outer contour, a non-circular central opening for receiving such hub and an opening spaced radially from such central opening for receiving the holding pin.

3,459,978

**NOISE DAMPED EXTERNAL ROTOR MOTOR WITH BALL BEARINGS**

Erich Trucks, Klaus Frohmüller, and Dieter Helms, Oldenburg, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed Oct. 12, 1965, Ser. No. 495,153

Claims priority, application Germany, Oct. 12, 1964, L 49,006

Int. Cl. H02k 5/24

U.S. Cl. 310—51

3 Claims

An external rotor motor suitable for use in office machines and sound reproducing equipment having at least one ball bearing rotatably supporting its rotor and a

bearing plate supporting each ball bearing. The bearing plate has a bore provided with axially extending cut-outs located about the periphery of the bore. The invention



includes an elastic inset interposed between each ball bearing and bearing plate for isolating the ball bearing noise.

3,459,979

**COOLING ARRANGEMENT FOR DAMPING WINDINGS OF DYNAMO-ELECTRIC MACHINES**

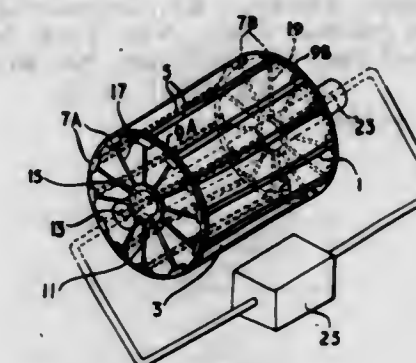
Clifford James Dickinson, Hillside, Rugby, and Noel John Carew, Rugby, England, assignors to Associated Electrical Industries, Limited, London, England, a British company

Filed Apr. 26, 1967, Ser. No. 633,734

Claims priority, application Great Britain, May 11, 1966, 20,965/66

Int. Cl. H02k 9/00, 9/20, 1/10  
U.S. Cl. 310—54

10 Claims



In a dynamo-electric machine a damper winding on the salient poles of the rotor of the machine is provided with ducts through which a cooling fluid is caused to flow. Header boxes which supply and collect the cooling fluid are of electrically conductive material and adapted to form end rings of the damper winding.

3,459,980

**PERMANENT MAGNET ALTERNATOR WITH MULTIPLE ROTOR**

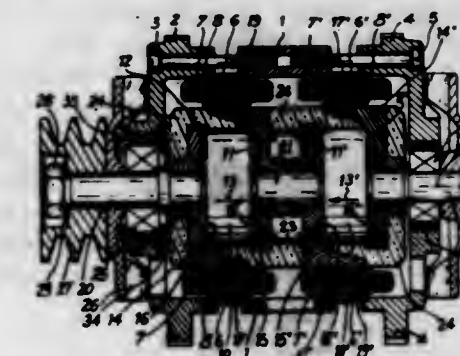
Pierre Coroller, Grenoble, France, assignor to Societe d'Etudes et de Recherches Magnetiques (Sermag), Saint-Martin d'Heres (Isere)

Filed Dec. 27, 1967, Ser. No. 693,809

Int. Cl. H02k 21/10, 23/60  
U.S. Cl. 310—114

1 Claim

An alternator includes at least two permanent magnet rotor portions of drum-like configuration. The terminal and intermediate claw-tooth pole pieces, made of soft magnetic material are used to enclose the rotor portions. Each pole piece includes a plurality of outwardly directed



magnetic light metal alloy is used to fill the gaps between the pole pieces and the rotor portion.

3,459,981

**SHADED POLE SYNCHRONOUS MOTOR**

Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed June 1, 1966, Ser. No. 554,371

Int. Cl. H02k 21/12, 21/04

U.S. Cl. 310—156

9 Claims



An electric motor is contained in a soft magnetic metal housing. A pair of stator members, having shading rings disposed on each of the members for developing a magnetic flux which lags the main flux induced therein to produce a rotating magnetic field, is disposed within the housing and fastened thereto. There is a field coil for providing an alternating magnetic flux and alternately changing the polarity of the stator members. The rotor of the electric motor is a squirrel cage rotor having a permanent magnet mounted thereon. The magnet means induces the motor to operate at a synchronous speed after it is started as a shaded pole motor.

3,459,982

**ELECTRIC MOTOR HAVING CLAW TOOTH TYPE STATOR**

Gaston Cartier, 8 Ave. de la Liberation, Cluses, Haute-Savoie, France

Filed Apr. 11, 1967, Ser. No. 630,054

Claims priority, application France, Apr. 18, 1966, 47,177

Int. Cl. H02k 23/40, 5/14

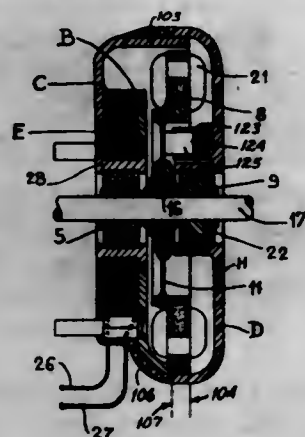
U.S. Cl. 310—164

1 Claim

An electric motor having a rotor within a claw tooth type stator. The stator includes two star shaped poles, each of which is provided with an outwardly extending arm. A winding arrangement is positioned between the



flat portions of said poles. Said rotor is provided with a disk-like commutator. A cap member closes the open end portion of said stator. The cap member supports the



brush units arranged to communicate with the commutator, and a housing unit encloses the above mentioned elements therein.

3,459,983

### COMMUTATOR SEGMENTS FOR DYNAMOELECTRIC MACHINES AND COIL END CONNECTORS

Roy Price Bowcott, Solihull, England, assignor to Joseph Lucas (Industries), Limited, Birmingham, England, a British company

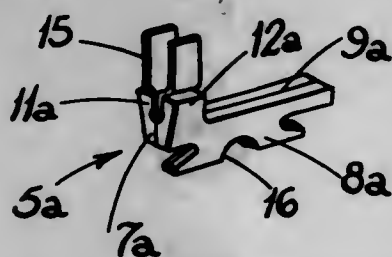
Filed Feb. 17, 1966, Ser. No. 528,305

Claims priority, application Great Britain, Feb. 18, 1965, 6,995/65

Int. Cl. H02k 13/04, 13/00

U.S. Cl. 310—234

3 Claims



In a commutator segment for a dynamoelectric machine of the kind in which a pair of parts are provided one being a mirror image of the other, with the parts interconnected in facial contact to define a surface over which the brushes move, the parts having a pair of arms upstanding therefrom as is usual. However, instead of receiving the windings directly, these parts receive an additional part in which the windings are received, giving an overall saving in material.

3,459,984

### MULTIPLIER LOGIC TUBE

Dale R. Koehler, 2208 Sockwell Drive SW.,

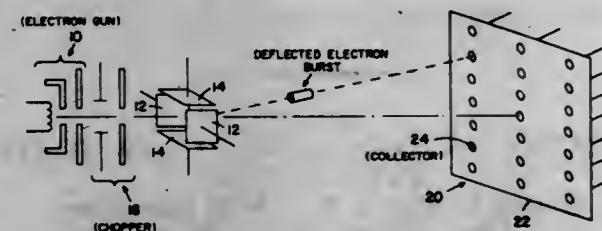
Huntsville, Ala. 35803

Filed Dec. 7, 1966, Ser. No. 599,978

Int. Cl. H01j 31/02

U.S. Cl. 313—73

1 Claim



An electron logic tube including an electron gun, chopper electrodes, vertical and horizontal deflection plates, and a novel receptor array. An input signal on the deflection plates serves to deflect an electron beam from the electron gun on a particular receptor which represents the product of the numbers represented by the input signal. The chopper electrodes allow the electron beam to pass only when a signal is present on the deflection plates.

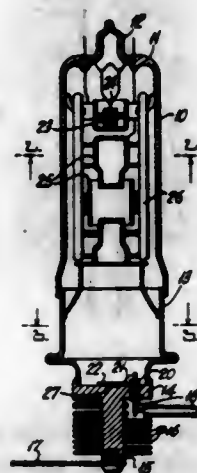
3,459,985  
PULSE AMPLIFIER  
Nelson E. Ake, Millington, and John J. McCartney, Basking Ridge, N.J., assignors to Wagner Electric Corporation, a corporation of Delaware

Filed Aug. 11, 1967, Ser. No. 659,947

Int. Cl. H01j 29/10, 31/26

U.S. Cl. 313—89

6 Claims



A pulse amplifier comprises an electron gun which generates an electron beam of high energy and an aluminum covered semiconductor diode connected in series with an output circuit. The intensity of the electron beam is controlled by a grid coupled to an input circuit. The output circuit includes a source of direct current power.

3,459,986

### SECONDARY EMISSION CATHODE OR DYNODE OF A POROUS MATRIX OF TUNGSTEN OR MOLYBDENUM IMPREGNATED WITH SECONDARY EMISSION MATERIAL SUCH AS A TUNGSTATE OR AN ALKALI HALIDE OF CALCIUM

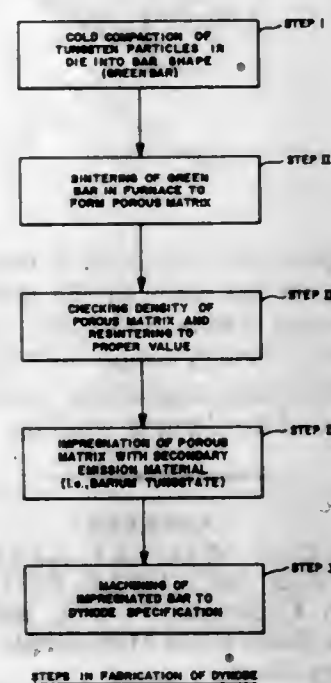
Otto G. Kopplius, Florence, Ky., assignor of fifteen percent to Michael Ebert, New York, N.Y.

Filed Jan. 27, 1967, Ser. No. 612,189

Int. Cl. H01j 19/06

U.S. Cl. 313—346

4 Claims



A secondary emission cathode structure or dynode formed from a porous matrix of tungsten or molybdenum impregnated with molten secondary emission material which is either an oxodic compound, such as tungstates, or a halide compound such as alkali halides of calcium.

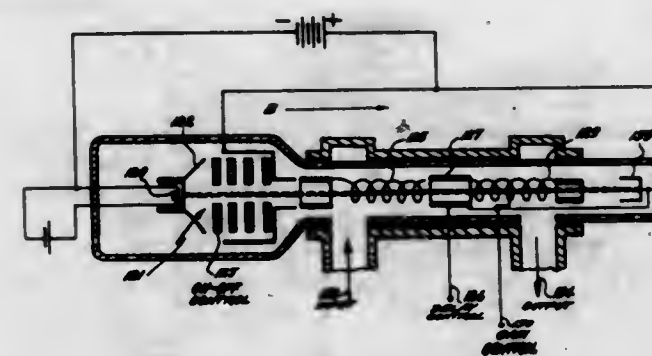
3,459,987  
TRAVELING WAVE PHASE SHIFTER HAVING INDEPENDENT GAIN AND PHASE CONTROL  
Wolfgang H. Kommer, Santa Monica, Calif., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Sept. 15, 1967, Ser. No. 668,250

Int. Cl. H01j 25/34

U.S. Cl. 315—3.6

1 Claim



A traveling wave tube having an input and an output helix with a drift tube interposed therebetween. Potentials are applied to the output helix and the drift tube for simultaneously and independently varying the gain and the output phase, respectively.

3,459,988

### CYCLOTRON HAVING CHARGED PARTICLE AND ELECTRON BEAMS

Francis Michael Russell, Abingdon, England, assignor to Science Research Council, London, England

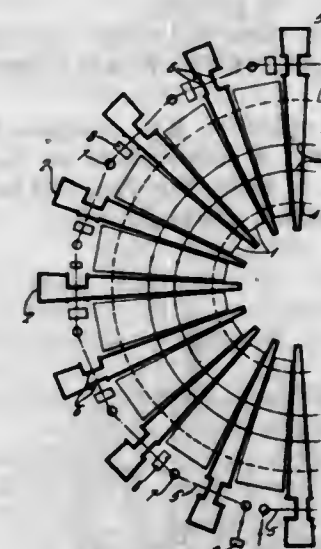
Filed Jan. 5, 1967, Ser. No. 607,480

Claims priority, application Great Britain, Jan. 14, 1966, 1,976/66

Int. Cl. H01j 25/10

U.S. Cl. 315—5.42

13 Claims



Energy is supplied to the cavities of a separated orbit cyclotron by passing a pulsed beam of electrons through the cavities in such a phase relationship with the pulsed beam of charged particles being accelerated that power is coupled from the electron beam to the cavities and thence to the charged particles.

3,459,989

### ELECTRON BEAM CONVERGENCE APPARATUS

Philip G. McCabe, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware

Filed Aug. 5, 1963, Ser. No. 299,770

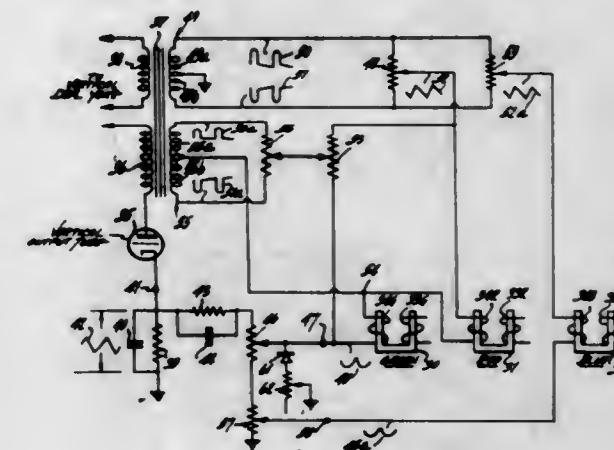
Int. Cl. H01j 29/50

U.S. Cl. 315—13

19 Claims

1. In a dynamic convergence system for multigun color age tube.

cathode ray tubes, which convergence system includes a plurality of beam convergence electromagnets having energizing coils and convergence wave generating means for producing energizing current having a parabolic current component, with said energizing coils presenting both series inductance and series resistance to said energizing current, the combination including means for providing a sawtooth wave having portions extending above and below a reference axis, means for coupling said sawtooth wave to one end of said coils, resistance means connected between said one end of said coils and a reference potential, said resistance means coacting with the series in-



ductance of said coils to integrate said sawtooth wave, with a portion of said sawtooth wave remaining unintegrated depending on the ratio of resistance to inductance of said coils, and clipping circuit means adapted to exclude portions of said sawtooth wave of a given polarity with respect to said reference axis from said coils, with said sawtooth wave thereby modified including components corresponding to the fundamental components of a parabolic wave, whereby additional parabolic components are added to the energizing current of said coils.

3,459,990

### VOLTAGE REGULATED DIRECT VIEW STORAGE TUBE PRECOLLIMATION SYSTEM

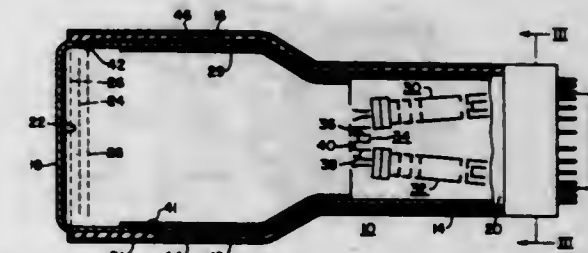
Donald C. Brooke, Montour Falls, N.Y., and Irwin Albert, Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 27, 1967, Ser. No. 656,556

Int. Cl. H01j 29/46, 29/56

U.S. Cl. 315—14

4 Claims



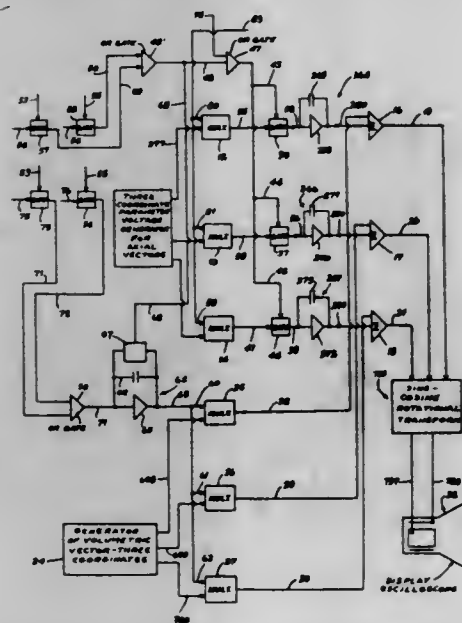
A storage display system including a voltage regulated precollimation network integral with a direct view storage tube.



**3,459,991**  
**MEANS AND METHOD FOR CONTROLLING SURFACE RESOLUTION AT CERTAIN POINTS ON MEMBERS OF FIGURES PRODUCED IN AN ELECTRONIC IMAGE GENERATOR**  
 Lee Harrison III, 8343 E. Briarwood Place, Englewood, Colo. 80110  
 Continuation-in-part of application Ser. No. 607,078, Jan. 3, 1967. This application Jan. 12, 1968, Ser. No. 697,513

U.S. Cl. 315-18 Int. Cl. H01j 29/70

8 Claims

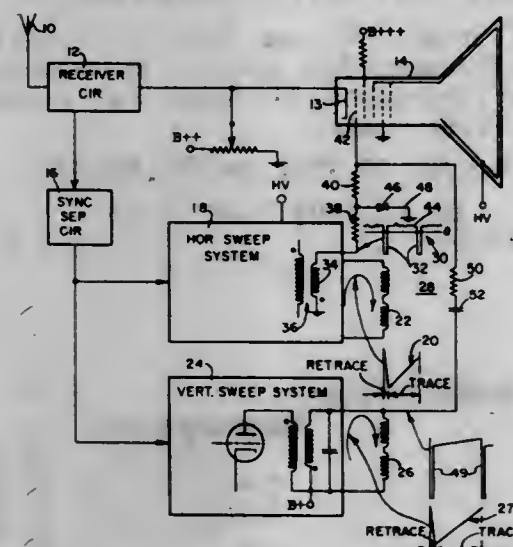


A network for maintaining substantially constant resolution of surfaces of varying cross-section on a display produced by an electronic image generator.

**3,459,992**  
**BLANKING CIRCUIT**  
 Donald E. Griffey, Skokie, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois  
 Filed Aug. 18, 1967, Ser. No. 661,597  
 Int. Cl. H01j 29/70

U.S. Cl. 315-22

7 Claims

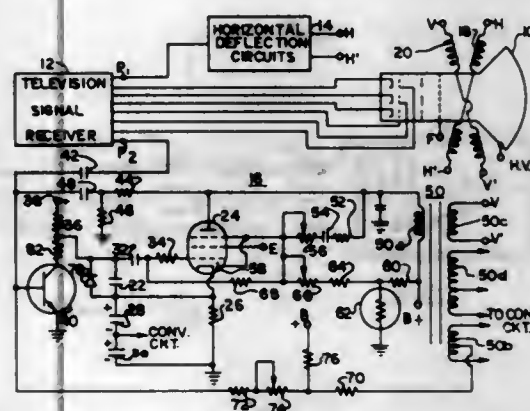


The circuit applies flyback pulses from the vertical and horizontal sweep systems to the cathode ray tube in a television receiver. The pulses are poled to render the cathode ray tube non-conductive during retrace intervals. Undesirable ripple components occurring between horizontal pulses are shunted away from the cathode ray tube by means of a diode coupled between the tube and ground reference potential.

**3,459,993**  
**TELEVISION DEFLECTION CIRCUIT**  
 Anibal Mayor, Indianapolis, Ind., and Jack A. Dean, Flemington, N.J., assignors to Radio Corporation of America, a corporation of Delaware  
 Filed Feb. 7, 1968, Ser. No. 703,743  
 Int. Cl. H01j 29/74

U.S. Cl. 315-29

7 Claims

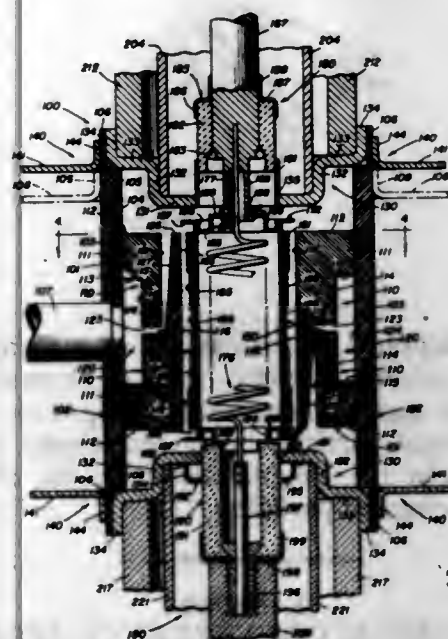


A television vertical deflection circuit comprises an oscillator or switching stage and an output stage. A resistance-capacitance sawtooth generating circuit is coupled to an input electrode of the output stage. An additional relatively large capacitance is coupled between a point of reference potential and the end of the sawtooth generating circuit remote from the input electrode. A further resistance-capacitance network including a diode is coupled in a feedback arrangement between the output and the input electrodes of the output stage and develops a feedback voltage which is added to the sawtooth for vertical linearity and vertical size control. Means are provided to prevent spurious oscillations at one-half the vertical deflection frequency.

**3,459,994**  
**CROSSED-FIELD DISCHARGE DEVICE AND IMPROVED MAGNETIC POLE STRUCTURES THEREFOR**  
 James E. Staats, Louisville, Ky., assignor to General Electric Company, a corporation of New York  
 Filed Oct. 6, 1966, Ser. No. 584,769  
 Int. Cl. H01j 25/50

U.S. Cl. 315-39.71

16 Claims



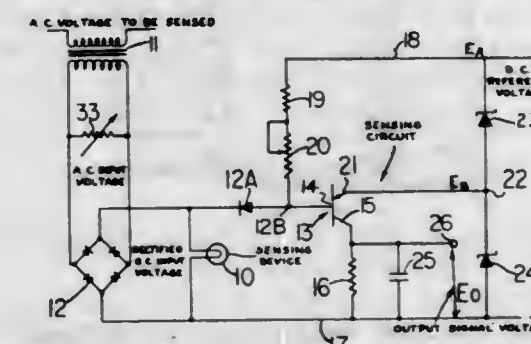
There is disclosed a crossed-field discharge device comprising an envelope enclosing an anode structure which defines an axially extending space, an electron emissive cathode structure disposed in the axially extending space

and a pair of identical composite pole pieces disposed adjacent to the opposite ends of the anode structure, each composite pole piece including an inner annular pole piece disposed internally of the envelope and an outer annular pole piece disposed externally of the envelope in radial alignment with the inner pole piece, the outer diameter of the composite pole piece being from about 2.0 to about 2.5 times the axial gap between the internal pole pieces.

**3,459,995**  
**RMS SENSING CIRCUIT**  
 Fred G. Rea, Watertown, Wis., assignor to Sola Basic Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin  
 Filed May 27, 1966, Ser. No. 553,375  
 Int. Cl. H05b 37/00, 39/00, 41/14

U.S. Cl. 315-200

9 Claims

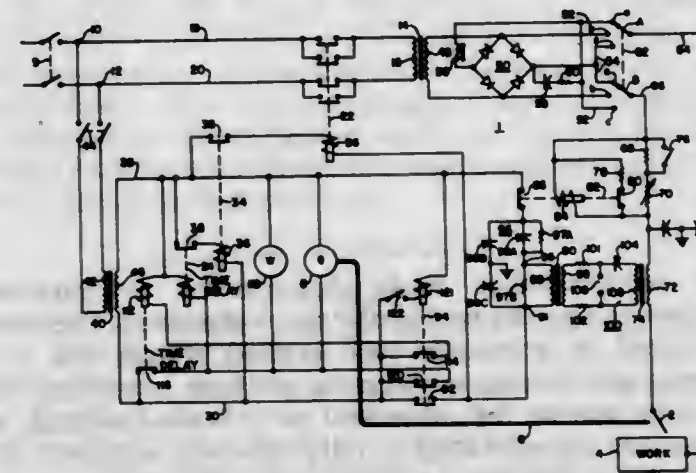


A RMS sensor circuit wherein a resistance element which changes resistance with temperature, such as a lamp bulb, is alternately heated by a rectified A.C. voltage to be sensed and then sensed by solid state circuitry means providing output signals proportional to the variation of the rectified A.C. voltage from a reference voltage, an important aspect being that the resistance element combines heating, heat storage, and change of resistance with heating in a single element. The circuitry further provides for automatic heating and sensing during portions of each half cycle of the applied A.C. voltage, and in a modified version, provides a control for an electric range or like heating element.

**3,459,996**  
**STARTING CIRCUIT FOR DIRECT CURRENT ARC WELDER**  
 Floyd E. Adamson, Ellicott City, Md., and James E. Frederick, Clarence, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
 Filed Sept. 14, 1967, Ser. No. 667,735  
 Int. Cl. H05b 41/14

U.S. Cl. 315-205

6 Claims



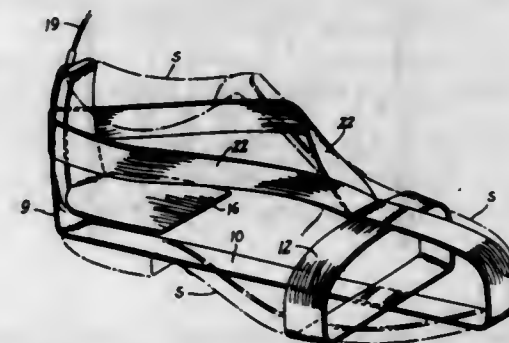
It is common in direct current welders to use a resistance, through which the welding current flows to a tungsten welding electrode, to control the magnitude of the arc

current. It is further old to envelop the weld area in a monatomic gas such as argon or helium thereby to prevent contamination of the weld from the atmosphere. This disclosure provides a shunt circuit around, at least a portion of, the series resistance so as to enhance the initiation of the arc between the tungsten electrode and the work to be welded. Means is also provided to interrupt this shunting circuit as soon as welding current flows so that the series resistors are effective to control the magnitude of the welding arc current.

**3,459,997**  
**BODY GROUNDING DEVICE**  
 Walter G. Legge, 1200 S. Ocean Blvd., Boca Raton, Fla. 33432  
 Filed Aug. 15, 1967, Ser. No. 660,699  
 Int. Cl. H05f 3/00

U.S. Cl. 317-2

2 Claims

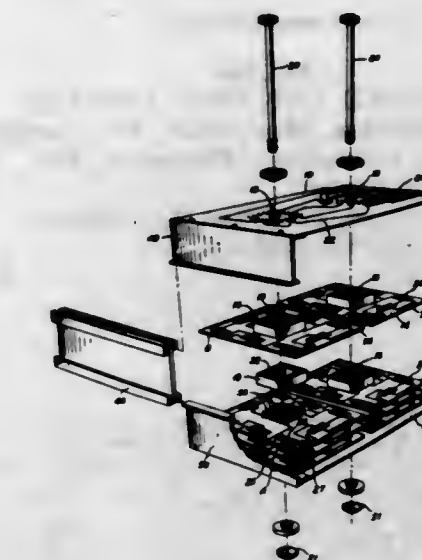


A body grounding device for attachment to the wearer's shoe. The device provides an elongated conductive strip extending under the shoe for its entire length. The fore part of the device provides an elastic toe strap secured between the strip and a folded back portion thereof so that the elastic strap does not directly contact the floor. Alternative means are provided for connecting the strip to a body contacting element.

**3,459,998**  
**MODULAR CIRCUIT ASSEMBLY**  
 Joseph P. Focarile, Freehold, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York  
 Filed Aug. 15, 1967, Ser. No. 660,756  
 Int. Cl. H02b 1/04

U.S. Cl. 317-100

20 Claims



Integrated circuit chips are formed into convection-cooled integrated circuit assemblies having minimum lead distances and accessible circuit layers by arranging the chips on printed circuit boards whose central areas carry transversely-projecting connector prongs extending in both



directions, and by stacking such boards with alternate blocks that space the boards from each other and connect the prongs of one board to another with tiltable hollow prong-engaging female buses passing through the blocks. Preferably two stacks of such boards are sandwiched between carrier boards that receive current from edge-connectors.

3,459,999

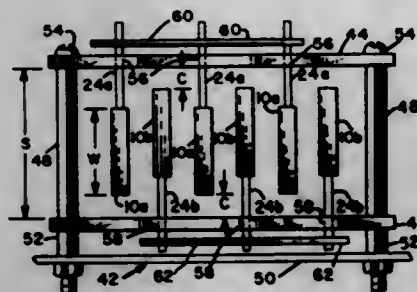
**CIRCUIT MODULE AND ASSEMBLY**

Franklin G. Kelly, Long Beach, and Donald J. Acton, Los Angeles, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

Filed July 3, 1967, Ser. No. 650,729  
Int. Cl. H02b 1/04, 9/00; H05k 1/00

U.S. Cl. 317-101

7 Claims



A number of integrated circuits are embedded in a circuit board to form a circuit module. The circuit board is provided with a multiplicity of holes that pierce the circuit leads and expose portions of the leads. The holes and leads are coated with conductive material. Output leads are attached along an edge of the board so that they extend beyond the edge in the plane of one of the board surfaces. Conductors printed on both sides of the board interconnect the output leads and the integrated circuit leads through the conductively coated holes.

A number of the above circuit modules are arranged in a closely packed parallel array between two insulative mounting panels to form a circuit module assembly with the output leads pointing alternately in one and then the other of two opposite directions. The output leads extend through holes in the mounting panels and are interconnected by jumpers at their external ends. A defective circuit module is readily removed by cutting the jumpered ends of the output leads. The removed module may be repaired and then easily replaced by jumpering the cut output leads.

3,460,000

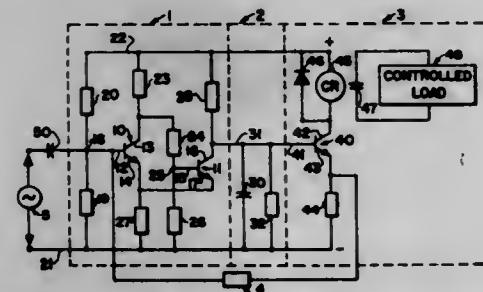
**STABILIZED CONTROL CIRCUIT**

William W. Kiffmeyer, Shorewood, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Nov. 16, 1965, Ser. No. 508,033  
Int. Cl. H01h 47/32

U.S. Cl. 317-148.5

8 Claims



A control circuit for operating a load having an operating frequency substantially less than the electrical fre-

quency of the input control signal and including a trigger network, a delay storage network, a bistable electric load and possibly a feedback network. The storage and feedback networks protect against extraneous signals affecting the desired circuit operation.

3,460,001

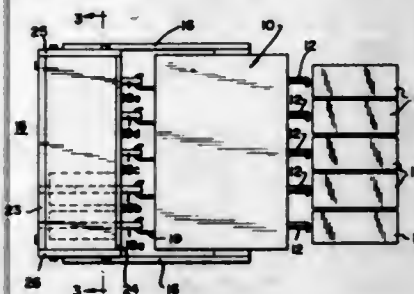
**ELECTROMAGNETIC ACTUATOR**

Ralph W. Reitherman, Lake Villa, Ill., assignor to Skill-Di, Inc., a corporation of Illinois

Filed Apr. 13, 1967, Ser. No. 630,767  
Int. Cl. H01h 47/00, 3/28; H01f 7/00

U.S. Cl. 317-155.5

10 Claims



A multiple function electromagnetic actuator having a plurality of solenoids with a magnetic housing which has sufficient cross-sectional area to avoid saturation with energization of the one solenoid, but which area is less than that required if the solenoids were housed individually.

3,460,002

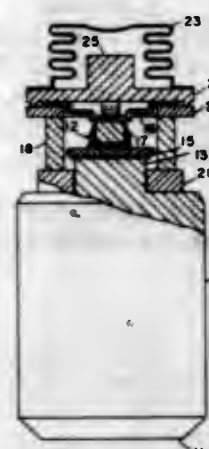
**SEMICONDUCTOR DIODE CONSTRUCTION AND MOUNTING**

Larry L. Mesler, Billerica, Mass., assignor to Microwave Associates, Inc., Burlington, Mass., a corporation of Massachusetts

Filed Sept. 29, 1965, Ser. No. 491,308  
Int. Cl. H01l 9/00, 1/00; H05k 5/02

U.S. Cl. 317-234

3 Claims



A semiconductor diode characterized by improved thermal and mechanical properties is disclosed. The diode is housed in a ceramic tube bonded at one end to a thermal sink having a mounting platform extending into the tube and at the other end to a flexible contact arrangement incorporating a rigid envelope member; this arrangement includes a flexible contact inside the housing and a flexible contact outside the housing with the rigid envelope member between them. Thermal shock is minimized by employing low-expansion coefficient metal washers between the ends of the ceramic tube and the adjoining housing members.

3,460,003

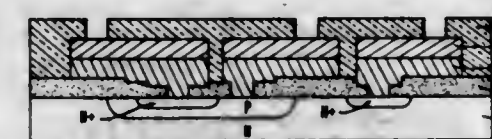
**METALLIZED SEMICONDUCTOR DEVICE WITH FIRED-ON GLAZE CONSISTING OF 25-35% PbO, 10-15% B<sub>2</sub>O<sub>3</sub>, 5-10% Al<sub>2</sub>O<sub>3</sub>, AND THE BALANCE SiO<sub>2</sub>**

Aram K. Hampikian, Norwalk, Conn., and Oscar D. Biddy, Jr., Raleigh, N.C., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Jan. 30, 1967, Ser. No. 612,618  
Int. Cl. H01l 3/00

U.S. Cl. 317-234

3 Claims



A semiconductor chip device doped with N- and P-type impurities and connected with appropriate conductors is encapsulated by a lead-borosilicate glass composition to protect from atmospheric contamination.

3,460,004

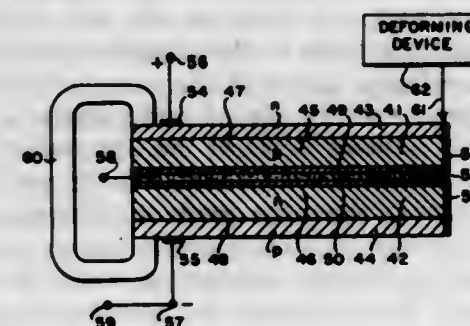
**MECHANICAL TO ELECTRICAL SEMICONDUCTOR TRANSDUCER**

Walter Heywang, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

Filed Aug. 20, 1964, Ser. No. 390,981  
Int. Cl. H01l 15/00

U.S. Cl. 317-235

12 Claims



An elongated piezoresistive semiconductor body has at least two adjacent layers of different conductivity type extending along the length of the semiconductor body and forming a p-n junction therein. The semiconductor body has spaced opposite first and second ends. An electrically conductive bridge electrically connects the layers of different conductivity type at the first end of the semiconductor body and the semiconductor body is supported at the second end thereof. A biasing arrangement contacts each of the conductivity layers of the semiconductor body at the second end thereof for biasing the p-n junction in the reverse direction. A deforming device applies a deformation force to the semiconductor body to vary the piezoresistive effect in the conductivity layers and to control the space charge in the region of the p-n junction thereby varying the cross-section and length of the current path in the semiconductor body.

3,460,005

**INSULATED GATE FIELD EFFECT TRANSISTORS WITH PIEZOELECTRIC SUBSTRATES**

Yozo Kanda, Kodaira-shi, and Yasunori Kanazawa, Hachioji-shi, Japan, assignors to Hitachi Ltd., Tokyo, Japan, a Japanese corporation

Filed Sept. 27, 1965, Ser. No. 490,315  
Claims priority, application Japan, Sept. 30, 1964, 39/55,221

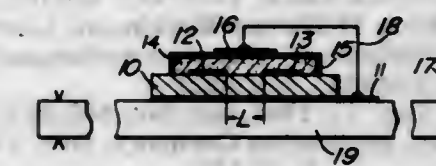
Int. Cl. H01l 5/00

U.S. Cl. 317-235

8 Claims

A transistor including an insulated gate field effect transistor mounted in a piezoelectric crystal substrate

secured to means for transmitting a mechanical force to both said substrate and said transducer, with the piezoelectric voltage, produced in the substrate under a me-



chanical stress, being applied to the gate electrode of the transistor or to its channel under the effect of electric charges induced in the substrate.

3,460,006

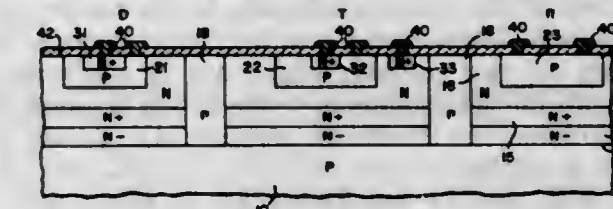
**SEMICONDUCTOR INTEGRATED CIRCUITS WITH IMPROVED ISOLATION**

Gene Strull, Pikesville, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 28, 1966, Ser. No. 530,578  
Int. Cl. H01l 19/00

U.S. Cl. 317-235

10 Claims



Electronic elements of an integrated circuit are combined within a unitary body but are isolated, at least from the substrate, by a layer of material whose resistivity is high, approaching intrinsic material. The high resistivity layer is followed by a subsequent layer or layers with diffused regions formed therein to complete the electronic elements.

3,460,007

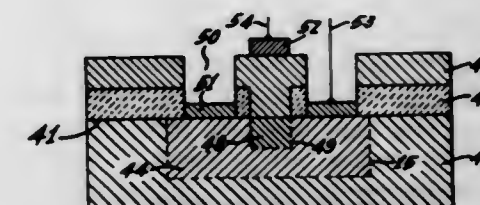
**SEMICONDUCTOR JUNCTION DEVICE**

Joseph H. Scott, Jr., Newark, N.J., assignor to RCA Corporation, a corporation of Delaware

Filed July 3, 1967, Ser. No. 650,978  
Int. Cl. H01l 11/00, 15/00

U.S. Cl. 317-235

8 Claims



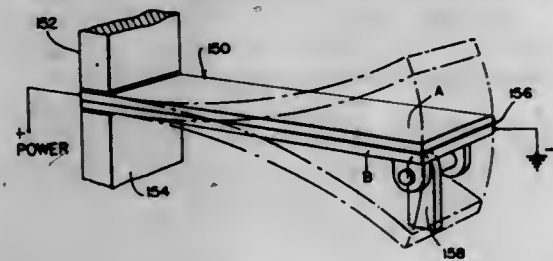
A semiconductor junction device is provided comprising a given conductivity type monocrystalline silicon body having a partly masked surface. On the unmasked portion of the body surface is a layer of low resistivity polycrystalline silicon having an opposite conductivity type modifier incorporated therein. A portion of the silicon body immediately adjacent the polycrystalline layer is of opposite conductivity type, due to diffusion of the conductivity modifier from the polycrystalline layer into the monocrystalline body. On the polycrystalline layer is a layer of high resistivity material, and on the high resistivity layer is an electrical contact. The electrical con-







and generate an electric signal representative of a condition of the element. This signal is compared against a reference signal and the resulting output signal is used to activate a Peltier device to produce expansion, contraction and/or mechanical distortion of the bimetallic Peltier device. The movable member is moved in response to the expansion, contraction and/or mechanical distortion to cause the sensed signal to approach the reference signal.

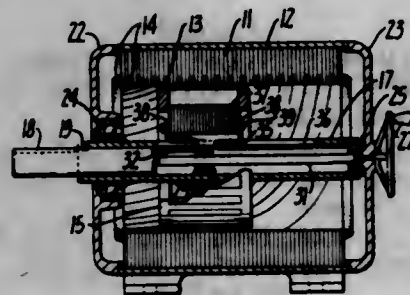


traction and/or mechanical distortion of the bimetallic Peltier device. The movable member is moved in response to the expansion, contraction and/or mechanical distortion to cause the sensed signal to approach the reference signal.

**3,460,016**  
**SHIFTABLE ROTOR VARIABLE SPEED INDUCTION MOTOR**  
William S. Rouverol, 2120 Haste St., Berkeley, Calif. 94704  
Filed Aug. 30, 1967, Ser. No. 664,371  
Int. Cl. H02k 17/02

U.S. Cl. 318-243

3 Claims

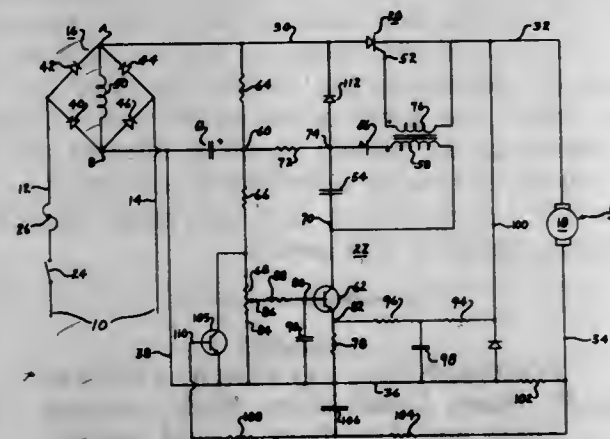


An induction motor having windings distributed non-uniformly over its field so as to produce different numbers of poles in different planes whereby continuous variation in speed is achieved by shifting the rotor to various positions within the field.

**3,460,017**  
**SOLID STATE TRIGGER FOR SCR**  
David O. Eggleston and Joseph Woyton, Mishawaka, Ind., assignors to The Reliance Electric and Engineering Company, a corporation of Ohio  
Filed Jan. 16, 1967, Ser. No. 609,367  
Int. Cl. H02p 5/12; 7/24; 7/58

U.S. Cl. 318-345

10 Claims



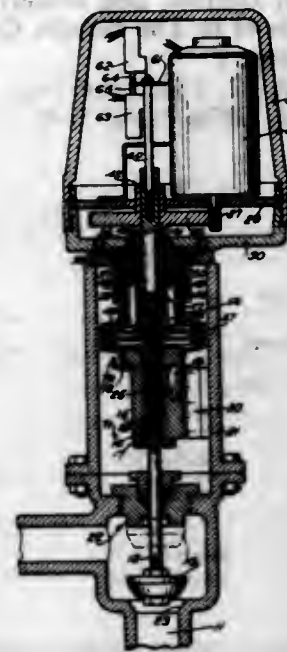
A solid state trigger circuit for a D.C. motor control circuit having a silicon controller rectifier, in which a capacitor, a breakdown diode and a pulse transformer are connected in series to the control element of the rectifier and

in which a variable signal is used to control the charge across the capacitor and thereby to control the speed of the motor.

**3,460,018**  
**POWER STOP IN RESPONSE TO OVERLOAD**  
Francis H. Cary, Apple Hill Drive, North Scituate, R.I. 02857  
Filed Oct. 10, 1966, Ser. No. 585,488  
Int. Cl. H02p 1/04; 3/06

U.S. Cl. 318-475

2 Claims

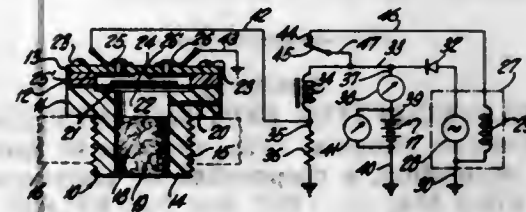


A motor driven actuator wherein the power means is made inoperative after the moved part has been brought into its desired position and wherein the actuator will cut off the power means not only at either end of the full stroke, but also during the stroke in either direction if any obstruction interferes with the normal motion of the moved part, and wherein the actuator has means which yields after the part has been brought into a desired position against the stop and the utilization of a single yieldable means permitting the power means to operate for a short period of time thereafter in either direction against the single yieldable means without placing an undue strain upon any of the parts and assuring that the part which has been moved will consistently be brought into its required position at either end of a stroke in opposite directions.

**3,460,019**  
**BATTERY CHARGING SYSTEM AND TRANSDUCER THEREFOR**  
Joseph A. Maz, Woodbury, N.Y., assignor to Dynamic Instrument Corp., Plainview, N.Y., a corporation of New York  
Filed Sept. 30, 1966, Ser. No. 583,274  
Int. Cl. H02j 7/04; 7/16; H02p 13/00

U.S. Cl. 320-31

9 Claims



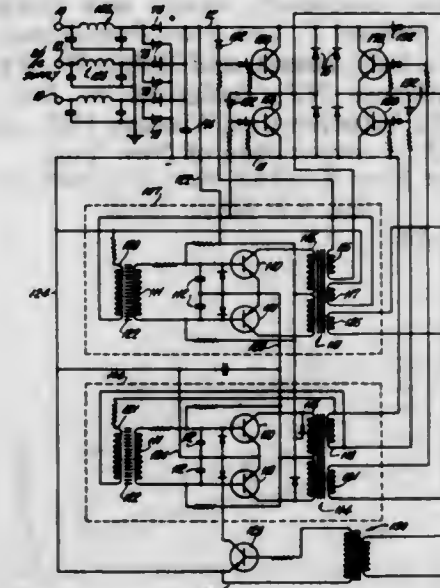
A pressure transducer for producing a change in resistance in response to battery pressure using metal and car-

bon contacts and a voltage regulating system responsive to battery pressure to control the charging voltage applied to the battery.

**3,460,020**  
**PHASE-CONTROLLED VOLTAGE REGULATOR**  
Halsey P. Quinn, Morris Plains, N.J., assignor to Wagner Electric Corporation, a corporation of Delaware  
Filed Aug. 11, 1967, Ser. No. 659,930  
Int. Cl. H02m 7/20; 3/32

U.S. Cl. 321-2

8 Claims

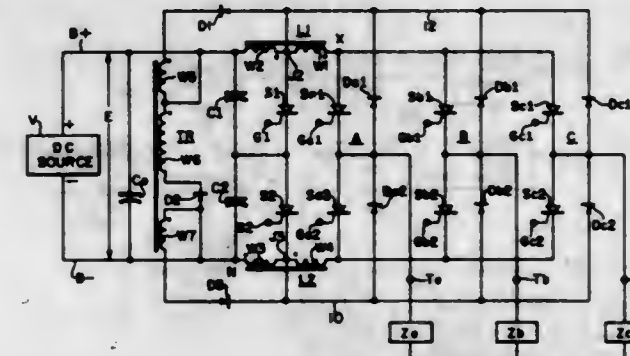


A voltage regulator rectifies an AC power supply and applies a regulated DC voltage to a load. The AC power is first rectified, a portion of the power is applied to a switching bridge circuit, and some of the power is applied to an oscillator circuit which in turn controls the bridge switching units. A phase adjuster circuit controls the relative phase of the switching units and a rectifier is connected between the bridge and the load. The usual voltage reference component (Zener diode) and an amplifier control the phase changing circuit.

**3,460,021**  
**TRAPPED ENERGY RECOVERY CIRCUIT**  
Leland A. Schlabach, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Jan. 25, 1967, Ser. No. 611,768  
Int. Cl. H02m 7/20

U.S. Cl. 321-5

10 Claims



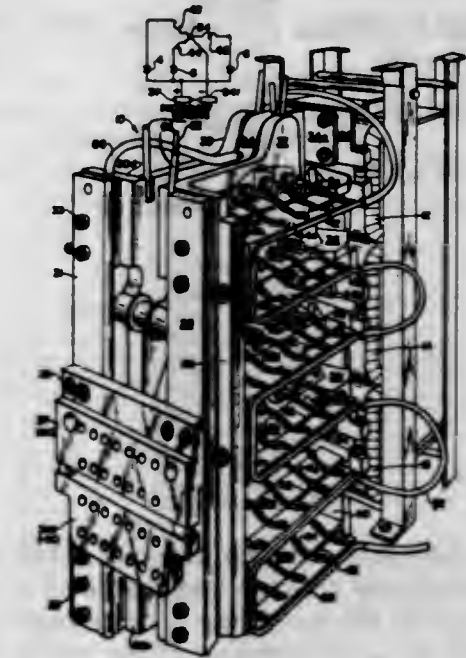
An energy recovery circuit for use in inverter apparatus of the forced commutation type, wherein the inverter is operative with a source of direct current for supplying alternating current to a load and includes a plurality of switching devices, such as silicon controlled rectifiers, for controllably completing a circuit to the load. A commutation circuit is utilized for turning off the controlled devices selectively by reverse biasing. The energy recovery circuit includes a transformer having a

winding for receiving current due to stored energy from the commutation circuit, with a voltage being induced in another winding thereof. The stored energy is transferred to the direct current source when the induced voltage exceeds that of the source.

**3,460,022**  
**THREE-PHASE POWER PACK FOR WELDING**  
Joseph J. Riley, Warren, Ohio, assignor to The Taylor-Winfield Corporation, Warren, Ohio  
Filed June 22, 1967, Ser. No. 648,074  
Int. Cl. H02m 7/00; B23k 11/24

U.S. Cl. 321-8

11 Claims

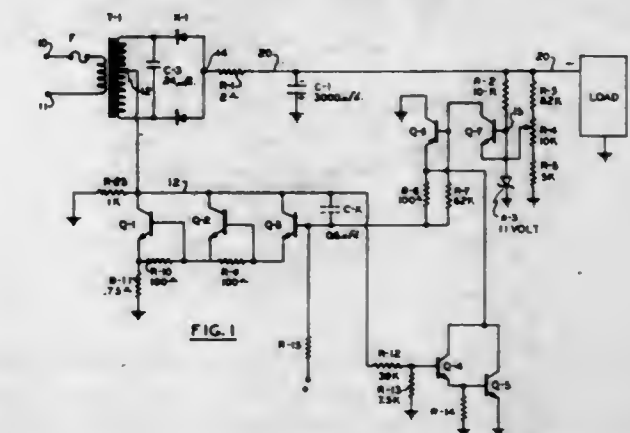


A D.C. silicon rectifier power pack for welding and other high D.C. current applications includes a neutral conductor sandwiched between and insulated from two direct current, water-cooled plates constructed to provide equal current division of silicon rectifier cells of all three phases mounted thereon. These cells are connected by flexible connectors to A.C. connectors, each of rectangular frame construction, which is slotted, thus providing parallel circuits and enhancing equal current division among the rows of cells.

**3,460,023**  
**REGULATED POWER SUPPLY**  
James H. Becker, Ann Arbor, Mich., assignor to Applied Dynamics, Inc., Ann Arbor, Mich., a corporation of Michigan  
Filed Mar. 27, 1967, Ser. No. 626,067  
Int. Cl. H02m 1/08; 7/20

U.S. Cl. 321-18

9 Claims



A direct current regulated supply including a switching transistor in series with a rectifier and the alternating source, with the transistor normally biased on, with aux-

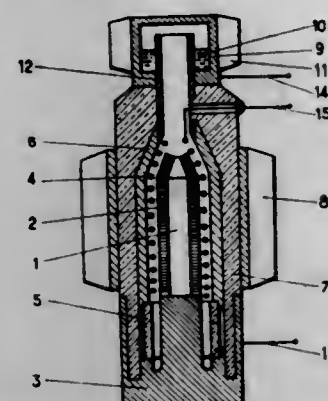


iliary transistor circuitry for rapidly cutting off the transistor whenever the output voltage exceeds a predetermined level (and whenever the current through the transistor exceeds a predetermined level).

### 3,460,024 GAS-FILLED DISCHARGE TUBE AND ELECTRICAL ENERGY GENERATORS USING THE SAME

Harry Huber and Gérard Moncorgé, Paris, France, assignors to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France  
Filed July 16, 1965, Ser. No. 472,548  
Claims priority, application France, July 16, 1964, 981,881

Int. Cl. H02m 1/02; H02n 3/00, 7/00  
U.S. Cl. 321—35 12 Claims

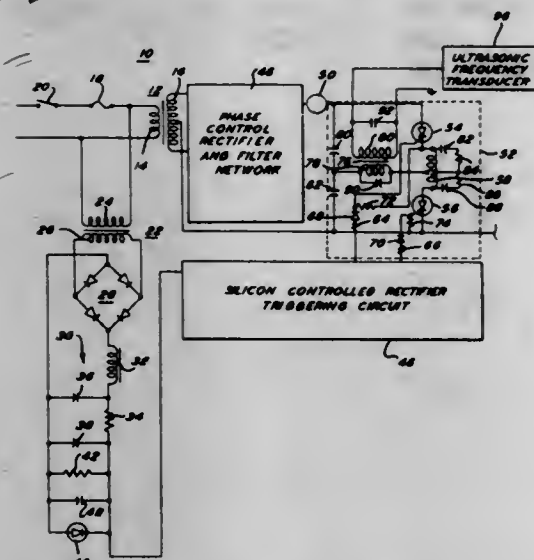


A tube operating with an external EMF applied between its anode and cathode and usable as a thyatron or rectifier, wherein the gas filling is of cesium vapor or the like, wherein the work function of the anode in operating condition is higher or at least equal to the work function of the cathode, and wherein the envelope is of refractory material, such as ceramics. The cathode is heatable either by heat of nuclear origin or by solar energy or by a flame, and the tube is usable in D.C. generators having a high internal impedance associated with nuclear or solar energy installations.

### 3,460,025 HIGH FREQUENCY, HIGH POWER SOURCE SOLID STATE INVERTER

Carmine F. De Prisco, Glen Mills, Pa., assignor to Aero-projects Incorporated, West Chester, Pa., a corporation of Pennsylvania

Filed Jan. 14, 1966, Ser. No. 520,726  
Int. Cl. H02m 7/44, 7/68  
U.S. Cl. 321—43 6 Claims



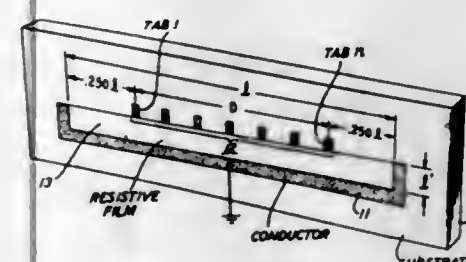
A solid state power supply for a high frequency, high power, variable impedance load including a Class A series inverter circuit including a first and second control recti-

fiers, a gating circuit for alternately triggering the rectifiers, a direct current power source for said circuit, an impedance matching transformer connected to the output of the inverter circuit and to a load, a capacitor connected in the primary and a capacitor connected across the secondary of the transformer for maintaining the turn-off time long enough to restore blocking to the rectifiers.

### 3,460,026 n-PORT MONOLITHIC THIN FILM DISTRIBUTED RESISTANCE NETWORK

Robert J. Dow, Amesbury, Mass., and David Feldman, Springfield, Samuel C. Lee, New Providence, Edward S. Mitchell, Jr., Succasunna, and Ralph W. Wyndrum, Jr., New Providence, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, and Berkeley Heights, N.J., a corporation of New York  
Filed May 8, 1967, Ser. No. 649,761  
Int. Cl. H01c 7/00

U.S. Cl. 323—74 15 Claims

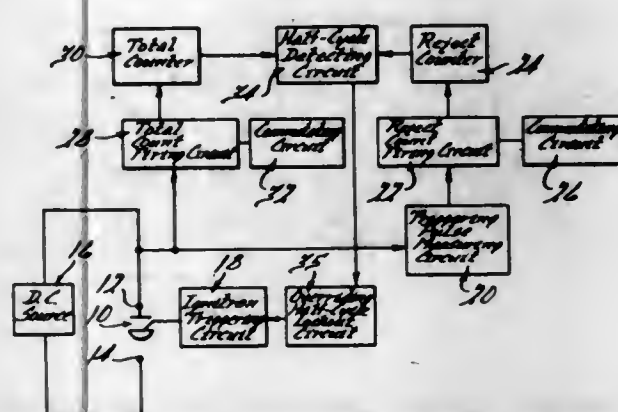


n-Port, thin film, distributed resistance networks are formed from rectangular or circular thin film areas deposited on supporting substrates. Desired network functions are realized by connecting suitably proportioned conductive tabs or ports and conductive grounding strips to specified portions of the resistive film.

### 3,460,027 TUBE TESTER FOR DETERMINING IGNITRON TUBE FIRING CHARACTERISTICS BASED UPON AVERAGE TURN-ON TIME AND FIRING COUNT

Gardiner A. Noble, Farmington, and James M. Cummins, Dearborn, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware  
Filed Dec. 1, 1966, Ser. No. 598,260  
Int. Cl. G01r 31/22

U.S. Cl. 324—26 4 Claims

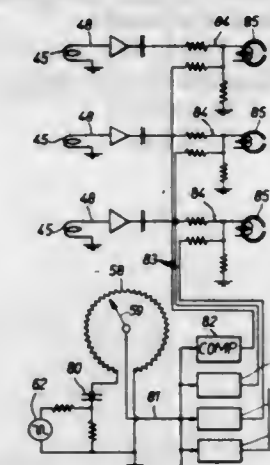


Apparatus for testing and rating the quality of ignitron tubes based on the demonstrated capability of the tube to fire for each of a predetermined number of test firing cycles and a measure of the average duration of the ignitor current flow therein prior to turn-on of the tube over that predetermined number of test cycles.

### 3,460,028 PIPELINE INSPECTION APPARATUS WITH MEANS FOR CORRELATING THE RECORDED DEFECT SIGNALS WITH THE ANGULAR POSITION WITHIN THE PIPELINE AT WHICH THEY WERE GENERATED

Ruby C. Beaver, Houston, and Fenton M. Wood, Sugarland, Tex., assignors to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey  
Filed Nov. 3, 1967, Ser. No. 680,574  
Int. Cl. G01r 33/12

U.S. Cl. 324—37 15 Claims

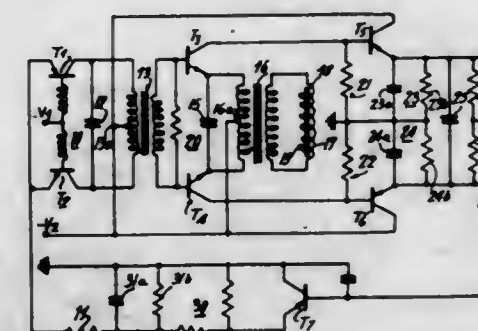


This application discloses apparatus for detecting and recording the angular orientation or o'clock position of pipeline inspection apparatus of the type propelled through pipelines by the fluid product being transported, preferably inspection apparatus of the type scanning the entire interior circumference of the pipeline. The orientation detector produces electrical signals which are recorded in separate channels or added to certain ones of the channels of recorded flaw detection information to identify the top or bottom of the pipeline. Eccentric weights, accelerometers, or the like are used to detect orientation, with rotary switches, potentiometers or inductive pickups being used to produce signals for recording.

### 3,460,029 MAGNETOMETER INCORPORATING PROBE IN THE FORM OF A SATURABLE FERROMAGNETIC CORE SUBJECT TO THE MAGNETIC FIELD TO BE MEASURED AND TO AN AUXILIARY EXCITING ALTERNATING FIELD

Germain Joseph Edmond Guillemin, Bagneux, Hauts-de-Seine, assignor to Compagnie des Compteurs, Paris, France, a company of France  
Filed Dec. 18, 1964, Ser. No. 419,520  
Claims priority, application France, Dec. 31, 1963, 958,950  
Int. Cl. G01r 33/02

U.S. Cl. 324—43 7 Claims



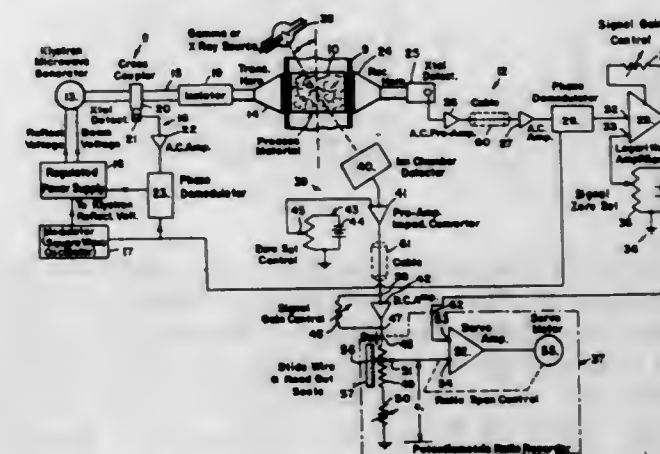
Magnetometer including a probe constituted by a saturable ferromagnetic core disposed within a single winding, said probe being, on the one hand, connected to an exciting alternating current generator and, on the other

hand, to a measuring circuit, this magnetometer being characterized in that said probe winding is connected to the recited generator through an impedance matching amplifier having a very low internal impedance whereby the core is cyclically saturated by the exciting alternating current, and in that the measuring circuit supplies at its output terminals a differential voltage proportional to the difference between the saturating currents produced in the winding of the probe at each alteration of the excitation current.

### 3,460,030 METHOD AND APPARATUS FOR MEASURING THE PERCENT MOISTURE CONTENT IN PROCESS MATERIAL UTILIZING MICROWAVE ABSORPTION AND A DIVERSE RADIANT ENERGY ABSORPTION TECHNIQUE

Donald C. Brunton and John M. Richter, Columbus, Ohio, assignors to Brun Sensor Systems, Inc., Columbus, Ohio, a corporation of Ohio  
Filed Oct. 22, 1965, Ser. No. 501,002  
Int. Cl. G01g 9/00

U.S. Cl. 324—58.5 8 Claims

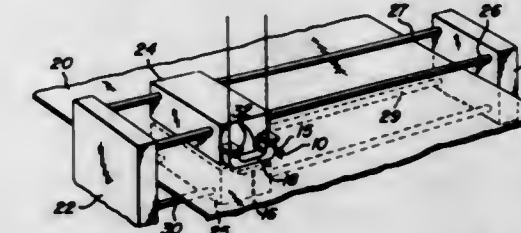


A method and apparatus for measuring the percent moisture in a process material which includes a microwave absorption measuring technique and apparatus for measuring the weight of the moisture content in the process material, a diverse radiation absorption measuring technique and apparatus for measuring the moist weight of the process material, a ratio computing step and apparatus for taking the ratio of the weight of moisture to the moist weight of the process material.

### 3,460,031 MICROWAVE WAVEGUIDE MOISTURE MEASUREMENT

Howard J. Evans and Wendell H. Cornet, Jr., Columbus, Ohio, assignors to Industrial Nucleonics Corporation, a corporation of Ohio  
Filed June 8, 1966, Ser. No. 556,224  
Int. Cl. G01r 27/04; H01p 3/20

U.S. Cl. 324—58.5 22 Claims



Microwave wave guide moisture measuring probes are formed in two halves which are split or separated through a neutral current axis longitudinally of the probe and positioned in superimposed relation to define a slot through which sheet material may be passed for measurement of microwave attenuation. Both non-resonant and resonant such probes are disclosed, and embodiments of the probes



are formed with folds, wraps and bends to increase the interaction with the web. The probe walls, at the slot, are flanged or formed with a thickness sufficient to make the probe relatively insensitive to slight misalignment in a traversing structure.

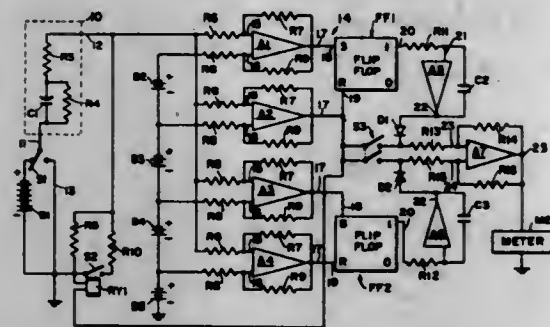
### 3,460,032 CAPACITOR TESTING APPARATUS INCLUDING TIMER MEANS FOR CONTROLLING THE DISCHARGE TIME THROUGH DIFFERENT RESISTANCES

Lyle W. Bement, William L. Morning, James E. Benjamin, Richard P. South, Richard B. Thompson, and James M. Anglin, Indianapolis, Ind., assignors to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed July 18, 1967, Ser. No. 654,177  
Int. Cl. G01r 27/26, 11/52

U.S. Cl. 324—60

27 Claims



A circuit containing capacitance and unknown values of resistance is charged or discharged through two values of known resistance. Time intervals required for predetermined ratio changes in voltage across the circuit are measured for each value of known resistance. The time intervals and values of the known resistances are then combined by analog computation circuits to yield a direct meter reading of the capacitance of the circuit. A correction factor based on an open-circuit voltage of the circuit when fully charged allows reduction of errors caused by low leakage or shunt resistance in the circuit.

### 3,460,033 APPARATUS FOR MEASURING SHAFT ROTATION

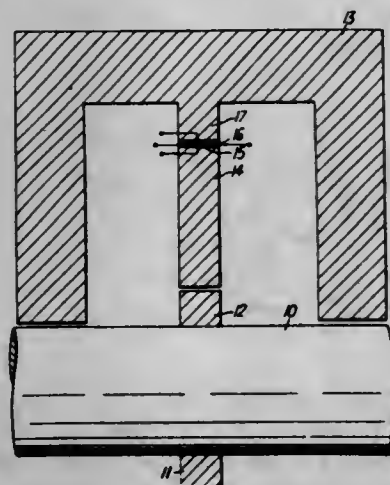
Robert James Weir and Anthony David Hewitt, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed May 4, 1966, Ser. No. 547,539  
Claims priority, application Great Britain, July 26, 1965, 31,782/65

Int. Cl. G01r 11/02

U.S. Cl. 324—70

5 Claims



A device for detecting rotational motion of a shaft comprising a magnet, and a "hall-type" semi-conductor transducer situated within the magnetic field of the magnet and

stationary relative to the magnet. The shaft has a magnetically detectable portion movable relative to the magnetic field along a path which is at least in part within the field. Rotation of the shaft thereby varies the magnetic field through the transducer to produce a series of pulses which enable the speed of the shaft to be measured.

### 3,460,034 COMPARATOR FOR DETERMINING BOTH THE MAGNITUDE AND THE SENSE OF DIFFERENCE IN THE FREQUENCIES OF TWO SIGNALS

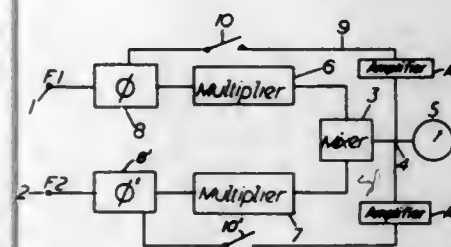
Leslie A. Tanner, Aldwych, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed July 30, 1965, Ser. No. 476,085  
Claims priority, application Great Britain, Sept. 4, 1964, 36,339/64

Int. Cl. G01r 23/14

U.S. Cl. 324—79

4 Claims



A circuit is provided to indicate both the magnitude and the sense of the frequency difference between two signals. In the circuit, the two signals are mixed and a conventional beat detector is used to provide an indication of beat frequency and thereby the magnitude of the difference. A variable phase modulator is placed in series with the circuit over which one signal is received and the phase is shifted by feedback from output of the mixer. The output of the mixer is asymmetric with the polarity of the mean current, depending upon which signal has the higher frequency.

### 3,460,035 AUTOMATIC CONTROL OF THE BASE LINE IN THE UTILIZATION OF VARIABLE ELECTRICAL RESPONSE

Bernard Louvel, Pau, France, assignor to Societe Anonyme dite: Societe Nationales des Petroles d'Aquitaine, Courbevoie, France

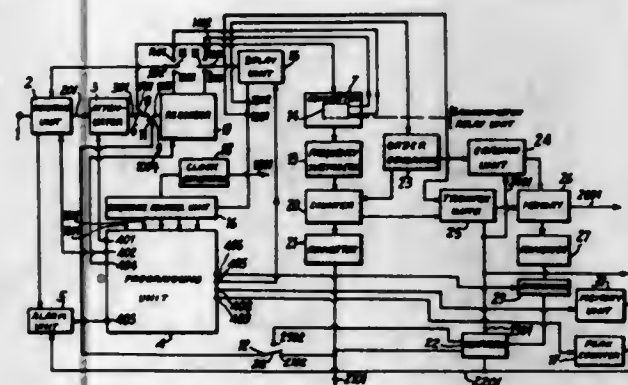
Continuation-in-part of application Ser. No. 255,822, Feb. 4, 1963. This application Nov. 7, 1966, Ser. No. 592,430

Claims priority, application France, Feb. 5, 1962, 886,951

Int. Cl. G01r 19/16, 1/02, 17/06

U.S. Cl. 324—103

4 Claims



The invention is broadly concerned with problems which arise when attempting to measure a given signal, be it voltage or current, relative to a base line (i.e., a ref-

erence line). Specifically, if the base line should vary or drift, then the measurements taken relative thereto will never be reliable. The instant invention provides means whereby the base line will be kept constant.

### 3,460,036 POTENTIAL INDICATING DEVICE INCLUDING SERIALLY CONNECTED NONINDUCTIVE RE- SISTOR AND CURRENT TRANSFORMER

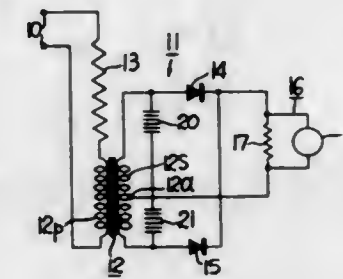
John Baude, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Continuation of application Ser. No. 617,726, Feb. 21, 1967, which is a continuation of application Ser. No. 283,421, May 27, 1963. This application Dec. 4, 1968, Ser. No. 784,534

Int. Cl. G01r 21/06

U.S. Cl. 324—127

9 Claims



Means for measuring the voltage of a power circuit in the range above ten kilovolts has the primary winding of a current transformer connected in series with a non-inductive resistor across the power circuit, the resistor and primary winding being selected so that the resistive voltage drop across the former is at least 1,000 times the reactive voltage drop across the latter. Means provided for measuring the output from the current transformer secondary winding may comprise means for rectifying the secondary winding current and an ammeter coupled to the output of the rectifying means. Substantially all of the voltage drop occurs across the resistor so that the magnetic core of the current transformer is operated in nonsaturated condition and provides an output linearly proportional to the input with negligible phase shift between input and output.

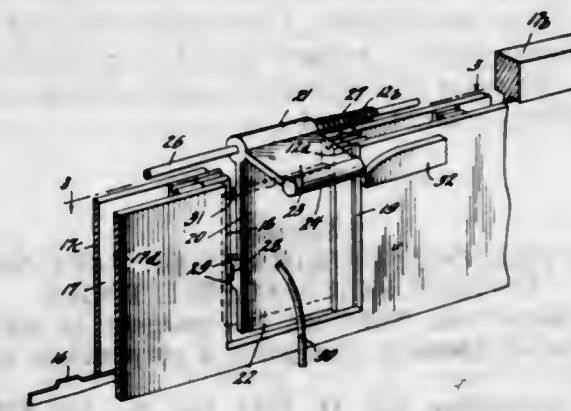
### 3,460,037 TRAVELLING PROBE ARRANGEMENT FOR TESTING ADVANCING ARTICLES

Robert F. Brewer, Bethlehem, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 6, 1966, Ser. No. 540,536

U.S. Cl. 324—158

4 Claims



Sputtered tantalum sheets are moved through a sputtering chamber on successively advanced carriers. A surface of an advancing, leading carrier is withdrawn from an

initial supporting contact with a weighted probe device. The probe device pivots into testing contact with a sheet on a trailing carrier. The pivoted probe device is driven forward by the advancing carrier, is utilized to test the sheet, and is then pivoted out of engagement with the sheet by a cam. A spring returns the disengaged probe device to its initial position.

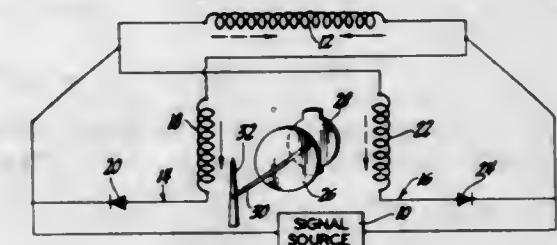
### 3,460,038 ELECTRIC INDICATOR UTILIZING A BIDIREC- TIONAL AND MULTIPLE UNIDIRECTION COILS TO PROVIDE EXTENDED POINTNER MOVEMENT IN OPPOSITE DIRECTIONS

John Richard Ziegler, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 17, 1965, Ser. No. 514,537  
Int. Cl. G01r 1/20, 7/00, 15/10

U.S. Cl. 324—146

9 Claims



An electrical gauge utilizing air core coils to obtain needle movement in opposite directions from a center zero position throughout a range that is greater than 180°. A restoring magnet generates a flux along the 0°-180° axis line and two unidirectional coils generate flux oppositely along this same axis in directions controlled by oppositely poled diodes. A bidirectional coil generates flux along the 90°-270° axis line and in a direction determined by the polarity of the input signal.

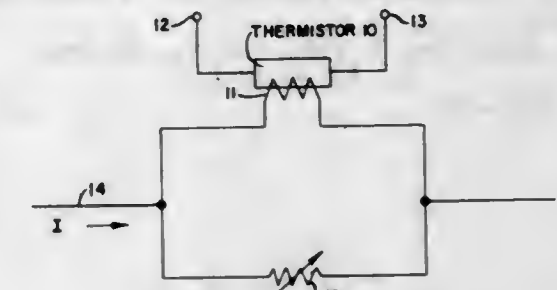
### 3,460,039 DISTANCE COMPENSATION CONTROL CIRCUIT

Joel Korn, Backnang, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed July 7, 1966, Ser. No. 563,414  
Claims priority, application Germany, July 8, 1965, T 28,954

U.S. Cl. 325—2

8 Claims



In a communication transmission system having a number of amplifying repeater stations, and a separate circuit for energizing a number of the repeater stations, a circuit for setting the mean gain of each amplifier in accordance with its distance from the adjacent repeated stations and for compensating for variations in ambient temperatures, the improvement comprising: an indirectly heated thermistor at the repeater station having a heating coil connected into the energizing circuit and means at the energizing station for adjusting the portion of the energizing current flowing into the heating winding so







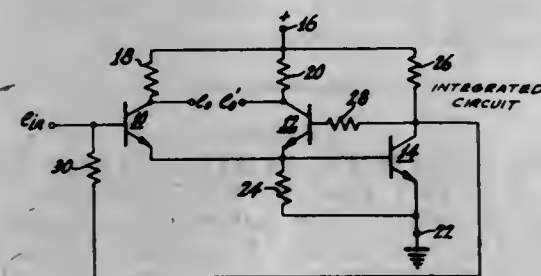
of the first and last transistors, while the other network is connected between the collector and base of the last and first transistors respectively. Where the number of transistors is even, one network is connected between the emitter and base of the last and first transistors respectively, while the other is connected between the collector and emitter electrodes of the last and first transistors respectively.

### 3,460,049 SINGLE ENDED AND DIFFERENTIAL STABILIZED AMPLIFIER

Erwin J. Wittmann, North Plainfield, N.J., assignor to RCA Corporation, a corporation of Delaware  
Filed Dec. 15, 1967, Ser. No. 690,832  
Int. Cl. H03f 1/08

U.S. Cl. 330—28

7 Claims



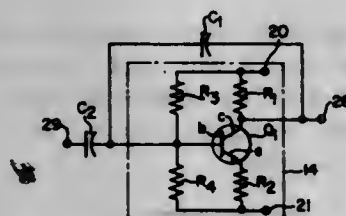
A single ended and differential stabilized amplifier which is completely biased by only one power supply. Although capacitors to bypass emitter bias resistors are not utilized, low impedance points prevent a substantial sacrifice in gain.

### 3,460,050 INTEGRATED CIRCUIT AMPLIFIER

Melbourne J. Hellstrom, Severna Park, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed July 18, 1967, Ser. No. 654,258  
Int. Cl. H03f 3/14, 1/34

U.S. Cl. 330—38

3 Claims



An integrated circuit structure includes an amplifier section having an input and an output connection. A dual capacitor arrangement is fabricated in the integrated circuit with one capacitor electrically connected between the input and output of the amplifier section and the other capacitor electrically connected between the input of the amplifier and an input terminal which receives the input signals to be amplified.

### 3,460,051 LOW-DISTORTION GAIN AND PHASE-STABLE POWER AMPLIFIER

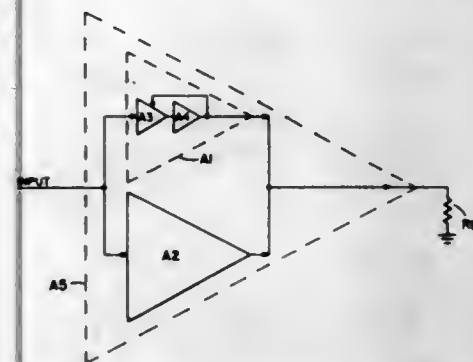
Chester W. Bray, Onondaga, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army  
Filed Nov. 14, 1967, Ser. No. 682,832  
Int. Cl. H03f 3/68

U.S. Cl. 330—124

1 Claim

A low-distortion voltage amplifier and an emitter follower in parallel with a Class A power amplifier to obtain

an overall amplifier whose linearity, phase shift, distortion, gain and output impedance are those of an essen-



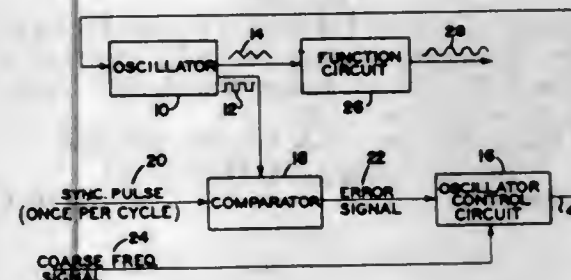
tially unloaded amplifier designed for minimum distortion while having the power output capability of a power amplifier.

### 3,460,052 OSCILLATOR PHASE AND FREQUENCY SYNCHRONIZING CIRCUIT

Edwin R. Rader, Tallmadge, and Robert C. Weyrick, Akron, Ohio, assignors to Information Development Corporation, Akron, Ohio  
Filed Aug. 2, 1967, Ser. No. 657,859  
Int. Cl. H03b 3/04

U.S. Cl. 331—10

5 Claims



An electrical circuit adapted to synchronize the output of a voltage-controlled oscillator to any variable periodic function by simultaneously correcting both phase and frequency errors. The oscillator output waveform is electronically compared to discrete pulses generated once each time the periodic function passes a reference point to produce electrical signals that are proportional to phase error. The phase error voltage is applied to an oscillator control circuit so that the phase error is corrected during the succeeding oscillator period and the oscillator frequency is adjusted to cause successive phase errors to approach zero. The circuit can synchronize the oscillator to either the fundamental frequency of the periodic function or to any integral multiple of the periodic function through the tenth harmonic.

### 3,460,053 MEANS FOR PRODUCING LONG GAS DISCHARGES

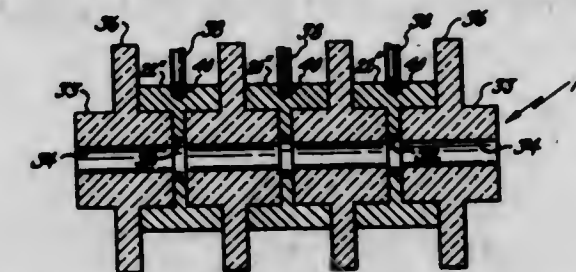
Donald A. Leonard, Stoneham, Mass., assignor to the United States of America as represented by the Secretary of the Air Force  
Filed Nov. 8, 1966, Ser. No. 593,246  
Int. Cl. H01s 3/09

U.S. Cl. 331—94.5

2 Claims

1. A gaseous laser discharge tube comprising: hollow, dielectric cylinders, each having a centrally disposed, radially oriented, cylindrical flange on the external surface thereof, and hollow metallic, cylindrical electrodes, each having a centrally disposed, radially oriented, cylindrical flange on the internal surface thereof, said hollow dielectric cylinders and said hollow metallic electrodes being alternately disposed such that adjacent dielectric cylinders to said electrodes abut against the internal flanges of said electrodes while

adjacent electrodes to said dielectric cylinders abut against the external flanges of said electrodes with

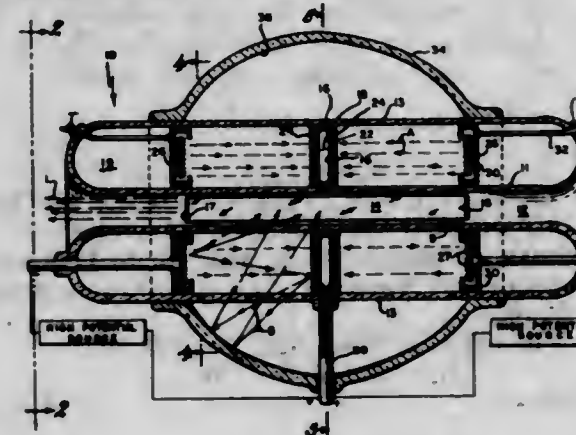


the hollow interior of said electrodes and said dielectric cylinders forming a tubular container for a gaseous medium.

3,460,054  
PUMPING SYSTEM FOR PULSED LASERS  
Werner Rambauske and Hermann R. Mestwerdt, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force  
Filed Aug. 24, 1967, Ser. No. 663,477  
Int. Cl. H01s 3/09

U.S. Cl. 331—94.5

4 Claims



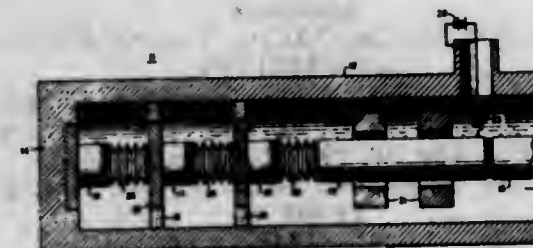
A cylindrical highly evacuated hollow tube having spherically formed ends and a toroidal cross section provides an elongated space at its axis for a laser crystal. The system has a toroidal anode plate at the midpoint and a cathode at each interior end to produce two electron streams that excite fluorescent material on opposite sides of the anode plate to produce light radiation received by the laser. A sphere, having a reflective inner surface, surrounds the whole system, intercepts light and reflects it back to the laser. A second embodiment replaces the toroidal cathode system with several, separated, light-producing tubes arranged around the laser rod.

### 3,460,055 MICROWAVE OSCILLATOR WITH PLURAL IMPATT DIODES

James G. Joenhaus and Frank M. Magalhães, Berkeley Heights, and Wolfgang O. Schlosser, Basking Ridge, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York  
Filed Dec. 29, 1967, Ser. No. 694,463  
Int. Cl. H03b 5/18, 7/12

U.S. Cl. 331—96

7 Claims



A plurality of IMPATT diodes are series connected within a microwave resonator. Each diode is separately

mounted by a beryllium oxide annulus. The distances between successive diodes are within the ranges of

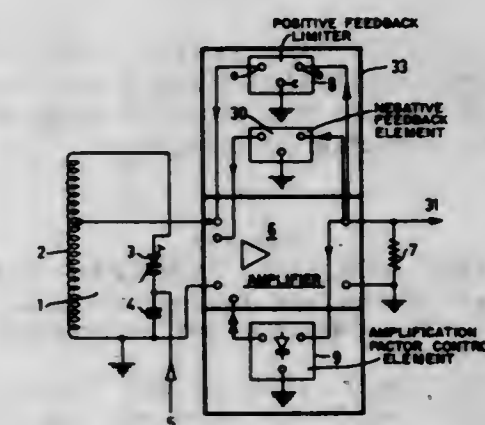
$$\left(0 \text{ to } \frac{1}{4}\lambda, \frac{1}{4}\lambda \text{ to } \frac{1}{2}\lambda, \frac{1}{2}\lambda \text{ to } \frac{3}{4}\lambda, \frac{3}{4}\lambda \text{ to } \lambda, \dots, \frac{3+4n}{8}\lambda \text{ to } \frac{5+4n}{8}\lambda\right)$$

where  $\lambda$  is the wavelength of the frequency of operation of the oscillator and  $n$  is an integral number.

3,460,056  
VOLTAGE TUNABLE L-C OSCILLATOR WITH  
AMPLITUDE LIMITED POSITIVE FEEDBACK  
Hermann Berger, Hamburg, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware  
Filed Apr. 24, 1967, Ser. No. 633,101  
Claims priority, application Germany, Apr. 26, 1966, P 39,278  
Int. Cl. H03b 3/02

U.S. Cl. 331—109

3 Claims



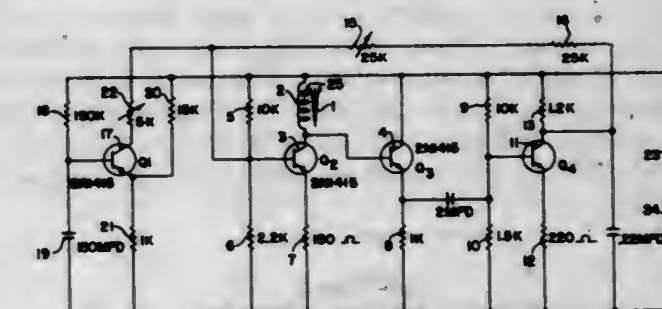
A voltage controlled oscillator which uses a voltage variable capacitor in a resonant circuit. Distortion is prevented in the oscillator output by connecting a linear amplifier to the resonant circuit and by using a limiter in a positive feedback path between the amplifier output and input terminals.

### 3,460,057 STABLE-FAST START ELECTROMECHANICALLY CONTROLLED OSCILLATOR

Robert B. McLeod, Clinton, Mass., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware  
Filed Sept. 20, 1967, Ser. No. 669,219  
Int. Cl. H03b 3/02, 5/30, 5/36

U.S. Cl. 331—109

11 Claims



A circuit having a time delayed gain control for minimizing the distortion of the feedback of a fast-start resonant oscillator, such as the type utilizing a vibrating reed. An electronic switching device changes the effective impedance of the feedback circuit after a predetermined delay to reduce the oscillator gain.



3,460,058

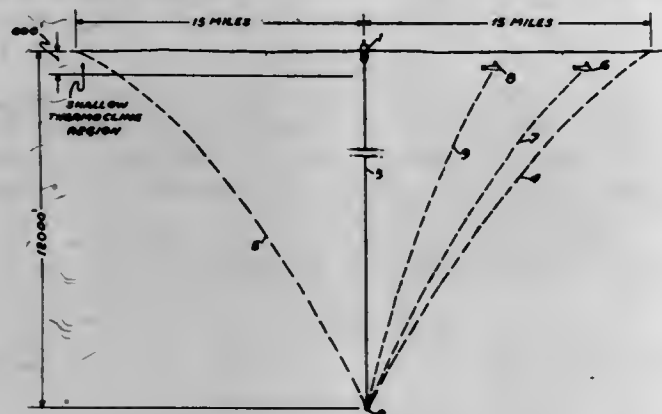
## RADIO SONOBUOY

Ronald H. Taplin, Nutley, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Oct. 25, 1960, Ser. No. 64,869  
Int. Cl. G01s 1/72; H04b 13/00

U.S. Cl. 340—2

5 Claims



An air-dropped sonobuoy including a fast sinking portion containing a sound detector. The detector is suspended below the thermocline regions of the ocean to provide for long range submarine detection.

3,460,059

CIRCUIT ARRANGEMENT FOR ECHO SOUNDERS  
Heinz Wilhelm Purnhagen, Bremen, Germany, assignor to Fried. Krupp Gesellschaft mit beschränkter Haftung, Essen, Germany

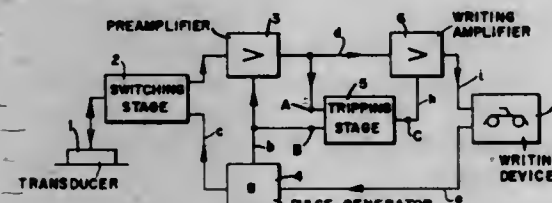
Filed Aug. 12, 1968, Ser. No. 751,874

Claims priority, application Germany, Aug. 12, 1967, B 93,957

Int. Cl. G01s 9/66

U.S. Cl. 340—3

6 Claims



Circuit arrangement for an echo sounding device including an echo signal recording means, an amplifier connected to such recording means for controlling the same and a tripping stage circuit connected in parallel with such amplifier. The tripping stage circuit forms a reference voltage corresponding to the means value of the peak echo signal amplitudes received over several sounding cycles. A fraction of such reference voltage is fed to a comparison circuit together with a voltage corresponding to an instantaneous echo signal amplitude. If the instantaneous signal voltage exceeds said fraction of the reference voltage a signal is emitted from the comparison circuit to a multivibrator circuit. The latter in turn, signals the amplifier which responds by controlling the intensity with which the instantaneous echo voltage which exceeded the said fraction of the reference echo voltage is recorded.

3,460,060

## NAVIGATION SYSTEM

Joseph Abruzzo, Severna Park, Andrew P. Cox, Jr., Lutherville, and Raymond F. Hollandbeck, Ellicott City, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 15, 1966, Ser. No. 572,293

Int. Cl. H04b 13/00

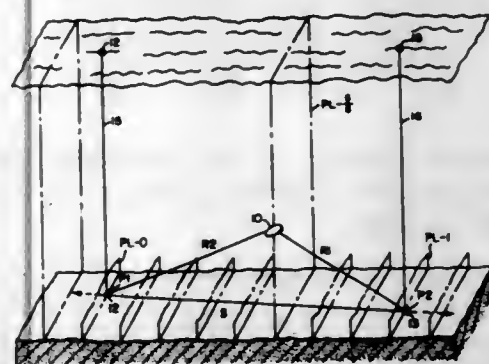
U.S. Cl. 340—4

8 Claims

An undersea vehicle transmits an acoustic signal to two transponder stations separated by a known distance S. Return signals from the transponder stations initiate the

transfer of the count in a running range counter to an onboard computing means which then computes a value for the contour parameter  $Y/S$  where  $Y/S$  is dependent upon

$$\frac{R1^2 - R2^2}{S^2}$$



$R1$  and  $R2$  are the respective ranges to the transponder stations and  $Y$  is a coordinate position. The computer means includes a control unit which eliminates the need for a stored program. The value of contour parameter is displayed and a navigational course is maintained by the vehicle by keeping the output reading of the contour parameter at a predetermined constant value.

3,460,061

## ELECTROACOUSTIC TRANSDUCER WITH IMPROVED SHOCK RESISTANCE

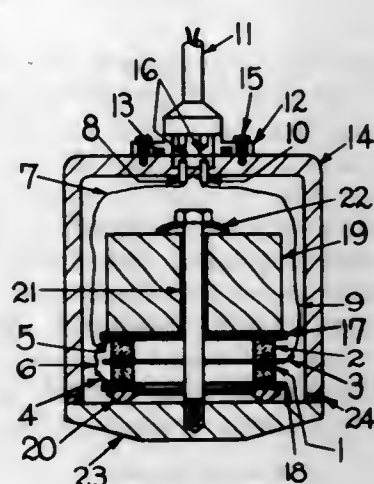
Frank Massa, Cohasset, Mass., assignor to Dynamics Corporation of America, Massa Division, Hingham, Mass.

Filed Oct. 7, 1965, Ser. No. 493,806

Int. Cl. H04b 13/00

U.S. Cl. 340—8

15 Claims



In an underwater transducer, a piezoelectric element is coupled to a vibratile plate via a mechanical coupling member. This member transmits axial vibrations from the piezoelectric element to the vibratile plate while preventing the transmission of the flexural vibrations from the plate to the element. This way, the element is protected against bending stresses as a result of mechanical shock.

3,460,062

## ELECTROMECHANICAL TRANSDUCER ASSEMBLIES

George Pearce, London, England, assignor to Smiths Industries Limited, London, England, a British company

Filed Aug. 28, 1967, Ser. No. 663,661

Claims priority, application Great Britain, Sept. 2, 1966, 39,445/66

Int. Cl. H04b 13/00

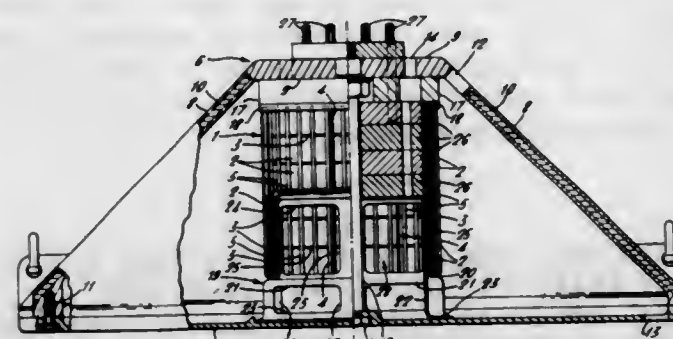
U.S. Cl. 340—11

9 Claims

A hollow, cylindrical, electromechanical transducer is situated coaxially within a frusto-conical acoustic reflector,

the outer cylindrical surface of the transducer propagating acoustic energy for reflection in a beam from the reflector. Part of the volume within the transducer is filled with pressure-release material, and the remainder of the vol-

rect vertical reflections from the seismic disturbances are received at reception points streamed behind the marine vessel and appear to emanate from a point source. Hori-



ume within the transducer defines a cavity that is resonant at the frequency of acoustic energy propagated by the transducer. Acoustic energy propagated in the cavity supplements the energy reflected from the reflector in the formation of the beam.

3,460,063

## ULTRASONIC TRANSDUCER

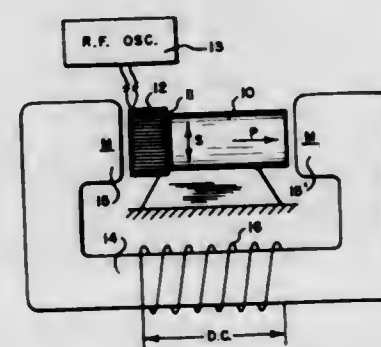
James R. Houck, 610 Mitchell St., Ithaca, N.Y. 14850, Henry V. Bohm, 13348 Talbot, Huntington Woods, Mich. 48070, and Bruce W. Maxfield, 215 Muriel St., Ithaca, N.Y. 14850

Filed July 26, 1968, Ser. No. 748,023

Int. Cl. H04b 11/00; G10k 11/00

U.S. Cl. 340—15

9 Claims



An ultrasonic transducer comprises a body having a conductive surface, means such as a coil for producing or responding to an electromagnetic field at the conductive surface, and a DC magnet producing a magnetic field at the conductive surface having a major component perpendicular to the electric vector of the electromagnetic field. The  $\omega_c \tau$  product is less than about unity, where  $\omega_c$  is the cyclotron frequency and  $\tau$  is the electron relaxation time. Ultrasonic waves are produced or detected by the direct coupling of RF currents in the conductive surface with the positive ion lattice of the surface or, stated differently, by the direct coupling of the electromagnetic fields of the RF and ultrasonic waves, in the presence of the DC magnetic field.

3,460,064

## CANCELLATION OF HORIZONTALLY TRAVELING NOISE IN MARINE SEISMIC EXPLORATION

Ben F. Giles, Dallas, Tex., and Howard L. Viger, Metairie, La., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

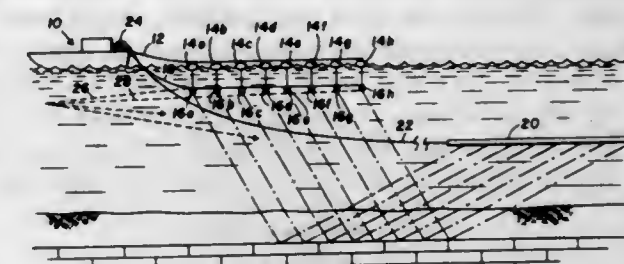
Filed Jan. 17, 1968, Ser. No. 698,571

Int. Cl. G01v 1/38

U.S. Cl. 340—15.5

8 Claims

An array of spaced apart seismic disturbance sources are streamed behind a marine vessel and are simultaneously actuated to generate seismic disturbances. The di-



rectionally traveling wave trains resulting from the seismic disturbances arrive at the reception points out of phase with one another and therefore tend to cancel one another.

3,460,065

## PROCESSING IDENTIFIED SEISMIC TAPE RECORDINGS

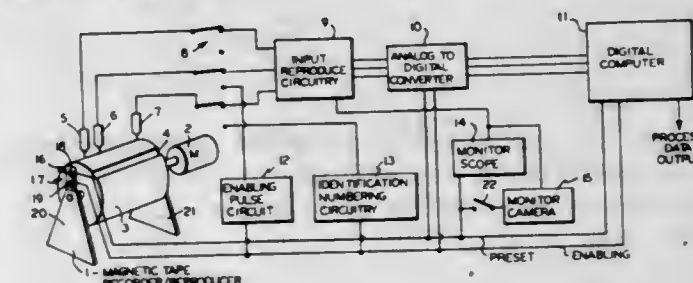
Robert D. Forester and Josephus O. Parr, Jr., San Antonio, Tex., assignors to Petty Geophysical Engineering Company, San Antonio, Tex., a corporation of Delaware

Filed Apr. 3, 1967, Ser. No. 627,931

Int. Cl. G01v 1/28

U.S. Cl. 340—15.5

3 Claims



Seismic processing equipment and methods are disclosed to utilize special auxiliary signals recorded on multi-track analog seismic tape records in correction of timing relationships and selection of related seismic signals for compositing. The seismic signals are preferably converted to digital form, stored and selected by digital programming methods for combination into a composite record.

3,460,066

## CONTROL SIGNAL APPARATUS FOR AIRCRAFT

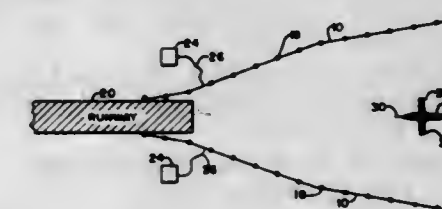
Charles R. Seashore and Henry W. Tenbroek, Minneapolis, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed June 30, 1966, Ser. No. 561,902

Int. Cl. G08s 5/02

U.S. Cl. 340—26

7 Claims



1. Apparatus to guide a craft along a predetermined course comprising in combination:

means for generating first and second electrostatic fields both of which have only horizontal direction lines at predetermined points, which points lie in curvate planes which are inclined approximately 45 degrees from the surface of the earth, said generating means positioned so that the curvate planes intersect to define a curvate line through space, substantially along the course that the craft is to follow;



means to characterize said second electrostatic field so that said second field may be distinguished from said first field; antenna means mounted on the craft operable to sense the direction of said electrostatic fields; and signal analyzing means connected to said antenna means operable to sense when the horizontal components of the fields are equal and the vertical components are zero so that the craft may follow the predetermined course as defined by said line through space.

3,460,067

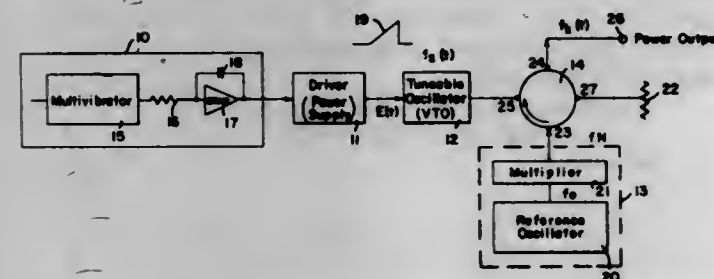
# PRECISION WIDEBAND FREQUENCY MODULATOR FOR INJECTION LOCKING A TUNEABLE RF SOURCE

Joseph Burnsweig, Jr., Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed May 10, 1966, Ser. No. 549,066  
Int. Cl. H03k 7/06

U.S. Cl. 332-9

12 Claims



A system for generating programmed precision radio frequencies wherein, in one embodiment, a driver stage is responsive to the reception of a programmed voltage waveform from a programmer to tune a tuneable RF source to a coarse frequency in accordance with the voltage waveform. A precision frequency modulator generates harmonics of a precision reference frequency which are supplied to the tuneable RF source through a hybrid circulator to injection-lock the coarsely tuned tuneable RF source precisely to the frequency required by the programmed voltage waveform. At the same time that the tuneable RF source is injection-locked in frequency, the starting phase of the required frequency is precisely related, or phase coherent, to the phase of the reference frequency whose harmonics are supplied via the circulator.

## ERRATUM

For Class 332-10 see:  
Patent No. 3,460,122

3,460,068

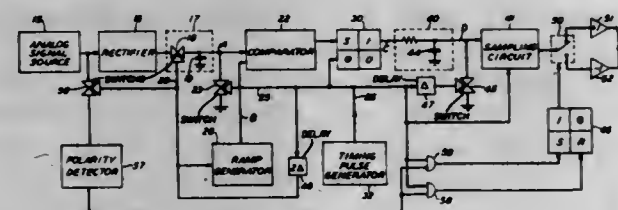
# INSTANTANEOUS COMPANDOR UTILIZING THE SAMPLED PULSE RESPONSE OF A LINEAR TIME-INVARIANT NETWORK

Joseph W. Lechleider, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 10, 1965, Ser. No. 462,969  
Int. Cl. H03k 7/08

U.S. Cl. 332-11

5 Claims



Samples from an input signal are converted by a pulse-width modulator into a sequence of constant amplitude pulses each of which has a width proportional to the am-

plitude of its respective sample. The pulses are applied to a linear time-invariant network the output of which is sampled at or near the conclusion of each applied pulse to provide output samples having the desired nonlinear relationship with respect to the input samples. After the output of the network is sampled and before a new pulse is applied thereto, initial conditions are returned in the network by discharging all reactances in the network such that each applied pulse causes the network to produce a step response at its output.

3,460,069

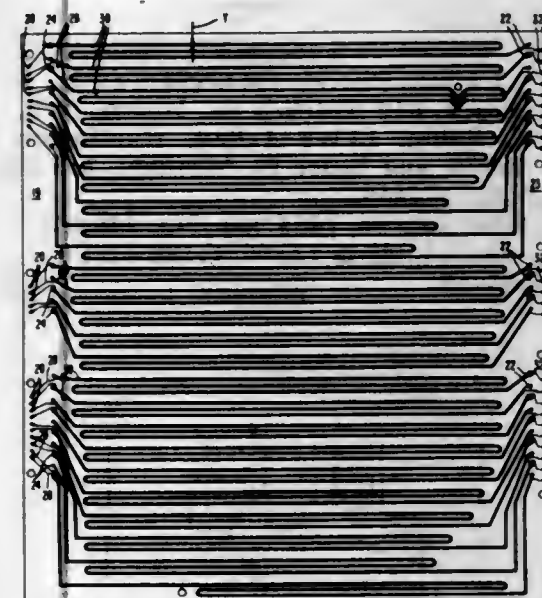
# DIRECTIONAL COUPLER UNIT HAVING A PLURALITY OF STRIPLINE COUPLERS

Edward C. Uberbacher and Murray H. Bolt, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 12, 1968, Ser. No. 697,380  
Int. Cl. H01p 5/14

U.S. Cl. 333-10

10 Claims



A multiplex directional coupler unit is provided having three circuit boards which are parallel and in register with one another. The two outside boards contain a plurality of strip-line directional couplers, the circuits of which have a path which winds back and forth between the input and output of the board a predetermined number of times to obtain the circuit coupling length and to also provide a substantially square, relatively small strip-line circuit board in relation to the number of directional couplers provided. The input and output connections for the directional couplers are made to the middle board by means of pins which extend from the middle board to the circuits on each outer coupler board.

3,460,070

# INTEGRAL MULTIPLE HYBRID COMPARATOR

Geoffrey Hyde, Moorestown, N.J., and Benjamin W. Watson, Palm Bay, Fla., assignors to the United States of America as represented by the Secretary of the Army

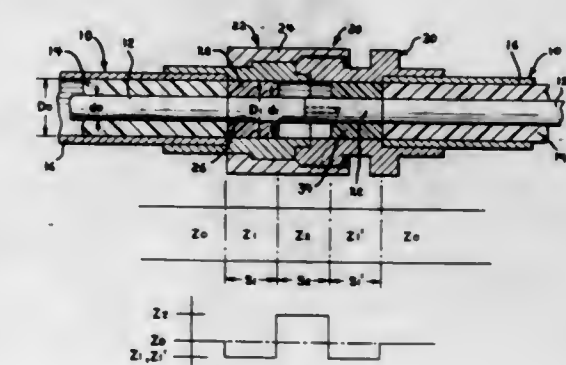
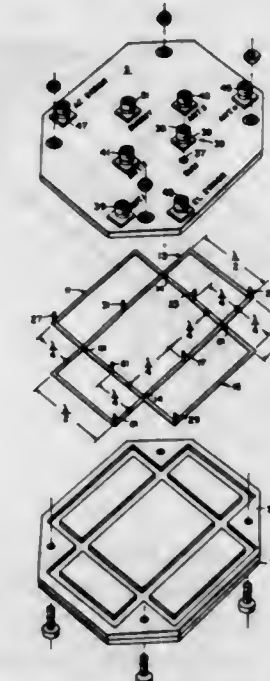
Filed Oct. 26, 1966, Ser. No. 590,152  
Int. Cl. H01p 5/12

U.S. Cl. 333-11

4 Claims

An integral multiple hybrid comparator that combines the function of four separate hybrid rings and their interconnecting cables. The comparator will take a signal from a transmitter and divide it equally between four output ports with negligible loss over appreciable bandwidth. Conversely, it will take signals coming in from the four output ports and provide sum and difference outputs. The

comparator includes a stripline wherein a conductor array is insulated from and sandwiched between two ground planes. The conductor array includes two overlapping rectangular arrays, each one being one wave length long



ments are disclosed to accommodate coaxial lines having high or low characteristic impedance mismatch both with and without the presence of discontinuity capacitances.

3,460,073

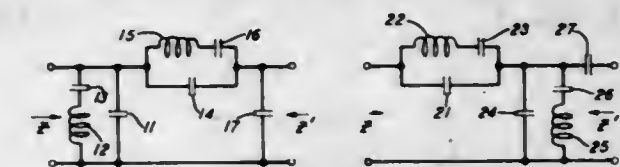
# LADDER-TYPE BAND-PASS FILTER END SECTIONS

William Thelen, Salem, N.H., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Apr. 20, 1967, Ser. No. 632,227  
Int. Cl. H03h 7/08

U.S. Cl. 333-72

7 Claims



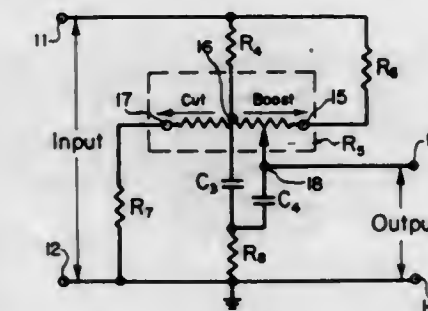
# VARIABLE-TURN-OVER-FREQUENCY BASS TONE CONTROL

Wayne M. Schott, Broadview, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Sept. 13, 1967, Ser. No. 667,442  
Int. Cl. H03h 5/08

U.S. Cl. 333-28

5 Claims



A continuously adjustable, variable-turn-over-frequency bass tone control circuit which compensates for the reduced low-frequency sensitivity of the ear at low volume levels. The circuit uses no switches or active elements and requires only fixed resistance and capacitance elements in conjunction with a resistance potentiometer.

3,460,072

# TRANSMISSION LINE COMPENSATION FOR HIGH FREQUENCY DEVICES

George William Ziegler, Jr., Carlisle, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed June 16, 1967, Ser. No. 646,718  
Int. Cl. H03h 7/38, 7/04

U.S. Cl. 333-33

10 Claims

Broad band compensation for high frequency coaxial lines is provided by arranging adjacent line zones of electrical lengths  $S_1$ ,  $S_2$  and  $S_1'$  and of effective dielectric constants  $K_1$ ,  $K_2$  and  $K_1'$  so that

$$S_1\sqrt{K_1} = S_2\sqrt{K_2} = S_1'\sqrt{K_1'}$$

An end section for high frequency band-pass filters minimizes ripple in the pass band response and has either a  $\Pi$ -type or a T-type configuration in which the outer arm on the terminating side is a capacitance shunted by the series combination of an inductance and a capacitance, the interposed inner arm is a capacitance shunted by the series combination of an inductance and a capacitance, and the outer arm on the other side is a capacitance. The impedance relationships of the three arms are defined by the pole-zero pattern of the open and short circuit impedance at both sides of the end section.

3,460,074

# FILTER FOR VERY SHORT ELECTROMAGNETIC WAVES

Albert Kürzi, Munich-Lochhausen, and Johann Steinkamp, Munich Germany, assignors to Siemens Aktiengesellschaft, Germany, a corporation of Germany

Filed July 20, 1965, Ser. No. 473,279  
Claims priority, application Germany, July 21, 1964, S 92,171

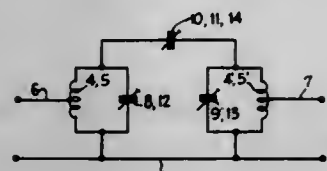
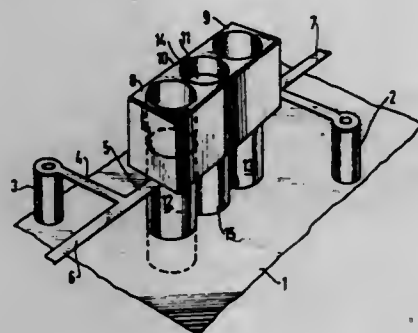
U.S. Cl. 333-73

8 Claims

An electrical filter comprising a filter with inductances formed by input leads and capacity formed from a stator which has aligned openings into which tuning plungers are received, is disclosed. A ground plane supports the tuning plungers and in one embodiment the stator is divided along a line of a central aligned opening into which the middle tuning plunger is received to form a  $\pi$



type filter. In a second embodiment, the stator is divided into three portions on planes through the two end cylin-



drical openings to form a T-type filter. The filter structure is mounted in a shielding casing.

3,460,075

#### CIRCUIT BREAKER WITH IMPROVED LATCH AND TRIP STRUCTURES

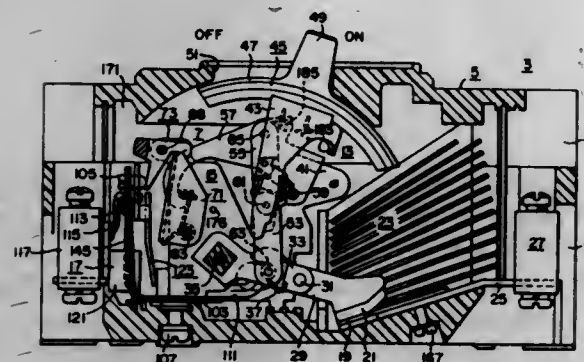
Nick Yorgin, Economy, Ambridge, and Alfred E. Maier, Beaver Falls, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 7, 1967, Ser. No. 621,321

Int. Cl. H01h 75/10, 77/06

U.S. Cl. 335—9

10 Claims



A circuit breaker having separable contacts and a latched releasable member releasable to effect automatic opening of the contacts, with a latch member latching the releasable member, a trip member latching the latch member and trip means operating automatically upon the occurrence of overloads to move the trip member to release the latch member to thereby release the releasable member.

3,460,076

#### CROSSBAR SWITCHING DEVICE FOR USE IN AUTOMATIC TELEPHONE SYSTEMS

Karl Axel Lundkvist, Banergatan 42, Stockholm Sweden

Filed Dec. 6, 1967, Ser. No. 688,553

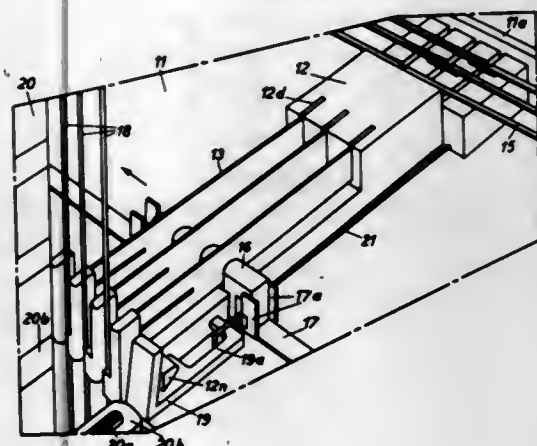
Int. Cl. H01h 67/14

U.S. Cl. 335—112

3 Claims

A crossbar switching device in which a multiple including a plurality of sets of flexible conductors is mounted on a frame structure in mutually parallel and coplanar relationship and a selecting bar for each of the said sets of conductors is mounted on the frame structure parallel to the plane of the conductors. A plurality of switching

means is also mounted on the frame structure adjacent to the multiple and the selecting bar. Each of the switch means includes an operating bar disposed crosswise of the conductors and the selecting bars, an electromagnet for



actuating the respective operating bar, a set of contact springs for each set of conductors in the multiple. Insulation blocks, that is one for each set of contact springs, support one end of the springs, the free ends of the springs protruding between the conductors.

3,460,077

#### MULTIPLE CONTACT MINIATURE DIAPHRAGM RELAY

Edward Ronald Myatt, Herts, Ernest Frederick Loveland, London, and Harry Stanley Woodhead, Harlow, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

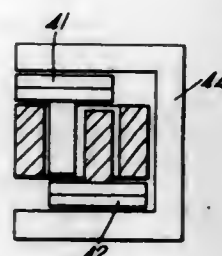
Filed Nov. 23, 1966, Ser. No. 596,673

Claims priority, application Great Britain, Dec. 14, 1965, 52,990/65

Int. Cl. H01h 51/28, 1/66

U.S. Cl. 335—152

2 Claims



A multiple contact electromagnetic relay, suitable for mounting on a printed wiring board, primarily for cross-point switching, has a number of sealed contact units mounted magnetically in series. In the embodiment described the contact units are of the so-called "diaphragm-relay" type. This arrangement results in a narrow spread of operating characteristics, i.e. narrower than the spread found with the individual single contact units.

3,460,078

#### ELECTRICAL OVERLOAD CIRCUIT BREAKER

Henry J. McCarrick, deceased, late of Middleborough, Mass., by Mary A. McCarrick, executrix, Middleborough, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Sept. 5, 1967, Ser. No. 666,236

Int. Cl. H01h 3/60

U.S. Cl. 335—193

5 Claims

A vibration-proof, trip-free, overload circuit breaker having a pair of stationary contacts and a movable bridging contact for making or interrupting an electric circuit.

The circuit breaker has a floating contact arm on which the bridging contact is at a head end and a latchable part is at a foot end. A foot latch holds the foot end for manual switch-closing operation. Manual operation is accomplished by means of a toggle mechanism, including resilient means for driving the contact arm into circuit-closing position when the toggle mechanism is manually placed in unbroken or locked position. Said resilient means prevent vibrations from causing unwanted opening of the contacts. An electromagnetically actuated arma-

erally I-shaped stack of lamination providing the center leg of the E. E-shaped non-magnetic stainless steel retainers maintain the lamination stacks in operative positions, with these operative positions being such that the stacks and retainers cooperate to form a pocket wherein a slab-like ceramic permanent magnet is retained. The armature is constructed of a flat sheet of steel.

3,460,080

#### ARMATURE MOUNTING ASSEMBLY FOR AN ELECTROACOUSTIC TRANSDUCER

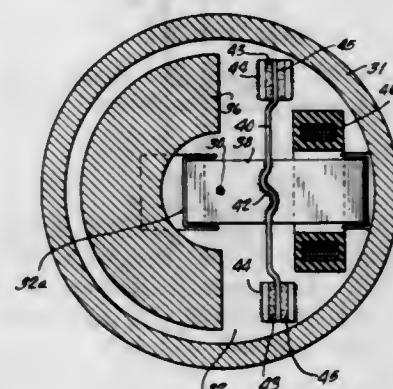
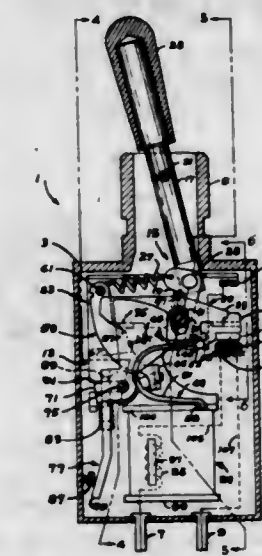
Vito L. Carbonaro, New York, N.Y., assignor to Roanwell Corporation, New York, N.Y., a corporation of New York

Filed Apr. 28, 1967, Ser. No. 634,572

Int. Cl. H01f 7/08; H04r 13/00

U.S. Cl. 335—231

8 Claims



ture, associated with a tripper latch, upon overload controls the foot latch for effecting release of the foot of the contact arm, together with actuation of the circuit breaker to open the contacts and return the toggle to a broken or unlocked position. When the overload ceases, the foot end of the arm is returned to latched position on the foot latch so that when the toggle is returned to locked position the switch recloses under normal load. A resilient connection interposed between the armature and the tripper latch prevents vibrations from causing unwanted opening of the contacts under normal load.

A technique of so clamping the armature in a balanced armature transducer to achieve accurate centering in air gaps of the ends of the armature w/o the need for further adjustment. According to the technique, epoxy cement, or similar material, holds the armature support in a manner to avoid straining any of the sensitive parts.

3,460,081

#### ELECTROMAGNETIC ACTUATOR WITH PERMANENT MAGNETS

Alfred Tillman, Mount Tabor, N.J., assignor to Marotta Valve Corporation, Boonton, N.J., a corporation of New Jersey

Filed May 31, 1967, Ser. No. 642,373

Int. Cl. H01f 7/08, 7/00, 7/18

U.S. Cl. 335—234

9 Claims

3,460,079

#### POLARIZED ELECTROMAGNET

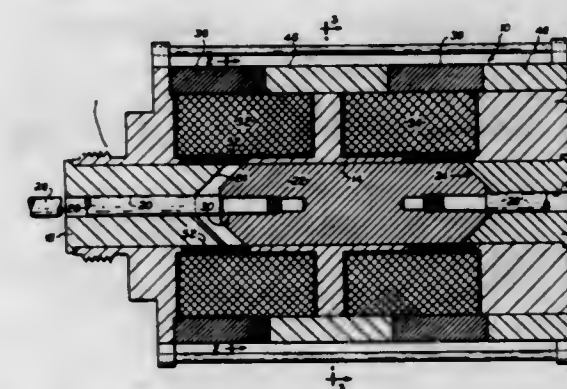
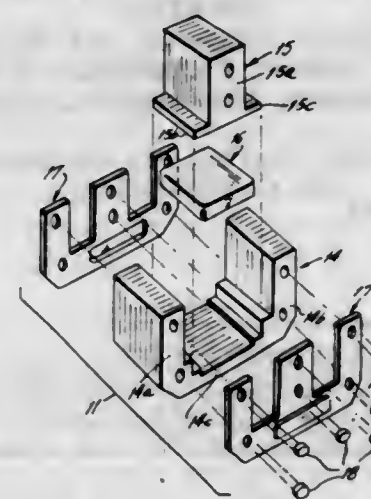
Bernard Di Marco, Lincoln Park, Mich., assignor to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware

Filed July 7, 1967, Ser. No. 651,912

Int. Cl. H01f 7/08

U.S. Cl. 335—230

8 Claims



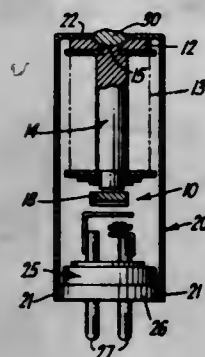
An electromagnet unit biased to open position is maintained in closed position by a permanent magnet that is part of the yoke assembly. The latter is generally E-shaped and consists of a first generally U-shaped stack of lamination providing the outer legs of the E, and a second gen-

A bi-stable electrically operated actuator suitable for use with valves, switches, or any other device that must be moved between positions at opposite ends of a stroke, and that must be held in position, selectively, at either end of the stroke. The actuator has two permanent magnets, one for holding it in each position, and it has electromagnetic windings that are temporarily energized to shift the movable element of the actuator from one position to the other. The movable element is a plunger which is made of material that is attracted by a magnet, but it is



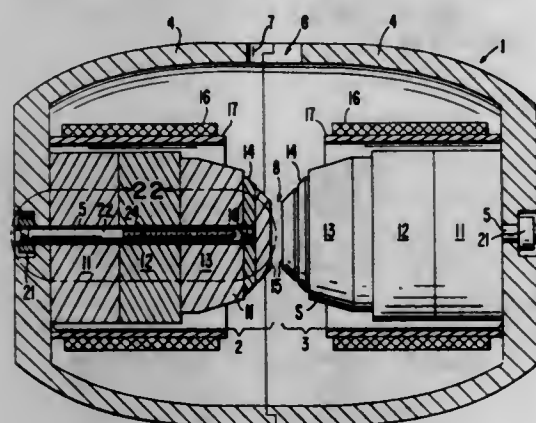
not itself a permanent magnet and it does not carry any of the windings. The preferred embodiment operates without requiring any reversal of the polarity of any of the magnetic poles of the actuator.

**3,460,982**  
**ELECTRICAL RELAY WITH ENCLOSURE CONNECTED TO THE MOTOR STRUCTURE THEREOF**  
Clarence Robert Stone, Princeton, Ind., assignor to American Machine & Foundry Company, a corporation of New Jersey  
Filed Feb. 20, 1967, Ser. No. 617,345  
Int. Cl. H01f 7/00; H01h 9/02, 13/04  
U.S. Cl. 335-278 10 Claims



An enclosed relay having a can engaging at one end the relay header and at the opposite end having improved means for securing the enclosure to the relay motor structure.

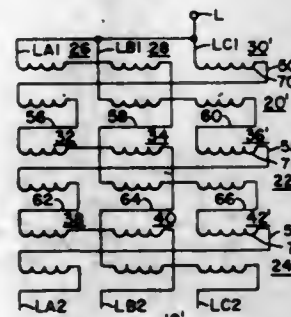
**3,460,983**  
**PERMANENT MAGNET EMPLOYING AN ADJUSTABLE SHUNT INTERNALLY OF THE PERMANENT MAGNET STRUCTURE**  
Richard L. Johnson, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California  
Filed June 12, 1967, Ser. No. 645,397  
Int. Cl. H01f 3/12  
U.S. Cl. 335-297 6 Claims



A high field permanent magnet apparatus is disclosed which is suitable for gyromagnetic resonance spectroscopy. The magnet includes a pair of coaxially disposed axially polarized permanent magnets spaced apart to define a high field gap. The permanent magnets are enclosed by a surrounding magnetic yoke structure serving to shield the magnetic gap. At least one of the permanent magnets is hollow on its axis to receive an axially movable magnetic shunt for varying the intensity of the field in the gap of the magnet. In one embodiment, the hollow magnet is held to the yoke by a non-magnetic tube axially disposed

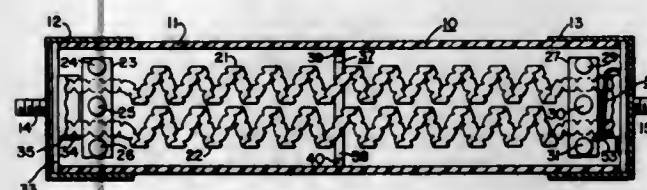
of the magnet. An axially expandable and contractable magnetic shunt is disposed in the tube for varying the field intensity in the gap.

**3,460,984**  
**INTERLEAVED ELECTRICAL WINDING STRUCTURES**  
Gerhard M. Stein, Sharon, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Apr. 16, 1968, Ser. No. 721,732  
Int. Cl. H01f 27/28  
U.S. Cl. 336-187 14 Claims



An electrical winding assembly having a plurality of pancake type coils of the interleaved turn, high series capacitance type. Each pancake coil has inner, intermediate, and outer radial portions, each formed of two radially interleaved conductors which provide first and second interleaved sections in each radial portion. The sections of the radial portions, in each pancake coil, are interconnected, including a single, top-to-bottom interleaving connection which is disposed in the duct between adjacent pancake coils, to place turns from an electrically distant portion of the pancake coil between consecutive mechanically connected turns. Predetermined sections of adjacent pancake coils are interconnected to provide three separate series circuits through the winding, which circuits are interconnected at the start and finish of the winding. One of the sections in a predetermined radial portion, in each of the pancake coils, has one more section turn than the section it is interleaved with, which places one end of the interleaving connection adjacent the outer edge of each pancake coil, and allows the conductors which interconnect adjacent pancake coils to be radially aligned.

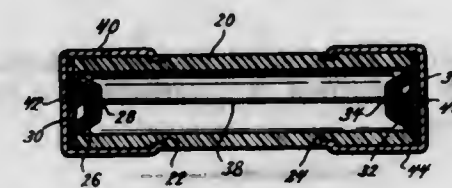
**3,460,985**  
**FUSE AND FUSE ELEMENT SUPPORTS FOR USE THEREIN**  
Byron T. McAllister, Pittsburgh, and Wilson C. Good, Level Green, Trafford, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Sept. 21, 1967, Ser. No. 669,433  
Int. Cl. H01h 85/36  
U.S. Cl. 337-190 17 Claims



A fuse has two spirally wound fuse elements each composed of a notched or perforated strip extending parallel to each other through the fuse tube and being spaced from each other at the ends by spacer bars composed of insulating material and clamped to the two fuse elements near the ends thereof. Because of the low self-supporting

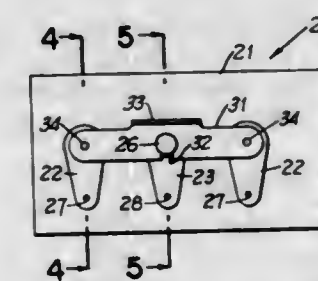
strength of the thin, spirally wound elements, support is added at the center of the fuse tube to prevent sagging of the elements and obtain correct interrupting characteristics. End support is provided to prevent rolling of the element spacer plates or bars under the sand load. The end support includes a formed wire and is self-supporting after being snapped into place, exerting spring tension against the fuse elements.

**3,460,986**  
**PROTECTORS FOR ELECTRIC CIRCUITS**  
Aloysius J. Flster, St. Louis, Mo., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware  
Filed Sept. 25, 1967, Ser. No. 670,231  
Int. Cl. H01h 85/14, 85/02  
U.S. Cl. 337-202 12 Claims



A small amperage, relatively-high voltage fuse is provided with a short casing which is devoid of arc-extinguishing filler material in which the position of the fusible element of the fuse is fixed within the casing and if barriers of insulation are disposed immediately adjacent the inner faces of the terminals at the opposite ends of the casings to prevent arc plasma from extending between those inner faces.

**3,460,987**  
**BULB HOLDER FOR INDICATOR ILLUMINATION**  
William E. Stapf, Alexandria, Va., assignor to American Machine & Foundry Company, a corporation of New Jersey  
Filed Aug. 30, 1967, Ser. No. 664,531  
Int. Cl. H05k 1/14; H01r 13/50, 13/22  
U.S. Cl. 339-17 10 Claims

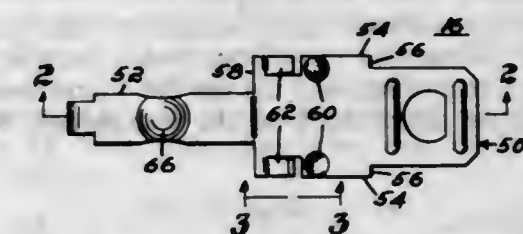


A printed circuit board with openings therethrough and through separate printed circuit portions for mounting lamps with flanged contact bases and providing separate electrical connections for each lamp, a fastener extending from the board engaging another printed circuit portion, and a spring member releasably mounted on said fastener and engaging the other contacts of all the lamps.

**3,460,988**  
**BLADE TERMINAL LAMP SOCKET**  
Joseph F. Arano, Needham, Robert E. Fitz Gerald, Quincy, and Armando J. Garcia, Medford, Mass., assignors, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware  
Filed Feb. 21, 1967, Ser. No. 617,633  
Int. Cl. H01r 13/64, 33/46, 11/22  
U.S. Cl. 339-184 3 Claims

This is a lamp socket having a mechanical means of engaging blade terminals to the insulator thereof which rotates the blade terminals a predetermined amount to

preserve an angle formed by the planes of the two blade terminals. There is also disclosed a spring portion of the

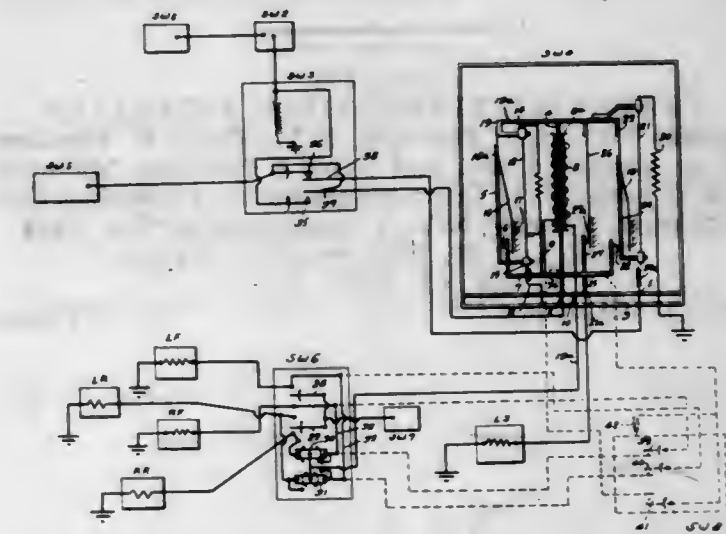


blade terminals having means of providing a wiping electrical engagement with the inner wall of an eyelet which in turn is spring loaded.

# ERRATUM

For Classes 340-2 thru 340-26 see:  
Patent Nos. 3,460,058 thru 3,460,066

**3,460,989**  
**AUTOMOBILE SIGNAL-BRAKE LIGHT FLASHER**  
Frederick H. Gregory, R1, B 85, Oakington Manor, Havre de Grace, Md. 21078  
Filed Sept. 21, 1966, Ser. No. 581,113  
Int. Cl. B60q 1/44  
U.S. Cl. 340-67 3 Claims



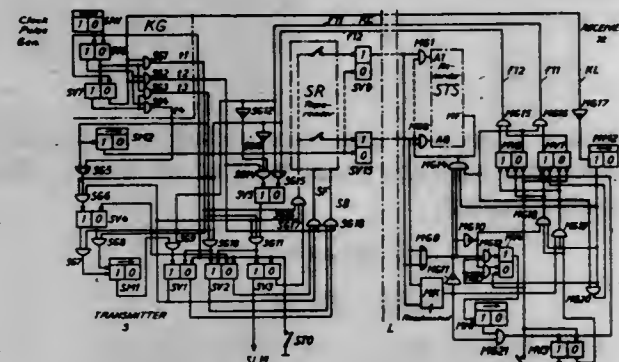
In order to make auto brake lights more effective as safety signals the present invention provides simple apparatus to flash the stop lights for a few seconds and then keep them on constantly until the brake pedal is released.

**3,460,990**  
**APPARATUS FOR ERROR CORRECTION IN A DATA TRANSMISSION SYSTEM**  
Elof Erik Eriksson, Bandhagen, Sweden, assignor to Telefonaktiebolaget LM Ericsson, Stockholm, Sweden, a corporation of Sweden  
Filed Oct. 13, 1965, Ser. No. 495,627  
Claims priority, application Sweden, Nov. 6, 1964, 13,379/64  
Int. Cl. G08b 29/00; G06f 11/00; H04l 1/00  
U.S. Cl. 340-146.1 2 Claims

A data transmission system includes a transmitter with a bidirectional stepping tape reader, and a source of clock pulses; a receiver including a stepping data recording device responsive to data signals and clock pulses for recording data and the stepping of the recording device only at the simultaneous receipt of data and clock signals; and a data transmission channel for connecting the transmitter



to the receiver. The transmitter always transmits clock pulses to the receiver whether or not data signals are simultaneously transmitted. Included in the receiver are error detecting means for detecting mutilated data signals. When such a mutilated signal is detected the error detecting means causes the recording means to stop stepping and to stop recording, and causes the transmission of an error response signal back to the transmitter. When the



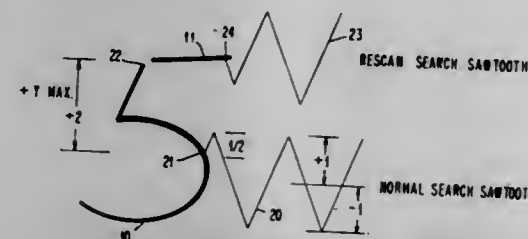
transmitter receives the error response signal, means cause the tape reader to step in the reverse direction without data signals being transmitted. However, clock pulses are still transmitted. When the receiver then receives a clock pulse without accompanying data signals it terminates the error response signal. The sensing of the termination of this response signal in the transmitter causes the tape reader therein to start stepping in the forward direction and the transmission of data signals.

3,460,091

**CHARACTER RECOGNITION APPARATUS**  
Thomas McCarthy, Peekskill, N.Y., Philip F. Meagher, Los Angeles, Calif., and Reini J. Norman, Mahopac, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Apr. 27, 1965, Ser. No. 451,126  
Int. Cl. G06k 9/16

U.S. Cl. 340-146.3

6 Claims



A curve follower character recognition system recognizes provisionally what appears to be either the sickle portion or the horizontal bar of a five to be potential fragments of a "broken" 5. Then the curve follower is caused to scan back and forth laterally and up and down in the area where the appropriate complementary segment of the 5 should be located relative to the segment which has been initially provisionally identified.

3,460,092

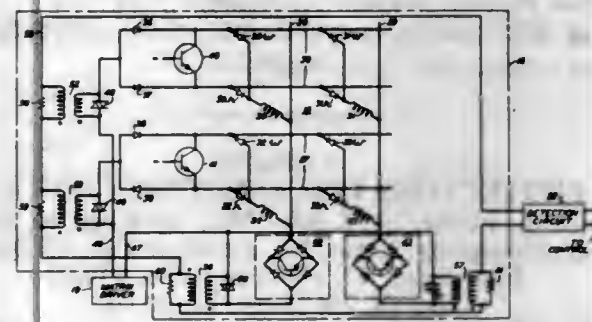
**SELECTOR MATRIX CHECK CIRCUIT**  
Evan E. Davidson, Matawan, and William M. Regitz, Colonia, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Mar. 31, 1965, Ser. No. 444,345  
Int. Cl. G11c 7/00; H03k 5/20

U.S. Cl. 340-166

15 Claims

Faults in circuits in, or associated with, a selection matrix for a magnetic memory are detected by varistors

which are connected in series in the respective matrix coordinate circuits. The varistors respond to matrix drive current by developing potential differences that are trans-

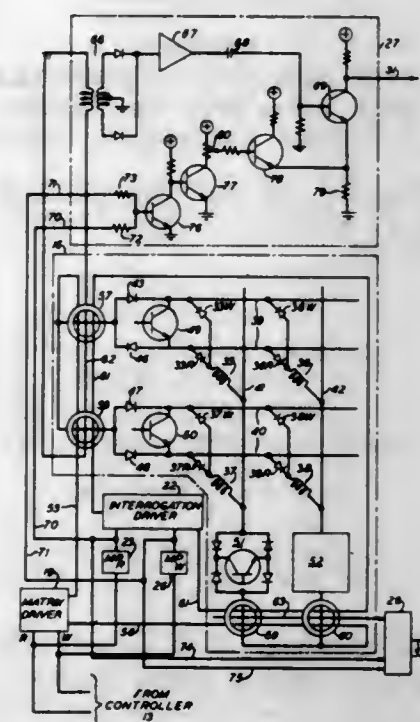


former coupled to signal-level responsive logic for indicating the flow of current in a varistor of a nonselected coordinate circuit.

3,460,093

**SELECTOR MATRIX CHECK CIRCUIT**  
Donald W. Huffman, Shrewsbury, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Mar. 31, 1965, Ser. No. 444,346  
Int. Cl. G11b 29/00; G11c 5/02, 5/06  
U.S. Cl. 340-166

6 Claims

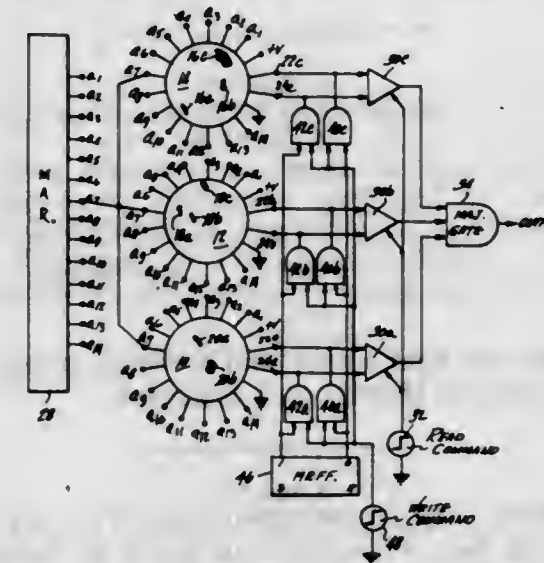


Toroidal magnetic cores are coupled to individual row and column coordinate circuits, respectively, of an access matrix to be switched by drive current in their respective circuits. A separate core-inhibiting current path for total drive current links all row cores in common and all column cores in common, and in opposite sense with respect to individual coordinate circuit linkages, during drive operations so that only cores coupled to selected coordinate circuits receive balanced flux and are, therefore, not set during a drive operation. If a circuit fault causes drive current division to energize nonselected coordinate circuits, cores receiving part of the divided current experience unbalanced flux and are set. A subsequent interrogation pulse applied to all cores initiates a fault indication if it does not set one row core and one column core corresponding to the selected coordinate circuits.

3,460,094

**INTEGRATED MEMORY SYSTEM**  
Richard L. Pryor, Cherry Hill, N.J., assignor to RCA Corporation, a corporation of Delaware  
Filed Jan. 16, 1967, Ser. No. 609,604  
Int. Cl. G11b 13/00  
U.S. Cl. 340-172.5

4 Claims



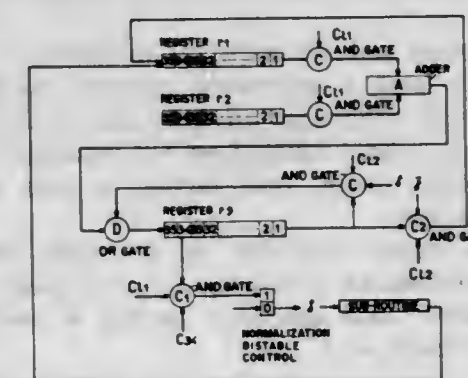
A memory system comprising three integrated circuit memory arrays, each array formed with the same pattern of storage circuits. None of the arrays need be perfect but at any given storage location, the corresponding storage circuits of at least two of the three arrays must not be defective. To read out a storage location, the signals produced at the storage circuits of all three arrays at that location are applied to a three-input majority gate.

3,460,095

**METHOD OF USING AN ARITHMETIC CALCULATOR AND CALCULATING MACHINE FOR UTILIZING SAID METHOD**  
Panayotis Carousos, Paris, France, assignor to Centre National de la Recherche Scientifique, Paris, France, a French Government administration  
Filed Feb. 28, 1966, Ser. No. 530,419  
Claims priority, application France, Mar. 2, 1965, 7,632

U.S. Cl. 340-172.5

6 Claims



Arithmetic calculator capable of determining for each arithmetic operation whether said operation should be carried out in fixed point or floating point notation, when instructed as to whether absolute or relative accuracy is preferred. The determination made by the machine is dependent on the fact that an operation in fixed point notation is quicker than one in floating point, but in certain

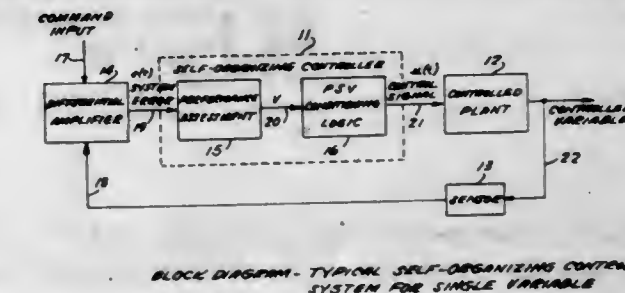
cases floating point notation affords greater relative accuracy.

3,460,096

**SELF-ORGANIZING CONTROL SYSTEM**  
Roger L. Barron, 8605 Ardfour Lane, Burke, Va. 22015  
Continuation-in-part of application Ser. No. 535,551, Mar. 18, 1966. This application July 14, 1966, Ser. No. 565,162

U.S. Cl. 340-172.5

41 Claims



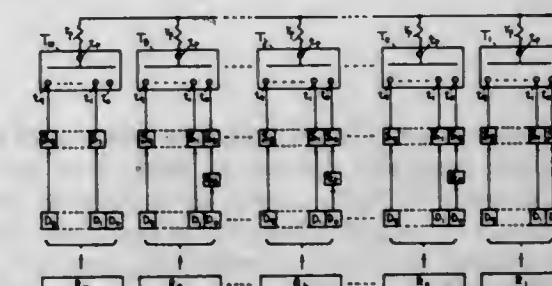
The disclosure relates to a self-organizing control system requiring minimum information storage capable of control of a plant by combining statistical decision theory to determine the true instantaneous plant performance, prediction theory to determine the performance trend, and rapid trial generation to ascertain what must be done to improve the performance trend. This is provided by on-line sampling and changing of system operation. The disclosure also includes performance assessment units and a probability state variable unit as subcombinations for carrying out the control operation.

3,460,097

**NUMERICAL DISPLAY SYSTEM FOR A COMPUTER OR THE LIKE**  
Kikuo Kubo and Katsuya Saito, Kawasaki-shi, Japan, assignors to Nippon Columbia Company, Limited, Tokyo, Japan, a corporation of Japan  
Filed Dec. 23, 1966, Ser. No. 604,247  
Claims priority, application Japan, Dec. 30, 1965, 41/6

U.S. Cl. 340-172.5

10 Claims



This invention relates to a numerical display system in which futile or unnecessary zero or zeros are prevented from being displayed. The numbers are displayed by means of indicator tubes. A series of switching and gate circuits are provided to permit the display of only significant zeros and to prevent the display of futile or unnecessary zeros.

3,460,098

**NON-SYNCHRONOUS DESIGN FOR DIGITAL DEVICE CONTROL**  
Melvin J. De Blaw, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware  
Filed Mar. 15, 1967, Ser. No. 623,338  
Int. Cl. G06f 1/04

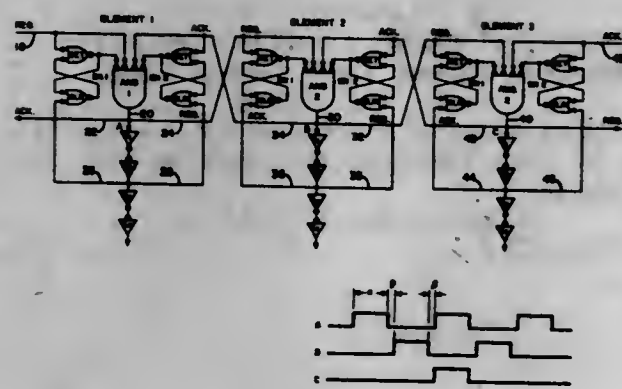
U.S. Cl. 340-172.5

9 Claims

A digital device that can be designed as a system of



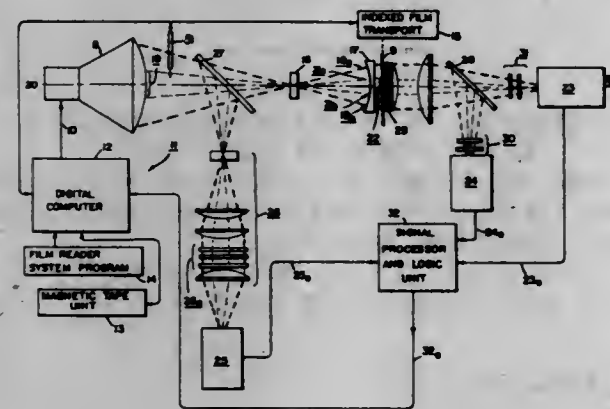
independently timed sub-units operating asynchronously edge in a coordinate location and a light receiving means at a light emitting edge in the coordinate location, and



with each other thereby eliminating the need for a master clock and the associated clock distribution problems.

**3,460,099**  
**HIGH-SPEED FILM READER/RECORDER WITH GRID REFERENCE**  
Edward Fredkin, Natick, Mass., assignor to Information International, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Mar. 5, 1965, Ser. No. 437,460  
Int. Cl. G11b 9/00, 9/04; H01j 29/96  
U.S. Cl. 340-173 17 Claims



Film records and the like, and an associated grid reference having optically distinctive grid lines, are synchronously scanned by light output of a cathode ray tube as programmed by cooperating digital computer equipment; light-responsive outputs characterizing optical conditions of the records are coordinated with those of the grid reference to identify each locus of recorded intelligence precisely under optimum conditions of sharp small-area scanning, despite indexing uncertainties in associated transport mechanisms.

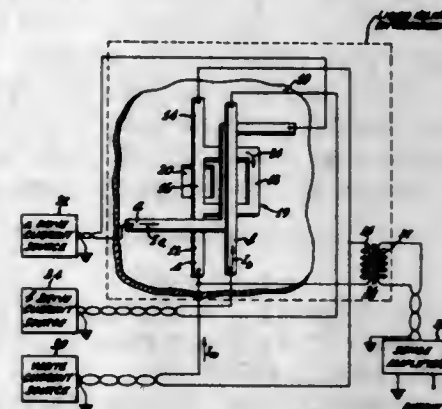
**3,460,100**  
**METHOD OF SEARCHING AND READING OUT INFORMATION BEARING CARDS**  
Robert L. Rutledge, St. Paul, and Raymond W. Shrewsbury, Roseville, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed July 2, 1964, Ser. No. 379,886  
Int. Cl. G11b 7/08; G02f 1/28; G06k 7/14  
U.S. Cl. 340-173 3 Claims  
Method of searching substantially simultaneously for a plurality of descriptors each having a coordinate location in a light transmissive information storage card by positioning a source of collimated light at a light admitting

regulating the light source and receiving means so they are synergetic to identify each descriptor.

**3,460,101**  
**CIRCUITS FOR REDUCING ELECTRICAL NOISE**  
Andrew R. Sass, Princeton, and Erwin K. Lohmer, Belle Mead, N.J., assignors to RCA Corporation, a corporation of Delaware

Filed Dec. 8, 1966, Ser. No. 600,202  
Int. Cl. G11b 9/00  
U.S. Cl. 340-173.1 10 Claims



8. A cryoelectric memory system comprising, in combination:

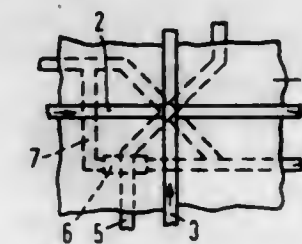
- (A) a superconducting ground plane located in a cryogenic environment;
- (B) drive means located on but insulated from said ground plane and one terminal of which is at system ground;
- (C) a storage and sense circuit including:
  - (a) at least a persistent current storage means in said cryogenic environment coupled to said drive means, located on but insulated from said ground plane, and having a pair of output terminals,
  - (b) a sense amplifier in a room temperature environment providing a return path to system ground, said amplifier having a pair of input terminals, and
  - (c) a circuit connecting the storage means output terminals to the input terminals of said sense amplifier, whereby when a portion of the storage loop is driven normal, a sense signal is applied from the storage loop to the sense amplifier if the loop is storing a persistent current, or when a drive signal is applied to said drive means which does not drive the storage loop normal, a portion of said signal, manifesting itself as noise, tends to be capacitively coupled via said ground plane through said sense amplifier to system ground; and

(d) an arrangement for substantially reducing said noise without substantially affecting the sense signal comprising a bypass circuit connected between said ground plane and system ground and having an impedance between said ground plane and system ground which is relatively small fraction of the impedance through said sense circuit to system ground.

**3,460,102**  
**ASSOCIATIVE SUPERCONDUCTIVE LAYER STORER**

Karl Goser, Munich, and Hans-Gunther Kaderelt, Munich-Solln, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany  
Filed Apr. 20, 1967, Ser. No. 632,411  
Claims priority, application Germany, Apr. 22, 1966, S 103,339

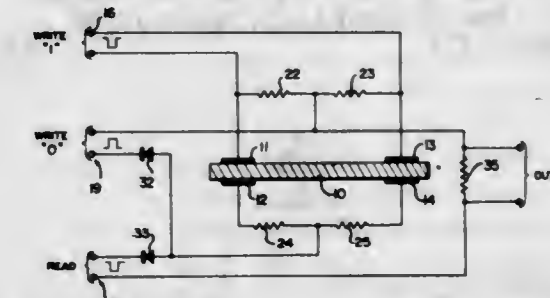
Int. Cl. G11b 9/02  
U.S. Cl. 340-173.1 9 Claims



A superconductive storer which is associatively organized whereby the presence of information and its location in the storer is determined by association, employing a superconductive layer and cooperable drive or insertion lines and sensing lines, for example, word and bit drive lines and interrogation and recognition sensing lines, which lines likewise may be superconductive, and including cyrotrons in certain lines.

**3,460,103**  
**FERROELECTRIC MEMORY DEVICE**  
Bernard L. Lewis, Satellite Beach, Fla., assignor to Radiation Incorporated, Melbourne, Fla., a corporation of Florida

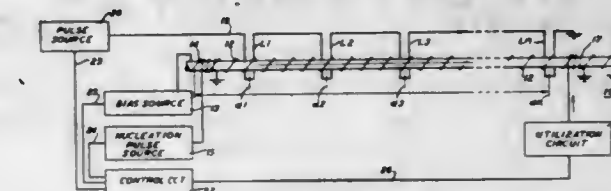
Filed Nov. 22, 1966, Ser. No. 596,210  
Int. Cl. G11b 9/02  
U.S. Cl. 340-173.2 8 Claims



A binary storage device includes a slab of ferroelectric material having on opposite surfaces thereof two pairs of capacitor plates, each pair of plates consisting of two confronting electrodes on the opposite surfaces. Two input circuits are connected to the pairs of capacitor plates in an arrangement such that application of a pulse representing a bit of one value to one input circuit polarizes the ferroelectric slab to maximize the capacitance between the plates, whereas application of a pulse representing a bit of the other value to the other input circuit polarizes the ferroelectric slab to minimize the capacitance between the plates. The value of the stored bit is

read out using a separate read circuit connected to the capacitor plates and to a resistance in series therewith, so that the level of a pulse applied to the read circuit, as sensed across the resistor, will vary according to the reactance and hence the capacitance value of the capacitor, without destroying the stored value.

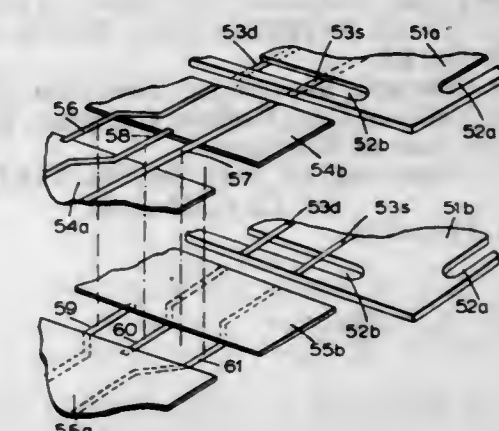
**3,460,104**  
**MAGNETIC DOMAIN PROPAGATION DEVICE**  
Andrew H. Bobeck, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Aug. 25, 1965, Ser. No. 482,463  
Int. Cl. G11b 5/02  
U.S. Cl. 340-174 8 Claims



A simplified domain wall propagation mechanism is described. A uniform bias field propagates domain walls in a magnetic medium. Wall motion is inhibited at prescribed positions in the medium by a superimposed second field generated in a pattern to reduce the bias field to zero at the prescribed positions. When the second field is interrupted, inhibited walls escape to next adjacent inhibit positions.

**3,460,105**  
**THIN FILM PRINTED ELECTRIC CIRCUIT**  
David Edward Birt, West Ealing, London, Raymond Frank Slyver, Sunbury-on-Thames, Middlesex, and Reginald Sidney Webley, Hayes, Middlesex, England, assignors to Electric & Musical Industries Limited, Hayes, Middlesex, England, a company of Great Britain

Filed Mar. 7, 1963, Ser. No. 263,558  
Claims priority, application Great Britain, Mar. 10, 1962, 9,328/62  
Int. Cl. G11b 5/02  
U.S. Cl. 340-174 7 Claims



The invention relates to multilayer printed circuits that is circuits in which conductors are provided adherent on a plurality of superimposed insulating supports. Conductors on different supports are selectively interconnected by virtue of apertures which are formed through one of the supports and at least some of the conductors on that support. Portions of the conductors on other supports, which extend beyond the insulating material of the respective supports are then passed through respective ones of said apertures. The invention is especially applicable to the manufacture of printed circuits such as are used in the formation of thin film magnetic stores. In such



stores problems arise because of unwanted inductive coupling between parallel sets of conductors such as digit and sense conductors. To reduce this coupling a plurality of means are provided one for each digit conductor and the corresponding sense conductor to modify the coupling between them, said means being adjustable so that unwanted coupling can be minimized during the setting up of the store.

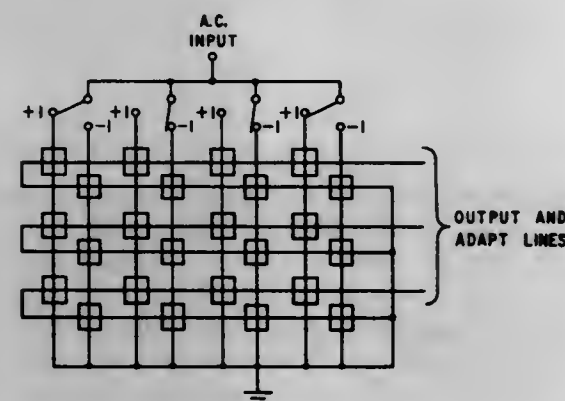
3,460,106

**MAGNETIC THIN FILM ADAPTIVE ELEMENT**  
Richard P. Abraham, Dallas, and Leonce J. Sevin, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 31, 1964, Ser. No. 422,814  
Int. Cl. G11b 5/66; H01f 10/04, 10/06

U.S. Cl. 340-174

3 Claims



Disclosed herein are two improved trainable decision systems, each utilizing magnetic thin film adaptive memory elements in an adaptive array. The two adaptive memory systems herein shown each comprise an array of thin films having magnetic fields exhibiting anisotropy, a means of applying a direct current voltage source in the easy axis direction of the film, and a means of applying an alternating current voltage source in the hard axis direction to control the movement of the domain walls, said movement being indicative of the adaptation process.

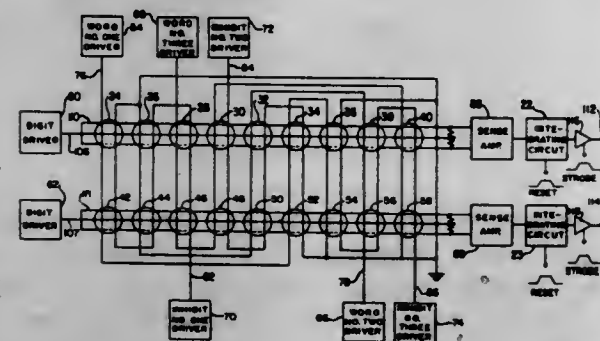
3,460,107

**TRANSVERSE INHIBIT MEMORY SYSTEM HAVING A FLUX INTEGRATION FORM OF SIGNAL DETECTION**  
Sidney J. Schwartz, Beavercreek Township, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Nov. 10, 1966, Ser. No. 593,573  
Int. Cl. G11b 5/00

U.S. Cl. 340-174

6 Claims



A magnetic memory system which has magnetic memory elements with two stable states of remanent magnetism, means to produce a read magnetic field, means to produce an inhibit magnetic field, a sensing means, and an integrating means which integrates the sensed signal to produce an output signal which is representative of

the initial memory state of the magnetic memory element when the means to produce the inhibit magnetic field has not been energized is disclosed. Thin magnetic film memory elements are employed in the described embodiment.

3,460,108

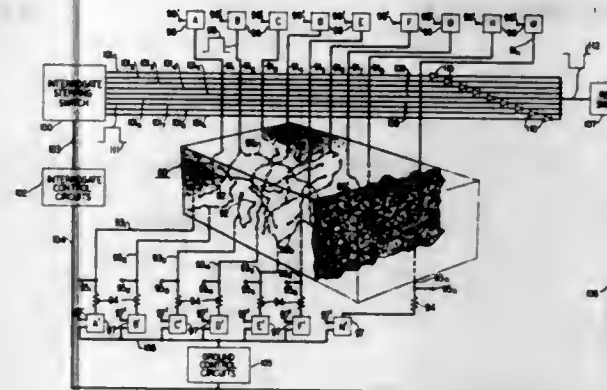
**MAGNETIC INDUCTIVE DEVICE COMPRISING A BODY OF INTERCONNECTED CONDUCTORS HAVING MAGNETIC STATES**

Andrew H. Bobeck, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Original application Dec. 23, 1960, Ser. No. 77,873, now Patent No. 3,214,742, dated Oct. 26, 1965. Divided and this application Mar. 1, 1965, Ser. No. 436,134  
Int. Cl. G11b 5/12

U.S. Cl. 340-174

23 Claims



A magnetic inductive device performing a learning function is developed from a body of interconnected conductors having remanent states. An energizing circuit connected to first and second points in the body applies pulses which cause portions of the conductors between the first and second points to change from first remanent states to second remanent states and thereby change the impedance between the first and second points.

3,460,109

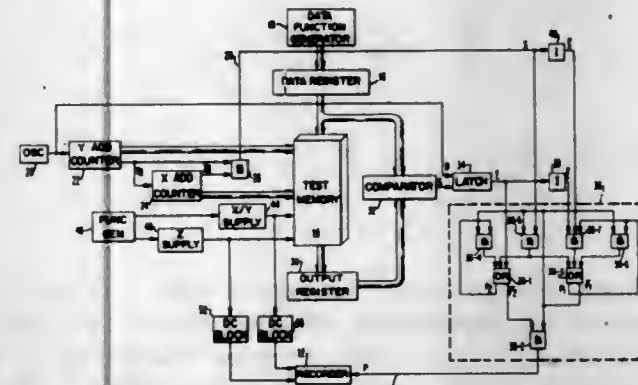
**AUTOMATIC TESTER FOR EVALUATING COMPUTER MEMORY SYSTEMS**

Philip J. Veneziano, Wappinger Falls, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Sept. 2, 1965, Ser. No. 484,585  
Int. Cl. G06f 11/04; G01r 33/00

U.S. Cl. 340-174

13 Claims



An automatic tester for evaluating computer memory systems cycles test data through each of the memory addresses and compares the supplied data with the read data for providing an error signal when they fail to compare. Coincident operating currents for the memory are varied simultaneously but differently and a recorder, re-

sponsive to the automatically varying currents and the error signals, graphically displays the error free area of operation by a series of partial Lissajous curves.

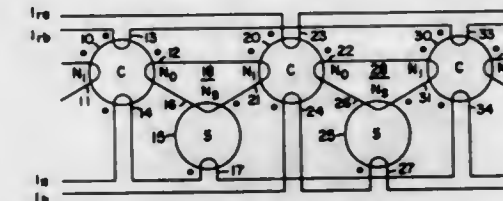
3,460,110

**MAGNETIC LOGIC CIRCUITRY EMPLOYING CORES HAVING SHIFTED HYSTERESIS LOOPS**  
Vello K. Paine, Minneapolis, and Edwin H. Schmidt, Hopkins, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Oct. 15, 1965, Ser. No. 496,318  
Int. Cl. G11b 5/62

U.S. Cl. 340-174

17 Claims



Logic circuits employing magnetic cores having inherently shifted hysteresis loops. Because of the inherent bias of such cores fewer windings are required and power requirements are reduced.

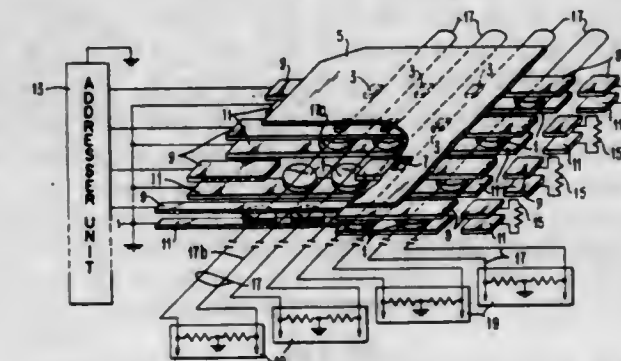
3,460,111

**THICK FILM READ-ONLY MEMORY**  
Richard E. Matlick, Peekskill, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 15, 1965, Ser. No. 496,455  
Int. Cl. G11b 5/00

U.S. Cl. 340-174

19 Claims



The read-only memory includes a plurality of magnetic thick films. Each film exhibits an easy axis of magnetization but the self-demagnetizing force is greater than the coercive force, which causes the magnetization to split up into several domains oriented in opposite directions along the easy axis. Information is entered by a card containing magnets at positions adjacent selected films. The magnets apply an easy axis field. The interrogate conductors are arranged parallel to the film's easy axis and apply hard axis fields to read out information. The sense conductors are arranged parallel to the film's hard axis and sense easy axis flux changes easy axis.

3,460,112

**MAGNETIC DOMAIN PROPAGATION DEVICE**  
Andrew H. Bobeck and Reginald A. Kaenel, Chatham, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

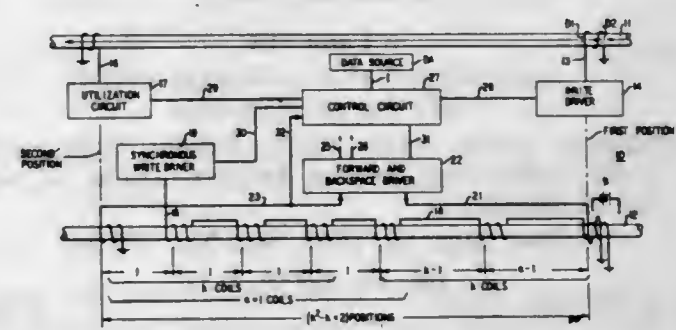
Filed Nov. 30, 1965, Ser. No. 510,523  
Int. Cl. G11b 5/00, H04l 9/00

U.S. Cl. 340-174

11 Claims

Information is scrambled in a shift register by changing the positions of stored bits with respect to an input position each time a new bit is stored. A convenient

implementation for moving the stored information comprises a second shift register in which a coded pattern of bits is stored between first and second positions. The information in both shift registers is moved back and



forth in unison. Each time a coded bit reaches a first or second position in the second register a signal is provided for reversing the direction of propagation and that bit is annihilated.

3,460,113

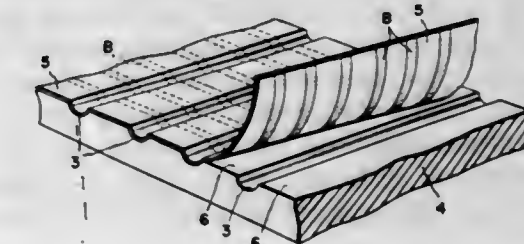
**MAGNETIC MEMORY DEVICE WITH GROOVED SUBSTRATE CONTAINING BIT DRIVE LINES**  
Hisao Maeda, 211 Minamisenzoku-machi, Ota-ku, Tokyo-to, Japan

Filed July 31, 1964, Ser. No. 386,665  
Claims priority, application Japan, Aug. 3, 1963, 38/41,470; Aug. 19, 1963, 38/44,257; Aug. 26, 1963, 38/64,076; Aug. 31, 1963, 38/66,000, 38/66,001; Sept. 6, 1963, 38/67,001; Mar. 25, 1964, 39/16,142

Int. Cl. G11b 5/62

U.S. Cl. 340-174

12 Claims



1. A magnetic memory device which comprises a base plate having a plurality of parallel grooves recessed in a surface, a film having a plurality of parallel driving conductors thereon, said film being secured onto the grooved surface of said base plate in such a manner that the driving conductors are crossed with said grooves, and memory wires fitted in said grooves, each of said memory wires consisting of a core conductor and a magnetic film covering said core conductor.

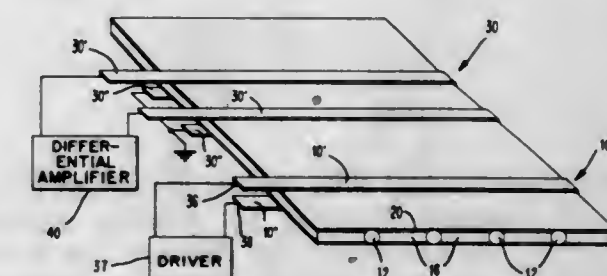
3,460,114

**PLATED WIRE MEMORY PLANE**  
Woo F. Chow, Horsham, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 499,971  
Int. Cl. G11b 5/62

U.S. Cl. 340-174

9 Claims



A memory plane is disclosed which provides a storage device having a low impedance characteristic. The stor-



age element comprises a plated wire around which are placed two contoured conductors. The contoured conductors in combination with the magnetizable wires comprise a low impedance coaxial line.

3,460,115

### MAGNETIC PIN INFORMATION STORAGE SYSTEM

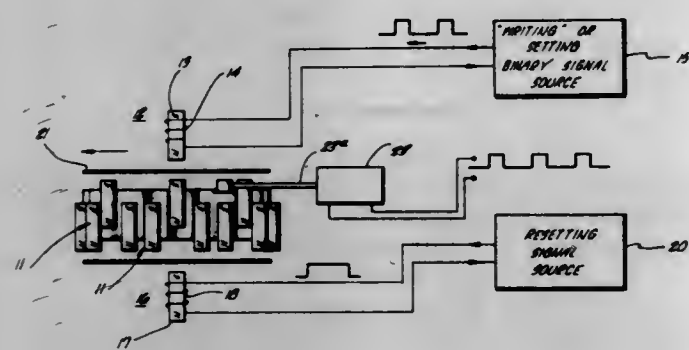
William C. Leone, Palos Verdes Estates, Calif., assignor to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan

Filed Aug. 16, 1965, Ser. No. 479,908

Int. Cl. G11b 5/12

U.S. Cl. 340—174

3 Claims



A mechanical storage system for mechanically storing binary coded electrical signals. The storage system comprises a supporting structure having movable storage elements mounted thereon for storing a binary signal in accordance with the position of the element on the supporting structure. The system includes means for setting and resetting the elements between the binary positions and sensing means for producing binary coded electrical signals representative of the positions of the movable storage elements upon the production of relative movement between the supporting structure and the sensing means.

3,460,116

### MAGNETIC DOMAIN PROPAGATION CIRCUIT

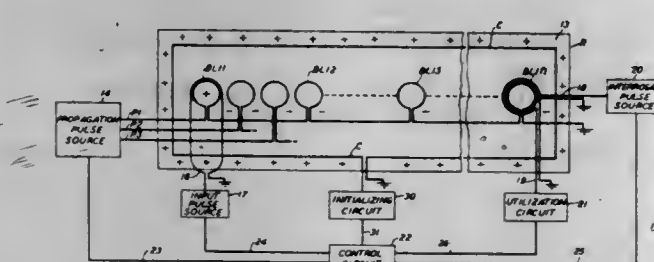
Andrew H. Bobeck, Chatham, Umberto F. Gianola, Florham Park, and Richard C. Sherwood, New Providence, N.J., and William Shockley, Santa Clara, Calif., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Sept. 16, 1966, Ser. No. 579,931

Int. Cl. G11c 5/02

U.S. Cl. 340—174

16 Claims



A two-dimensional shift register is realized in a single sheet of magnetic material by defining self-bounded (single wall) reverse-magnetized domains free to move in any direction in the sheet. A simple arrangement for the propagation of the domains is made possible by the use of a material having substantially isotropic properties

in the plane of the sheet and a preferred direction of magnetization out of that plane.

3,460,117

### ERROR DETECTING METHODS

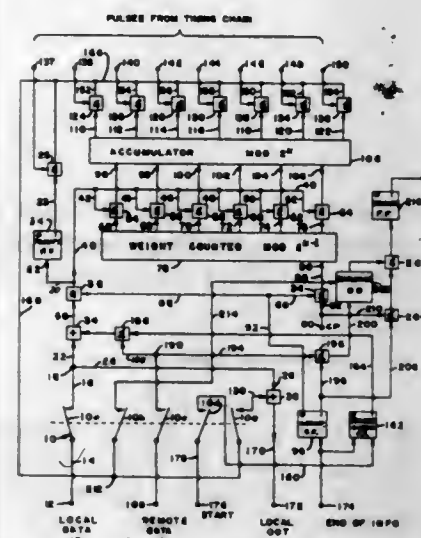
Marius Cohn and Abraham Franck, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 120,048, June 27, 1961. This application Sept. 16, 1965, Ser. No. 492,976

Int. Cl. G08b 29/00; G06f 11/00

U.S. Cl. 340—146.1

3 Claims



A method is described for checking the accuracy of transmission of digital information wherein at the transmitting station a check number is generated by developing a check character which is a function of the permutation of the message bits which are weighted and then summed in a modular two adder. Appended to this check character to form the check number is one or more parity bits such that the total number of digits of a given binary significance in the check number odd.

3,460,118

### DATA RECORDING DEVICE AND SYSTEM

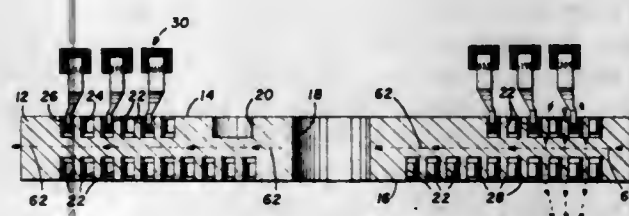
Robert L. Woolfolk, Dallas, Tex., assignor to Recognition Equipment, Incorporated

Filed Feb. 11, 1965, Ser. No. 431,951

Int. Cl. G11 5/02, 5/82

U.S. Cl. 340—174.1

6 Claims



A record device for magnetically storing data having a continuous magnetic recording media surrounded by relatively high reluctance zones. The magnetic recording media is disposed within a groove having a generally square cross-sectional configuration with parallel side walls disposed normal to the face of a planar disk. The disk is fabricated from a material having a high magnetic permeability. A layer of high reluctance insulating ma-

terial binds the magnetic recording media to one side wall of the generally square cross-sectional groove.

3,460,119

### APPARATUS FOR MAGNETICALLY CODING AND DECODING PNEUMATIC TIRE MEMBERS

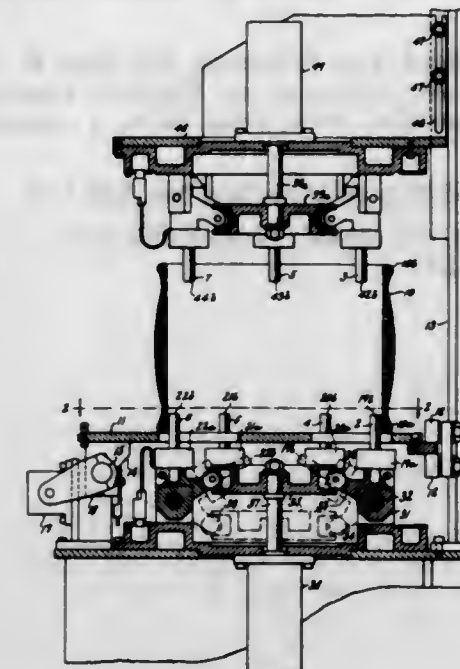
John W. Ugo, Detroit, and Walter J. Tomalc, Warren, Mich., assignors to Uniroyal, Inc., a corporation of New Jersey

Filed Aug. 20, 1965, Ser. No. 481,181

Int. Cl. G11b 5/74, 7/00

U.S. Cl. 340—174.1

10 Claims



A digital magnetic code containing both an indexing digit and information digits is placed circumferentially on both sides of a tire carcass. Synchronously rotatable magnetic transducers are disposed on both sides of the tire to code the tire.

3,460,120

### RANDOM ACCESS CARD MEMORY SYSTEM

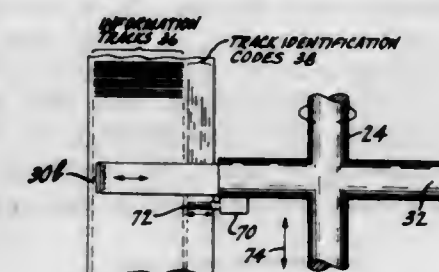
Abraham Lichowsky, Los Angeles, Calif., assignor to Radio Corporation of America, a corporation of Delaware

Filed Feb. 1, 1966, Ser. No. 523,993

Int. Cl. G11b 5/80

U.S. Cl. 340—174.1

12 Claims



Information is stored on spaced cards, each of which has identification codes recorded along one of its edges and information tracks parallel to another of its edges. In response to an input address, relative movement occurs between the read-write heads and cards until the heads are at the approximate position of the tracks called for by the address. Identification heads then read the codes appearing on a card or cards and in response thereto, center the read-write heads on the desired tracks. The read-write heads are then moved along the tracks to read from or write on the tracks.

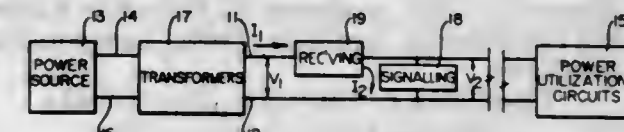
3,460,121  
SIGNALLING AND COMMUNICATION SYSTEM  
Willard H. Wattenburg, Berkeley, Calif., assignor, by mesne assignments, to Berkeley Scientific Laboratories, a corporation of California

Filed Oct. 24, 1965, Ser. No. 504,918

Int. Cl. G08b 17/06, 25/00

U.S. Cl. 340—216

3 Claims



A signalling system including a sensing device such as a smoke detector or fire alarm which supplies an actuating signal to a transmitter which causes a dynamic load to be connected to the transmission lines causing a doubly modulated signal to appear thereon. The signal consists of a communicating frequency modulated by a pattern harmonically related to the power line frequency. A receiver is coupled to the transmission lines and includes a double detector for detecting the communicating frequency and providing an output signal when the periodic pattern on the communicating frequency is present. Specific circuitry is disclosed for the transmitter and receiver.

3,460,122

### PULSE CODE MODULATION APPARATUS

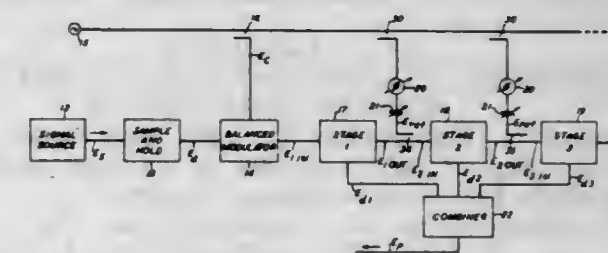
Mark R. Barber, Summit, and Reed E. Fisher, Parsippany-Troy Hills Township, Morris County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Feb. 23, 1966, Ser. No. 529,453

Int. Cl. H03k 7/06

U.S. Cl. 332—10

10 Claims



An analog-to-digital converter is disclosed that uses a balanced modulator to form a modulated signal having both a phase, of either zero or 180 degrees, and an amplitude that are representative of the amplitude of the analog signal. This modulated signal is then fed through a series of phase-responsive coder stages, each of which determines a digit in the Gray or binary code representation of the analog signal.

3,460,123

### CLOTHING ALARM MEANS

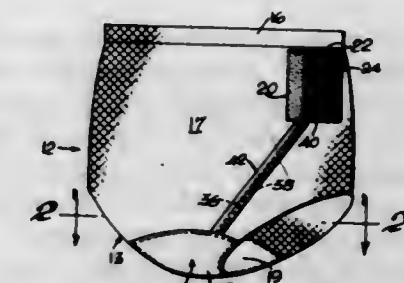
Jack V. Bass, 2335 Trapp Ave., Miami, Fla. 33133

Filed July 14, 1965, Ser. No. 471,886

Int. Cl. G08b 21/00

U.S. Cl. 340—235

3 Claims



An undergarment of diaper form to signal the patient when urine is present in which includes a pair of super-



imposed but spaced urine detection means of screen form to be electrically bridged by the urine to permit a current to flow from a battery source to a transmitter to cause an audible signal.

3,460,124

## SMOKE DETECTOR

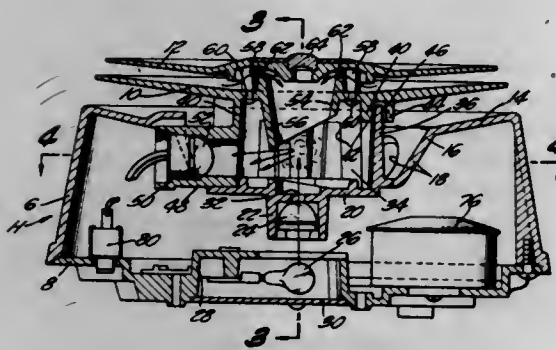
Randolph J. Smith, Anaheim, and Kenneth R. House, Norwalk, Calif., assignors to Interstate Engineering Corporation, Anaheim, Calif., a corporation of California

Filed June 6, 1966, Ser. No. 555,424

Int. Cl. G08b 17/10, 21/00

U.S. Cl. 340-237

3 Claims



A smoke detector including a housing having an omnidirectional ambient smoke inlet and a central diffusion chamber into which is directed a light source and the reception path of a photoelectric cell, the housing having concentric baffles with staggered interruptions uniformly distributed thereabout.

3,460,125

## METHOD AND APPARATUS FOR DETECTING GASEOUS IMPURITIES

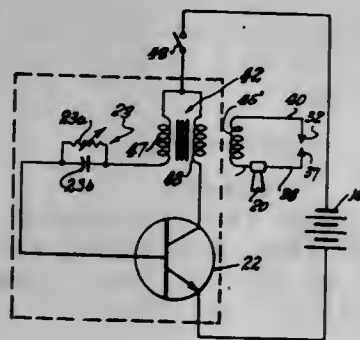
Leonard N. Liebermann, La Jolla, and Stanley H. Lai, San Diego, Calif., assignors to Thermal Industries of Florida, Inc., a corporation of Delaware

Continuation-in-part of application Ser. No. 417,385, Dec. 10, 1964. This application May 5, 1967, Ser. No. 636,352

Int. Cl. G08b 21/00

U.S. Cl. 340-242

22 Claims



A low intensity spark discharge is periodically ignited and extinguished in a given atmosphere by applying a voltage across two electrodes which differs slightly in amplitude from the dielectric breakdown potential  $V_b$  of the given atmosphere. To detect impurities which have the effect of raising the dielectric breakdown potential  $V_b$  of the given atmosphere, apparatus is provided for applying a periodic electrode voltage greater in amplitude than  $V_b$ , and cessation of the resultant spark discharge is detected by a device which signals the presence of the impurity. To detect impurities which have the effect of

lowering the dielectric breakdown potential  $V_b$  of the given atmosphere, the applied periodic electrode voltage is made lower in amplitude than  $V_b$ , and apparatus is provided for detecting initiation of a spark discharge corresponding to the applied voltage and for signaling the presence of the impurity denoted thereby. In one embodiment, at least one electrode is composed essentially of zirconium, virtually eliminating electrode fouling and concomitant misfiring.

3,460,126

## CIRCUIT FOR PROTECTING A CURRENT LIMITING RESISTIVE DEVICE FROM EXCESSIVE CURRENT

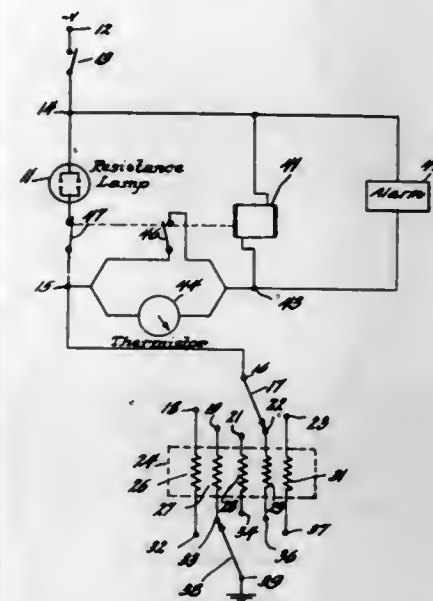
Jordan F. Spofford, East Kingston, and Emil B. Swanson, Kingston, N.H., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed May 6, 1966, Ser. No. 548,145

Int. Cl. G08b 21/00; H02h 5/04

U.S. Cl. 340-253

5 Claims



A bypass circuit protects a current limiting resistance lamp from damage due to excessive current from a current source connected through the lamp to a device under test when the device is short-circuited. The bypass circuit includes a thermistor and the coil of a relay both connected in series across the lamp. A normally open relay contact pair is connected across the thermistor and an alarm is connected across the coil and a normally closed relay contact pair is connected in series with the lamp. A predetermined increase in current between the source and the device actuates the alarm and, after a predetermined time, energizes the relay through the thermistor operating the contacts to shunt the thermistor, and cut off the lamp to bypass the lamp and protect it from damage.

3,460,127

## DISPLAY APPARATUS

Marcel A. Pahlavan, Los Angeles, Calif., assignor to Aerospace Products Research Corporation, Santa Monica, Calif., a corporation of California

Filed Feb. 15, 1966, Ser. No. 527,424

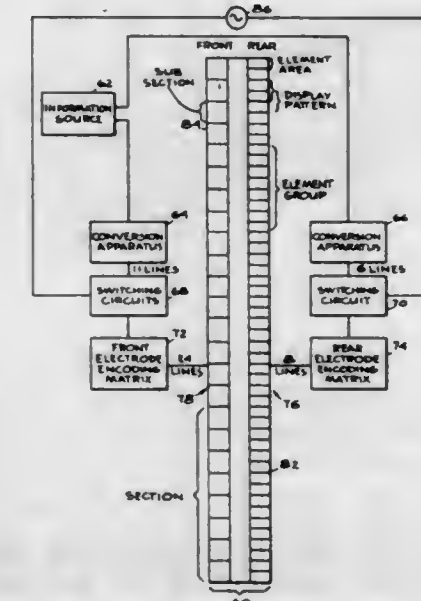
Int. Cl. G08b 25/00

U.S. Cl. 340-324

15 Claims

A solid state moving tape type display apparatus capable of displaying various patterns and apparently physically moving the displayed patterns by incremental dis-

tances considerably smaller than the dimension of the pattern. The apparatus is comprised of front and rear segmented electrode structures. The rear electrode structure is segmented to define a plurality of element areas and the front electrode structure is segmented to define areas, each of which overlays at least two rear electrode



element areas. First and second encoding matrices are provided to respectively couple the first and second terminals of an alternating current source to the front and rear electrode structures. The encoding matrices are responsive to pattern and position information to cause anyone of several different patterns to be displayed in anyone of several different positions.

3,460,128

## ANALOGUE-TO-DIGITAL CONVERTER EMPLOYING SERIES CONNECTED NEGATIVE RESISTANCE DEVICES

John Clifford Price and Ryszard Kitajewski, Aldwych, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

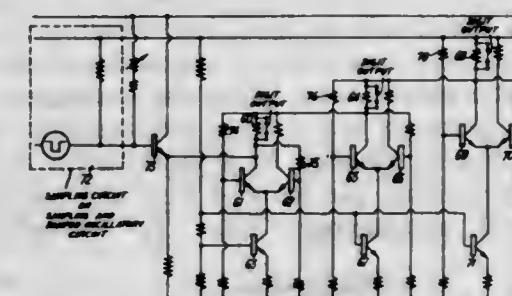
Filed Oct. 8, 1965, Ser. No. 494,009

Claims priority, application Great Britain, Feb. 12, 1965, 6,168/65

Int. Cl. H03k 13/02

U.S. Cl. 340-347

14 Claims



An equilibrium type encoder having a plurality of bi-stable coding elements connected in series with each other and the source of analogue signal having superimposed thereon a damp oscillatory waveform of fixed initial amplitude and a predetermined rate of decay. Each bi-stable element includes a pair of transistors in a common emitter switching configuration to connect a constant current source to an output resistor connected to the collector of one of the pair of transistors. The bi-stable element

containing the components defined above each exhibit a negative resistance characteristic similar to a tunnel diode. In the case of a binary converter, each constant current source is twice the value of the preceding one.

3,460,129

## FREQUENCY DIVIDER

Kurt Egon Thorvaldson, Goteborg, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

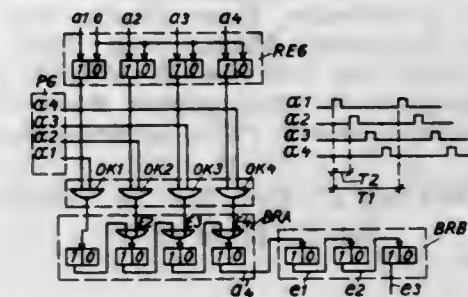
Filed Feb. 24, 1965, Ser. No. 434,760

Claims priority, application Sweden, Mar. 9, 1964, 2,917/64

Int. Cl. H03k 13/02

U.S. Cl. 340-347

2 Claims



A frequency divider for converting an  $n$  position binary number to a train of pulses having a frequency proportional to the binary number includes  $n$  two-input and-circuits. One input of each and-circuit receives the signal representing the value of one of the binary positions of the number respectively. The other input of each and-circuit receives one of  $n$  trains of pulses which are phase-shifted with respect to each other so that signals are transmitted from the and-circuits in a cyclic sense. The outputs of the and-circuits are connected in parallel via or-circuits to the inputs of a cascaded chain of  $n$  binary counter stages. In addition, the frequency divider is shown in various embodiments to perform binary multiplication and division.

3,460,130

## RESOLVER SHAFT ANGULAR VELOCITY TO PULSE WIDTH CONVERTER

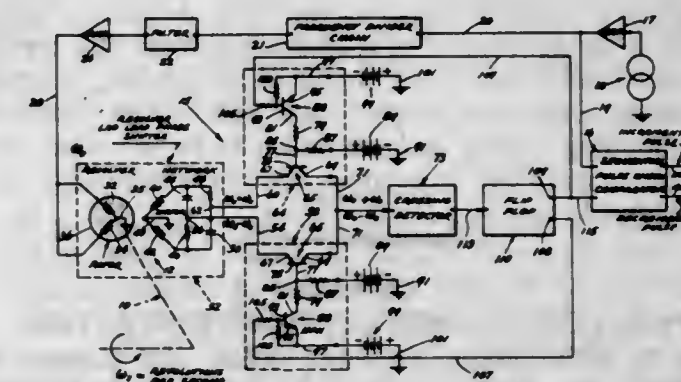
Thomas J. Lavin, Midland Park, N.J., assignor to The Bendix Corporation, a corporation of Delaware

Filed June 14, 1965, Ser. No. 463,547

Int. Cl. H03k 13/02

U.S. Cl. 340-347

6 Claims



An improved device for the incremental encoding of rotational motion in which electrical signals are generated which may be used to determine the rotational velocity of a rotating component. In the improved device, a known frequency excitation voltage is applied to a resolver net-



work including a resolver lag-lead phase shifter network effecting at a first output a first side band sinusoidal signal wave of a frequency equivalent to a sum of the angular velocity of a shaft and a carrier wave angular velocity and at a second output a second side band sinusoidal signal wave of a frequency equivalent to a difference between the shaft angular velocity and the carrier wave angular velocity; and in which device these outputs are switched selectively to a zero crossing detector which triggers a flip-flop. The flip-flop output goes to a comparator where it is compared with the excitation voltage to provide an appropriately generated increment or decrement pulse output.

3,460,131

# SEQUENTIALLY GATED SUCCESSIVE APPROXIMATION ANALOG TO DIGITAL CONVERTER

George G. Gorbatenko, James Jursik, and Milton J. Kimmel, Rochester, Minn., Syed Razi, Mountain View, Calif., and Norman D. Wilson, Rochester, Minn., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

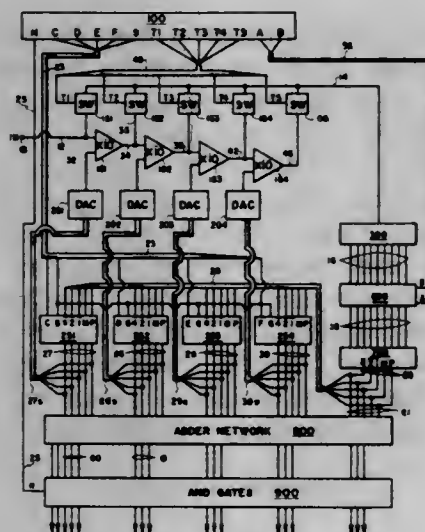
Filed July 23, 1965, Ser. No. 474,255

Int. Cl. H03k 13/02

U.S. Cl. 340—347

23 Claims

of switches are responsive to apertures with parity dependent upon coincident operation of the switches.



The disclosed successive-approximation converter has sequentially gated level-detection means for producing conversion digits from an analog signal, differential amplifiers which subtract analog representations of the stored conversion digits from the analog signal, and correction means for detecting conversion errors. An error causes an out-of-range analog signal at the level detectors, which results in the generation of a correction digit. The correction digit causes an output circuit to change the incorrect conversion digit to its proper value, and further causes its corresponding analog representation to be modified to a different magnitude. More than one correction digit may be employed.

3,460,132

# PARALLEL TO SERIAL CODE CONVERTER

Hans Y. Juliusburger, Putnam Valley, and George R. Stilwell, Jr., West Nyack, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Sept. 7, 1965, Ser. No. 485,339

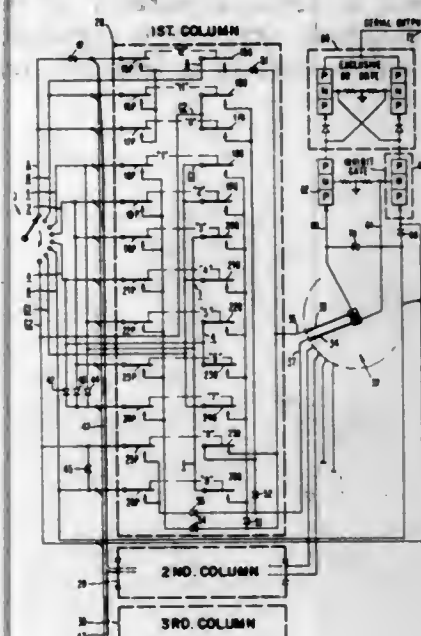
Int. Cl. H03k 13/02

U.S. Cl. 340—347

8 Claims

An arrangement of switches is provided for converting

data on aperture cards into a series of output pulses of a given parity. The switches are arranged so that pairs



3,460,133

# ASYNCHRONOUS MAGNETIC CORE ANALOG-TO-DIGITAL CONVERTER

Friedrich Ulrich, Stuttgart-Weilimdorf, Germany, assignor to International Standard Electric Corporation

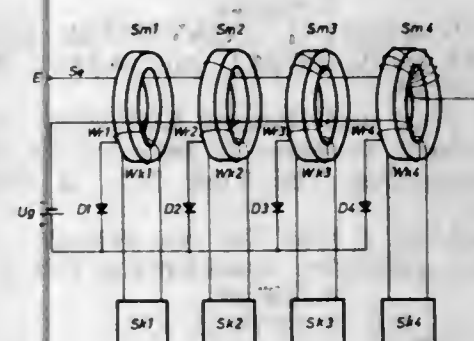
Filed Oct. 20, 1965, Ser. No. 498,397

Claims priority, application Germany, Nov. 16, 1964, St 22,946

Int. Cl. H03k 13/175; H04I 3/00

U.S. Cl. 340—347

5 Claims



An analog-digital converter is formed by a series of magnetic cores wired with an input lead which provides a number of turns over each core corresponding to the digit value of a digital output code. When the analogous value is reached the elements are shunted differentially, otherwise they are directly shunted by a short-circuit arrangement. The digital signal can be read from the position of the short-circuit arrangement after the conversion is completed.

3,460,134

# SIGNALLING DEVICE

William Ross Aiken, 10410 Magdalena Ave.,

Los Altos Hills, Calif. 94022

Filed June 23, 1967, Ser. No. 648,374

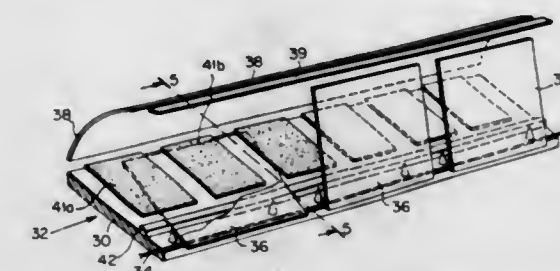
Int. Cl. G08b 5/30

U.S. Cl. 340—373

4 Claims

A signalling device having a vane hingedly mounted for movement between a concealed and a display position, provided with a base electrode arranged adjacent said vane in its concealed position and an arched electrode ad-

acent the intended path of movement of an outer edge of said vane. Means is provided which is normally effective to establish a vane-attracting electrostatic field between the base electrode and the vane and which is operable to abolish said field; and means is also provided which is operable to establish a vane-attracting electrostatic field between the vane and the arched electrode so



that forces may simultaneously be exerted upon the vane which endeavor to move it in opposite directions. Removal of the vane-attracting potential from the base electrode operates to raise the vane dependably into its exposed position. The base electrode may be subdivided into relatively spaced sections which have their own control switches to provide additional control facilities for the device.

3,460,135

# PULSED SYMBOL MASK SHIFTING ARRANGEMENT

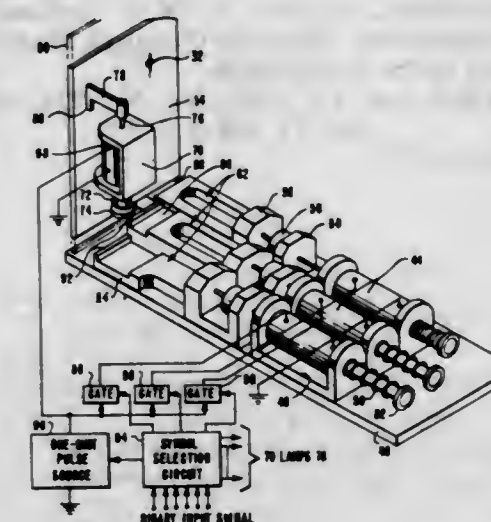
Raymond W. Gardner, Lakewood, Calif., assignor to Shelly Associates, Inc., a corporation of California

Filed Sept. 7, 1966, Ser. No. 577,678

Int. Cl. G08b 5/22

U.S. Cl. 340—378

11 Claims



This invention relates to an optical projection device in which various symbols are arranged on a symbol mask and the particular symbol to be projected is aligned with the projection path. The symbol mask and an associated shuttle arrangement are pulse operated such that the particular symbol on the mask which is to be projected is held in alignment with the projection path by the shuttle element.

3,460,136

# ELECTRONIC SOUND SIGNALLING DEVICE

Vartan M. Jambazian, 2351 Warwick Ave.,

Los Angeles, Calif. 90032

Filed Nov. 23, 1965, Ser. No. 509,283

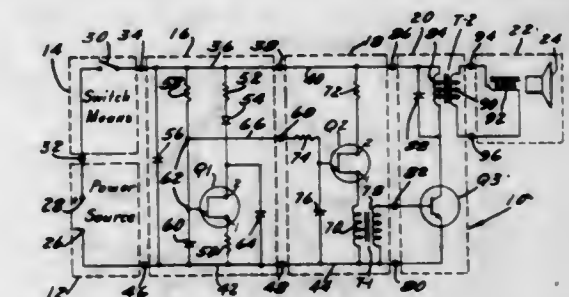
Int. Cl. G08b 3/10

U.S. Cl. 340—384

3 Claims

The invention provides an electronic signalling device

in which two signals of different frequencies are operated



on to produce an output having characteristics similar to the sounds produced by birds and the like.

3,460,137

# TRACK INITIATION SYSTEM

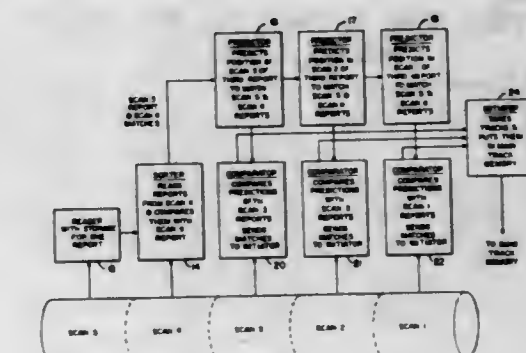
Anthony Ralston, Upper Montclair, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed May 24, 1965, Ser. No. 459,980

Int. Cl. G01s 9/00

U.S. Cl. 343—5

14 Claims



1. A track initiator comprising a source of radar reports; storage means for storing said reports; said source of radar reports being stored on the storage means so that different scans of the radar are identified in order of their appearances; sorter means for comparing the reports of a last scan with the reports of a second to last scan in order to find matches within certain limits, said sorter means having an output only when a match occurs; first means for comparing matches of the last and second to last scan reports to produce a predicted report in at least one previous scan to the second last scan; second means comparing the predicted position with actual reports in the previous scans; said second means having an output when a match of the predicted report and an actual report occur; and initiator means responsive to the output of said second means for producing a track initiating output signal.

3,460,138

# ELECTRONIC COUNTERMEASURE PLOTTING

Earl E. Hill, Jr., with the armed forces of the United States, assignor to the United States of America as represented by the Secretary of the Air Force

Filed June 27, 1966, Ser. No. 562,428

Int. Cl. G01s 7/04

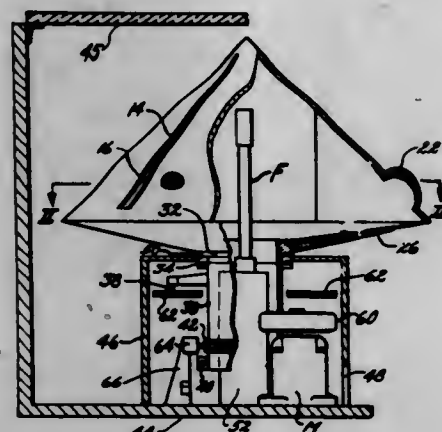
U.S. Cl. 343—5

6 Claims

A lighted strobe plotting table to provide a mechanized display of passive electronic countermeasure data. The projection arrangement forms a fan-shaped beam of light to intersect a translucent plotting surface in order to display a pie-shaped strobe with its origin at a fixed point on the board's surface. By rotating the projection system



and pulsing the light source at selected azimuths, a number of strobes can be displayed around one point which



represents a radar site location. Display of azimuth only information from several sites is, therefore, both possible and practical.

3,460,139

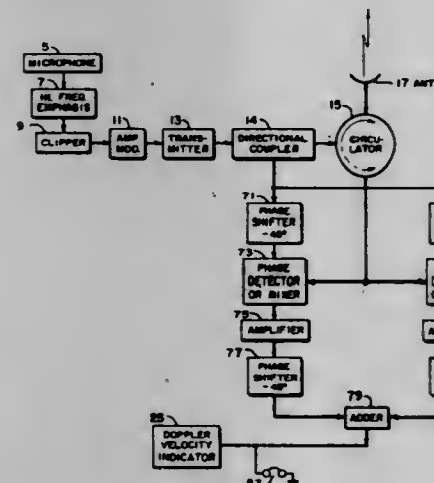
## COMMUNICATION BY RADAR BEAMS

Otto E. Rittenbach, Neptune, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Sept. 6, 1967, Ser. No. 666,559  
Int. Cl. G01s 9/00

U.S. Cl. 343-6

6 Claims



Several systems are shown for communicating via the beams of Doppler radar sets. In each embodiment the outgoing radar beam is modulated with a voice or other intelligence signal and a remote station is adapted to demodulate this signal. Each remote station also includes a transmitter for reflecting the radar beam back toward the radar set with intelligence originating at the remote station impressed thereon. In order to provide a fade-free link, single sideband modulation at the remote transmitter, or single sideband demodulation at the radar set is provided. Also, high frequency emphasis plus clipping of the voice signals at both ends of the system increase the useful range.

3,460,140

## CONOPULSE RADAR

Russell H. Logan, Irving, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

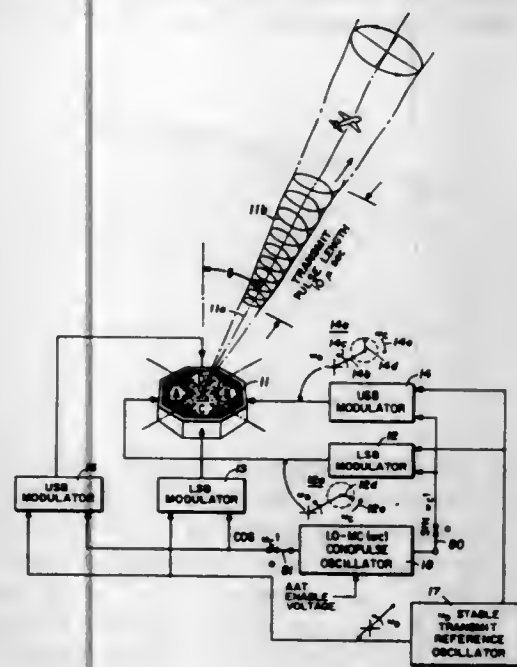
Filed June 29, 1967, Ser. No. 649,915  
Int. Cl. G01s 9/40

U.S. Cl. 343-16

10 Claims

Single beam radar employing within-pulse-scanning determines target range and angle. The phases of the signals transmitted from antenna elements are controlled

individually by means of a beam steering control unit thereby determining the beam pointing direction. The relative phases of the signals from elements in an array are further controlled by mixing a scan signal with the



transmit oscillator signal so that within each transmitted pulse the antenna beam scans a trajectory about the normal beam pointing direction. After reflection from a target, angle and range controlled parameters of the return signal are extracted.

3,460,141

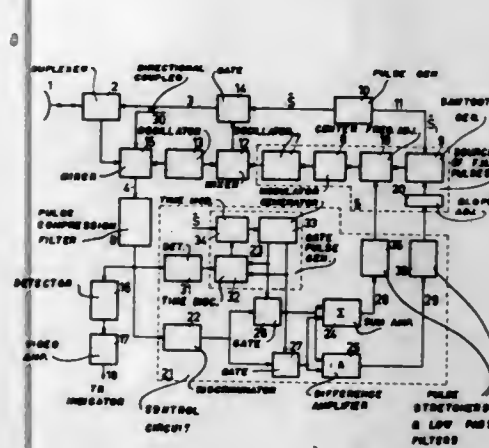
## PULSE RADAR APPARATUS

Antonius Fredericus Mattias Bouman, Hengelo, Netherlands, assignor to N.V. Hollandse Signaalapparaten, Hengelo Overijssel, Netherlands, a firm of the Netherlands

Filed Apr. 15, 1968, Ser. No. 721,345  
Int. Cl. G01s 7/28

U.S. Cl. 343-17.2

4 Claims



The invention relates to a pulse radar apparatus, the transmitter channel of which includes an arrangement for producing substantially linearly frequency-modulated pulses of comparatively long duration, while its receiver channel includes a pulse compression filter which compresses applied echo pulses having said frequency modulation to output pulses of comparatively short duration. Deviations from  $f_0$  and  $df/dt$  are caused by temperature, voltage and aging changes. A sum and difference amplifier generates error signals proportional to these deviations of the compressed pulse. These signals control members which readjust the above parameters to their nominal value.

3,460,142

## MICROWAVE ABSORBING WALL

Kunihiko Suetake, 10-11, Minami 3-chome, Meguro-ku, Tokyo, Japan

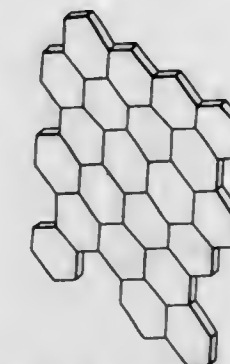
Filed May 23, 1967, Ser. No. 640,583

Claims priority, application Japan, Oct. 7, 1966,  
41/66,120

Int. Cl. H01q 17/00

U.S. Cl. 343-18

2 Claims



This invention is to provide a thin microwave absorbing wall made of a magnetic material plate in which the real part  $\mu_r'$  of the complex permeability  $\mu = \mu_r' - j\mu_r''$  is close to 1 and the imaginary part  $\mu_r''$  is much larger than  $\mu_r'$  and varies in inverse proportion to the frequency and which is lined with a conductive plate on the back surface.

3,460,143

## APPARATUS FOR MEASURING THE QUALITY OF A PRINTED CHARACTER

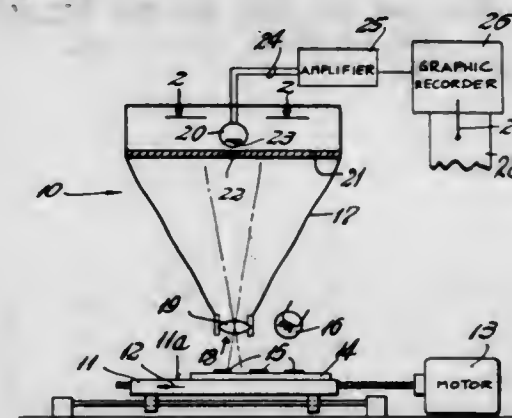
Angelo Vaccaro, Port Washington, N.Y., assignor to Columbia Controls Research Corporation, Glen Cove, N.Y., a corporation of New York

Filed Sept. 18, 1967, Ser. No. 668,322

Int. Cl. G01d 9/00

U.S. Cl. 346-33

3 Claims



An apparatus for optically scanning a printed character to determine its quality by changes in the reflectance of light therefrom by moving the character past a sensing station that is only responsive to a small transverse width of the character but substantially the height of the character to thereby scan essentially the whole character and provide a record of the reflectance.

3,460,144

## ANTENNA SYSTEMS PROVIDING INDEPENDENT CONTROL IN A PLURALITY OF MODES OF OPERATION

Peter W. Hannan, Centerport, N.Y., assignor to Hazeltine Research, Inc., a corporation of Illinois

Application Apr. 26, 1966, Ser. No. 545,324, now Patent No. 3,392,395, dated July 9, 1968, which is a division of application Ser. No. 111,542, May 22, 1961, now Patent No. 3,308,468, dated Mar. 7, 1967. Divided and this application Mar. 7, 1968, Ser. No. 711,398

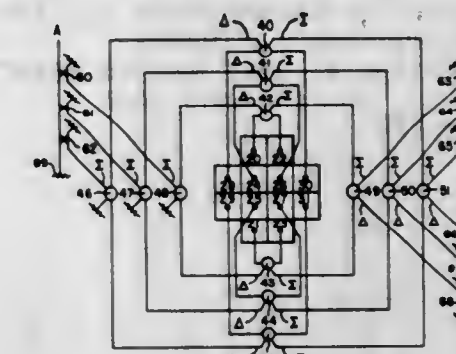
Int. Cl. H01q 13/02, 19/14, 21/00

U.S. Cl. 343-777

5 Claims

An antenna system providing independent control in a plurality of modes of operation having a plurality of horns arranged symmetrically about horizontal and ver-

tical axes. A group of hybrid junctions are coupled to the outputs of the horns to obtain preliminary sum and difference comparisons. The preliminary sum and difference comparison signals are coupled to a plurality of directional couplers in order to selectively combine portions of these preliminary signals to form each operating



mode of the antenna in order to effectively change the size of the array for each mode. For example, in a monopulse antenna a different effective antenna size is provided for the sum mode and the elevation and azimuth difference modes. Alternative arrangements are also covered.

3,460,145

## ELECTRONIC SCANNING SYSTEM FOR WAVE ENERGY BEAM FORMING AND STEERING WITH RECEPTOR ARRAYS

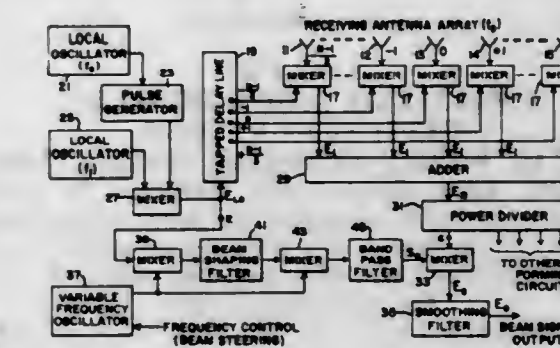
Major A. Johnson, Cazenovia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Mar. 14, 1968, Ser. No. 713,054

Int. Cl. H04b 7/02, 7/04

U.S. Cl. 343-100

9 Claims



This disclosure describes electronic scanning means for forming and steering one or a plurality of receive beams with an antenna or other receptor array comprising a plurality of wave energy receiving elements ordered in various arrays of both linear and circular form. As described, beam forming is accomplished by first converting and combining all the element signals received from each wave energy source into an IF signal of character such that the IF signal frequency provides a measure of beam direction. Thus a number of simultaneously received beams at different angles will produce a corresponding number of IF signals of different frequencies multiplexed onto a single scanning signal, with the principal components for each received signal grouped around a scanning signal frequency corresponding to its direction of arrival. Each such signal thus multiplexed may be separated and processed to shape and steer the individual beam represented thereby, by mixing them with sampling signals the frequencies of which determine beam position and the bandwidths of which determine beam width. Different processors for accomplishing this beam shaping



and steering are described, as are extensions of the beam forming and steering system to arrays of different forms including one of multiple concentric rings.

3,460,146

**RADIO MAGNETIC INDICATOR**

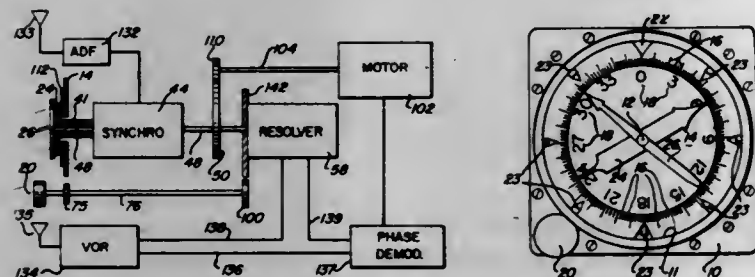
Edward S. White, Highland Park, Clement C. Krueger, Orland Park, and Donald S. Rosenthal, Deerfield, Ill., assignors to Allen Aircraft Radio, Inc., Elk Grove Village, Ill., a corporation of Illinois

Filed Apr. 21, 1967, Ser. No. 632,679

Int. Cl. G01s 3/02

U.S. Cl. 343—112

11 Claims



This disclosure concerns an aircraft navigation instrument for displaying the relative locations of two different radio stations broadcasting radio signals known as ADF and VOR signals, which are employed as radio aids to navigation. The instrument does not require a gyrocompass for its operation; a manual control is settable to the compass heading of the aircraft. The manual control is connected to the stator of a resolver, the rotor of which is connected to an indicator needle. The resolver is connected in circuit with one output from a VOR receiver, and the rotor of the resolver is driven by a motor responsive to the phase difference between the output of the resolver and a second output from the VOR receiver.

3,460,147

**AMPLITUDE MODE DOPPLER DIRECTION FINDER**

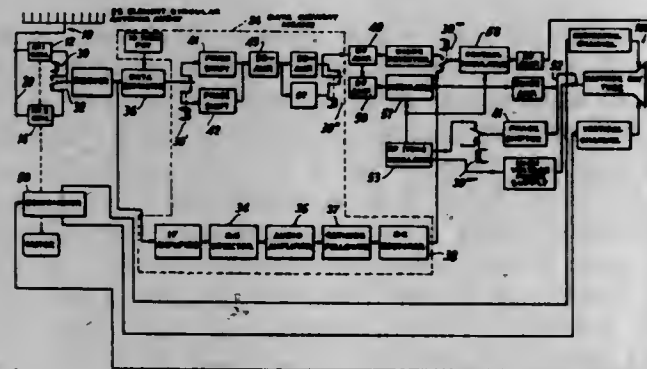
Frederick G. Richter, Huntington Station, Thomas V. Guerriere, Lake Grove, and Christian B. Williams, Stony Brook, N.Y., assignors to Servo Corporation of America, Hicksville, N.Y., a corporation of New York

Filed Dec. 11, 1967, Ser. No. 689,418

Int. Cl. G01s 5/02

U.S. Cl. 343—113

5 Claims



This invention relates to a direction finder characterized by a simulated rotating antenna which operates in an amplitude mode. Two simulated rotating antennas are developed from a conventional Doppler array and have their outputs continuously differenced to obtain amplitude modulated bearing information. The rotational spacing of the antennas is continuously made adjustable to provide desired results.

3,460,148

**ANTENNA FOR SPACE VEHICLE**

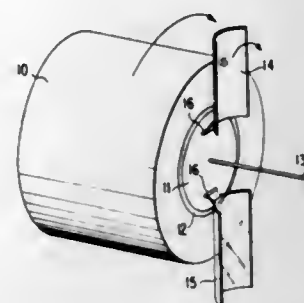
Emeric L. Podraczyk, Bethesda, Md., assignor to Communications Satellite Corporation, Washington, D.C.

Filed Dec. 8, 1965, Ser. No. 512,394

Int. Cl. H01q 1/28

U.S. Cl. 343—705

7 Claims



1. A fail safe antenna device for a spin-stabilized space satellite having a normally despun section comprising: a radiator/collector member mounted on the despun section and wave reflector means mounted on the despun section adjacent the radiator-collector member and biased toward an active first position and away from a passive second position whereby centrifugal force overcomes the biasing to move the reflector means to the passive second position whenever the normal despun section rotates with the satellite.

3,460,149

**PHASE-CONTROLLED SLOT ANTENNA**

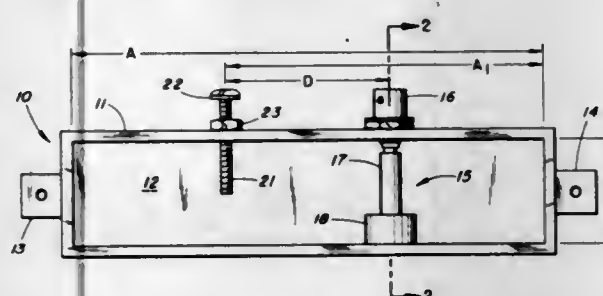
William F. McMahon, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Aug. 12, 1966, Ser. No. 572,154

Int. Cl. H01q 13/10, 1/42

U.S. Cl. 343—768

2 Claims



A slot antenna formed of an open-faced rectangular shaped cavity of approximately one wavelength in physical length having an energy feed extending through a side-wall thereof at a location off-center of both dimensions of the side-wall. A variable reactance tuning element may also be included extending through a side-wall of the cavity at a location off-center of both dimensions of the side-wall but not co-located with the energy feed.

3,460,150

**BROADSIDE LOG-PERIODIC ANTENNA**  
Kenneth K. Mei, Oakland, Calif., assignor to the Regents of the University of California, Berkeley, Calif.

Filed Jan. 21, 1966, Ser. No. 522,170

Int. Cl. H01q 11/10

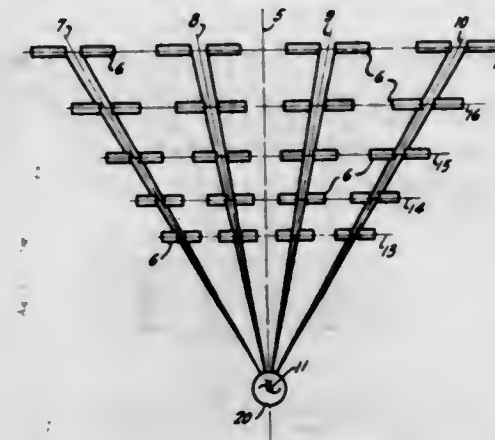
U.S. Cl. 343—792.5

6 Claims

A high gain frequency independent antenna includes an array of dipoles arranged in rows and files in substantially a common plane, the files radiating from a common origin and the rows being transverse and being spaced apart according to a logarithmic function. A pair of

conductors electrically connects the dipoles in each file to a source of energy, the conductors having substan-

cially equal effective length between said dipoles in any adjacent ones of said rows.



tially equal effective length between said dipoles in any adjacent ones of said rows.

3,460,151

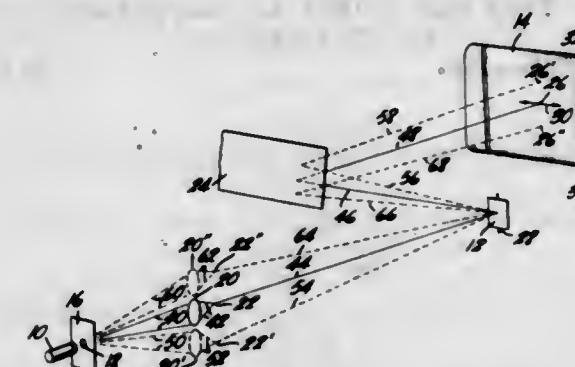
**DISPLACEMENT OF OSCILLOGRAPHIC TRACES**  
John A. Stafford, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Aug. 14, 1967, Ser. No. 660,444

Int. Cl. G01d 9/42; E21b 47/00

U.S. Cl. 346—1

4 Claims



A lens forms a real image of a light source, and the image is reflected by a mirror onto a moving photographic film used to make a well log. The mirror is caused to pivot back and forth in a pattern representative of information from a sensor in a well bore. An oscillographic trace is thus formed on the film. The lens referred to above is movable to adjust the location of the trace. Additional mirrors similarly generate additional oscillographic traces representative of information from additional sensors vertically spaced apart in the well bore. A separate movable lens is associated with each trace. By adjusting the positions of the lenses, the traces are shifted along the depth axis of the well log to compensate for the depth separation of the downhole sensing devices.

**ERRATUM**

For Class 346—33 see:  
Patent No. 3,460,143

3,460,152

**APPARATUS FOR RECORDING DATA**

Noel B. Proctor, Sugarland, and Fenton M. Wood, Houston, Tex., assignors to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey

Filed July 13, 1967, Ser. No. 653,058

Int. Cl. G01d 9/00

U.S. Cl. 346—33

7 Claims

Means for recording signals representing wall thickness and cross-sectional area of a tubular product. The re-

sectional area. The continuous wall thickness and cross-sectional area signals are passed through gating means, and the pulsed output of the gating means is recorded against a reference tolerance line.

3,460,153

**SENSING AND RECORDING GAS CONCENTRATION**

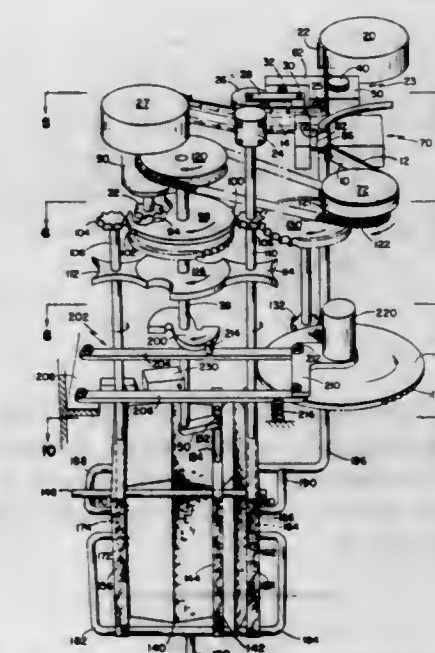
Carl B. White, Hamden, Conn., assignor to Union Industrial Equipment Corporation, Fall River, Mass., a corporation of Massachusetts

Filed Feb. 14, 1968, Ser. No. 705,380

Int. Cl. G01d 9/38

U.S. Cl. 346—33

15 Claims



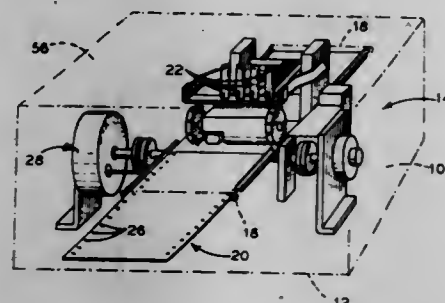
Gas concentration is sensed and recorded by advancing charges of a color changing material to an optical sensor, exposing the charges to gaseous samples, and recording gas concentration through a device that reflects the length of time required for the charges to undergo a certain amount of color change in response to the exposure to the gaseous samples. The charges are sealed in a laminated tape, and a device is provided to separate the laminations to expose only the charge about to be advanced to the sensor.



### 3,460,154 INDIVIDUAL SELECTIVE RESPONSE RECORDER

Herbert Schainholz, New York, N.Y., and Peter Katz, Livingston, N.J., assignors to Edgar A. Rosenberg, New York, N.Y.

Filed Oct. 13, 1966, Ser. No. 586,431  
Claims priority, application Great Britain, Oct. 21, 1965,  
44,586/65  
Int. Cl. G01d 9/28, 9/36, 15/04  
U.S. Cl. 346—60 9 Claims

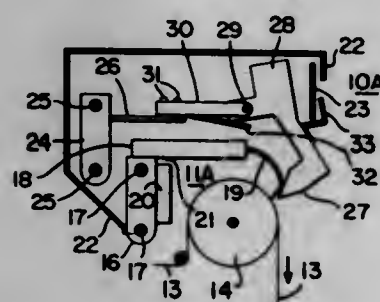


A response recorder is provided which has means for recording on a punch card, an operator's response, the exact time of the recording, and selected code symbols which uniquely identify the operator. Discrete, mutually exclusive, mechanical and electrical timing means are also provided for automatically indicating the time that a response is recorded, the mechanical timing means allowing the timing means to be operative and set to a selected time before the recorder is delivered to the operator.

### 3,460,155 ANALOG DECIMAL RECORDER WITH OVERLAPPING RANGES

Norman E. Polster, Southampton, Raymond W. Ross, Cheltenham, and Albert J. Williams, Jr., Philadelphia, Pa., assignors to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania  
Filed Mar. 31, 1967, Ser. No. 627,526  
Int. Cl. G01d 9/02

U.S. Cl. 346—66 14 Claims



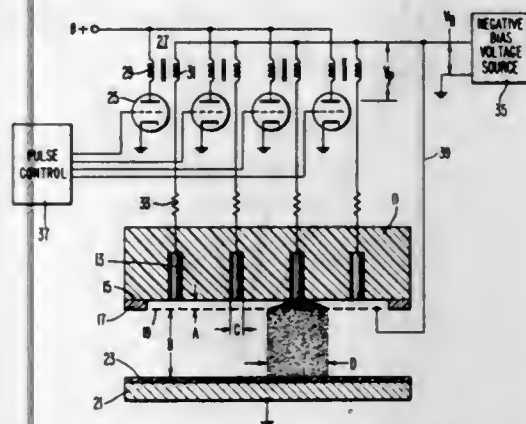
Various two-pen recorder systems in which movements of the pens in response to changes of the same measured quantity are centesimally proportioned and in which provision is made for the pens to pass to produce superimposed analog records.

### 3,460,156 ELECTROSTATIC PRINT HEAD AND PRINTING STATION

Theodore E. Byrd, Phoenix, Ariz., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan  
Filed Dec. 31, 1964, Ser. No. 422,614  
Int. Cl. G01d 15/06

U.S. Cl. 346—74 9 Claims  
An electrostatic printing station for controlling the size of latent image charged spots deposited on a charged retentive medium. The printing station is comprised of a print head having a plurality of ionization initiating pin electrodes terminating in a planar face and having an electrically biased flat grid positioned parallel to and

closely spaced from said planar pin face, an electrically biased planar back electrode positioned parallel to said grid and spaced away from it to define a gap through which said charge retentive medium is passed and a



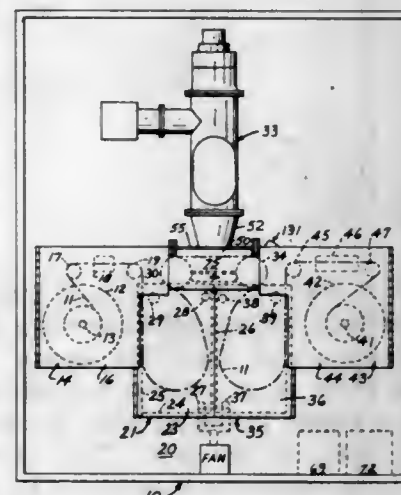
means to energize a selected pin electrode or selected pin electrodes simultaneously as desired. The size of the charged spot is a function of the spreading of the ionized particles in the area between the grid and the planar pin face.

### 3,460,157 CORPUSCULAR BEAM RECORDER

Earl K. Hoyne, Fridley, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Nov. 3, 1967, Ser. No. 684,096  
Int. Cl. G01d 9/42

U.S. Cl. 346—110 10 Claims



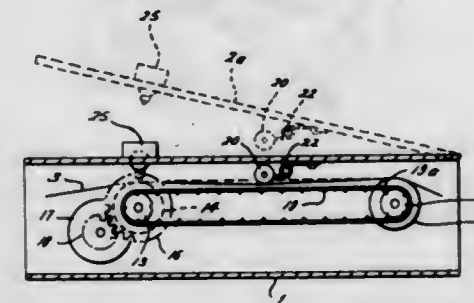
A web transport for a corpuscular beam recorder having a linear constrictive web path formed in opposed polished, aluminum oxide coated faces of aluminum members. The gas seal along said path being formed by two roughing slots on each side of an at least partially evacuated beam aperture and symmetrically disposed relative to the aperture. The spacing of the slots between the aperture and the first slot, between the slots, and between the second slot and the end of the path being in a proportion of 1:5:1:3 respectively. The web is advanced through the path by incrementally and simultaneously driven capstans, one at each end of the path.

### 3,460,158 RECORDER WITH CHART TENSIONING MEANS

Frank Richard Bravenec, Houston, Tex., assignor to Bausch & Lomb Incorporated, Rochester, N.Y.  
Filed Oct. 25, 1967, Ser. No. 678,012  
Int. Cl. G01d 15/24

U.S. Cl. 346—136 10 Claims  
A recorder for recording information on a strip of recording medium having spaced perforations along the

length thereof, is disclosed. The recorder includes a frame and a mechanism for driving and tensioning the medium between two sets of spaced apart sprockets mounted for rotation with respect to the frame. Means, such as a timing belt, connects the sprockets for rotation in unison and a motor is connected to drive one of the sprockets. A resilient tensioning means, such as a spring, is mounted on the recorder engageable with one surface of the medium between its engagement with the sprockets so that when the medium between its engagement with the sprockets so



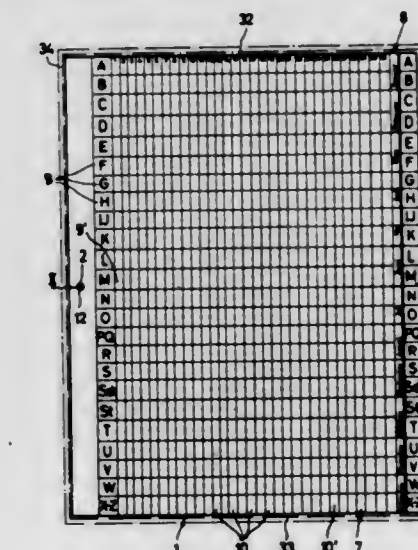
that when the medium is placed in engagement with the sprockets the tensioning means will deflect the medium between the sprockets and cause it to be placed in tension. The tensioning means yields sufficiently to allow the medium between the sprockets to vary in length from substantially the distance between the sprockets to greater lengths while maintaining tension on the medium and not causing tearing or mutilating thereof. A record marking means is mounted on the frame of the recorder for marking information on the medium in an area of interest.

### 3,460,159 FILE FOLDER HAVING A PLURALITY OF POCKETS

Walter Lennartz, Waldstrasse 9, Rothschaig, near Dachau, Germany

Filed Mar. 22, 1967, Ser. No. 625,142  
Claims priority, application Germany, Mar. 24, 1966,  
L 53,186, L 53,187

Int. Cl. G09f 7/06; B42f 17/08, 21/04  
U.S. Cl. 40—104.05 8 Claims



A document container having a frame with a plurality of pockets therein, formed by insert sheets. The container preferably has a first group of insert sheets therein provided along one edge thereof with an alphabetically constructed letter tab. A second group of insert sheets is positioned on top of the first group and is provided with a tab along one edge thereof identifying the months of the year. Each sheet of said second group is provided with a parallel set of alphabetically organized letter dividing lines thereon and is further provided with a second set of lines thereon transverse to said first set, said

second set of dividing lines identifying the days of the months. Each sheet of said second group is further provided with a removable transparent sheet thereover, the transparent sheet being approximately the same size as the index sheet and being capable of being written on so as to record thereon the transactions which either need to be or have been performed.

### 3,460,160 CIRCULAR HOSIERY-MAKING APPARATUS

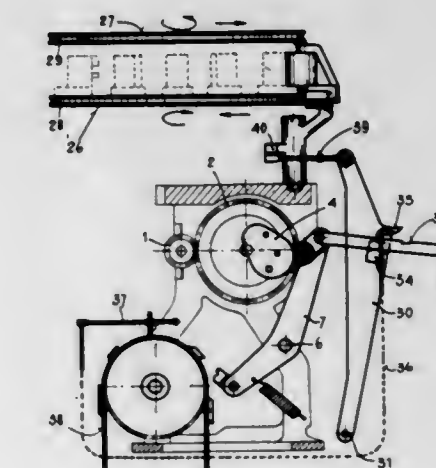
Fulvio Sangiacomo, Via O. Villa 13, Brescia, Italy

Filed Nov. 14, 1966, Ser. No. 593,902

Claims priority, application Italy, Dec. 28, 1965, 749,995

Int. Cl. D04b 15/74, 15/78, 15/66

U.S. Cl. 66—50 11 Claims



A circular hosiery-making apparatus characterized by improvements in its cylinder-controlling means, in its chain-displacing pawl, in its platform arrangements, so that a greater variety of operations are possible with a lesser number of component parts.

### 3,460,161 SECURITY TELEVISION APPARATUS WITH SCRAMBLED SYNCHRONIZING SIGNALS

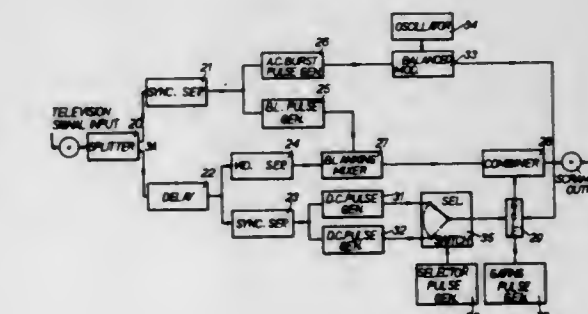
Peter John Waller, Chelmsford, Essex, and Charles Jeffrey Waterfield, Brentwood, Essex, England, assignors to R. & R. Research Limited

Filed Mar. 31, 1965, Ser. No. 444,296

Claims priority, application Great Britain, Apr. 7, 1964,  
14,258/64

Int. Cl. H04n 1/44 10 Claims

U.S. Cl. 178—5.1



Apparatus to provide a "scrambled" television signal conveying picture information and picture synchronisation information for reception by authorised receivers, in which scrambled signals the true synchronising signals are replaced either by modified signals having a different timing, or by signals having the nature and timing of the true synchronising signals, but having a different duration.



3,460,162  
**METHOD FOR PEELING POTATOES OR SIMILAR  
 TUBERS, BULBS, ROOTS, OR FRUITS AND  
 AN APPARATUS FOR CARRYING OUT THIS  
 METHOD**

Pieter Herman Sijbring, Rhenen, Netherlands, assignor to  
 Instituut voor Bewaring en Verwerking van Landbouw-  
 produkten, Wageningen, Netherlands

Filed May 22, 1967, Ser. No. 640,057

Claims priority, application Netherlands, May 25, 1966,  
 6607226

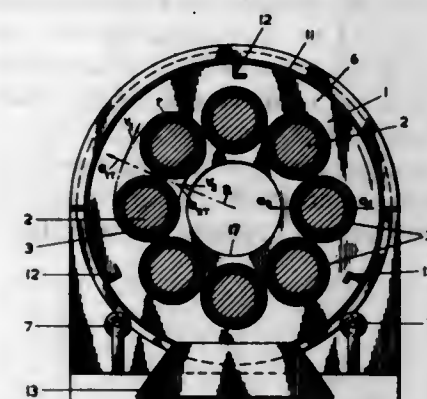
Int. Cl. A23n 7/02, 13/00

U.S. Cl. 146—225

10 Claims

Tubers, such as potatoes, or other fruit or vegetables  
 are peeled by being fed into a rotating drum having a  
 plurality of rollers with abrasive surfaces of bristles or  
 other projections, parallel to, and equidistant from the  
 axis of the drum, the rollers being close together and  
 each rotating about its own axis so that, at the outer por-  
 tion of the rotating rollers, the sum of the centrifugal

forces generated by the rotation of the drum and the ro-  
 tation of the rollers is great enough to cast the peels



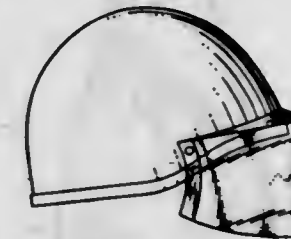
outwardly while at the inner portion of the rollers the  
 difference between these two forces is small enough that  
 the peels are retained on the roller surfaces.



# DESIGNS

AUGUST 5, 1969

214,824  
**HELMET AND SLIDABLE VISOR**  
 John Fisher, Dover, Del., assignor to ILC Industries, Inc.,  
 Dover, Del., a corporation of Delaware  
 Filed Mar. 29, 1968, Ser. No. 11,206  
 Term of patent 14 years  
 Int. Cl. D2—03  
 U.S. Cl. D2—252



214,825  
**HOOK FASTENER**  
 William A. Czapar, 7201 Kenney, Niles, Ill. 60648, and  
 Robert P. Suggs, 6401 N. Nordica, Chicago, Ill.  
 60631  
 Filed May 31, 1968, Ser. No. 12,146  
 Term of patent 14 years  
 Int. Cl. D2—08  
 U.S. Cl. D2—418



214,826  
**SHIRT OR THE LIKE**  
 Sid Corlin, P.O. Box 8731, Honolulu, Hawaii 96815  
 Filed July 24, 1968, Ser. No. 12,874  
 Term of patent 14 years  
 Int. Cl. D2—01  
 U.S. Cl. D2—217



214,827  
**HACKSAW OR SIMILAR ARTICLE**  
 Sydney Jacoff, Mineola, N.Y., assignor to Great Neck  
 Saw Manufacturers, Inc., Mineola, N.Y., a corporation  
 of New York  
 Filed Aug. 30, 1968, Ser. No. 13,344  
 Term of patent 14 years  
 Int. Cl. D8—02  
 U.S. Cl. D8—96



214,828  
**HANDLE FOR A KNIFE BLADE OR THE LIKE**  
 Donald F. Kroener, 452 Fulton Court,  
 Santa Clara, Calif. 95051  
 Filed Mar. 3, 1967, Ser. No. 6,055  
 Term of patent 14 years  
 Int. Cl. D8—02  
 U.S. Cl. D8—107

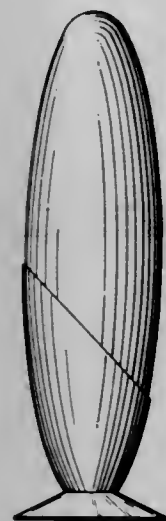




**214,829**  
**COMBINED AEROSOL CONTAINER AND BASE THEREFOR**  
Ralph A. Muscatello, Norwood, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware

Filed Aug. 13, 1968, Ser. No. 13,127  
Term of patent 14 years  
Int. Cl. D9—01

U.S. Cl. D9—8



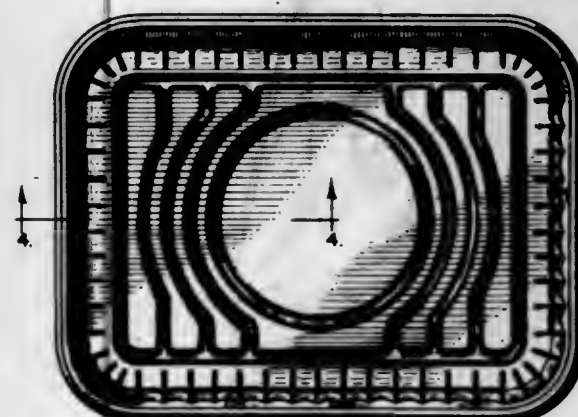
**214,831**  
**CRUET**  
Max M. Lomont, 8 Carwall, Mount Vernon, N.Y. 10552, and Ernest F. Thomson, 212 Burns St., Forest Hills, N.Y. 11375  
Filed Nov. 1, 1965, Ser. No. 87,969  
Term of patent 14 years  
Int. Cl. D9—01

U.S. Cl. D9—137



**214,832**  
**FOOD PACKAGING TRAY**  
Roy W. Bloch, Northbrook, and Donald K. Jewell, Chicago, Ill., assignors to Ekco Products, Inc., Wheeling, Ill., a corporation of Illinois  
Filed Aug. 20, 1968, Ser. No. 13,196  
Term of patent 14 years  
Int. Cl. D9—04

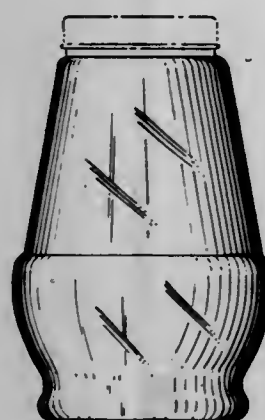
U.S. Cl. D9—219



**214,830**  
**BOTTLE OR SIMILAR ARTICLE**  
Floyd E. Pettengill, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware  
Original design application Sept. 23, 1966, Ser. No. 4,005.  
Divided and this application Jan. 19, 1968, Ser. No. 10,225

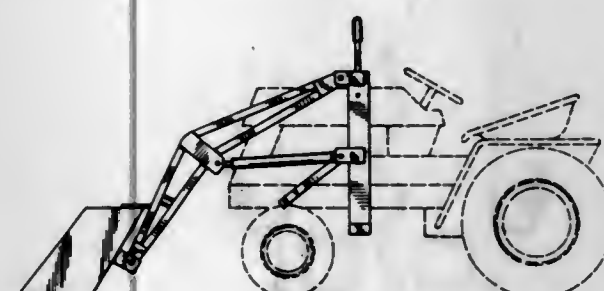
Term of patent 14 years  
Int. Cl. D9—01

U.S. Cl. D9—100



**214,833**  
**LOADER FOR GARDEN TRACTOR**  
Anton L. Glommen, Delano, Minn. 55328  
Filed Oct. 3, 1968, Ser. No. 13,832  
Term of patent 14 years  
Int. Cl. D12—19, 13

U.S. Cl. D14—3



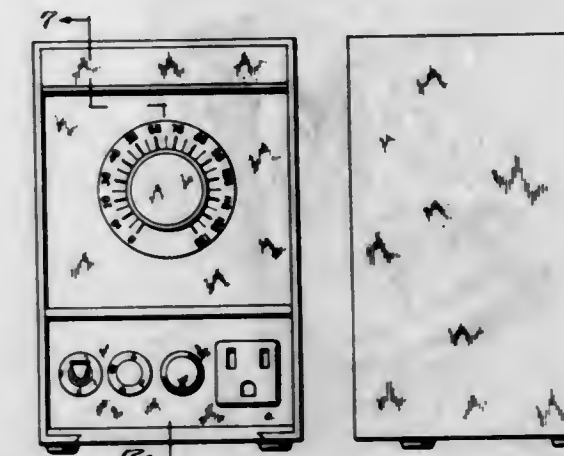
**214,834**  
**CHAIR**  
Donald L. Moore, Paul M. Fricke, Jr., and William H. Tucker, Gallatin, Tenn., and Raymond R. Spilman, Stamford, Conn., assignors to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana  
Filed Mar. 7, 1968, Ser. No. 10,885  
Term of patent 14 years  
Int. Cl. D6—01

U.S. Cl. D15—1



**214,836**  
**VARIABLE ELECTRIC POWER SUPPLY UNIT**  
William L. Gamble, Unionville, and Richard H. Russell and Richard A. Tarozzi, Farmington, Conn., assignors to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut  
Filed Apr. 4, 1968, Ser. No. 11,297  
Term of patent 14 years  
Int. Cl. D13—02

U.S. Cl. D26—15



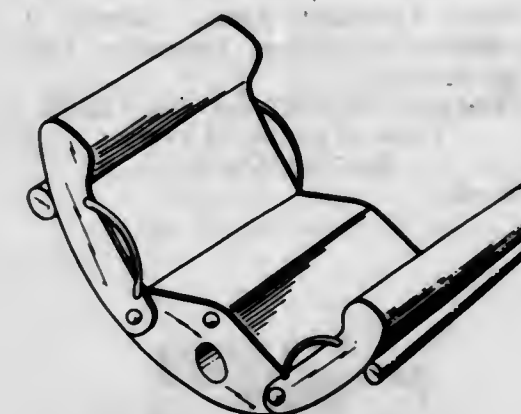
**214,837**  
**ANGEL FIGURINE**  
Joaquim Ferreira Pinto Basto, Largo do Barao de Quintela 3-1, Lisbon, Portugal  
Filed July 15, 1968, Ser. No. 12,765  
Term of patent 3½ years  
Claims priority, application Portugal Jan. 27, 1968  
Int. Cl. D11—02

U.S. Cl. D29—23



**214,835**  
**CONVERTIBLE ROCKER AND BED UNIT**  
Earle E. Lockwood, 35 Crosby St., East Hartford, Conn. 06118  
Filed Sept. 25, 1967, Ser. No. 8,714  
Term of patent 14 years  
Int. Cl. D6—01

U.S. Cl. D15—11



**214,838**  
**ANGEL FIGURINE**  
Joaquim Ferreira Pinto Basto, Largo do Barao de Quintela 3-1, Lisbon, Portugal  
Filed July 15, 1968, Ser. No. 12,766  
Term of patent 3½ years  
Claims priority, application Portugal Jan. 27, 1968  
Int. Cl. D11—02

U.S. Cl. D29—23

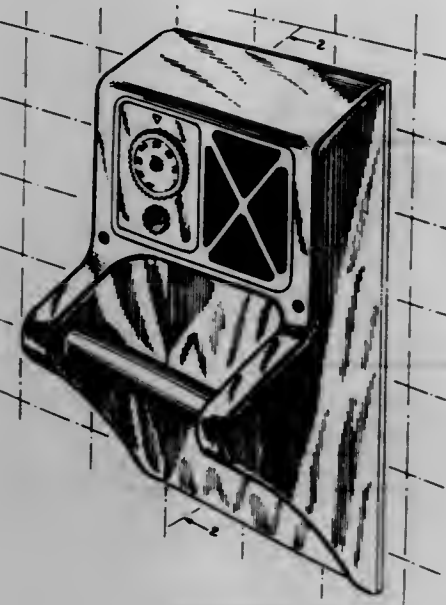




214,839  
COMBINED RADIO CABINET AND TOILET PAPER  
HOLDER

John F. Louis, 11962 York Ave.,  
Hawthorne, Calif. 90250  
Filed Oct. 22, 1968, Ser. No. 14,112  
Term of patent 14 years  
Int. Cl. D6—01

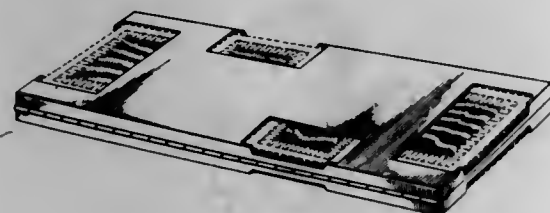
U.S. Cl. D33—31



214,840  
DUPLICATE BRIDGE BOARD OR SIMILAR  
ARTICLE

Frederick H. Flam, 4510 Callada Place,  
Tarzana, Calif. 91356  
Filed May 1, 1968, Ser. No. 11,725  
Term of patent 14 years  
Int. Cl. D21—01

U.S. Cl. D34—13



214,841  
PITCHER OR SIMILAR ARTICLE  
Frank J. Benes, Lancaster, Ohio, assignor to Anchor  
Hocking Glass Corporation, Lancaster, Ohio, a cor-  
poration of Delaware  
Original design application May 26, 1967, Ser. No. 7,274,  
now Patent No. 211,037, dated May 14, 1968. Divided  
and this application Dec. 14, 1967, Ser. No. 9,771  
Term of patent 14 years  
Int. Cl. D7—01

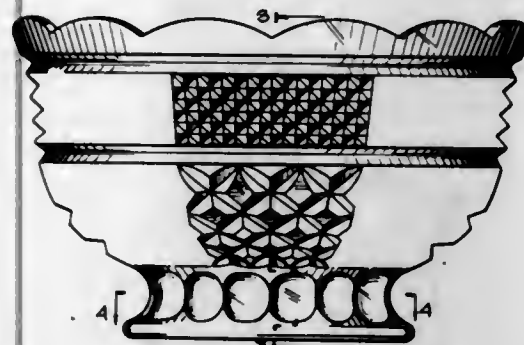
U.S. Cl. D36—2



214,842  
BOWL OR SIMILAR ARTICLE  
Frank J. Benes, Lancaster, Ohio, assignor to Anchor  
Hocking Glass Corporation, Lancaster, Ohio, a cor-  
poration of Delaware

Filed Apr. 30, 1968, Ser. No. 11,700  
Term of patent 14 years  
Int. Cl. D7—01

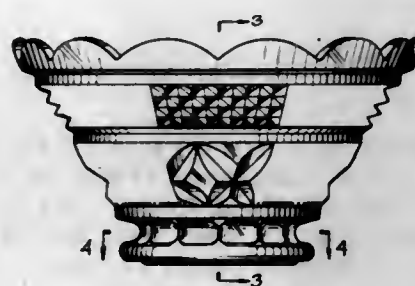
U.S. Cl. D36—2



214,843  
BOWL OR SIMILAR ARTICLE  
Frank J. Benes, Lancaster, Ohio, assignor to Anchor  
Hocking Glass Corporation, Lancaster, Ohio, a cor-  
poration of Delaware

Filed Apr. 30, 1968, Ser. No. 11,701  
Term of patent 14 years  
Int. Cl. D7—01

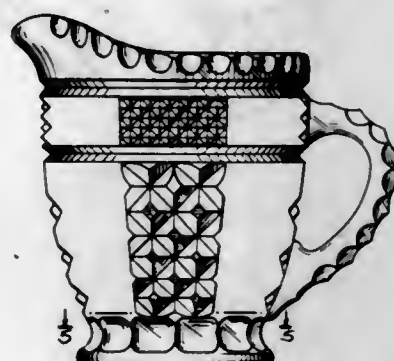
U.S. Cl. D36—2



214,844  
CREAMER OR SIMILAR ARTICLE  
Frank J. Benes, Lancaster, Ohio, assignor to Anchor  
Hocking Glass Corporation, Lancaster, Ohio, a cor-  
poration of Delaware

Filed Apr. 30, 1968, Ser. No. 11,704  
Term of patent 14 years  
Int. Cl. D7—01

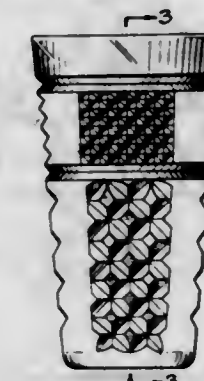
U.S. Cl. D36—2



214,845  
TUMBLER OR SIMILAR ARTICLE  
Frank J. Benes, Lancaster, Ohio, assignor to Anchor  
Hocking Glass Corporation, Lancaster, Ohio, a cor-  
poration of Delaware

Filed Apr. 30, 1968, Ser. No. 11,702  
Term of patent 14 years  
Int. Cl. D7—01

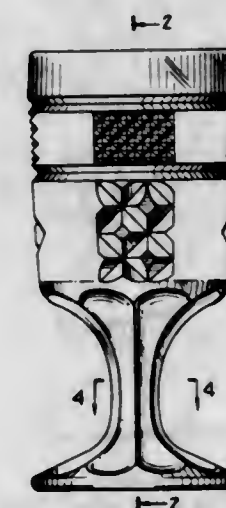
U.S. Cl. D36—8



214,846  
GOBLET OR SIMILAR ARTICLE  
Frank J. Benes, Lancaster, Ohio, assignor to Anchor  
Hocking Glass Corporation, Lancaster, Ohio, a cor-  
poration of Delaware

Filed Apr. 30, 1968, Ser. No. 11,705  
Term of patent 14 years  
Int. Cl. D7—01

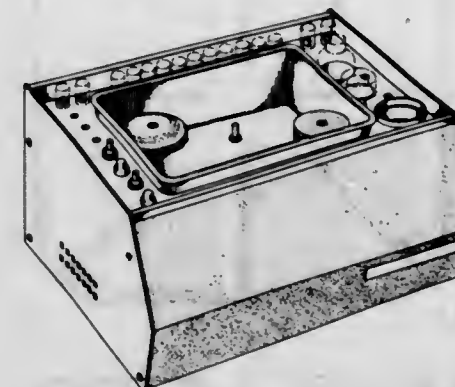
U.S. Cl. D36—8



214,847  
CONTACT LENS GRINDING KIT  
Jacques Urbach, North Hollywood, Calif. (% Urocon  
Inc., 6205 Santa Monica Blvd., Los Angeles, Calif.  
90038)

Filed Apr. 22, 1968, Ser. No. 11,549  
Term of patent 14 years  
Int. Cl. D16—99; D24—99

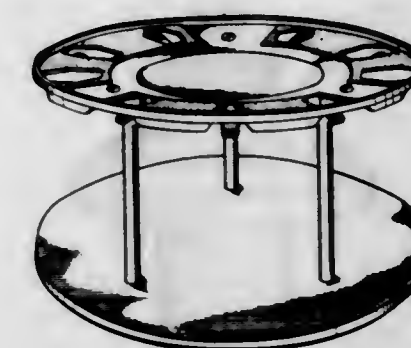
U.S. Cl. D37—1



214,848  
CUP AND SAUCER HOLDER  
Harvey R. Avedon, Pacific Palisades, Calif., assignor to  
Alladin Plastics, Inc., Gardena, Calif., a corporation  
of California

Filed Mar. 18, 1968, Ser. No. 11,020  
Term of patent 14 years  
Int. Cl. D6—01

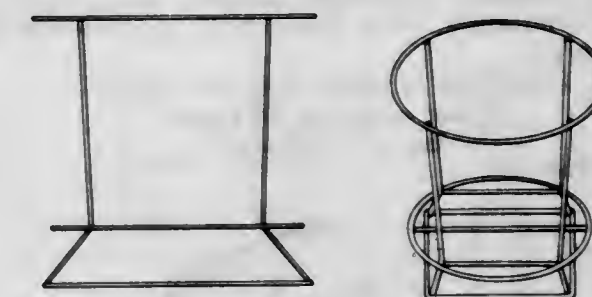
U.S. Cl. D44—29



214,849  
HOLDER FOR TRASH RECEPTACLE  
Hoke S. Barrett, Kinchafoonee Creek Road, Rte. 2,  
Leesburg, Ga. 31763

Filed Oct. 3, 1968, Ser. No. 13,831  
Term of patent 14 years  
Int. Cl. D7—06

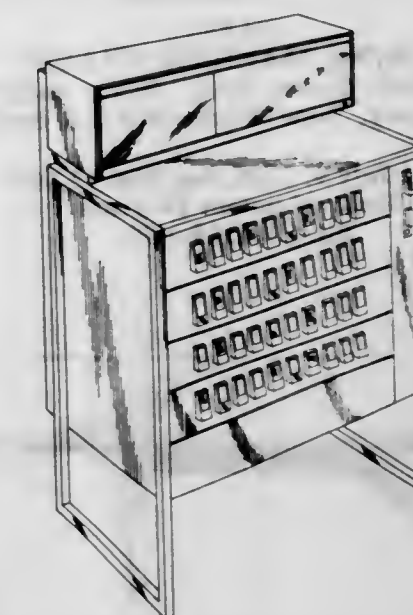
U.S. Cl. D49—30



214,850  
CIGARETTE VENDING MACHINE CABINET  
Robert A. O'Neil, Glen Ellyn, Ill., assignor to The  
Seeburg Corporation, Chicago, Ill., a corporation  
of Delaware

Filed Sept. 12, 1968, Ser. No. 13,506  
Term of patent 14 years  
Int. Cl. D20—01

U.S. Cl. D51—3



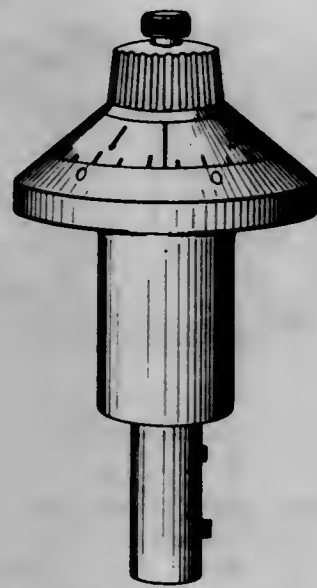


214,851

**TORQUE METER**

Robert Mimeur, Cluses, France, assignor to Ets. Carpano & Pons, Cluses, France, a company of France  
 Filed May 25, 1967, Ser. No. 7,264  
 Term of patent 14 years  
 Claims priority, application Switzerland Dec. 2, 1966  
 Int. Cl. D10-03

U.S. Cl. D52-6

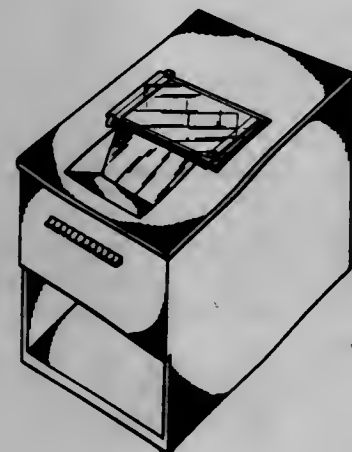


214,852

**TELEPRINTER CABINET**

Robert O. Carlson, Arlington Heights, Ill., assignor to SCM Corporation, New York, N.Y., a corporation of New York  
 Filed May 22, 1968, Ser. No. 12,045  
 Term of patent 14 years  
 Int. Cl. D18-03

U.S. Cl. D64-11

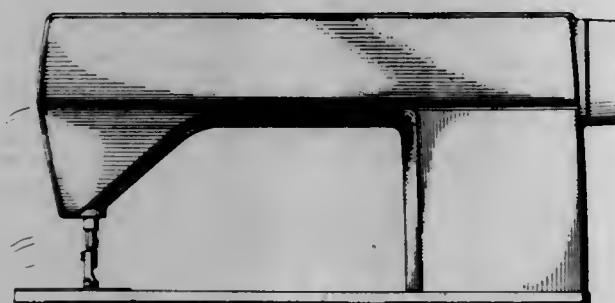


214,853

**SEWING MACHINE FRAME**

George Rosenfeld, Great Neck, N.Y., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey  
 Filed July 9, 1968, Ser. No. 12,669  
 Term of patent 14 years  
 Int. Cl. D15-09

U.S. Cl. D70-1

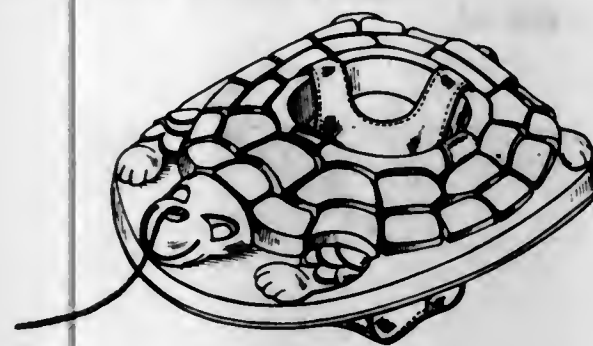


214,854

**SLING-SEATED FLOAT**

Sidney A. Tarrson, 777 S. Tripp, Chicago, Ill. 60624  
 Filed Apr. 25, 1968, Ser. No. 11,621  
 Term of patent 14 years  
 Int. Cl. D21-03

U.S. Cl. D71-1



214,855

**WIRE HAND FOR MANNEQUIN**

John W. Rigsby, Evansville, Ind., assignor to Merit Clothing Company, Inc., Mayfield, Ky., a corporation of Kentucky  
 Filed Feb. 7, 1968, Ser. No. 10,476  
 Term of patent 14 years  
 Int. Cl. D20-02

U.S. Cl. D80-8

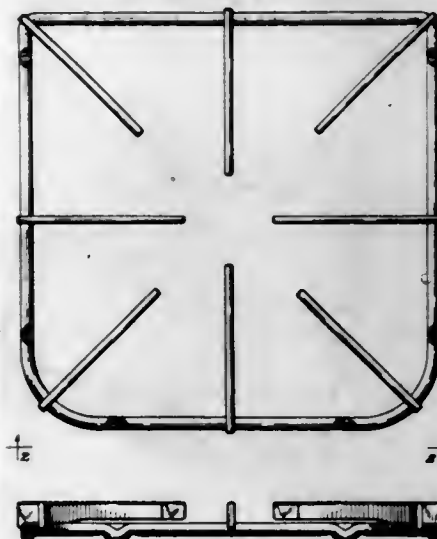


214,856

**BURNER GRATE OR THE LIKE**

Clarence E. Feldkircher, Nashville, Tenn., assignor to Feldkircher Wire Fabricating Company, Nashville, Tenn., a corporation of Tennessee  
 Filed June 10, 1968, Ser. No. 12,284  
 Term of patent 14 years  
 Int. Cl. D7-04

U.S. Cl. D81-25

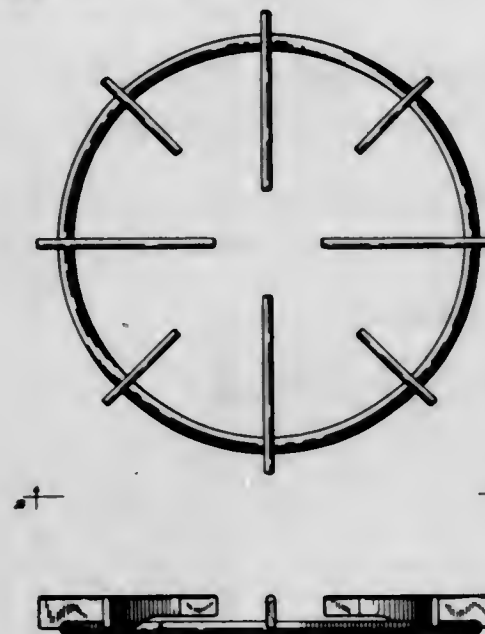


214,857

**BURNER GRATE OR THE LIKE**

Clarence E. Feldkircher, Nashville, Tenn., assignor to Feldkircher Wire Fabricating Company, Nashville, Tenn., a corporation of Tennessee  
 Filed June 10, 1968, Ser. No. 12,287  
 Term of patent 14 years  
 Int. Cl. D7-04

U.S. Cl. D81-25

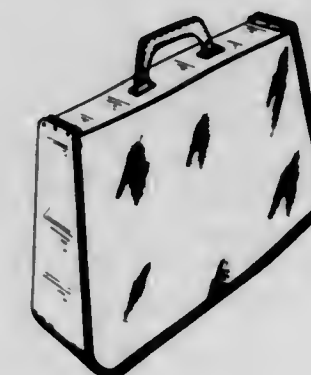


214,858

**LUGGAGE CASE**

Anthony N. D'Elia, Riverdale, and Edward M. Stolarz, Yorktown Heights, N.Y., assignors to Reliable Luggage Incorporated, Pittsburgh, Pa., a corporation of Pennsylvania  
 Filed Mar. 20, 1968, Ser. No. 11,066  
 Term of patent 14 years  
 Int. Cl. D3-01

U.S. Cl. D87-5



214,859

**ICE CRACKER**

George W. Stroh, P.O. Box 906, Lancaster, Pa. 17604  
 Filed Oct. 9, 1968, Ser. No. 13,912  
 Term of patent 14 years  
 Int. Cl. D7-02

U.S. Cl. D89-1

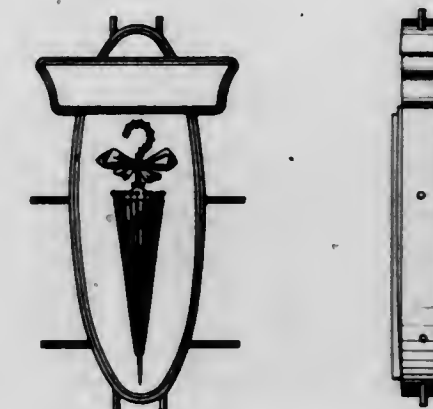


214,860

**SIGN**

Enrique Avila, % Central De Malta, S.A., Paseo De La Reforma 144, 5th Floor, Mexico City, Mexico 6  
 Filed July 9, 1968, Ser. No. 12,664  
 Term of patent 14 years  
 Int. Cl. D20-03

U.S. Cl. D96-12





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NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

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Armstrong, David L., to Armstrong Nurseries, Inc. Rose plant. 2,915, 8-5-69, Cl. 6. Armstrong, David L. 2,914.  
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Benes, Frank J. 214,842.  
Benes, Frank J. 214,843.  
Benes, Frank J. 214,844.  
Benes, Frank J. 214,845.  
Benes, Frank J. 214,846.  
Pettengill, Floyd E. 214,830.  
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Avila, Enrique. Sign. 214,860, 8-5-69, Cl. D96—12.  
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Benes, Frank J., to Anchor Hocking Glass Corp. Bowl or similar article. 214,842, 8-5-69, Cl. D36—2.  
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Benes, Frank J., to Anchor Hocking Glass Corp. Creamer or similar article. 214,844, 8-5-69, Cl. D36—2.  
Benes, Frank J., to Anchor Hocking Glass Corp. Tumbler or similar article. 214,845, 8-5-69, Cl. D36—8.  
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# LIST OF PATENTEEES

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Aasen, Torulf F., Schlessel, Joseph H., and Waznys, Peter J., to Airequip Inc. Automatic slide projector. 3,459,474, Cl. 353-021.  
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Abrams, Paul S. Marking device. 3,459,484, Cl. 401-206.  
Abruzzo, Joseph, Cox, Andrew P., Jr., and Hollandbeck, Raymond F., to Westinghouse Electric Corporation. Navigation system. 3,460,060, Cl. 340-004.  
ACF Industries, Incorporated: See—  
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Ackermann, Jacob, and Radici, Pierino, to Societa Italiana Resine S.p.A. Method of stabilizing polyoxymethylenes. 3,459,709, Cl. 260-067.  
Acton, Donald J.: See—  
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Aeroprojects Incorporated: See—  
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Aktiebolaget Peritus Enkoping: See—  
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Alix, Joe F., to Continental Oil Company. Apparatus for prevention of edge bead on curtain coated substrates. 3,459,153, Cl. 118-102.  
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Allen, Earle E., Jr.: See—  
Hull, Glenn A., Allen, Earle E., Jr., and Parmerter, Stanley M., 3,459,732.  
Allen, John W., and Hachler, Wesley R., to Stanray Corporation. Apparatus for forming a cellular core panel. 3,459,026, Cl. 072-324.  
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AMBAC Industries Incorporated: See—  
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American Home Products Corporation: See—  
Bell, Stanley C., 3,459,754.  
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Anderson, Jon E., to General Electric Company. High frequency light source. 3,459,942, Cl. 250-199.  
Anderson, Robert L., and Bayne, Donald E., to Brunswick Corporation. Means for simulating the rough on a golf course. 3,459,107, Cl. 094-007.  
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Watanabe, Akinori, and Ando, Takeki 3,460,014.  
Andreotti, Eugene R., and McGee, Sherwood W., to Burgess-Norton Mfg. Co. Method of making a structural alloy steel containing copper and other alloy elements. 3,459,547, Cl. 075-208.  
Andrew, Bertha M., and Blumenberg, Karl E., to Du Pont de Nemours, E. I., and Company. Titanium pigment manufacture. 3,459,575, Cl. 106-300.  
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Lane, Peter John, and Wheeler, Rodney Edward William, 3,459,899.  
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- Branson, Charles D., to Robertshaw Controls Company. Ignition means for burner means and the like. 3,459,172, Cl. 126-039.
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- Bravenec, Frank Richard, to Bausch & Lomb Incorporated. Recorder with cover mounted web tensioning means. 3,460,158, Cl. 346-136.
- Bray, Chester W., to United States of America, Army, mesne. Low-distortion gain and phase-stable power amplifier. 3,460,051, Cl. 330-124.
- Breed, David S. Dashpot timer having a coated piston. 3,458,991, Cl. 058-144.



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- Brenchley, George R. Photosensitive fluid monitoring device. 3,459,304, Cl. 210-093.
- Bressat, Rene, De Calmes, Alain, Claudel, Bernard, and Trambouze, Yves, to Commissariat a l'Energie Atomique. Mixed oxide of thorium and uranium monophased oxydation catalyst. 3,459,682, Cl. 252-469.
- Bresslein, Helmut, and Korte, Klaus, to Werke AG. Arresting mechanism for result printer in calculator having multiplication facility. 3,459,371, Cl. 235-060.
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# CLASSIFICATION OF PATENTS

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3,458,874	3,459,558	3,459,241	3,459,701	3,459,606	3,459,915
3,458,885	3,459,597	3,459,250	3,459,852	3,459,611	3,459,989
3,458,910	3,459,634	3,459,269	3,459,997	3,459,618	3,459,993
3,459,915	3,459,636	3,459,274	3,460,103	3,459,620	3,460,017
3,459,932	3,459,653	3,459,292	3,460,123	3,459,656	3,460,032
3,459,934	3,459,658	3,459,330	3,458,974	3,459,661	3,460,082
3,459,940	3,459,664	3,459,446	3,459,008	3,459,731	19 : 3,458,949
3,459,953	3,459,675	3,459,487	3,459,174	3,459,732	3,459,162
3,459,958	3,459,681	3,459,635	3,459,528	3,459,758	3,459,273
3,459,959	3,459,687	3,459,767	3,459,529	3,459,813	3,459,482
3,459,971	3,459,693	3,459,833	3,459,530	3,459,822	20 : 3,458,952
3,459,032	3,459,700	3,459,834	3,459,533	3,459,836	3,459,393
3,459,040	3,459,734	3,459,885	3,459,562	3,459,877	21 : 3,458,964
3,459,060	3,459,741	3,459,945	3,458,863	3,459,884	3,459,011
3,459,123	3,459,803	3,459,966	3,458,879	3,459,887	3,459,017
3,459,125	3,459,819	3,460,003	3,458,903	3,459,903	3,459,340
3,459,138	3,459,823	10 : 3,458,902	3,458,928	3,459,905	3,459,358
3,459,149	3,459,826	3,458,905	3,458,930	3,459,947	3,459,613
3,459,158	3,459,830	3,459,906	3,458,957	3,459,992	3,459,986
3,459,176	3,459,831	3,459,086	3,458,990	3,460,001	3,459,994
3,459,181	3,459,868	3,459,153	3,459,026	3,460,041	22 : 3,458,904
3,459,188	3,459,869	3,459,546	3,459,050	3,460,042	3,458,922
3,459,192	3,459,870	3,459,574	3,459,051	3,460,044	3,458,969
3,459,196	3,459,879	3,459,575	3,459,058	3,460,071	3,459,116
3,459,203	3,459,960	3,459,576	3,459,080	3,460,146	3,459,442
3,459,205	3,459,962	3,459,622	3,459,139	3,458,867	18 : 3,458,867
3,459,215	3,459,987	3,459,647	3,459,165	3,458,947	3,459,514
3,459,216	3,459,999	3,459,684	3,459,182	3,458,948	3,459,555
3,459,222	3,460,010	3,459,694	3,459,254	3,458,955	3,459,589
3,459,234	3,460,016	3,459,695	3,459,256	3,459,055	3,459,655
3,459,262	3,460,067	3,459,696	3,459,300	3,459,062	3,459,662
3,459,294	3,460,083	3,459,766	3,459,303	3,459,070	24 : 3,458,884
3,459,304	3,460,115	3,459,781	3,459,321	3,459,071	3,459,167
3,459,310	3,460,120	3,459,785	3,459,324	3,459,082	3,459,206
					3,459,391

XLII

## GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

XLIII

24 : 3,459,426	26 : 3,459,472	34 : 3,459,676	36 : 3,459,609	39 : 3,459,794	42 : 3,460,085
3,459,443	3,459,484	3,459,679	3,459,637	3,459,808	3,460,114
3,459,452	3,459,541	3,459,680	3,459,641	3,459,832	3,460,155
3,459,601	3,459,565	3,459,689	3,459,651	3,459,839	44 : 3,458,985
3,459,602	3,459,588	3,459,699	3,459,683	3,459,912	3,459,012
3,459,629	3,459,710	3,459,718	3,459,704	3,459,923	3,459,013
3,459,859	3,459,762	3,459,720	3,459,747	3,459,936	3,460,018
3,459,878	3,459,891	3,459,721	3,459,763	3,459,981	45 : 3,458,980
3,459,892	3,459,909	3,459,742	3,459,790	3,460,022	3,459,144
3,459,901	3,459,916	3,459,748	3,459,795	3,460,030	3,459,145
3,459,996	3,459,917	3,459,750	3,459,816	3,460,031	3,459,239
3,460,006	3,459,922	3,459,752	3,459,827	3,460,052	3,459,531
3,460,050	3,459,938	3,459,757	3,459,835	3,460,053	3,459,925
3,460,060	3,460,012	3,459,760	3,459,837	3,460,054	47 : 3,458,972
3,460,089	3,460,015	3,459,764	3,459,843	3,460,107	3,458,986
3,460,148	3,460,023	3,459,768	3,459,858	40 : 3,458,886	3,459,506
3,460,149	3,460,027	3,459,772	3,459,861	3,458,956	3,459,584
25 : 3,458,870	3,460,038	3,459,783	3,459,873	3,459,264	3,459,612
3,458,916	3,460,040	3,459,792	3,459,880	3,459,265	3,459,755
3,458,924	3,460,047	3,459,805	3,459,886	3,459,354	48 : 3,458,887
3,458,935	3,460,079	3,459,806	3,459,888	3,459,499	3,458,890
3,458,939	3,460,119	3,459,810	3,459,896	3,459,502	3,458,920
3,458,988	27 : 3,458,941	3,459,817	3,459,900	3,459,688	3,458,944
3,459,045	3,458,943	3,459,838	3,459,911	3,459,824	3,458,973
3,459,046	3,458,970	3,459,851	3,459,918	3,459,953	3,458,976
3,459,102	3,459,031	3,459,856	3,459,926	41 : 3,458,876	3,459,003
3,459,106	3,459,042	3,459,860	3,459,927	3,459,007	3,459,038
3,459,111	3,459,118	3,459,863	3,459,937	3,459,095	3,459,041
3,459,126	3,459,142	3,459,867	3,459,943	3,459,168	3,459,108
3,459,160	3,459,178	3,459,871	3,459,944	42 : 3,458,864	3,459,186
3,459,194	3,459,238	3,459,893	3,459,946	3,458,865	3,459,259
3,459,198	3,459,483	3,459,894	3,459,968	3,458,893	3,459,260
3,459,204	3,459,505	3,459,919	3,459,990	3,458,896	3,459,261
3,459,240	3,459,560	3,459,957	3,460,011	3,458,899	3,459,268
3,459,323	3,459,659	3,459,958	3,460,019	3,459,919	3,459,270
3,459,365	3,459,668	3,459,963	3,460,051	3,458,951	3,459,307
3,459,372	3,459,815	3,459,972	3,460,063	3,458,966	3,459,344
3,459,384	3,459,908	3,459,973	3,460,069	3,458,996	3,459,363
3,459,390	3,460,066	3,459,985	3,460,080	3,459,019	3,459,408
3,459,400	3,460,098	3,459,998	3,460,091	3,459,027	3,459,498
3,459,516	3,460,100	3,460,007	3,460,109	3,459,047	3,459,504
3,459,548	3,460,110	3,460,020	3,460,111	3,459,098	3,459,619
3,459,553	3,460,117	3,460,043	3,460,132	3,459,099	3,459,644
3,459,570	3,460,131	3,460,045	3,460,143	3,459,117	3,459,660
3,459,579	3,460,157	3,460,046	3,460,144	3,459,121	3,459,678
3,459,580	29 : 3,458,917	3,460,049	3,460,145	3,459,152	3,459,685
3,459,592	3,458,945	3,460,055	3,460,147	3,459,172	3,459,686
3,459,617	3,458,962	3,460,058	3,460,154	3,459,231	3,459,719
3,459,643	3,458,975	3,460,068	3,459,231	3,459,243	3,459,798
3,459,907	3,459,918	3,460,070	37 : 3,458,869	3,459,245	3,459,842
3,459,935	3,459,293	3,460,081	3,458,877	3,459,247	3,459,844
3,459,952	3,459,316	3,460,092	3,459,255	3,459,248	3,459,883
3,459,970	3,459,434	3,460,093	3,459,631	3,459,255	3,459,921
3,459,976	3,459,455	3,460,094	3,459,677	3,459,289	3,459,924
3,460,000	3,459,670	3,460,101	3,459,695	3,459,312	3,459,934
3,460,002	3,459,673	3,460,104	38 : 3,459,955	3,459,322	3,459,956
3,460,026	3,459,715	3,460,108	39 : 3,458,888	3,459,332	3,459,969
3,460,057	3,459,793	3,460,112	3,458,895	3,459,356	3,460,028
3,460,061	3,459,804	3,460,116	3,458,907	3,459,397	3,460,064
3,460,078	3,459,821	3,460,122	3,458,911	3,459,399	3,460,065
3,460,088	3,459,910	3,460,130	3,458,931	3,459,406	3,460,106
3,460,099	3,460,086	3,460,137	3,459,014	3,459,416	3,460,118
26 : 3,458,875	31 : 3,459,435	3,460,139	3,459,025	3,459,421	3,460,140
3,458,882	32 : 3,459,023	3,459,049	3,459,049	3,459,477	3,460,151
3,458,889	33 : 3,459,069	3,459,081	3,459,081	3,459,523	3,460,152
3,458,894	3,459,244	3,459,092	3,459,092	3,459,537	3,460,158
3,458,923	3,459,434	3,459,094	3,459,094	3,459,540	49 : 3,459,035
3,458,946	3,460,126	3,459,133	3,459,133	3,459,568	3,459,183
3,458,954	3,459,989	3,459,146	3,459,146	3,459,585	3,459,184
3,458,994	3,459,921	3,459,156	3,459,156	3,459,587	51 : 3,459,016
3,458,995	3,459,929	3,459,166	3,459,166	3,459,593	3,459,134
3,458,998	3,459,950	3,459,173	3,459,173	3,459,599	3,459,195
3,459,033	3,459,029	3,459,213	3,459,213	3,459,605	3,459,427
3,459,037	3,459,064	3,459,217	3,459,217	3,459,615	3,459,441
3,459,044	3,459,092	3,459,229	3,459,229	3,459,624	3,459,733
3,459,048	3,459,021	3,459,251	3,459,251	3,459,627	3,460,087
3,459,052	3,459,039	3,459,257	3,459,257	3,459,630	3,460,096
3,459,065	3,459,054	3,459,266	3,459,266	3,459,638	52 : 3,459,005
3,459,078	3,459,056	3,459,271	3,459,271	3,459,663	53 : 3,459,202
3,459,079	3,459,114	3,459,272	3,459,272	3,459,690	3,459,230
3,459,088	3,459,170	3,459,295	3,459,295	3,459,691	3,459,318
3,459,103	3,459,193	3,459,302	3,459,302	3,459,706	54 : 3,459,210
3,459,107	3,459,220	3,459,345	3,459,345	3,459,722	3,459,539
3,459,109	3,459,221	3,459,351	3,459,351	3,459,723	3,459,646
3,459,120	3,459,287	3,459,392	3,459,392	3,459,754	3,459,775
3,459,131	3,459,299	3,459,396	3,459,396	3,459,770	3,459,786
3,459,163	3,459,326	3,459,395	3,459,413	3,459,778	55 : 3,458,881
3,459,171	3,459,357	3,459,423	3,459,420	3,459,825	3,458,908
3,459,219	3,459,359	3,459,428	3,459,438	3,459,828	3,459,015
3,459,224	3,459,385	3,459,463	3,459,445	3,459,872	3,459,191
3,459,225	3,459,409	3,459,465	3,459,510	3,459,874	3,459,277
3,459,242	3,459,466	3,459,474	3,459,526	3,459,875	3,459,296
3,459,278	3,459,478	3,459,492	3,459,533	3,459,881	3,459,383
3,459,297	3,459,480	3,459,493	3,459,536	3,459,904	3,459,388
3,459,313	3,459,501	3,459,503	3,459,542	3,459,906	3,459,398
3,459,327	3,459,515	3,459,522	3,459,569	3,459,932	3,459,453
3,459,349	3,459,519	3,459,527	3,459,571	3,459,961	3,459,623
3,459,350	3,459,572	3,459,534	3,459,594	3,459,971	3,459,625
3,459,404	3,459,603	3,459,545	3,459,596	3,460,009	3,459,652
3,459,424	3,459,607	3,459,549	3,459,626	3,460,021	3,459,941
3,459,433	3,459,632	3,459,561	3,459,628	3,460,025	3,459,942
3,459,439	3,459,648	3,459,564	3,459,698	3,460,037	3,459,995
3,459,440	3,459,654	3,459,566	3,459,702	3,460,072	3,460,036
3,459,444	3,459,662	3,459,581	3,459,712	3,460,075	56 : 3,459,497
3,459,454	3,459,667	3,459,582	3,459,777	3,460,084	57 : 3,460,138
3,459,459	3,459,672	3,459,598	3,459,787		



# GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

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## Design Patents

6 : 214,828	9 : 214,835	17 : 214,850	36 : 214,826	39 : 214,841	39 : 214,846
214,839	214,836	214,852	214,827	214,842	214,859
214,840	214,824	214,854	214,831	214,843	214,834
214,847	13 : 214,849	18 : 214,855	214,853	214,844	214,856
214,848	17 : 214,825	25 : 214,829	39 : 214,830	214,845	214,857
214,858	214,832	27 : 214,833			

## Plant Patents

6 : 2,914	6 : 2,915				
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# U.S. DEPARTMENT OF COMMERCE OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

August 5, 1969

Volume 865

Number 1

## TRADEMARKS NOTICES

### Effect of Closing on July 21, 1969

In view of the fact that Federal Offices including the Patent Office were closed on July 21, 1969, the day proclaimed by President Nixon as a National Day of Participation, the Patent Office will consider Monday, July 21, 1969, a "holiday within the District of Columbia" under 35 USC 21. Any action due on that day is to be considered timely if taken on July 22, 1969.

WILLIAM E. SCHUYLER, JR.,  
Commissioner of Patents.  
July 22, 1969.

### Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

**Reg. No. 118,628 (CONTINENTAL)**, Continental Motors Corporation, Internal-combustion engines, clutches, and their parts; **Reg. No. 537,624**, same, Internal combustion engines, for general power application; complete industrial power units for general power application; each unit comprising an internal combustion engine mounted in a frame with cooling fluid and fuel tanks; replacement and spare parts for such engines and power units—namely, carburetors, induction manifold parts, fuel economisers for the carburetors and manifold, fuel heaters for said carburetors and manifolds, engine superchargers, governors and engine speed controlling mechanisms; gearing and transmission assemblies and clutches, lubricant pressure and scavenge pumps for same; fuel pumps and fuel injecting mechanisms, accessory mountings and accessory driv-

ing mechanisms, and engine vibration dampers; **Reg. No. 820,497**, same, Service, rework, maintenance, overhaul, repair, design, testing, research and field engineering of internal combustion engines, transmissions, and their controls, parts and accessories, for industrial, marine, transportation and aircraft power application of commercial and military customers and users; and for design, engineering, research and field test supervision of ram jets and ram jet motors, their parts, controls and accessories, filed May 22, 1969, D.C., N.D. Tex. (Dallas), Doc. CA-3-3175-B, *Continental Motors Corporation v. Superior Air Parts, Inc., C. D. Dedmon, Jr., Charles Dedmon and Eleanor Dedmon*.

**Reg. No. 242,227 (SWEETARTS AND DESIGN)**, Sweetarts Company, Dried prunes, filed Sept. 6, 1967, D.C., E.D. Mo. (St. Louis), Doc. 64C226(2), *Sweetarts v. Sunline, Inc. and Memo F. Smith*. Cause remanded to District Court Sept. 6, 1967. Injunction ordered effective Jan. 1, 1968. Judgment, defendants violated this court's order of 9-8-67. Order filed denying motion of defendants for stay of execution. Order denying motion of defendants for stay of judgment of Mar. 27, 1969 filed.

**Reg. No. 298,400 (ADAPTOLETTE)**, Lane Bryant, Inc., Hosiery, shoes of leather and fabric, rubbers, underwear, corsets, brassieres, dresses, coats, suits, hats, caps, raincoats, bathing suits, bath-ropes, negligees; gloves of leather, rubber and fabric; pajamas; said underwear, dresses coats, suits, hats, and caps being for the use of women and children; **Reg. No. 298,373 (ADAPTO)**, same, filed Dec. 11, 1967, D.C., S.D.N.Y., Doc. 67-C-4854, *Lane Bryant, Inc. v. Esquisite*

### CONDITION OF TRADEMARK APPLICATIONS AS OF JUNE 30, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]..... 13,377  
Date of oldest new application..... August 7, 1968  
Date of oldest amended application (filing date)..... November 13, 1964

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B.....	1-29-60	11-13-64
(II) F. H. WETTERBEE, Classes 1, 6, 16, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200.....	10-17-68	2-26-66
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36.....	12-17-68	2-21-66
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107.....	8-7-68	11-27-64
Renewals (All Classes).....	5-5-60	
Sec. 12(c) Publications (All Classes).....	5-12-60	

Applications filed during the month of June 1969—2,872

Registrations Issued ..... 411—No. 874,087 to No. 874,497  
Renewals Issued ..... 120

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, \$20.50 per annum, foreign mailing \$5.75 additional; single copies, 40 cents each.  
PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

TM 865 O.G.—1

TM 1



*Form Industries, Inc.* Stipulation and order of discontinuance without prejudice, May 14, 1969.

Reg. No. 293,873. (See Reg. No. 293,400.)

Reg. No. 378,913 (BATMAN), National Comics Publications, Inc., Cartoons published in a series; Reg. No. 382,770 (BATMAN AND DESIGN), same Magazine; Reg. No. 804,700, same, National Periodical Publications, Inc., Comic Magazines, filed July 26, 1966, D.C., S.D.N.Y., Doc. 66-C-2293, *National Periodical Publications, Inc. v. Foster Grant Co., Inc.* Consent judgment, defendants perpetually enjoined, May 5, 1969.

Reg. No. 382,770. (See Reg. No. 378,913.)

Reg. No. 421,496 (FORMICA), Formica Corporation, Laminated sheets of wood, fabric, or paper impregnated with synthetic resin and consolidated under heat and pressure, for use on table tops, furniture and wall panelling, filed Nov. 12, 1968, D.C. Del. (Wilmington), Doc. 3631, *Formica Corporation v. Hyman Reiser & Co.* Dismissed on stipulation and order; defendant permanently enjoined, May 26, 1969.

Reg. No. 537,624. (See Reg. No. 118,628.)

Reg. No. 693,800 (SPEEDIFLEX), Moore Business Forms, Inc. Manifold blank forms, filed Apr. 15, 1969, D.C., E.D. Mo. (St. Louis), Doc. 69C121(1), *Moore Business Forms, Inc. v. James Mulligan Printing Co.* Plaintiff dismisses its complaint, Apr. 28, 1969.

Reg. No. 709,385 (KIKI), Kiki Undies Corporation, Ladies' panties; Reg. No. 767,232 (KIKI KONTROL), same; Reg. No. 767,242 (KIKI MAGIC), same; Reg. No. 774,624 (KIKI SATINETTE), same; Reg. No. 818,716 (KIKI DELUXE), same, filed Mar. 7, 1967, D.C., S.D.N.Y., Doc. 67-C-910, *Kiki Undies Corporation v. Ohbach's Inc.* Order dismissing action for lack of prosecution with prejudice, May 22, 1969.

Reg. No. 712,257 (SOFTIQUE), Bristol-Myers Company, Bath oil, filed May 15, 1969, D.C., N.D. Ohio (Cleveland), Doc. C-69-373, *Bristol-Myers Company v. The Climacene Company.*

Reg. No. 722,796 (ZEISS), Carl Zeiss Stiftung, doing business as Carl Zeiss et ano., High voltage supply units, spark generators, apparatus and appliances for generating of electron-, ion-, or neutron-beams; Reg. No. 727,470 (ZEISS IKON), Zeiss Ikon A.G., Cameras, lenses, shutters, light filters, view finders, stereoscopes, sensitized films and papers, flashlight apparatus, projectors, hemometers, exposure meters, calculating machines, filed Feb. 14, 1962, D.C., S.D.N.Y., Doc. 62-C-850, *Carl Zeiss Stiftung, doing business as Carl Zeiss et ano. v. V.E.B. Carl Zeiss, Jena et al.* Plaintiff Carl Zeiss Stiftung, owner of U.S. trade names "Zeiss" and "Carl Zeiss" in a dis-

tinctive lens frame, the distinctive lens frame alone, "Zeiss" and the monogram "CZ" and entitled to the sole and exclusive right to use such names and marks in commerce within and with the United States. Plaintiff Zeiss Ikon AG owner of trade name "Zeiss Ikon" and trademarks "Zeiss Ikon" and "Zeiss Ikon" in a distinctive lens frame. None of the defendants, either jointly or severally, has right to use any of the United States trade names "Zeiss," "Carl Zeiss" or "Zeiss Ikon." Defendants and each of them permanently enjoined, Apr. 1, 1969.

Reg. No. 726,929 (TOWER OF BABBLE), E. Christman Dawn, doing business as The Game Company, Equipment sold as a unit for playing an educational language game, filed May 5, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69-862-CC, *E. Christman Dawn, etc. v. Sterling Drug, Inc. and Dancer-Fitzgerald-Sample, Inc.*

Reg. No. 727,470. (See Reg. No. 722,796.)

Reg. No. 739,414 (JEANIE AND DESIGN), Blue Bell, Inc., Ladies' and misses' blouses, and ladies', girls' and little girls' sportswear—namely, sport jackets and sport coats, shorts, Bermuda shorts, Jamaica shorts, capri pants, pedal pushers and slacks; Reg. No. 756,876 (JEANIE), same, Rainwear, skirts and sweaters, filed May 22, 1969, D.C., S.D.N.Y., Doc. 69-C-2217, *Blue Bell Inc. v. Jaymar Ruby Inc.*

Reg. No. 758,876. (See Reg. No. 739,414.)

Reg. No. 761,718 (CINDERELLA), Cinderella International Company, Inc., Cosmetic—namely, spray cologne, filed Mar. 8, 1968, D.C., S.D.N.Y., Doc. 68-C-989, *Cinderella International Co., Inc. v. Rayette-Faberge, Inc.* Stipulation and order of dismissal without prejudice, May 19, 1969.

Reg. No. 761,750 (GBS AND DESIGN), General Business Services, Inc., Business advisory, tax, and record keeping service, filed Feb. 20, 1969, D.C., E.D. N.C. (Elizabeth City), Doc. 603, *General Business Services, Inc. v. Silas Fletcher, Sr., doing business as General Business Service.*

Reg. No. 767,232. (See Reg. No. 709,385.)

Reg. No. 767,242. (See Reg. No. 709,385.)

Reg. No. 774,624. (See Reg. No. 709,385.)

Reg. No. 802,314 (COME ON STRONG), B & L Sales Associates, Work Clothing—namely, pants and shirts; and leisure wear—namely, slacks and lingerie, filed Feb. 28, 1968, D.C., S.D.N.Y., Doc. 68-C-826, *B & L Sales Associates v. H. Daroff & Sons, Inc.* Judgment against plaintiff, Apr. 28, 1969.

Reg. No. 804,709. (See Reg. No. 378,913.)

Reg. No. 818,716. (See Reg. No. 709,385.)

Reg. No. 820,497. (See Reg. No. 118,628.)

## MARKS PUBLISHED FOR OPPOSITION

### SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105. A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 260,143. The Dexter Corporation, Windsor Locks, Conn. Filed Dec. 6, 1966.



#### Class 1—Raw or Partly Prepared Materials

For Man-Made Resins for Industrial Use (Int. Cl. 1).

#### Class 5—Adhesives

For Adhesives for Industrial Use (Int. Cl. 1).

#### Class 6—Chemicals and Chemical Compositions

For Pigments; and Coatings for Electrostatic Copy Papers (Int. Cls. 1 and 2).

#### Class 16—Protective and Decorative Coatings

For Specialty Protective Coatings for Metal Structures, Builders' Hardware, Appliances and Components; Coating Compositions for Food and Beverage Containers, Golf Balls, Bowling Pins and Lane Surfaces; Coatings for Fabrics and Other Materials Used in Making Upholstery, Shoes and Wearing Apparel; Enamels; Lacquers; Varnishes; and Primers for Enamels, Lacquers, Varnishes, and the Like (Int. Cl. 2).

First use on or before May 1, 1966.

SN 273,826. Kybe Corporation, Waltham, Mass., by change of name from Cybetronics, Inc., Waltham, Mass. Filed June 14, 1967.

## CYBE-TAPE

#### Class 21—Electrical Apparatus, Machines, and Supplies

For Electro-Mechanical Equipment for Moving Magnetic Tape of Digital Computer Type, Instrumentation Type and Audio and Video Type, From One Reel to Another Across Cleaning Mechanism, the Cleaners Including Motors, Controls, Electronic Components and Cleaning Mechanisms Operating Automatically To Move and Stop the Tape (Int. Cl. 9).

First use May 1967.

#### Class 26—Measuring and Scientific Appliances

For Tape Testers and Certifiers Comprising Mechanical and Electronic Equipment for Moving Magnetic Tape and Testing Tape With Magnetic Coding Simulating the Movement of the Tape If Used on a Computer (Int. Cl. 9).

First use May 1967.

#### Class 103—Construction and Repair

For Cleaning and Rehabilitation of Magnetic Computer Tape (Int. Cl. 37).

First use March 1966.

SN 280,508. H. E. Laufer Co., Inc., New York, N.Y. Filed Sept. 18, 1967.

## LAUFFER

Owner of Reg. No. 574,460.

#### Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Stainless Steel Cutlery—Namely, Knives, Forks, Spoons and Serving Spoons and Forks (Int. Cl. 8).

#### Class 30—Crockery, Earthenware, and Porcelain

For Dinnerware Made of Porcelain and Earthenware—Namely, Plates, Bowls, Cups, Saucers and Serving Pieces (Int. Cl. 21).

#### Class 33—Glassware

For Glassware—Namely, Barware and Stemware (Int. Cl. 21).

First use February 1952.

SN 282,027. Exico Foreign Trade Company Limited, Prague, Czechoslovakia, by merger from Exico Foreign Trade Corporation, Prague, Czechoslovakia. Filed Oct. 9, 1967.

## EXICO

Owner of Czechoslovak Reg. No. 156,553, dated Jan. 12, 1966.

#### Class 1—Raw or Partly Prepared Materials

For Natural and Artificial Leather; Hides; Animal Skins; Animal Furs; and Plastic Sheets (Int. Cls. 17 and 18).

#### Class 39—Clothing

For Footwear—Namely, Shoes, Boots, Sandals, Slippers; Gloves; Men's, Women's and Children's Coats, Jackets, Slacks, Shorts, Aprons, and Headwear Made of Leather (Int. Cl. 25).

#### Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Bookbinding Cloth (Int. Cl. 16).

SN 292,123. Phrix-Werke Aktiengesellschaft, Hamburg, Germany. Filed Feb. 28, 1968.

## PHRYON

The term "Phryon" is fanciful and has no meaning in any language. Owner of German Reg. No. 634,488, dated Feb. 21, 1953.

#### Class 1—Raw or Partly Prepared Materials

For Artificial Fibers and Filaments (Int. Cl. 22).

#### Class 39—Clothing

For Outerwear—Namely, Trousers, Jackets, Suits, Dresses, Skirts, Waistcoats, Coats; and Underwear for Men, Women and Children (Int. Cl. 25).

#### Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Table Cloths, Sheets, Pillow Cases, Rugs, Blankets, Curtains, Woven and Knitted Fabrics (Int. Cls. 24 and 27).



SN 293,474. Cardinal of Adrian, Inc., Adrian, Mich. Filed Mar. 18, 1968.



The drawing is lined for the color red, but no claim is made to color.

### Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Cabinet Hardware—Namely, Hinges, Door Pulls, Knobs, Back Plates, Door Catches, Door Chains, and Fasteners (Int. Cl. 6).  
First use December 1965.

### Class 21—Electrical Apparatus, Machines, and Supplies

For Lighting Fixtures (Int. Cl. 11).  
First use about Sept. 7, 1965.

### Class 32—Furniture and Upholstery

For Cabinets—Namely, Bathroom Cosmetics or Medicine Cabinets (Int. Cl. 20).  
First use about Sept. 7, 1965.

SN 295,400. Toyo Rayon Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Apr. 11, 1968.

## TORAYLON

Owner of Japanese Reg. Nos. 564,680, dated Jan. 20, 1961; 564,674, dated Jan. 20, 1961; and 578,931, dated Aug. 15, 1961.

### Class 39—Clothing

For Suits, Jackets, Vests, Slacks, Trousers, Pants, Raincoats, Topcoats, Overcoats, Uniforms, Working Clothes, Dress Shirts, Sport Shirts, Blouses, Negligees, Underwear, Pajamas, Dresses, Jumpers, Skirts, Cardigans, Sweaters, Stockings, Socks, Gloves, and Mittens (Int. Cl. 25).

### Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Knitted, Netted, Woven and Non-Woven Fabrics of Cotton, Wool, Silk, Rayon, and Synthetic Fibers, and Combinations Thereof (Int. Cl. 24).

SN 300,505. Standard Marine Supply Co., Tampa, Fla. Filed June 17, 1968.



### Class 7—Cordage

For Steel Towing Cables (Wire Rope) and Synthetic Non-Metal Rope and Twine (Int. Cls. 6 and 22).

### Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Steel Shackles, Galvanized Metal Chain, Metal Cable Attachments, and Metal Fish and Shrimp Net Attachments (Int. Cl. 6).

### Class 14—Metals and Metal Castings and Forgings

For Steel Boat Anchors (Int. Cl. 6).

### Class 22—Games, Toys, and Sporting Goods

For Plastic Fish and Shrimp Net Floats (Int. Cl. 28).  
First use May 4, 1960.

SN 301,801. Broadway-Hale Stores, Inc., Los Angeles, Calif. Filed July 2, 1968.

## THE BROADWAY'S CRADLE CROWD

Owner of Reg. No. 861,820.

### Class 39—Clothing

For Infants' Apparel—Namely, Underwear, Sleep Wear, Coveralls, Bathrobes, and Shirts (Int. Cl. 25).  
First use March 1964.

### Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Infants' Bedding—Namely, Sheets and Blankets; and Towels and Washcloths (Int. Cl. 24).  
First use September 1967.

SN 307,157. The Cincinnati Sheet Metal & Roofing Co., Cincinnati, Ohio. Filed Sept. 12, 1968.

## AJAX

Owner of Reg. No. 236,307.

### Class 12—Construction Materials

For Metal Roofing and Siding and Accessories—Namely, Painted and Unpainted Metal Siding, Metal Siding Laminated to Backer Board, Sheet Metal Roofing, Backer Plates, Corner Covers, Starter Strip, Channels, Moldings, Corner Posts, Closure Strips, Window and Door Facings, Louvers, Coll Flashing, Trim, Drip Caps, Foli Insulation, Caulking; Metal Rain Carrying Materials, Including Box Gutters, Meters, Connectors, Outlets, End Caps, Hangers, Ferrules, Spikes, Mastic, Conductor Pipe, Eaves Troughs, Elbows, Funnels, Cut-Offs, Bands, Hangers, Hooks, Strainers, Roof Edging, Gravel Stops, Valleys, Ridge Roll, Roll Roofing, Formed Metal Roofing, Soffits, Barn Battens and Concrete Culvert Pipe (Int. Cls. 6, 17, and 19).  
First use on or about Mar. 31, 1910.

### Class 34—Heating, Lighting, and Ventilating Apparatus

For Duct Components—Namely, Pipes, Plenums, Collars, Elbows, Reducers, Caps, Take-Off, Connecting Members, Straps, T's, Increasers, Thimbles, Draw Bands, Boots, Stacks, Draft Diverters, Panning, Cleanouts, Hangers, Stack Heads, Boxes, and Register Pans (Int. Cl. 6).  
First use in or about 1925.

## SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.  
A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

### Class 1—Raw or Partly Prepared Materials

SN 301,086. Nitto Denki Kogyo Kabushiki Kaisha (Nitto Electric Industrial Co., Ltd.), Ibaraki-shi, Osaka, Japan. Filed June 21, 1968.

## S.P.V.

Owner of Japanese Reg. No. 633,240, dated Jan. 7, 1964.  
For Plastic Sheet and Plastic Adhesive Sheet (Int. Cl. 17).

SN 307,861. Piness-Staufner (North American) Inc., New York, N.Y. Filed Sept. 20, 1968.

## NAUTEX

For Ground Chalk for General Industrial Use (Int. Cl. 19).  
First use April 1967.

SN 310,577. Monsanto Company, St. Louis, Mo. Filed Oct. 25, 1968.

## CEREX

Owner of Reg. No. 440,236.  
For Flexible Sheets and Sheetings of Man-Made Fibers for General Use in the Industrial Arts (Int. Cl. 17).  
First use Aug. 12, 1968.

SN 312,002. American Modoc, Inc., Davis, Calif. Filed Nov. 13, 1968.



## RED BARK

Applicant disclaims the words "Red" and "Bark" apart from the mark as a whole.  
For Decorative Bark for Playground, Garden, and Patio Use (Int. Cl. 31).  
First use Nov. 12, 1967.

SN 315,720. Standard Oil Company, Flemington, N.J. Filed Jan. 3, 1969.

## NUREL

For Synthetic Textile Fibers (Int. Cl. 22).  
First use July 10, 1968.

SN 316,337. Prodesco, Inc., Perkaskie, Pa. Filed Jan. 10, 1969.



For Water Resistant, Simulated Leather, Polyurethane Coated Fabric (Int. Cl. 18).  
First use Dec. 27, 1968.

SN 317,128. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Jan. 21, 1969.

## SONY

Owner of Reg. Nos. 691,940, 824,847, and others.  
For Flower Seeds (Int. Cl. 31).  
First use June 11, 1968; in commerce June 11, 1968.

SN 317,228. Hoffmann-Stafford Tanning Co., Chicago, Ill. Filed Jan. 22, 1969.

## PER-GARD

For Leather (Int. Cl. 18).  
First use Nov. 5, 1968.

### Class 2—Receptacles

SN 303,160. Fulguritwerke Seelze und Elchriede in Luthe bei Hannover Adolf Oesterheld, Luthe uber Wunstorf, Germany. Filed July 19, 1968.

## MALANDERS

Owner of German Reg. No. 840,158, dated June 14, 1967.  
For Flower Pots and Flower Boxes of Asbestos Cement, Fibrous Cement, or Plastics Material (Int. Cl. 21).

SN 308,131. Perma Grass Inc., Ridgefield, N.J. Filed Sept. 24, 1968.

## PORT-O-PLATE

For Plastic Holders for Paper Plates and Paper Cups (Int. Cl. 21).  
First use Sept. 3, 1968.

SN 308,957. Mattel, Inc., Hawthorne, Calif. Filed Oct. 7, 1968.

## BARBIE AND MIDGE

Owner of Reg. Nos. 764,237, 794,438, and 820,649.  
For Lunch Kits and Vacuum Bottles (Int. Cl. 21).  
First use Apr. 1, 1963.

SN 308,960. Mattel, Inc., Hawthorne, Calif. Filed Oct. 7, 1968.

## BARBIE AND FRANCIE

Owner of Reg. Nos. 803,392 and 827,113.  
For Lunch Kits and Vacuum Bottles (Int. Cl. 21).  
First use June 1966.

SN 309,410. Victor Stanley, Inc., Dunkirk, Md. Filed Oct. 10, 1968.

## LITTER KING

No exclusive claim is made to the word "Litter" apart from the mark as shown.  
For Trash Receptacles (Int. Cl. 21).  
First use May 15, 1968.



SN 309,516. Mattel, Inc., Hawthorne, Calif. Filed Oct. 14, 1968.  
 SN 303,147. Daron Products, Inc., Margate City, N.J. Filed July 19, 1968.

**LIDDLE KIDDLES**

Owner of Reg. Nos. 814,385, 838,306, and others.  
 For Lunch Kits and Vacuum Bottles (Int. Cl. 21).  
 First use Apr. 1, 1968.

**ZIRCOTAB**

SN 315,273. Sunkist Growers, Inc., Los Angeles, Calif. Filed Dec. 26, 1968.

**SUNKIST**

For Paperboard Shipping Containers (Int. Cl. 16).  
 First use Aug. 30, 1968.

For Dental Prophylaxis of Zirconium Silicate for Cleaning and Polishing (Int. Cl. 3).  
 First use Jan. 15, 1968.

SN 317,129. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Jan. 21, 1969.

**SONY**

Owner of U.S. Reg. Nos. 691,940, 824,847, and others.  
 For Shoe Polish (Int. Cl. 3).  
 First use June 11, 1968; in commerce June 11, 1968.

SN 316,152. Vulcan Containers Inc., Hillside, Ill. Filed Jan. 8, 1969.

**Ultra Seam**

For Metal Shipping Pails and Cans (Int. Cl. 6).  
 First use Dec. 16, 1968.

**Class 5—Adhesives**

SN 317,824. Container Corporation of America, Chicago, Ill. Filed Jan. 29, 1969.

**DG**

For Paperboard Boxes, Folding Cartons, and Shipping Containers (Int. Cl. 16).  
 First use on or before Jan. 15, 1969.

SN 298,516. Am-Finn Sauna, Inc., Camden, N.J. Filed May 20, 1968.

**LITE-STIC**

For Adhesive Material for Adhering Structural and Decorative Items Such as Wall Panels, Ceiling Tiles, and Polyurethane Beams (Int. Cl. 1).  
 First use Apr. 15, 1968.

**Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks**

SN 292,965. Safespeed Shoe Corp., Westbury, N.Y. Filed Mar. 11, 1968.



The representation of the goods is disclaimed apart from the mark as shown.  
 For Horseshoes (Int. Cl. 6).  
 First use Jan. 18, 1968.

SN 311,314. Trim-Twist, Inc., Miami, Fla. Filed Nov. 4, 1968.

**COMFANETTE**

For-Shoulder Sling for Carrying Babies (Int. Cl. 18).  
 First use June 13, 1967.

**Class 4—Abrasives and Polishing Materials**

SN 292,212. Madison Chemical Corporation, Maywood, Ill. Filed Feb. 29, 1968.

**SHOWCASE**

For Combination Cleaning and Polishing Composition for Glass, Stainless Steel, Formica, Aluminum, Plastic, and Ceramic Tile Surfaces for Commercial, Industrial, and Institutional Use (Int. Cl. 3).  
 First use Oct. 1, 1967.

**Class 6—Chemicals and Chemical Compositions**

SN 299,798. Tenneco Chemicals, Inc., New York, N.Y. Filed June 5, 1968.

**FLOAT R**

For Acidic Tail Oil Fraction for Use in the Forming of Floation Agent for Ore Beneficiation (Int. Cl. 1).  
 First use on or about Dec. 5, 1967.

SN 303,526. Great Lakes Chemical Corporation, West Lafayette, Ind. Filed July 24, 1968.

**SOILBROM**

For Soil Fumigant (Int. Cl. 5).  
 First use June 21, 1965.

SN 303,801. Jefferson Chemical Company, Inc., Houston, Tex. Filed July 29, 1968.

**FIRESORB**

For Chemicals for Use in Fire Fighting, Combustion Control, and as Surfactants (Int. Cl. 1).  
 First use Mar. 15, 1968.

SN 310,542. Cotton States Chemical Co., Inc., West Monroe, La. Filed Oct. 25, 1968.

**TEMP**

For Insecticide (Int. Cl. 5).  
 First use June 27, 1968.

**CAMPATOP**

Owner of Reg. Nos. 688,968, 819,350, and others.  
 For Chemical Ingredient Used in the Manufacture of Herbicides (Int. Cl. 1).  
 First use Oct. 25, 1968.

SN 310,659. Hartz Mountain Products Corp., New York, N.Y. Filed Oct. 28, 1968.

**MY-T-MITE**

For Spray for Killing Mites and Lice on Birds (Int. Cl. 5).  
 First use May 3, 1948.

**CAMPADURAL**

Owner of Reg. Nos. 688,968, 819,350, and others.  
 For Chemical Ingredient Used in the Manufacture of Herbicides (Int. Cl. 1).  
 First use Oct. 25, 1968.

SN 310,803. Rhodia Inc., New Brunswick, N.J. Filed Oct. 29, 1968.

**BRONATE**

For Fungicides and Herbicides (Int. Cl. 5).  
 First use May 8, 1967.

**DREWSPERSE**

For Antifoulants, Dispersants, Antiprecipitating Agents (Int. Cl. 1).  
 First use at least as early as December 1964.

SN 311,386. Milchem Incorporated, Houston, Tex. Filed Nov. 5, 1968.

**SURF-COTE**

For Drilling Mud Additives—Namely, Oil Soluble Surfactants Useful as Wetting Agents in Oil Muds (Int. Cl. 1).  
 First use Aug. 23, 1966.

**PERSOFTAL**

Owner of German Reg. No. 432,137, dated Nov. 24, 1930.  
 For Textile Auxiliaries (Int. Cl. 1).

SN 311,387. Milchem Incorporated, Houston, Tex. Filed Nov. 5, 1968.

**CARBO-TROL**

For Drilling Mud Additives—Namely, a Mixture of Oil Dispersible Polymers for Filtration Control (Int. Cl. 1).  
 First use May 21, 1968.

**KEMSET**

For Chemicals To Be Used in the Manufacture of Printing Inks (Int. Cl. 1).  
 First use Sept. 18, 1968.

SN 311,600. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed Nov. 7, 1968.

**KA-201**

For Active Alumina (Int. Cl. 1).  
 First use at least as early as Nov. 15, 1966.

**SONY**

Owner of U.S. Reg. Nos. 691,940, 824,847, and others.  
 For Butane Lighter Fuel (Int. Cl. 4).  
 First use June 11, 1968; in commerce June 11, 1968.

SN 311,604. Mallinckrodt Chemical Works, St. Louis, Mo. Filed Nov. 7, 1968.

**VITALON**

For Turf and Foliage Colorant (Int. Cl. 2).  
 First use Oct. 24, 1968.

SN 311,629. Thuron Industries, Inc., Dallas, Tex. Filed Nov. 7, 1968.

**VAMITE**

For Insect Eradication Strand for Attachment to Poultry Cages (Int. Cl. 5).  
 First use on or about July 1, 1967.



The drawing is lined for the colors blue and red, but no claim is made to color.  
 For Caustic Soda, Chlorine and Sodium Chlorate (Int. Cl. 1).  
 First use at least as early as Sept. 12, 1960; in commerce at least as early as Sept. 12, 1960.



**Class 7—Cordage**

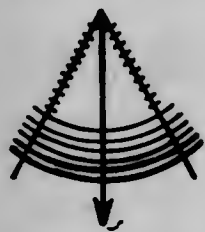
SN 295,463. Rockford Manufacturing Company, Rockford, Tenn. Filed Apr. 11, 1968.



The drawing is lined to show the color red, which is not claimed as an essential part of the mark.  
For Twines, Braided Sash Cords, and Clothes Lines (Int. Cl. 22).  
First use 1913.

**Class 9—Explosives, Firearms, Equipments, and Projectiles**

SN 286,522. Explosives Engineering Corporation, Pomona, Calif. Filed Mar. 13, 1967.



For Blasting Explosives (Int. Cl. 13).  
First use Feb. 6, 1965.

SN 288,294. Europa Corporation, Miami, Fla. Filed Jan. 8, 1968.

# Krieghoff

For Shotguns and Interchangeable Shotgun Barrels (Int. Cl. 13).  
First use on or about Jan. 3, 1958.

SN 302,399. Federal Laboratories, Inc., Saltsburg, Pa. Filed July 10, 1968.

**SPOONER**

For Bullet-Proof Armor (Int. Cl. 6).  
First use June 2, 1961.

SN 317,023. Explosive Technology, Inc., Fairfield, Calif. Filed Jan. 21, 1969.

**JET-PACK**

For Prepackage Pipe Cutting Charges (Int. Cl. 13).  
First use Jan. 30, 1968.

SN 317,215. Explosive Technology, Inc., Fairfield, Calif. Filed Jan. 22, 1969.

**JETENATOR**

For Non-Electric Explosive Initiators (Int. Cl. 13).  
First use Jan. 30, 1968.

**Class 10—Fertilizers**

SN 280,197. AG Marketing Corporation, West Lafayette, Ind. Filed Sept. 13, 1967.

**MULTIPLEX**

For Fertilizer Supplements (Int. Cl. 1).  
First use Aug. 12, 1967.

SN 317,133. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Jan. 21, 1969.

**SONY**

Owner of U.S. Reg. Nos. 691,940, 824,847, and others.  
For Fertilizer (Int. Cl. 1).  
First use June 11, 1968; in commerce June 11, 1968.

**Class 11—Inks and Inking Materials**

SN 313,753. Sun Chemical Corporation, New York, N.Y. Filed Dec. 4, 1968.

**MULTI**

For Printing Inks (Int. Cl. 2).  
First use Nov. 15, 1924.

SN 317,134. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Jan. 21, 1969.

**SONY**

Owner of Reg. Nos. 691,940, 824,847, and others.  
For Writing Ink (Int. Cl. 16).  
First use June 11, 1968; in commerce June 11, 1968.

**Class 12—Construction Materials**

SN 301,895. Philip Adelman, Torrance, Calif. Filed July 3, 1968.

**VARI-BLOCK**

For Concrete and Masonry Building Units for Varied Constructions (Int. Cl. 19).  
First use Nov. 30, 1966.

SN 301,938. M. C. Gill Corporation, El Monte, Calif. Filed July 3, 1968.



No registration rights are claimed for the words "Never Needs Painting" and "This Surface Is Protected With" apart from the mark as shown, but the applicant waives none of its common law rights in the mark or any feature thereof. Owner of Reg. Nos. 667,584, 804,970, and others.

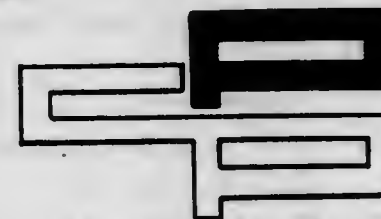
For Laminated Plastic Sheets Treated With a Thermosetting Resin (Int. Cl. 17).  
First use May 15, 1968.

SN 303,159. Fulguritwerke Seelze und Eichriede in Luthel bei Hannover Adolf Oesterheld, Luthel über Wunstorf, Germany. Filed July 19, 1968.

**MALANDERS**

Owner of German Reg. No. 840,156, dated June 14, 1967.  
For Asbestos-Cement and Fibrous Cement Products—Namely, Roof Slabs, Floor Slabs, Wall-Lining Slabs, Ceiling-Lining Slabs, Balcony-Lining Slabs; Structural Elements of Asbestos Cement, Namely, Sheet-Type Structural Elements Prepared From Plane or Corrugated Sheets of Asbestos Cement and Formed Parts Ready To Be Mounted in Place in the Construction of Multicell Building Walls; Asbestos Cement Sheets for Sheet Piling; High- and Low-Pressure Pipes for Water Conduits, for Drain Channels and for Gas; Parts Formed of Asbestos Cement or Fibrous Cement for Construction Purposes, in Particular Roof Coverings and Wall Linings; Connections and Branch Pieces for Pipe Lines (Int. Cls. 11 and 19).

SN 307,586. Pacific Clay Products, Los Angeles, Calif. Filed Sept. 17, 1968.



For Fire Clay, Clay Pipe, and Clay Flue Linings (Int. Cl. 19).  
First use Sept. 15, 1966.

SN 309,346. Acme Highway Products Corporation, Buffalo, N.Y. Filed Oct. 10, 1968.

**ACMASEAL**

Owner of Reg. Nos. 859,547 and 861,249.  
For Compression Seals for Highway Pavements, Bridges, Parking Ramps, Airports, Concrete Buildings, Dams, and General Construction (Int. Cl. 19).  
First use Mar. 6, 1968.

SN 311,246. Enterprise Pool Equipment Corp., South Kearny, N.J. Filed Nov. 4, 1968.

**EPECO**

For Swimming Pool Liners and Swimming Pool Covers (Int. Cl. 19).  
First use Sept. 17, 1968.

SN 317,135. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Jan. 21, 1969.

**SONY**

For Composition Board for Construction Purposes (Int. Cl. 19).  
First use June 11, 1968; in commerce June 11, 1968.

SN 318,053. Joslyn Mfg. and Supply Co., Chicago, Ill. Filed Jan. 31, 1969.

**CHROM-AR-CU**

For Insect- and Decay-Proofed Wood Products—Namely, Lumber, Utility Poles, Cross Arms, and Plywood (Int. Cl. 19).  
First use Oct. 1, 1968.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

SN 310,440. Bock Industries of Elkhart, Indiana, Inc., Elkhart, Ind. Filed Oct. 24, 1968.

**BOCK 10-GT-A**

For Metal Tubing Material (Int. Cl. 6).  
First use on or about Oct. 17, 1968.

SN 313,026. Price-Pfister Brass Mfg. Co., Pacoima, Calif. Filed Nov. 25, 1968.



For General Line of Plumbing Fittings and Valves; Faucets; Aerators for Faucets; Single Lever Fixtures for Lavatories and Sinks; Laundry Tray Fixtures; Hydraulic Dishwashing Apparatus Composed of Dishwashing Brush, Receptacle and Valves for Dispensing Detergents Into the Water Stream and a Hose for Connection to a Sink Plumbing Fixture; Hose Bibs; Diverter Valves; Shower Head Sets; Spouts; Diverter Spouts; Bath Cocks; By-Pass Valves; Diverter; Waste and Overflows; Trip Lever Waste and Overflows; Pop-Up Waste and Overflows; Flexible Fittings; Washing Machine Fillers; Air Conditioning Cooler Valves; Gas Log Lighter Valves; Gas Cocks; Relief Valves; and Parts for Sald Goods (Int. Cls. 6 and 11).  
First use Oct. 3, 1968.

SN 314,893. Lasco Industries, Montebello, Calif. Filed Dec. 19, 1968.

**PINECO**

For Bathroom Fixtures—Namely, Tubs, Stall Showers, and Tub-Shower Combinations (Int. Cl. 11).  
First use on or about Sept. 21, 1965.

SN 315,035. David R. Blake, Detroit, Mich. Filed Dec. 23, 1968.

**LEVELMATIC**

For Self-Adjusting Furniture Glide (Int. Cl. 6).  
First use at least as early as Mar. 22, 1955.

**Class 14—Metals and Metal Castings and Forgings**

SN 303,295. Engelhard Minerals & Chemical Corporation, Newark, N.J. Filed July 22, 1968.

**SPECTROPURE**

Owner of Reg. No. 334,818.  
For Pure Precious Metals—Namely, Metals of the Platinum Group, Gold and Silver (Int. Cl. 14).  
First use Nov. 9, 1960.

SN 317,136. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Jan. 21, 1969.

**SONY**

Owner of U.S. Reg. Nos. 691,940, 824,847, and others.  
For Aluminum Plate (Int. Cl. 6).  
First use June 11, 1969; in commerce June 11, 1968.



**Class 16—Protective and Decorative Coatings**

SN 305,379. E. C. Rieck Paint Co., Inc., Chicago, Ill. Filed Aug. 19, 1968.

**SUPER PRO**

For Paint (Int. Cl. 2).  
First use on or about Aug. 6, 1968.

SN 306,789. The Lubrizol Corporation, Cleveland, Ohio. Filed Sept. 6, 1968.

**LUBRIZOL**

Owner of Reg. Nos. 275,737, 790,878, and others.  
For Paint Additives, and Corrosion Control Coatings (Int. Cls. 1 and 2).  
First use Oct. 22, 1964.

**Class 17—Tobacco Products**

SN 293,585. Rothmans of Pall Mall Limited, Zurich, Switzerland. Filed Mar. 18, 1968.



Owner of U.S. Reg. Nos. 613,423 and 768,639.  
For Cigarettes (Int. Cl. 34).  
First use November 1956; in commerce November 1956.

SN 309,075. Montecristi Cigar Co. Inc., Miami Beach, Fla. Filed Oct. 10, 1968.



The terms "Tabaco Exquisito" and "Hand Made Cigars" are disclaimed apart from the mark as shown.  
For Cigars (Int. Cl. 34).  
First use July 1, 1968.

**Class 18—Medicines and Pharmaceutical Preparations**

SN 282,273. Crinos Industria Farmacobiologica S.p.A., Villaguardia, Como, Italy. Filed Oct. 11, 1967.

**ATEROID**

Owner of Italian Reg. No. 137,512, dated May 13, 1957.  
For Extracted Heparinoid of High Clearing and Anti-Cholesterol Activity (Int. Cl. 5).

SN 290,573. Barnes-Hind Ophthalmic Product, Inc., d.b.a. Barnes-Hind Ophthalmic Products, Sunnyvale, Calif. Filed Feb. 8, 1968.

**BLINX**

For Antiseptic Wetting and Cleansing Solution To Be Used With Plastic Contact Lenses (Int. Cl. 5).  
First use May 9, 1946.

SN 290,713. Bristol-Myers Company, New York, N.Y. Filed Feb. 9, 1968.

**PREVAIL**

For Antacid and Analgesic Preparations (Int. Cl. 5).  
First use Jan. 9, 1968.

SN 296,344. Physicians Supply Co., Inc., Herrin, Ill. Filed Apr. 23, 1968.

**PHENASCO**

For Analgesic for Use as a Pain Reliever (Int. Cl. 5).  
First use May 1937.

SN 300,484. Savage Laboratories, Inc., Houston, Tex. Filed June 14, 1968.

**CORTIGEL-40**

For ACTH, Adrenocorticotrophic Hormone, a Pituitary Hormone That Stimulates the Cortex of the Adrenal Glands (Int. Cl. 5).  
First use Dec. 10, 1964.

SN 301,731. Endo Laboratories, Inc., Garden City, N.Y. Filed July 1, 1968.

**ENDOCON**

Owner of Reg. Nos. 213,724 and 324,936.  
For Medicinal Preparation for the Relief of Colds (Int. Cl. 5).  
First use on or about June 28, 1968.

SN 302,126. The Purdue Frederick Company, Yonkers, N.Y. Filed July 5, 1968.

**GRAVATEST**

For Drug for Use as a Test for Pregnancy (Int. Cl. 5).  
First use June 12, 1968.

SN 307,085. Bromo Cedon Corp. of Florida, U.S.A., Fort Lauderdale, Fla. Filed Sept. 11, 1968.

**BROMO CEDIN**

The word "Bromo" is disclaimed apart from the mark as shown.  
For Effervescent Preparation Containing Bromides for the Relief of Headaches and Upset Stomach (Int. Cl. 5).  
First use November 1958.

SN 308,086. Bristol-Myers Company, New York, N.Y. Filed Sept. 24, 1968.

**NEOTREND**

For Analgesic Tablets (Int. Cl. 5).  
First use July 29, 1968.

SN 311,302. The Purdue Frederick Company, Yonkers, N.Y. Filed Nov. 4, 1968.

**XOROX**

For Oral Antiseptic Mouthwash (Int. Cl. 5).  
First use Oct. 18, 1968.

SN 311,819. Bristol-Myers Company, New York, N.Y. Filed Nov. 12, 1968.

**DATRYL**

For Analgesic (Int. Cl. 5).  
First use Sept. 12, 1968.

SN 311,820. Bristol-Myers Company, New York, N.Y. Filed Nov. 12, 1968.

**DAYTRIL**

For Analgesic (Int. Cl. 5).  
First use Sept. 12, 1968.

SN 312,072. The Spertl Drug Corporation, South Fort Mitchell, Ky. Filed Nov. 13, 1968.

**C-MOX**

For Drug Compound Consisting Primarily of a Magnesium Aluminum Hydroxide Gel Whose Use is Primarily as an Antacid (Int. Cl. 5).  
First use Feb. 1, 1963.

SN 320,111. Parke, Davis & Company, Detroit, Mich. Filed Feb. 26, 1969.

**DAPOLAR**

For Anti-Malarial Preparation (Int. Cl. 5).  
First use on or before Feb. 17, 1969.

SN 320,760. American Home Products Corporation, New York, N.Y. Filed Mar. 5, 1969.

**TAMP-R-TEL**

For Sterile Cartridge-Needle Units of Medicinal Injectables in Tamper Resistant Packages (Int. Cl. 5).  
First use Dec. 23, 1968.

**Class 22—Games, Toys, and Sporting Goods**

SN 296,458. Schuhfabrik Humanic Heinisch & Mayer-Rieckh K.G., Graz, Austria. Filed Apr. 24, 1968.

**DYNAFIT**

For Ski Boots (Int. Cl. 25).  
First use 1959; in commerce 1959.

SN 296,512. Milton Bradley Company, East Longmeadow, Mass. Filed Apr. 25, 1968.

**PRO SOCCER**

The word "Soccer" is disclaimed apart from the mark as shown.  
For Equipment for Playing a Parlor-Type Game Comprising a Game Board, Dice and Playing Pieces (Int. Cl. 28).  
First use Mar. 1, 1968.

SN 306,304. Mattel, Inc., Hawthorne, Calif. Filed Aug. 30, 1968.

**KAKEROOP**

For Packaged Cake Mix for Making Edible Toy Figures, Which Mix is a Component Part of a Make and Play Kit (Int. Cl. 28).  
First use Dec. 4, 1967.

SN 306,557. J. Kennedy Fisher, Inc., Los Angeles, Calif. Filed Sept. 4, 1968.

**PIZZA TAIL**

For Fishing Lures (Int. Cl. 28).  
First use Aug. 20, 1968.

SN 306,921. S. S. Kresge Company, Detroit, Mich. Filed Sept. 9, 1968.



For Toy Balloons (Int. Cl. 28).  
First use in or before January 1968.

SN 306,922. S. S. Kresge Company, Detroit, Mich. Filed Sept. 9, 1968.



For Toy Balloons (Int. Cl. 28).  
First use in or before January 1968.

SN 308,555. Woodstream Corporation, Lititz, Pa. Filed Sept. 30, 1968.

**TOMCAT**

For Fishing Reels (Int. Cl. 28).  
First use Sept. 9, 1968.

SN 308,556. Woodstream Corporation, Lititz, Pa. Filed Sept. 30, 1968.

**BOBCAT**

For Fishing Reels (Int. Cl. 28).  
First use Sept. 9, 1968.

SN 309,221. Atlantic Lures, Inc., Providence, R.I. Filed Oct. 9, 1968.

**SPARKIE**

For Fishing Lures (Int. Cl. 28).  
First use Aug. 7, 1967.



SN 309,603. Milton Bradley Company, East Longmeadow, Mass. Filed Oct. 14, 1968.

## DROP IN THE BUCKET

For Apparatus for Playing an Action-Type Game Comprising Receptacles Worn on the Person, Playing Pieces, and Means for Depositing the Playing Pieces in the Receptacles (Int. Cl. 28).  
First use Aug. 1, 1968.

SN 309,631. Sidney A. Tarrson Co., Chicago, Ill. Filed Oct. 14, 1968.

## "MY SANDPAL"

For Sand and Water Toy Comprising Combined Toy Bucket, Shovel, Funnel, and Strainer (Int. Cl. 28).  
First use Nov. 7, 1967.

SN 311,030. The Greyhound Corporation, Chicago, Ill. Filed Oct. 31, 1968.

## SCENICRUISER

Owner of Reg. No. 676,464.  
For Toy Busses (Int. Cl. 28).  
First use in or about November 1958.

SN 312,864. Wham-O Mfg. Co., San Gabriel, Calif. Filed Nov. 22, 1968.

## FUN FOUNTAIN

Applicant disclaims any registration rights for the word "Fountain" apart from the mark as shown, but applicant waives none of its common-law rights in the mark or any feature thereof.

For Toy Liquid Flavoring Apparatus, Including Separate Liquid Supply and Flavoring Compartments (Int. Cl. 28).  
First use at least as early as Nov. 19, 1968.

## Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 303,280. Creve Coeur Mfg. Co., East Peoria, Ill. Filed July 22, 1968.

## WHOPPER-HOPPER

For Extensions for the Grain Bins of Combines (Int. Cl. 7).  
First use Aug. 1, 1967.

## Class 24—Laundry Appliances and Machines

SN 318,654. Jensen Machinery, Inc., Fort Lauderdale, Fla. Filed Feb. 7, 1969.

## NEET-SHEET

For Laundry Stacking Machines (Int. Cl. 7).  
First use Mar. 1, 1968.

## Class 26—Measuring and Scientific Appliances

SN 309,317. Universal Lancaster, Inc., Dallas, Tex. Filed Oct. 9, 1968.



For Gas Meters, Gas Regulators, Gas Breather Vents, Insulated Gas Meter Swivels, Gas Pressure Testing Equipment, Gas Leak Detectors, Gas Regulator Test Stands, and Test Plugs (Int. Cl. 9).  
First use September 1968.

SN 317,703. Atlas Supply Company, Springfield, N.J. Filed Jan. 28, 1969.

## ATLAS

Owner of Reg. No. 295,541.  
For Sun Glasses (Int. Cl. 9).  
First use Dec. 16, 1968.

## Class 27—Horological Instruments

SN 286,321. Bulova Watch Company, Inc., Flushing, N.Y. Filed Dec. 6, 1967.

## OCEANOGRAPHER

For General Purpose Watches and Parts Thereof (Int. Cl. 14).  
First use Oct. 26, 1967.

SN 308,130. Pennwood Numechron Company, Pittsburgh, Pa. Filed Sept. 24, 1968.



No claim is made to the exclusive right to use the term "Time" or a representation of a clock, but applicant waives none of its common law rights therein.  
For Time Meters—Namely, Direct Reading Digital Clocks (Int. Cl. 14).  
First use on or about Jan. 1, 1965.

SN 312,018. Bulova Watch Company, Inc., Flushing, N.Y. Filed Nov. 13, 1968.

## ACTION

Owner of Reg. No. 721,312.  
For Watches (Int. Cl. 14).  
First use Oct. 21, 1968.

SN 316,232. Movado Watch Agency, Inc., New York, N.Y. Filed Jan. 9, 1969.

## KINGMATIC-CHRONO

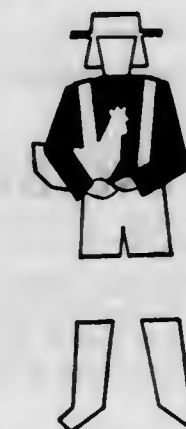
Owner of Reg. Nos. 649,695, 750,850, and 862,375.  
For Watches (Int. Cl. 14).  
First use Dec. 23, 1968.

SN 320,921. Ulysse Nardin, Ltd., New York, N.Y. Filed Mar. 6, 1969.

## ULNA

For Watches (Int. Cl. 14).  
First use Feb. 18, 1969.

SN 321,109. Bird-In-Hand Poultry Company, Bird-In-Hand, Pa. Filed Mar. 10, 1969.



Owner of Reg. Nos. 835,581, 839,683, and 839,684.  
For Watches (Int. Cl. 14).  
First use on or about Dec. 15, 1968.

## Class 28—Jewelry and Precious-Metal Ware

SN 295,752. Memory Gems, Inc., Brockton, Mass. Filed Apr. 16, 1968.

## MOTHER'S MEMORY GEMS

The word "Gems" is disclaimed apart from the mark as shown.  
For Pins Adapted To Have Charms or Gems Attached Thereto (Int. Cl. 14).  
First use Mar. 15, 1968.

SN 310,127. Pakula and Company, Chicago, Ill. Filed Oct. 21, 1968.

*Michael James*

The name "Michael James" is fanciful and does not identify any particular living individual.  
For Jewelry (Int. Cl. 14).  
First use on or about Sept. 26, 1968.

SN 315,418. K & R Spraycraft & Jewelry Corp., New York, N.Y. Filed Dec. 30, 1968.

## NIP-PROOF

For Earrings (Int. Cl. 14).  
First use 1968.

SN 316,529. Michael C. Fina Jewelry Corporation, New York, N.Y. Filed Jan. 14, 1969.

## BRADFORD

For Gold Jewelry (Int. Cl. 14).  
First use September 1967.

SN 317,088. Ortho Pharmaceutical Corporation, Raritan, N.J. Filed Jan. 21, 1969.

## ORTHO

Owner of Reg. Nos. 298,222, 846,288, and others.  
For Tie Tacks (Int. Cl. 14).  
First use Apr. 30, 1968.

SN 320,907. Bennett Brothers, Inc., Chicago, Ill. Filed Mar. 6, 1969.

## VENUS

Owner of Reg. No. 732,140.  
For Diamonds and Diamond Rings (Int. Cl. 14).  
First use November 1937.

## Class 29—Brooms, Brushes, and Dusters

SN 303,315. Kellogg Brush Manufacturing Co., Easthampton, Mass. Filed July 22, 1968.

**Kellogg**  
♦♦♦ Quality

Owner of Reg. Nos. 503,893 and 635,919.  
For Brushes, Brooms, Mops, Sponges and Dusters, All for Household, Personal and Kitchen Use; Lint Rollers and Plate and Bowl Scrapers of the Type Comprising a Slender Handle Carrying a Flexible Wiping Element at One End (Int. Cl. 21).  
First use Jan. 1, 1961.

SN 313,451. Sentry Hardware Corporation, Cleveland, Ohio. Filed Dec. 2, 1968.

## SENTRY

For Paint Brushes (Int. Cl. 16).  
First use June 28, 1963.

## Class 32—Furniture and Upholstery

SN 282,711. Modern Furniture Upholstering Co., Inc., Gardner, Mass. Filed Oct. 17, 1967.



No claim is made for the representation of a chair.  
For Chairs and Sofas (Int. Cl. 20).  
First use Sept. 25, 1967.



TM 14

## OFFICIAL GAZETTE

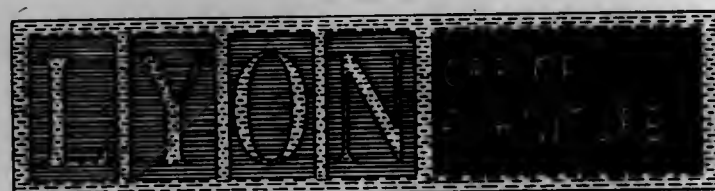
AUGUST 5, 1969

SN 287,951. Restonic Corporation, Chicago, Ill. Filed Jan. 2, 1968. SN 316,019. Modular Systems, Inc., Fruitport, Mich. Filed Jan. 7, 1969.



For Mattresses and Box Springs, Beds, Head Boards, Night Stands, Dressers, Chests, Couches, Chairs, Desks, Love-Seats, Hutches, Bookcases, Tables, and Mirrors (Int. Cl. 20).  
First use June 18, 1967.

SN 291,754. Lyon Metal Products, Incorporated, Aurora, Ill. Filed Feb. 23, 1968.



The words "Office" and "Furniture" are disclaimed apart from the mark as shown. The drawing is lined for blue and silver, but no claim is made to color. Owner of Reg. Nos. 571,461, 749,664, and others.

For Office Desks; Parts of and Accessories for Office Desks; Office Tables; Credenzas; Desk Returns; Modulars; Parts of and Accessories for Modulars; Filing Cabinets, Parts of and Accessories for Filing Cabinets; and Office Chairs (Int. Cl. 20).  
First use May 5, 1966.

SN 302,655. Temple Industries, Inc., Diboll, Tex. Filed July 12, 1968.



For Bedroom and Dining Room Furniture—Namely, Beds, Night Stands, Dressers, Chests, Desks, Tables, Chairs, and Mirror Frames (Int. Cl. 20).  
First use January 1964.

SN 307,029. International Computer Appliances Corporation, Minneapolis, Minn. Filed Sept. 10, 1968.

ICA

For Storage Cabinets for Computer Data, Microfilms, and the Like (Int. Cl. 20).  
First use Apr. 1, 1968.

SN 311,181. Shapiro Rochester Industries, Inc., Rochester, N.Y. Filed Nov. 1, 1968.

VILLA KITCHENS

No exclusive claim is made to the word "Kitchens," apart from the mark as shown.  
For Kitchen Cabinets (Int. Cl. 20).  
First use April 1962.

## MOD-EEZ

For Shelving Units—Namely, Bookshelves and Telephone Shelves, and Joint Systems Therefor (Int. Cl. 20).  
First use on or about Dec. 10, 1968.

SN 316,417. Dolly Madison Industries, Inc., Philadelphia, Pa. Filed Jan. 13, 1969.

4 ★ on ★ the ★ floor

For Fast Service Table and Chair Unit for General Use (Int. Cl. 20).  
First use Oct. 1, 1968.

SN 319,314. Invincible Metal Furniture Co., Manitowoc, Wis. Filed Feb. 17, 1968.

INVINCIBLE

Owner of Reg. No. 518,565.  
For Office Furniture—Namely, Desks, Filing Cabinets, Tables, Chests, Telephone Stands, Credenzas, Bookcases, Cabinets, Files, Desk Trays and Letter Trays, Continuous Tops for Multiple Units, and Parts Thereof (Int. Cl. 20).  
First use in 1935.

## Class 33—Glassware

SN 295,632. Michael C. Fina Company, New York, N.Y. Filed Apr. 15, 1968.

ROYAL THEDFORD

For Crystal Tableware and Crystal Stemware (Int. Cl. 21).  
First use August 1967.

SN 310,349. NMS Industries, Inc., New York, N.Y. Filed Oct. 23, 1968.

*Royal Iridesence*

The word "Iridesence" is disclaimed apart from the mark as shown.  
For Drinking Glasses of Various Shapes and Sizes (Int. Cl. 21).  
First use Sept. 18, 1968.

## Class 34—Heating, Lighting, and Ventilating Apparatus

SN 306,257. Wiley W. Lowrey, Oklahoma City, Okla. Filed Aug. 29, 1968.

J/MAC

For Fuel Heaters and Separators Used To Promote Efficiency in Liquid Fuel Systems of Diesel Engines (Int. Cl. 11).  
First use Apr. 15, 1965.

AUGUST 5, 1969

U. S. PATENT OFFICE

TM 15

## Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 308,058. Hoerner Waldorf Corporation, St. Paul, Minn. Filed Sept. 23, 1968.

IMPERIAL BOARD

Applicant disclaims the word "Board" apart from its usage in the mark.  
For Paperboard (Int. Cl. 16).  
First use July 31, 1968.

SN 317,147. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Jan. 21, 1969.

SONY

Owner of Reg. Nos. 691,940, 824,847, and others.  
For Brake Hose (Int. Cl. 17).  
First use June 11, 1968; in commerce June 11, 1968.

## Class 37—Paper and Stationery

SN 284,312. Ketcham & McDougall, Inc., Roseland, N.J. Filed Nov. 7, 1967.

FUTURA

For Telephone Index (Int. Cl. 16).  
First use January 1966.

SN 291,601. Facelle Company Limited, Toronto, Ontario, Canada. Filed Feb. 21, 1968.

PERI-WIPES

For Cellulose Tissues, Especially Adapted for Perineal Care and Feminine Hygiene (Int. Cl. 16).  
First use on or about Jan. 13, 1955; in commerce on or about June 13, 1966.

SN 294,297. Med-Dent Publishing Co., San Francisco, Calif. Filed Mar. 27, 1968.

OUT-N-BACK

For Paper and Stationery Items Consisting of Envelopes (Int. Cl. 16).  
First use June 1966.

SN 295,183. Sanford Ink Company, Bellwood, Ill. Filed Apr. 8, 1968.

EXPRESSO

Owner of Reg. No. 44,921.  
For Porous Tip Pens (Int. Cl. 16).  
First use Apr. 1, 1968.

SN 299,327. Day-Timers, Inc., Allentown, Pa. Filed May 29, 1968.

DAY/TIMER

*Time-Saver*

The words "Time-Saver" are disclaimed apart from the mark as shown.  
For Blank or Partially Printed Forms—Namely, Letters, Memos, Telephone Pads, Invoices, Purchase Orders, Receipts, and Record Forms (Int. Cl. 16).  
First use Apr. 6, 1968.

SN 302,035. Milton Bradley Company, East Longmeadow, Mass. Filed July 5, 1968.

CHUNK-O CRAYON

The word "Crayon" is disclaimed.  
For Multi-Colored Wax Crayons (Int. Cl. 16).  
First use Apr. 1, 1968.

SN 318,641. Ethyl Corporation, Richmond, Va. Filed Feb. 7, 1969.

CARROLLTON

Owner of Reg. No. 254,870.  
For Printing Papers (Int. Cl. 16).  
First use 1942.

SN 315,107. Riverside Paper Corporation, Appleton, Wis. Filed Dec. 23, 1968.

ADMIRAL

For Bond, Mimeo, Duplicator, and Offset Paper (Int. Cl. 16).  
First use Oct. 31, 1968.

SN 316,211. K.C. Pen Co., Inc., Brooklyn, N.Y. Filed Jan. 9, 1969.

SIDEKICK

For Ball Point Pens and Refill Cartridges Therefor (Int. Cl. 16).  
First use Feb. 13, 1968.

SN 316,671. The Northwest Paper Company, Cloquet, Minn. Filed Jan. 15, 1969.

MAGNA

For Printing, Publishing, and Converting Paper (Int. Cl. 16).  
First use Nov. 15, 1968.

SN 316,808. The Mead Corporation, Dayton, Ohio. Filed Jan. 16, 1969.

ARROW

The mark is used as a watermark on the goods. Owner of Reg. No. 300,156.  
For Bond Papers and Manifold Papers (Int. Cl. 16).  
First use December 1968.

SN 317,039. Hasbro Industries, Inc., Pawtucket, R.I. Filed Jan. 21, 1969.

BUD

For Pencils (Int. Cl. 16).  
First use on or about Apr. 29, 1920.

SN 317,043. Hasbro Industries, Pawtucket, R.I. Filed Jan. 21, 1969.

FIFTH AVE.

For Pencils (Int. Cl. 16).  
First use in or about 1935.



**Class 38—Prints and Publications**

SN 293,040. Kline's Services, Inc., Chicago, Ill. Filed Mar. 12, 1968.

**OUTDOOR POWER**

For Weekly Newspaper Column (Int. Cl. 16).  
First use Feb. 14, 1968.

SN 294,014. Chrono Graphics, Ltd., New York, N.Y. Filed Mar. 25, 1968.

**STIK-TOOS**

For Pressure Sensitive Decals To Be Placed on Cars, Furniture, Mirrors, etc. (Int. Cl. 16).  
First use Mar. 12, 1968.

SN 295,916. The Congregation of Sons of the Immaculate Heart of Mary, Incorporated, Los Angeles, Calif. Filed Apr. 18, 1968.

**ULTREYA**

For Religious Magazine (Int. Cl. 16).  
First use Aug. 15, 1959.

SN 296,634. Musigame Features Co., Harper Woods, Mich. Filed Apr. 26, 1968.

**MUSIGAME**

For Music Instruction Books (Int. Cl. 16).  
First use Nov. 10, 1967.

SN 297,058. Gelman Instrument Company, Ann Arbor, Mich. Filed May 1, 1968.

**DUST TOPICS**

For Magazine, Published Bi-Monthly, Relating to Techniques, Apparatus, and Problems Specific to Sample Collection, Filtering and Pollution (Int. Cl. 16).  
First use November 1959.

SN 299,610. Lee Wood, Savage, Minn. Filed June 3, 1968.

**SERVICEMAN'S SHIELD**

For New Testament Bibles and Prayer Book (Int. Cl. 16).  
First use July 24, 1967.

SN 309,160. Class Student Services, Inc., d.b.a. Campus League To Aid Student Savings, Inc., Rockville, Md. Filed Oct. 8, 1968.

**CLASS**

For Magazine, Published Periodically (Int. Cl. 16).  
First use Aug. 27, 1968.

SN 312,674. William M. Hall, d.b.a. Hall Publishing Company, Hoboken, N.J. Filed Nov. 20, 1968.

**CDB****Curtain, Drapery & Bedspread Magazine**

Applicant disclaims the exclusive right to use the words "Curtain, Drapery & Bedspread Magazine" apart from the mark as a whole.  
For Monthly Trade Magazine (Int. Cl. 16).  
First use November 1968.

SN 314,497. Kimberly-Clark Corporation, Neenah, Wis. Filed Dec. 16, 1968.

**LUV-ON**

For Cut-Outs Made of Plastic Coated Paper, With Adhesive Backing, To Be Applied to a Variety of Surfaces for Decorative Purposes (Int. Cl. 16).  
First use Nov. 22, 1968.

SN 314,873. Cluff Edward Chappell, d.b.a. Manumit Institute, Albuquerque, N. Mex. Filed Dec. 19, 1968.

**Manumit**

For Booklets (Int. Cl. 16).  
First use June 1, 1968.

SN 315,877. Avon Printed Hospital Products Corporation, Chicago, Ill. Filed Jan. 6, 1969.

**AVON**

For Pressure Sensitive Printed Labels for Use in Hospitals (Int. Cl. 16).  
First use on or about Feb. 9, 1968.

SN 317,420. The Bureau of National Affairs, Inc., Washington, D.C. Filed Jan. 24, 1969.

**LABOR ARBITRATION REPORTS**

Owner of Reg. No. 502,425.  
For Periodically Issued Reports and Supplements Therefor (Int. Cl. 16).  
First use October 1946.

SN 318,193. Insurance Publication Company, Palo Alto, Calif. Filed Feb. 3, 1969.

**THE INSURANCE MARKET FINDER**

For Magazine, Published Quarterly (Int. Cl. 16).  
First use Jan. 30, 1969.

SN 318,852. Ralph L. Clifford, d.b.a. New York Graphic, New York, N.Y. Filed Feb. 6, 1969.

**NEW YORK GRAPHIC**

For Newspaper (Int. Cl. 16).  
First use Nov. 4, 1966.

SN 319,163. Harvey Features Syndicate, New York, N.Y. Filed Feb. 14, 1969.

**Bunny**

For Comic Magazine Issued Periodically and Comic Strip (Int. Cl. 16).  
First use May 13, 1966.

SN 320,732. Norcross, Inc., New York, N.Y. Filed Mar. 4, 1969.

**RHAPSODY IN BLUE**

For Greeting Cards (Int. Cl. 16).  
First use Nov. 27, 1968.

SN 321,861. Farm Journal, Inc., Philadelphia, Pa. Filed Mar. 17, 1969.

**ADA THE AYRSHIRE**

Owner of Reg. No. 762,476.  
For Cartoon (Int. Cl. 16).  
First use at least as early as Aug. 27, 1955.

SN 322,132. Rapidata, Inc., New York, N.Y. Filed Mar. 19, 1969.

**RAPIDATA**

Owner of Reg. No. 722,217.  
For Newsletter Issued Periodically (Int. Cl. 16).  
First use April 1968.

**Class 39—Clothing**

SN 280,463. Rob Roy Company, Inc., New York, N.Y. Filed Sept. 15, 1967.

**FIREBIRD**

For Knit Shirts for Men, Young Men and Boys (Int. Cl. 25).  
First use June 13, 1967.

SN 281,698. Georgia Griffin Fashions, Inc., New York, N.Y. Filed Oct. 3, 1967.

**ALLIE I**

For Ladies' Knit Dresses (Int. Cl. 25).  
First use Sept. 1, 1966.

**AMERICAN HERITAGE CLUBS**

For Neckwear (Int. Cl. 25).  
First use Oct. 24, 1967.

SN 292,952. Oshkosh B'Gosh, Incorporated, Oshkosh, Wis. Filed Mar. 11, 1968.

**The Guys**

Applicant claims no exclusive rights in the word "Guys" alone or apart from the mark as shown.  
For Men's and Boys' Trousers (Int. Cl. 25).  
First use Feb. 26, 1968.

SN 293,930. Kati Screenprints Inc., New York, N.Y. Filed Mar. 22, 1968.

**Bonheur**

"Bonheur" is a French word meaning "happiness" or "luck."  
For Handkerchiefs and Scarves (Int. Cl. 25).  
First use 1959.

SN 295,668. Playland Industries, Inc., New York, N.Y. Filed Apr. 15, 1968.

**AQUASEAL**

For Women's, Misses' and Children's Jackets, Coats, Snowsuits, and Pants (Int. Cl. 25).  
First use Nov. 6, 1967.

SN 295,982. Trimfoot Company, St. Louis, Mo. Filed Apr. 18, 1968.

**PENN-FLEX**

For Children's Shoes (Int. Cl. 25).  
First use on or about Nov. 17, 1967.

SN 296,218. U.S. Industries, Inc., New York, N.Y. Filed Apr. 22, 1968.

**CHANGE-A-LEG**

For Hosiery and Underwear (Int. Cl. 25).  
First use Mar. 7, 1968.



SN 296,683. Fortuna Foundations, Inc., New York, N.Y. SN 299,752. Harold Arthur Candland, Chevy Chase, Md. Filed Apr. 26, 1968. Filed June 5, 1968.

**NOTHIN'**

For Brassieres, Girdles, Panty Girdles, Garter Belts, and Lingerie (Int. Cl. 25).  
First use Apr. 5, 1968.

SN 296,826. Alex Gropper, d.b.a. Ledaspain, New York, N.Y. Filed Apr. 29, 1968.

**LEDASPAIN**

For Men's and Women's Leather Coats, Jackets, Dresses, and Gloves (Int. Cl. 25).  
First use Apr. 9, 1966.

SN 296,831. Arthur Jay Company, Milwaukee, Wis. Filed Apr. 29, 1968.

**ROVERCOAT**

For Women's Outer Apparel—Namely, Coats and Rainwear (Int. Cl. 25).  
First use Mar. 15, 1968.

SN 298,039. Puritan Fashions Corporation, New York, N.Y. Filed May 13, 1968.

**PARK SUITE**

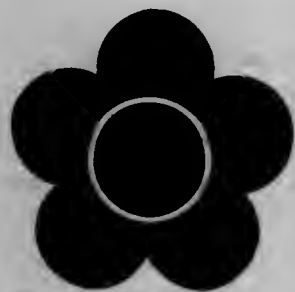
For Women's Clothing—Namely, Dresses and Matching Jackets and Pants Ensembles (Int. Cl. 25).  
First use May 7, 1968.

SN 299,176. Utilitog Company, Warrensburg, Mo. Filed May 27, 1968.



For Uniforms (Int. Cl. 25).  
First use October 1964.

SN 299,567. Mary Quant Limited, London, England. Filed June 3, 1968.



Owner of British Reg. No. 906,279, dated Mar. 6, 1967.  
For Headwear, Sweaters, Hosiery, Boots, and Shoes (Int. Cl. 25).



For Slacks, Shorts, Shirts, Jackets, and Headwear (Int. Cl. 25).  
First use May 1, 1968.

SN 299,940. Robert Bruce, Inc., Philadelphia, Pa. Filed June 7, 1968.



For Boys' Knit Shirts (Int. Cl. 25).  
First use January 1967.

SN 301,357. Pollak Leather Inc., New York, N.Y. Filed June 25, 1968.



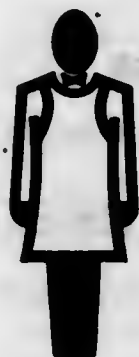
Applicant disclaims the word "Leather" apart from the mark as shown.  
For Jackets (Int. Cl. 25).  
First use Feb. 1, 1968.

SN 301,795. Robert Woolley Shoe Company Ltd., Galt, Ontario, Canada. Filed July 1, 1968.

**WALKINGWOOLLEYS**

Priority claimed under Sec. 44(d) on Canadian application filed Apr. 2, 1968; Reg. No. 159,785, dated Dec. 6, 1968.  
For Women's and Teenagers' Shoes, Slippers, and Sandals (Int. Cl. 25).

SN 304,334. Fort Howard Paper Company, Green Bay, Wis. Filed Aug. 5, 1968.



For purposes of registration, applicant makes no claim to the exclusive right to use the illustration of the goods identified herein apart from the mark as shown, but applicant waives none of its common law rights therein.  
For Disposable Bibs and Aprons (Int. Cl. 25).  
First use June 11, 1968.

SN 304,335. Fort Howard Paper Company, Green Bay, Wis. SN 308,382. S. S. Kresge Company, Detroit, Mich. Filed Aug. 5, 1968. Filed Sept. 27, 1968.



For purposes of registration, applicant makes no claim to the exclusive right to the illustration of bibs as a representation of the goods identified herein, apart from the mark as shown, but applicant waives none of its common law rights therein.

For Disposable Bibs (Int. Cl. 25).  
First use Apr. 3, 1968.

SN 304,413. Thetford Moulded Products Limited, Thetford, Norfolk, England. Filed Aug. 5, 1968.

**CENTURION**

Owner of British Reg. Nos. 718,827, dated June 9, 1953, and 912,849, dated Aug. 3, 1967.  
For Motorcyclists' Safety Helmets and Industrial Helmets for Protection Against Accident or Injury (Int. Cl. 9).

SN 304,691. Louis Israel (Footwear) Limited, London, England. Filed Aug. 8, 1968.

**MICHAEL OF BOND STREET**

For Footwear—Namely, Boots, Shoes, Slippers, and Sandals (Int. Cl. 25).  
First use April 1968; in commerce Apr. 1, 1968.

SN 306,224. Cobbs Corner Casuals, Inc., New York, N.Y. Filed Aug. 29, 1968.



The name "Nancy Amory" is being used only for its fanciful appearance.  
For Girls' and Women's Clothing—Namely, Dresses, Shirts, Blouses, Slacks and Suits (Int. Cl. 25).  
First use May 23, 1968.

SN 307,614. The Lovable Company, Atlanta, Ga. Filed Sept. 18, 1968.

**GREAT SHAPE**

For Women's Foundation Garments (Int. Cl. 25).  
First use Feb. 24, 1967.

SN 308,120. Monleigh Garment Company, Mocksville, N.C. Filed Sept. 24, 1968.

**OLDE WELL**

For Women's Wearing Apparel—Namely, Dresses, Blouses, Skirts, Shifts, Shirts, Shorts, Slacks, Sweaters and Coats (Int. Cl. 25).  
First use July 23, 1968.



For Infant's Wear Including Training Pants, Diaper Sets, Sleepers, Gowns, Dresses, Shirts, Shorts, Sweaters, Overalls, Sun suits, and Underwear (Int. Cl. 25).  
First use on or about May 20, 1968.

SN 308,635. Somerset Knitting Mills, Inc., d.b.a. Monterey Knitting Mills, Philadelphia, Pa. Filed Oct. 1, 1968.

**LOCH LEISURE**

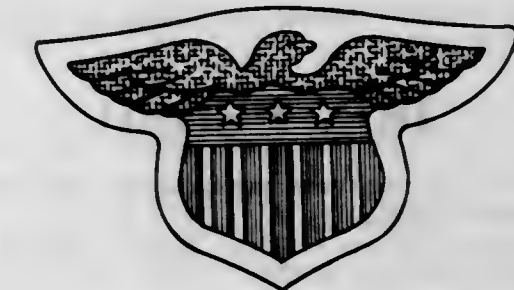
Applicant disclaims "Leisure" apart from the mark as shown.  
For Sweaters for Men, Women and Children (Int. Cl. 25).  
First use Sept. 10, 1968.

SN 308,852. Interco Incorporated, d.b.a. The Florsheim Shoe Company, Chicago, Ill. Filed Oct. 4, 1968.

**FLORSHEIM**

Owner of Reg. Nos. 73,586, 229,063, and others.  
For Hosiery (Int. Cl. 25).  
First use Sept. 6, 1968; January 1870 as to "Florsheim."

SN 309,967. Hilts-Willard Glove Corp., Gloversville, N.Y. Filed Oct. 18, 1968.



The drawing is lined for the colors gold, red and blue.  
For Sport Clothing—Namely, Golf Gloves (Int. Cl. 25).  
First use June 1968.

SN 309,972. The Kendall Company, Walpole, Mass. Filed Oct. 18, 1968.

**THRIFTY DRY**

Owner of Reg. No. 787,845.  
For Clothing, Specifically, Infants' and Toddlers' Diapers (Int. Cl. 25).  
First use Mar. 15, 1967.



SN 310,146. Spartans Industries, Inc., New York, N.Y. Filed Oct. 21, 1968.

**RISA**

The name "Risa" is fanciful, and is not intended to identify or be identified with any living individual.  
For Girls' and Ladies' Clothing—Namely, Blouses, Slacks, Shorts, Jackets, Skirts and Shirts (Int. Cl. 25).  
First use Aug. 1, 1967.

SN 310,211. Dan-Mar Mfg. Co. Inc., Baltimore, Md. Filed Oct. 22, 1968.



Owner of Reg. No. 441,703.  
For Men's and Boys' Suits, Trousers, and Sportswear—Namely, Sport Shirts and Slacks (Int. Cl. 25).  
First use on or about Jan. 16, 1946.

SN 311,220. Alatex, Inc., Andalusia, Ala. Filed Nov. 4, 1968.  
Owner of Reg. No. 619,963.

**ALATEX**

For Men's Dress Shirts, Sport Shirts, Underwear and Pajamas, and Women's Dresses and Blouses (Int. Cl. 25).  
First use Sept. 13, 1954.

SN 311,309. J. T. Smith Company, Inc., Dallas, Tex. Filed Nov. 4, 1968.



The word "Footwear" is disclaimed apart from the mark as shown.  
For Shoes (Int. Cl. 25).  
First use October 1964.

SN 311,515. Pierre's Exclusive Fashions, Inc., Hialeah, Fla. Filed Nov. 6, 1968.

**DON PEDRO**

"Don Pedro" is a fictitious name and does not identify any known living individual.  
For Women's Children's Skirts, Blouses, Slacks, Dresses, Shorts, and Jackets (Int. Cl. 25).  
First use January 1968.

SN 311,542. Wilker Bros. Co., Inc., New York, N.Y. Filed Nov. 6, 1968.



For Men's, Women's, Boys', and Girls' Pajamas, Bath Robes, Dressing Robes, and Beach Robes (Int. Cl. 25).  
First use on or about Jan. 2, 1968.

SN 312,023. Cape Ann Manufacturing Co., Gloucester, Mass. Filed Nov. 13, 1968.

**PELTBELT**

For Belt Which Converts to a Jacket for Men, Women and Children (Int. Cl. 25).  
First use on or about Sept. 13, 1968.

SN 312,401. Sea Bella Originals, Inc., New York, N.Y. Filed Nov. 18, 1968.

**SEA BELLA**

For Swimwear (Int. Cl. 25).  
First use Oct. 28, 1968.

SN 312,892. S. H. Kress and Company, New York, N.Y. Filed Nov. 22, 1968.

**LANCELOT**

Owner of Reg. No. 561,925.  
For Men's Shirts, Neckties, Underwear, Belts, Gloves, Pants, Scarfs, Shoes, Handkerchiefs, and Hats (Int. Cl. 24 and 25).  
First use Aug. 11, 1954.

SN 312,932. The Williams Manufacturing Company, Portsmouth, Ohio. Filed Nov. 22, 1968.

**SPORTABLES**

For Women's and Children's Shoes (Int. Cl. 25).  
First use Nov. 15, 1968.

SN 314,735. Stedman Manufacturing Company, Asheboro, N.C. Filed Dec. 17, 1968.

**BENCHMARK**

For Men's and Boys' Underwear (Int. Cl. 25).  
First use Dec. 6, 1968.

SN 315,196. Bartson's, Antwerp, Belgium. Filed Dec. 26, 1968.



Owner of Belgian Reg. No. 18,685, dated Apr. 1, 1963.  
For Articles of Clothing, Especially Rainwear (Int. Cl. 25).

SN 315,197. Bartson's, Antwerp, Belgium. Filed Dec. 26, 1968.



Owner of Belgian Reg. No. 18,850, dated Dec. 16, 1963.  
For Articles of Clothing, Especially Rainwear (Int. Cl. 25).

SN 315,439. Publix Shirt Corporation, New York, N.Y. Filed Dec. 30, 1968.

**OLYMPIAN**

Owner of Reg. No. 239,283.  
For Men's Pajamas, Night Robes, and Bowling Shirts (Int. Cl. 25).  
First use Apr. 15, 1925.

SN 315,623. The Villager, Inc., Philadelphia, Pa. Filed Dec. 31, 1968.

**PRETTYFORE**

Owner of Reg. No. 722,282.  
For Children's Garments—Namely, Jumpers (Int. Cl. 25).  
First use Aug. 7, 1959.

SN 315,787. Raleigh Stores Corporation, Washington, D.C. Filed Jan. 3, 1969.

**RALEIGHS**

Owner of Reg. Nos. 641,423 and 758,893.  
For Men's Apparel—Namely, Dress Shirts, Undershirts, Night Shirts, Leather and Fabric Gloves, Hats, Caps, Shoes, Woven and Knit Sport Shirts, Suits, Coats, Sport Coats, Slacks, Belts, Suspenders, Suburban Coats, Outer Jackets, Robes, Smoking Jackets, Rainwear, Sweaters, Pajamas, Neckwear, Under Shorts and Bermuda Shorts; Ladies' Apparel—Namely, Dresses, Evening Dresses, Junior Dresses, Sweaters, Slacks, Bermuda Shorts, Coats, Suits, Belts, Leather and Fabric Gloves, Raincoats, Suburban Coats, Sport Shirts, Beachwear, Hosiery, Panties, Slips, Gowns, and Robes (Int. Cl. 25).  
First use Nov. 1, 1967; in or about 1912 as to "Raleigh."

SN 316,475. Sears, Roebuck and Co., Chicago, Ill. Filed Jan. 13, 1969.

**THE DOESN'T SLIP**

The word "Slip" is disclaimed apart from the mark as shown.  
For Slips, Half Slips, Bra-Slips, Panties, and Pettipants (Int. Cl. 25).  
First use on or about May 16, 1968.

SN 316,515. Becker & Burns, Philadelphia, Pa. Filed Jan. 14, 1969.

**ZOOTIQUE**

For Fur Hats, Fur Scarfs, Fur Coats, Fur Jackets, and Fur Stoles (Int. Cl. 25).  
First use Feb. 28, 1968.

SN 317,952. House of Worsteds-Tex, Inc., Philadelphia, Pa. Filed Jan. 30, 1969.

Tailored by  
**Worsted-Tex**

The words "Tailored by" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 218,057, 829,498, and others.  
For Men's and Young Men's Suits, Topcoats and Overcoats (Int. Cl. 25).  
First use on or about June 27, 1950; on or about Jan. 16, 1926 as to "Worsted-Tex."

SN 318,180. Frayne Sportswear Manufacturers Inc., Tampa, Fla. Filed Feb. 3, 1969.

**THE GREEN TURTLE**

For Women's, Girl's and Juniors Wearing Apparel—Namely, Shorts, Slacks, Skirts, Blouses, and Jackets (Int. Cl. 25).  
First use Nov. 26, 1968.

SN 318,580. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. Filed Feb. 6, 1969.

**Glen Douglas**

"Glen Douglas" is not the name of a living individual and does not identify a particular designer. Owner of Reg. Nos. 626,274 and 775,402.  
For Ladies' and Misses' Sweaters and Coats; Men's Coats, Jackets, Shorts, Slacks, Knit and Outer Shirts and Sweaters; and Boys' Snowsuits, Jackets, Coats, and Sweaters (Int. Cl. 25).  
First use on or about Aug. 9, 1955.

SN 318,704. Genesco Inc., Nashville, Tenn. Filed Feb. 10, 1969.

**SLEEKAIRE**

Owner of Reg. No. 322,372.  
For Panties, Slips, Gowns, and Peignoirs (Int. Cl. 25).  
First use Jan. 22, 1969.

SN 320,849. Oak Hall Cap & Gown Co., Inc., Roanoke, Va. Filed Mar. 5, 1969.

**ECONO-GOWN**

No exclusive claim is made to the word "Gown" apart from the mark as shown.  
For Academic Caps and Gowns (Int. Cl. 25).  
First use August 1968.

SN 320,929. Angelica Corporation, St. Louis, Mo. Filed Mar. 6, 1969.

**ANGELICARE**

For Uniforms, Coats, Jackets, Shirts, and Pants (Int. Cl. 25).  
First use Dec. 11, 1968.

SN 321,440. Wilroy Inc., New York, N.Y. Filed Mar. 12, 1969.

**GALE 'N JILL**

For Women's and Girls' Clothing—Namely, Dresses (Int. Cl. 25).  
First use Feb. 20, 1969.

SN 321,608. Interco Incorporated, d.b.a. The Florsheim Shoe Company, Chicago, Ill. Filed Mar. 13, 1969.



Applicant makes no claim of exclusive right to the use of the word "Lightweights" except as part of its mark. Owner of Reg. Nos. 73,586, 146,737 and others.  
For Shoes (Int. Cl. 25).  
First use Feb. 25, 1969; January 1890 as to "Florsheim."



SN 321,869. La Chemise Lacoste, Paris, France. Filed Mar. 17, 1969. SN 299,999. Pellon Corporation, New York, N.Y. Filed June 7, 1968.

**LACOSTE**

Owner of U.S. Reg. No. 637,201.  
For Shirts for Men, Women and Children, Sweaters, Tennis Shorts, Walking Shorts, Socks, Beach Jackets, Dresses for Women and Children, Swim Trunks, Caps, Hats, and Skirts (Int. Cl. 25).  
First use July 19, 1935; in commerce Sept. 5, 1950.

**Class 40—Fancy Goods, Furnishings, and Notions**

SN 300,080. B. B. Greenberg Co., Cranston, R.I. Filed June 10, 1968.



Owner of Reg. No. 788,777.  
For Ornamental Shoe Attachments—Namely, Bows and Buckles (Int. Cl. 26).  
First use on or about Jan. 23, 1968.

SN 318,518. The Arthur M. Ross Company, Inc., Los Angeles, Calif. Filed Feb. 6, 1969.

**STASH**

For Ornamental Pin-On Pockets of Fabric or Felt (Int. Cl. 25).  
First use Oct. 8, 1968.

**Class 41—Canes, Parasols, and Umbrellas**

SN 318,422. L. P. Henryson & Co., Inc., New York, N.Y. Filed Feb. 5, 1969.



For Umbrellas (Int. Cl. 18).  
First use Jan. 24, 1969.

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

SN 299,606. Waumbec Mills Incorporated, New York, N.Y. Filed June 3, 1968.

**KINDER KLOTH**

Applicant disclaims the word "Kloth" apart from the mark as shown.  
For Textile Fabrics Used To Manufacture Children's and Women's Dresses, Skirts, Jackets and Sportswear and Men's Suits, Jackets, Pants and Sportswear (Int. Cl. 24).  
First use Mar. 26, 1968.

Owner of Reg. No. 589,758.  
For Textile Fabrics Which Are Useful for Making Clothing of All Types and for Laminating Two Layers of Fabric Together (Int. Cl. 24).  
First use Mar. 19, 1968.



SN 305,297. Aldens, Inc., Chicago, Ill. Filed Aug. 16, 1968.

**PERMA-PURE**

For Treated Mattress Ticking Which Resists Bacterial Growth (Int. Cl. 24).  
First use Dec. 26, 1967.

SN 306,350. Cordemex, S.A. de C.V., Merida, Yucatan, Mexico. Filed Aug. 30, 1968.

**MAYATEX**

Owner of Mexican Reg. No. 141,341; dated Feb. 10, 1968.  
For Carpets and Rugs of Sisal (Int. Cl. 27).

SN 309,919. Textiles Inc., Fall River, Mass. Filed Oct. 17, 1968.

**WUNDER 100**

For Outerwear Fabrics Including Corduroy for Making Coats, Jackets, Slacks, Suits, Dresses, Shirts, and the Like (Int. Cl. 24).  
First use June 1, 1968.

SN 310,578. Monsanto Company, St. Louis, Mo. Filed Oct. 25, 1968.

**CEREX**

Owner of Reg. No. 440,236.  
For Fabrics of Manmade Fibers and Filaments Suitable for Making Into Household Furnishings and Apparel and for Industrial Uses (Int. Cl. 24).  
First use Aug. 12, 1968.

SN 311,044. R. Mackness & Company Limited, Edinburgh, Scotland. Filed Oct. 31, 1968.



Owner of British Reg. No. B884,978; dated Sept. 30, 1965.  
For Quilts, Quilt Covers, Bedsheets, and Pillowcases (Int. Cl. 24).

SN 311,661. Alamac Knitting Mills, Inc., New York, N.Y. Filed Nov. 8, 1968.

**BULLDOG BOND**

Applicant disclaims the word "Bond" except insofar as that word is used as part of the instant mark "Bulldog Bond."  
For Bonded Knitted Fabric for Men's, Women's and Children's Clothing (Int. Cl. 24).  
First use on or about Feb. 14, 1968.

SN 313,162. Davidson Adelphi Textiles, Inc., New York, N.Y. Filed Nov. 27, 1968. SN 318,911. Jerris-Mounds, Inc., Cincinnati, Ohio. Filed Feb. 11, 1969.

**ASTRELLA**

For Velours (Int. Cl. 24).  
First use September 1959.

SN 314,821. Roselon Industries, Inc., Philadelphia, Pa. Filed Dec. 18, 1968.

**ROSELON**

Owner of Reg. No. 652,465.  
For Textile Fabrics of Synthetic Fibers (Int. Cl. 24).  
First use Nov. 20, 1968.

SN 315,722. Standard Oil Company, Flemington, N.J. Filed Jan. 3, 1969.

**NUREL**

For Carpeting Manufactured in Whole or Part of Synthetic Fibers (Int. Cl. 27).  
First use Aug. 19, 1968.

SN 318,154. Burke Rubber Company, Inc., San Jose, Calif. Filed Feb. 3, 1969.



For Carpets (Int. Cl. 27).  
First use Oct. 17, 1968.

SN 318,197. The Kendall Company, Walpole, Mass. Filed Feb. 3, 1969.

**PRO-TEM**

For Disposable Nonwoven Fabrics Comprising Cotton, Rayon, or Synthetic Fibers, or Mixtures Thereof (Int. Cl. 24).  
First use Sept. 17, 1968.

SN 318,339. Tahlequah, Inc., Cartersville, Ga. Filed Feb. 4, 1969.

**TAHLEQUAH**

For Carpeting Comprised of Synthetic Fibers, Wool Fibers and Cotton Fibers (Int. Cl. 27).  
First use at least as early as May 6, 1968.

SN 318,340. Tahlequah, Inc., Cartersville, Ga. Filed Feb. 4, 1969.

**CHAMBLEE**

For Carpeting Comprised of Synthetic Fibers, Wool Fibers and Cotton Fibers (Int. Cl. 27).  
First use at least as early as Dec. 31, 1958.

SN 318,552. Jolo Corporation, New York, N.Y. Filed Feb. 6, 1969.

**JOLO**

For Mattress and Pillow Covers, Tablecloths, Table Pads, Shower Curtains, and Curtains (Int. Cl. 24).  
First use 1941.

**INTERIO**

For Plastic Shower Curtains, Table Cloths, and Draperies (Int. Cl. 24).  
First use Jan. 23, 1969.

SN 318,929. Deering Milliken, Inc., New York, N.Y. Filed Feb. 12, 1969.

**ORBANA**

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers and Combinations Thereof (Int. Cl. 24).  
First use Feb. 5, 1969.

SN 320,244. Collins & Aikman Corporation, New York, N.Y. Filed Feb. 27, 1969.

**POWERBOND**

For Carpets (Int. Cl. 27).  
First use Aug. 2, 1967.

**Class 43—Thread and Yarn**

SN 296,266. Standard Oil Company, Flemington, N.J. Filed Apr. 23, 1968.

**EDCO**

For Synthetic Fibrous Material—Namely, Yarn (Int. Cl. 23).  
First use Oct. 4, 1967.

SN 318,754. Columbia-Minerva Corporation, New York, N.Y. Filed Feb. 10, 1969.

**NANTUK CASCADE**

For Yarn (Int. Cl. 23).  
First use Oct. 15, 1968.

**Class 44—Dental, Medical, and Surgical Appliances**

SN 322,232. Parke, Davis & Company, Detroit, Mich. Filed Mar. 20, 1969.

**SPECTRA**

For Surgeons, Gloves (Int. Cl. 10).  
First use on or before Mar. 12, 1969.

**Class 45—Soft Drinks and Carbonated Waters**

SN 306,173. Seneca Foods Corporation, Dundee, N.Y. Filed Aug. 28, 1968.

**SENECA**

Owner of Reg. No. 755,615.  
For Concentrates for Making Fruit Flavored Drinks Containing Water (Int. Cl. 32).  
First use 1961.



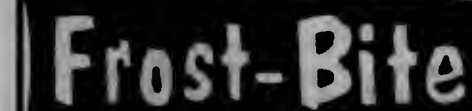
SN 311,550. Jos. M. Linsey Corp., Somerville, Mass. Filed Nov. 7, 1968. SN 295,644. Hygrade Food Products Corporation, Detroit, Mich. Filed Apr. 15, 1968.

**"FREEZERINO"**

For Non-Alcoholic Fruit-Flavored Concentrates for Making Soft Drinks (Int. Cl. 32).  
First use at least as early as Oct. 8, 1968.

**Class 46—Foods and Ingredients of Foods**

SN 281,436. Blackwell Products, Inc., Ontario, Calif. Filed Sept. 29, 1967.



For Flavored Shaved Ice Confections (Int. Cl. 30).  
First use June 1964.

SN 281,827. Société Agricole les Fermiers Reunis des Flandres, Steenvoorde, Nord, France. Filed Oct. 4, 1967.



Priority claimed under Sec. 44(d) on French Reg. No. 735,092, dated June 2, 1967.  
For Butter, Cheese, Yogurt, Cream, Fresh Milk, Milk Powder, Gellified Milk and Milk Serum Powder (Int. Cl. 29).

SN 284,694. Mark Morris Associates, Topeka, Kans., assignee of Mar-Ko Company, Topeka, Kans. Filed Nov. 13, 1967.

**ZU/PREEM**

For Foods for Zoo Animals Sold Exclusively to Zoos (Int. Cl. 31).  
First use on or about Nov. 1, 1967.

SN 295,259. South Australian Fishermen's Co-Operative Limited, Adelaide, Australia. Filed Apr. 9, 1968.

**SAFCOL**

Owner of Australian Reg. No. A184,431, dated Nov. 27, 1963.

For Fish and Fish Products, Both Frozen and Canned—Namely, Abalone, Cooked Rock Lobsters and Shrimp (Int. Cl. 29).

SN 295,643. Hygrade Food Products Corporation, Detroit, Mich. Filed Apr. 15, 1968.

**BRECHTSHEEN**

Owner of Reg. No. 643,673.  
For Sausage Casings (Int. Cl. 18).  
First use July 1, 1966.

**AVANTI**

The English translation of the Italian word "Avanti" is "forward."  
For Sausage (Int. Cl. 29).  
First use Nov. 27, 1967.

SN 297,219. Salada Foods Ltd., Don Mills, Ontario, Canada. Filed May 2, 1968.

**DINER'S CHOICE**

For Tea (Int. Cl. 30).  
First use Mar. 14, 1968; in commerce Mar. 14, 1968.

SN 298,846. National Dairy Products Corporation, Chicago, Ill. Filed May 22, 1968.

**MANOR HOUSE**

Owner of Reg. No. 278,511.  
For Macaroni (Int. Cl. 30).  
First use Mar. 28, 1968.

SN 301,846. Hunt-Wesson Foods, Inc., Fullerton, Calif. Filed July 2, 1968.

**HUNT'S**

Owner of Reg. No. 573,487.  
For Cheese Sauce, Cream Sauce, Brown Sauce, and Sweet-Sour Sauce (Int. Cl. 30).  
First use Mar. 27, 1968.

SN 303,569. Cargill, Incorporated, Minneapolis, Minn. Filed July 25, 1968.



Owner of Reg. No. 835,125.  
For Animal Feed—Namely, Feed for Livestock, Poultry, Fish, Mink, Dogs, Cats, Rabbits and Game Birds; and Salt—Namely, Salt for Industry and Agriculture Which Will Be Consumed by Animals and Humans Including Meat Packing Salt, Feed Mixing Salt, and Free Choice Feeding Salt (Int. Cls. 30 and 31).  
First use Oct. 19, 1966.

SN 304,889. Carnation Company, Los Angeles, Calif. Filed Aug. 12, 1968.

**LEAN 'N LIVELY**

The word "Lean" is disclaimed separate and apart from the mark as a whole, but the applicant waives none of its common law rights in the mark shown in the drawing or any feature thereof.  
For Dog Food (Int. Cl. 31).  
First use July 17, 1968.

SN 305,844. McCormick & Company, Incorporated, Baltimore, Md. Filed Aug. 23, 1968. SN 306,528. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Sept. 3, 1968.

**PERSONALITY**

For Seasonings of a Spice and Flavoring Nature (Int. Cl. 30).  
First use Aug. 12, 1968.

SN 305,974. Philadelphia Chewing Gum Corporation, Haver-town, Pa. Filed Aug. 26, 1968.



The drawing is lined for the colors blue and pink, but no claim is made as to the colors so named.  
For Bubble Gum (Int. Cl. 30).  
First use Aug. 12, 1968.

SN 305,994. Takeda Chemical Industries, Ltd., Higashi-ku, Osaka, Japan. Filed Aug. 26, 1968.

**TAKESHIO**

For Seasoned Salt (Int. Cl. 30).  
First use Oct. 28, 1966; in commerce Oct. 28, 1966.

SN 306,080. Sunshine Biscuits, Inc., New York, N.Y. Filed Aug. 27, 1968.

**LEMON COOLERS**

Without waiver of common law rights, applicant makes no claim herein of exclusive right to use the word "Lemon" apart from the complete mark shown in the drawing.  
For Cookies (Int. Cl. 30).  
First use Aug. 13, 1968.

SN 306,136. Ernest J. Gottula, Redwood City, Calif. Filed Aug. 28, 1968.

**"IT"**

For Granular Food Seasoning Consisting of a Blend of Salt, Herbs and Spices (Int. Cl. 30).  
First use July 15, 1968.

SN 306,527. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Sept. 3, 1968.

**MR. H**

For Candy—Namely, Nut Roll (Int. Cl. 30).  
First use Aug. 2, 1968.

**BUT-R-TOF**

For Candy—Namely, Nut Roll (Int. Cl. 30).  
First use Aug. 2, 1968.

SN 306,529. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Sept. 3, 1968.

**PBR**

For Candy—Namely, Nut Roll (Int. Cl. 30).  
First use Aug. 2, 1968.

SN 306,530. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Sept. 3, 1968.

**BEAUT**

For Candy—Namely, Nut Roll (Int. Cl. 30).  
First use Aug. 2, 1968.

SN 307,827. Consolidated Foods Corporation, d.b.a. Joe Lowe Company, Englewood, N.J. Filed Sept. 20, 1968.

**WHISTLE-SICLE**

Owner of Reg. No. 593,672 and others.  
For Frozen Confections on Sticks and Flavor Bases for Making the Same (Int. Cl. 30).  
First use Sept. 4, 1968.

SN 307,960. An Expensive Foreign Affair, Inc., New York, N.Y. Filed Sept. 23, 1968.



For Marinades and Gourmet Sauces—Namely, Sauces Used for Meats, Game, Seafoods and Desserts (Int. Cl. 30).  
First use December 1967.

SN 311,019. Duffy-Mott Company, Inc., New York, N.Y. Filed Oct. 31, 1968.

**CHAMPOMME**

For Sparkling Apple Juice (Int. Cl. 32).  
First Use Oct. 4, 1968.



SN 311,120. Duffy-Mott Company, Inc., New York, N.Y.  
Filed Nov. 1, 1968.

## CHAMPAPPLE

For Sparkling Apple Juice (Int. Cl. 32).  
First use Oct. 4, 1968.

SN 315,731. Carnation Company, Los Angeles, Calif. Filed  
Jan. 3, 1969.

## CHEF-MATE

Owner of Reg. Nos. 759,530 and 846,367.  
For Chicken Salad, Ham Salad, Tuna Salad, Shredded Beef  
With Barbecue Sauce, Beef Stew, and Chicken Pot Pie Filling  
(Int. Cls. 29 and 30).  
First use Oct. 11, 1968.

SN 316,560. B/G Foods, Inc., Chicago, Ill. Filed Jan. 15,  
1969.

## DUTCHLAND DAIRY

The word "Dairy" is disclaimed apart from the mark as  
shown.

For Bread, Ice Cream, Custard, Ice Milk, Butter, Fresh Eggs,  
Fluid Fresh Milk, Potato Chips and Cooked Take-Out Foods—  
Namely, Chicken, Fish, Shrimp, Spareribs, Onions, and Po-  
tatoes (Int. Cls. 29 and 30).  
First use December 1943.

SN 320,769. Castle & Cooke, Inc., d.b.a. Dole Company,  
Honolulu, Hawaii. Filed Mar. 5, 1969.

## Hawaiian Prince

Owner of Reg. No. 256,965.  
For Canned Fruits (Int. Cl. 29).  
First use Aug. 24, 1924.

SN 321,878. Riviana Foods Inc., Houston, Tex. Filed Mar.  
17, 1969.

## PRESCRIPTION DIET

Owner of Reg. Nos. 581,424 and 690,708.  
For Animal Foods for Dogs, Cats, and Other Domesticated  
Household Pets (Int. Cl. 31).  
First use 1950.

SN 322,032. The Quaker Oats Company, Chicago, Ill. Filed  
Mar. 18, 1969.

## KING SOLOMON

Owner of Reg. No. 250,772.  
For Canned Fish and Cat Food (Int. Cl. 29).  
First use Aug. 1, 1928.

## Class 47—Wines

SN 297,121. Zimmerman's Cut Rate Liquor Store, Inc., Chi-  
cago, Ill. Filed May 1, 1968.

## JACQUES ARNOUL

"Jacques Arnoul" is not the name of any particular living  
individual.  
For Wines (Int. Cl. 33).  
First use March 1967.

SN 318,610. North American Suppliers Ltd., Inc., New Or-  
leans, La. Filed Feb. 7, 1969.

## PAMPAS

For Wines (Int. Cl. 33).  
First use Dec. 10, 1968.

## Class 49—Distilled Alcoholic Liquors

SN 307,134. Popper Morson Corp., New York, N.Y. Filed  
Sept. 11, 1968.

## CLAN MACGREGOR

Owner of Reg. No. 324,468.  
For Gin and Scotch Whiskey (Int. Cl. 33).  
First use in 1936.

SN 307,302. Barton Distilling Company, Chicago, Ill. Filed  
Sept. 13, 1968.

## VERY OLD BARTON

Applicant claims the exclusive use of the words "Very  
Old" as part of its mark, but not otherwise. Owner of Reg.  
Nos. 672,614, 807,608, and others.  
For Bourbon Whiskey (Int. Cl. 33).  
First use Aug. 28, 1964.

SN 307,836. Joseph S. Finch and Company, New York, N.Y.  
Filed Sept. 20, 1968.

## CHANCELLOR

Owner of Reg. No. 655,926.  
For Gin (Int. Cl. 33).  
First use June 27, 1968.

SN 322,024. Continental Distilling Corporation, d.b.a. Con-  
tinental Distilling Co., Philadelphia, Pa. Filed Mar. 18,  
1969.

## CANADIAN BREEZE

Applicant disclaims the term "Canadian" separate and apart  
from the mark as shown. Owner of Reg. No. 808,940.  
For Whisky (Int. Cl. 33).  
First use at least as early as Mar. 3, 1969.

## Class 50—Merchandise Not Otherwise Classified Class 51—Cosmetics and Toilet Preparations

SN 290,123. Yardley of London, Inc., d.b.a. Yardley, Totowa,  
N.J. Filed Feb. 1, 1968.

SN 298,724. Albert C. Carballo, Rockville, Md. Filed May  
22, 1968.

## RAGA

For Lipstick and Cologne (Int. Cl. 3).  
First use Jan. 19, 1968.

## Hobby Horse Products

Applicant disclaims the word "Products" apart from the  
mark as shown.  
For Wall and Other Decorative Plaques on Which Are  
Mounted Bits, Stirrups or Other Hardware or Tack Related  
to Horses and Horsemanship (Int. Cl. 20).  
First use Apr. 2, 1968.

SN 292,927. Guardian Chemical Corporation, Long Island  
City, N.Y. Filed Mar. 11, 1968.

## ON AND OFF

Owner of Reg. No. 593,803.  
For Instant Make-Up and Cosmetic Remover (Int. Cl. 3).  
First use Feb. 23, 1968.

SN 301,619. John Gordon Ltd., Vancouver, British Columbia,  
Canada. Filed June 28, 1968.

## SKIRTANG

Priority claimed under Sec. 44(d) on Canadian application  
filed May 21, 1968; Reg. No. 162,227, dated Apr. 18, 1969.  
For Clothing Hangers (Int. Cl. 26).  
First use Mar. 6, 1956; in commerce September 1958.

SN 301,405. Cerruti, Incorporated, New York, N.Y. Filed  
June 26, 1968.

## CERRUTI CXIII

For Men's Cologne (Int. Cl. 3).  
First use Dec. 26, 1967.

SN 301,633. Metaframe Corporation, Maywood, N.J. Filed  
June 28, 1968.

## BETTA BARRACKS

The word "Betta" is disclaimed separate and apart from  
the mark.  
For Aquarium Accessory Displaying Betta Fishes in Iso-  
lation From Each Other and From the Rest of the Fishes in  
the Aquarium (Int. Cl. 16).  
First use May 22, 1968.

SN 301,901. Amway Corporation, Ada, Mich. Filed July 3,  
1968.

## SWEET SHOT

Applicant disclaims the word "Sweet" apart from the mark.  
For Mouth Refresher Sprays (Int. Cl. 3).  
First use on or about Mar. 15, 1968.

SN 305,948. Rene D. Lyon Company, Inc., Richmond Hill,  
N.Y. Filed Aug. 26, 1968.

## MERRY MIRACLES

For Artificial Feather Birds, Artificial Pixie-Like Figures,  
Vinyl Reindeer, Cotton Snow Men, Artificial Christmas Trees,  
Papier-Mache Santa Claus, Christmas Tree Ornaments, and  
Artificial Vinyl Fruits (Int. Cl. 28).  
First use October 1960.

SN 305,455. Johnson & Johnson, New Brunswick, N.J. Filed  
Aug. 19, 1968.

## MICRIN

Owner of Reg. No. 713,789.  
For Toothpaste (Int. Cl. 3).  
First use July 12, 1967.

SN 310,449. Delta American Corporation, Wheeling, Ill.  
Filed Oct. 24, 1968.

## BRAND "X"

The word "Brand" is disclaimed apart from the mark as  
shown.  
For Plastic Film on a Roll for Use as Furniture Covers,  
Barbeque Covers, Boat Covers, and the Like (Int. Cl. 22).  
First use February 1966.

SN 310,426. The Sovera Company, Winter Haven, Fla. Filed  
Oct. 24, 1968.

## NIGHT TREAT

For Skin Cream (Int. Cl. 3).  
First use Sept. 16, 1968.

SN 311,374. In-Store Media Inc., New York, N.Y. Filed Nov.  
5, 1968.

## super star

The lining on the drawing is a feature of the mark and does  
not represent color.  
For Animated Advertising Displays (Int. Cl. 20).  
First use Sept. 24, 1968.

SN 310,442. Borden, Inc., New York, N.Y. Filed Oct. 24,  
1968.

## GRAND PRIX

Owner of Reg. No. 738,357.  
For Full Line of Men's Toiletries—Namely, Cologne, After  
Shave Lotions, Sunburn Lotion, Shaving Cream, Facial Lotion,  
Stick Anti-Perspirant, and After Shave Bronz (Int. Cl. 3).  
First use on or before Aug. 30, 1968.



SN 310,738. Yardley of London, Inc., New York, N.Y. Filed Oct. 29, 1968. SN 316,603. Caled Products Company, Inc., Brentwood, Md. Filed Jan. 15, 1969.

**FACE SETTER**

For Facial Makeup Finishing Preparation (Int. Cl. 3).  
First use Sept. 5, 1968.

SN 313,022. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Nov. 25, 1968.

**JUDO**

For After Shave Lotion (Int. Cl. 3).  
First use Nov. 5, 1968.

SN 314,877. Demert & Dougherty, Inc., Chicago, Ill. Filed Dec. 19, 1968.

**COLENE**

For Hair Conditioner (Int. Cl. 3).  
First use on or about Nov. 25, 1968.

SN 315,021. Ulay Export Corporation, Miami, Fla. Filed Dec. 23, 1968.

**TROPICAL MOIST OIL**

Applicant disclaims "Moist" and "Oil" apart from the mark as shown.  
For Skin Lotion (Int. Cl. 3).  
First use July 1963.

SN 315,106. Rexall Drug and Chemical Company, d.b.a. Vanda BC Co., Los Angeles, Calif. Filed Dec. 23, 1968.

**V de Vanda**

For Perfume and Cologne (Int. Cl. 3).  
First use Dec. 3, 1968.

SN 315,351. Chesebrough-Pond's Inc., New York, N.Y. Filed Dec. 30, 1968.

**SUMMER SKIN**

Applicant disclaims the exclusive right to the word "Skin" apart from the mark as shown.  
For Dry Skin Cream (Int. Cl. 3).  
First use Dec. 13, 1968.

**Class 52—Detergents and Soaps**

SN 315,552. Norman H. Harris, d.b.a. Blue Cloud Mineral Co., Newhall, Calif. Filed Jan. 2, 1969.

**BLUE CLOUD**

For Chinchilla Bath Fur Cleaner Used Principally for Cleaning Chinchilla Furs (Int. Cl. 3).  
First use January 1950.

**TAN-E-CAL**

Owner of Reg. Nos. 753,574 and 754,860.  
For Spotter Composition for Removing Spots and Stains From Garments (Int. Cl. 3).  
First use Sept. 24, 1965.

SN 316,604. Caled Products Company, Inc., Brentwood, Md. Filed Jan. 15, 1969.

**PRO-TE-CAL**

Owner of Reg. Nos. 753,574 and 754,860.  
For Spotter Composition for Removing Spots and Stains From Garments (Int. Cl. 3).  
First use Sept. 24, 1965.

SN 316,616. Caled Products Company, Inc., Brentwood, Md. Filed Jan. 15, 1969.

**CAL-TEX**

Owner of Reg. Nos. 753,574 and 754,860.  
For Detergent Concentrate for Wet Cleaning Garments (Int. Cl. 3).  
First use January 1954.

SN 316,682. S. & S. Soap Co., Bronx, N.Y. Filed Jan. 15, 1969.

**PLUMBER'S CHOICE**

For Liquid Drain Opener (Int. Cl. 3).  
First use on or about Jan. 9, 1969.

SN 316,915. Standard International Corporation, Andover, Mass. Filed Jan. 17, 1969.

**LESTO**

Owner of Reg. Nos. 343,957, 711,638, and others.  
For Liquid Detergent for Institutional Cleaning (Int. Cl. 3).  
First use August 1961.

SN 320,687. The Procter & Gamble Company, Cincinnati, Ohio. Filed Mar. 4, 1969.

**RUG QUICK**

No claim is made to the word "Rug" apart from the mark as shown.  
For Rug Shampoo (Int. Cl. 3).  
First use Nov. 13, 1968.

SN 320,900. American Home Products Corporation, New York, N.Y. Filed Mar. 6, 1969.

**LIKE**

For Laundry Detergent (Int. Cl. 3).  
First use Feb. 7, 1969.

**SERVICE MARKS****Class 100—Miscellaneous**

SN 299,189. All-Pro Chicken, Inc., Pittsburgh, Pa. Filed May 28, 1968.

**ALL PRO**

For Restaurant Services (Int. Cl. 42).  
First use at least as early as May 17, 1968.

SN 308,208. Al Hirt's Sandwich Saloons, Inc., Nashville, Tenn., by change of name from Al Hirt Sandwich Saloons, Inc., Nashville, Tenn. Filed Sept. 25, 1968.



No registration rights are claimed for the words "Sandwich" and "Saloon" apart from the mark as shown; however, applicant waives none of its common law rights in the mark as shown or any features thereof. "Al Hirt" is a living individual whose consent is of record.  
For Restaurant Services (Int. Cl. 42).  
First use Sept. 6, 1968.

SN 317,788. Commercial Equipment Leasing Corporation, Chicago, Ill. Filed Dec. 10, 1968.

**LEASEAMATIC**

For Leasing of Commercial and Industrial Equipment for Others (Int. Cl. 42).  
First use at least as early as Sept. 24, 1968.

**Class 101—Advertising and Business**

SN 302,619. Draper M. Harvey, d.b.a. Bank Travel Club, Hingham, Mass. Filed July 12, 1968.



For Promoting the Business of Banks Through the Planning of Tours, the Distribution of Travel and Tour Literature to Bank Customers and Inducing Bank Customers To Enter Into Financial Arrangements With Banks for Travel Purposes (Int. Cl. 35).  
First use in or about April 1967.

SN 302,823. Baddour Wholesale Dry Goods Company, Inc., Memphis, Tenn. Filed July 16, 1968.

**VIC'S DOLLAR STORE**

No claim is made to the wording "Dollar Store" apart from the mark as shown. Owner of Reg. No. 736,162.  
For Retail Dry Goods Store Services (Int. Cl. 35).  
First use on or about Dec. 1, 1967.

SN 303,337. P-A-R Management, Inc., Columbia, S.C. Filed July 22, 1968.



For Retail Store Services Directed to Pets and Pet Supplies (Int. Cl. 35).  
First use on or about Nov. 1, 1962.

SN 303,631. The Sharaday Company, Inc., Huntington, Ind. Filed July 25, 1968.

**GET ACQUAINTED**

For Promoting the Sale of the Goods and Services of Others by Sending Through the Mails a Packet Containing Gift Certificates Offering Free Merchandise or Discount Certificates From Participating Merchants to a New Customer (Int. Cl. 35).  
First use Feb. 17, 1967.

SN 303,729. Edwin K. Williams & Co., Santa Barbara, Calif. Filed July 26, 1968.



Owner of Reg. Nos. 787,188 and 795,716.  
For Bookkeeping and Business Management Services (Int. Cl. 35).  
First use May 1, 1968.

SN 303,890. Campus Chefs, Incorporated, Elizabeth, N.J. Filed July 30, 1968.



For Operating and Managing Cafeterias for Schools, Colleges, and Universities (Int. Cl. 35).  
First use 1953.



SN 304,590. Dansco Associates, Inc., Birmingham, Mich. Filed Aug. 7, 1968.

## BINGO ODD! BINGO EVEN!

Applicant makes no claim to exclusive right in the term "Bingo" apart from the mark as shown for the services recited, but applicant waives none of its common law rights in the mark or any feature thereof.

For Promoting the Sale of Goods and/or Services of Others Through the Distribution of Printed Materials and Advertising Designed for Promotional Contests (Int. Cl. 35).  
First use on or about May 31, 1967.

SN 304,592. Dansco Associates, Inc., Birmingham, Mich. Filed Aug. 7, 1968.

## LUCKY SOLITAIRE

For Promoting the Sale of Goods and/or Services of Others Through the Distribution of Printed Materials and Advertising Designed for Promotional Contests (Int. Cl. 35).  
First use on or about Feb. 1, 1968.

SN 306,972. Cahners Publishing Company, Inc., Boston, Mass. Filed Sept. 9, 1968.

## MARKETING PLUS

No claim is made to the word "Marketing" apart from the mark as shown.

For Marketing Research Services—Namely, Advising and Assisting Manufacturers in Sales Research, Distribution, Promotion, and Modes of Communication in Connection With the Marketing of Products of the Manufacturers (Int. Cl. 35).  
First use July 3, 1968.

SN 310,120. The Robert V. McCurdy Company, Towson, Md. Filed Oct. 21, 1968.



For Real Estate Appraisal and Consultant Services (Int. Cl. 35).  
First use Sept. 13, 1967.

SN 317,426. Search Systems Incorporated, New York, N.Y. Filed Jan. 24, 1969.



For Computerized Typing Services Transmitted Over Telephone Lines (Int. Cl. 35).  
First use Dec. 18, 1968.

SN 321,136. Wheels of Fashion, Inc., Los Angeles, Calif. Filed Mar. 10, 1969.

## WHEELS OF FASHION

For Retail Sales and Display Service by Means of Carts, Buses and Other Mobile Vehicles (Int. Cl. 35).  
First use Feb. 3, 1969.

## Class 102 — Insurance and Financial

SN 312,383. Fox-Raff & Company, Inc., Seattle, Wash. Filed Nov. 18, 1968.

## FOX-RÄFF & COMPANY

For Insurance Brokerage (Int. Cl. 36).  
First use Feb. 1, 1968.

SN 312,384. Fox-Raff & Company, Inc., Seattle, Wash. Filed Nov. 18, 1968.



For Insurance Brokerage (Int. Cl. 36).  
First use Feb. 1, 1968.

SN 317,275. The Chase Manhattan Bank, National Association, New York, N.Y. Filed Jan. 23, 1969.

## SANTAMATIC

For Christmas Savings Service Whereby a Stipulated Amount Is Transferred Thereto Each Month From the Member's Checking Account (Int. Cl. 36).  
First use at least prior to Nov. 2, 1968.

## Class 103 — Construction and Repair

SN 315,872. Anthony Pools, Inc., South Gate, Calif. Filed Jan. 6, 1969.



The drawing is lined for the color blue, but no claim is made to color.  
For Construction, Maintenance and Repair of Swimming Pools and Auxiliary Gas, Water, Electrical and Masonry Services (Int. Cl. 37).  
First use February 1967.

SN 317,440. De-Fi-Al Process, Inc., Newark, N.J. Filed Jan. 24, 1969.

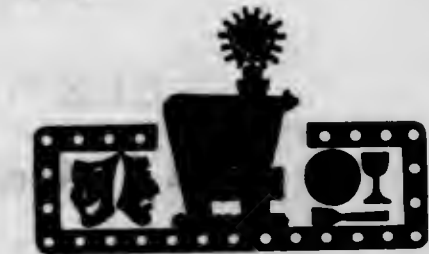
## Class 107 — Education and Entertainment

SN 292,198. Holiday Inns of America, Inc., Memphis, Tenn. Filed Feb. 29, 1968.



No claim is made to the exclusive use of the word "Process" except in the relationship shown in the drawing.

For Stucco Refinishing to Existing Stucco on Private Homes and Waterproofing of Commercial Masonry Properties (Int. Cl. 37).  
First use February 1947.



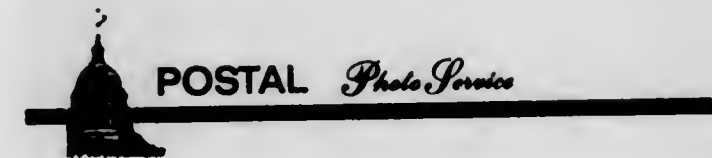
Owner of Reg. Nos. 592,539, 742,490, and others.  
For Dinner Theatre Services—Namely, Presentation of Theatrical Plays and Productions and Furnishing Restaurant Services in Conjunction Therewith (Int. Cl. 41).  
First use as early as August 1967.

SN 292,199. Holiday Inns of America, Inc., Memphis, Tenn. Filed Feb. 29, 1968.

## HOLIDAY INN

Owner of Reg. Nos. 592,539, 742,490, and others.  
For Dinner Theatre Services—Namely, Presentation of Theatrical Plays and Productions and Furnishing Restaurant Services in Conjunction Therewith (Int. Cl. 41).  
First use as early as 1967.

SN 310,043. American Automation Training Centers, Inc., Kansas City, Mo. Filed Oct. 21, 1968.



No claim is made to the words "Postal Photo Service" apart from the mark shown.  
For Mail Order Film Processing Services (Int. Cl. 40).  
First use June 1966.



For Educational Services—Namely, Providing Instruction in the Operation of Data Processing Computers (Int. Cl. 41).  
First use Dec. 12, 1967.

## COLLECTIVE MEMBERSHIP MARKS

### Class 200

SN 305,716. Chums, Incorporated, St. Albans, N.Y. Filed Aug. 22, 1968.



*Chums, Incorporated*

For Indicating Membership in Applicant.  
First use Dec. 2, 1952.



## CERTIFICATION MARKS

### Class A — Goods

SN 291,665. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Feb. 23, 1968.

### NOMELLE

The mark certifies that the goods with which the mark is associated comply with quality standards imposed by applicant as to fiber content.  
For Yarns.  
First use Feb. 2, 1968.

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## TRADEMARK REGISTRATIONS ISSUED PRINCIPAL REGISTER

### Class 1 — Raw or Partly Prepared Materials

- 874,087. NYSYN. Copolymer Rubber & Chemical Corporation. SN 283,637. Pub. 5-20-69. Filed 10-30-67.  
874,088. STEPANTHANE. Stepan Chemical Company. SN 297,100. Pub. 5-20-69. Filed 5-1-68.  
874,089. STEPANPOL. Stepan Chemical Company. SN 297,101. Pub. 5-20-69. Filed 5-1-68.  
874,090. A AND GLOBE DESIGN. Rexall Drug and Chemical Company, d.b.a. Action Plastics Company. SN 302,129. Pub. 5-20-69. Filed 7-5-68.  
874,091. PANFLOR. Polyplastex United, Inc. SN 302,966. Pub. 5-20-69. Filed 7-17-68.

### Class 2 — Receptacles

- 874,092. BELLAPLAST. Bellaplast, Heller & Co. SN 260,490. Pub. 5-20-69. Filed 9-7-66.  
874,093. AQUA BOOSTER. Ford Products Corporation. SN 271,246. Pub. 5-20-69. Filed 5-11-67.  
874,094. AJAX PLASTIC PRODUCTS INC. PLASTICS OF QUALITY AND DESIGN. Ajax Plastic Products, Inc. MULTIPLE CLASS (Classes 2, 13, and 31). SN 286,592. Pub. 5-20-69. Filed 12-11-67.  
874,095. TOUR ICE AND DESIGN. Virgil L. Clinebell. MULTIPLE CLASS (Classes 2 and 31). SN 293,878. Pub. 5-20-69. Filed 3-22-68.

### Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

- 874,096. DEMCOR AND DESIGN. Duker Industries, Inc., by change of name from Dura-Vent Corporation of California. SN 279,721. Pub. 5-20-69. Filed 9-6-67.  
874,097. GRIZZLY AND DESIGN. A.M.S. Distributing Co., d.b.a. American Sport Company. SN 290,810. Pub. 5-20-69. Filed 2-12-68.

### Class 4 — Abrasives and Polishing Materials

- 874,098. ANGELUS AND DESIGN. Angelus Shoe Polish Company. SN 244,651. Pub. 5-20-69. Filed 5-2-66.  
874,099. ARTIFEX. Artifex Chemische Fabrik Dr. Lohmann & Co. SN 301,024. Pub. 5-20-69. Filed 6-21-68.  
874,100. ABRATRIX. General Motors Corporation. SN 309,251. Pub. 5-20-69. Filed 10-9-68.

### Class 6 — Chemicals and Chemical Compositions

- 874,101. DRISOY. Textron Inc. SN 265,125. Pub. 5-20-69. Filed 2-20-67.  
874,102. ONE STEP. Burton, Parsons Chemicals, Inc. SN 283,508. Pub. 5-20-69. Filed 10-27-67.  
874,103. E-Z CLOR PAC. King-Kratz Corporation. SN 285,138. Pub. 5-20-69. Filed 11-17-67.

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- 874,104. POLYCAT. Abbott Laboratories. SN 285,507. Pub. 5-20-69. Filed 11-24-67.  
874,105. GEIGY. Geigy Chemical Corporation. SN 299,976. Pub. 5-20-69. Filed 6-7-68.  
874,106. ZETA FLOC AND DESIGN. Narvon Products, Inc., d.b.a. Narvon Mines Ltd. SN 301,085. Pub. 5-20-69. Filed 6-21-68.  
874,107. CALCOSET. American Cyanamid Company. SN 306,624. Pub. 5-20-69. Filed 9-5-68.  
874,108. REGISIL. Regis Chemical Company. SN 306,692. Pub. 5-20-69. Filed 9-5-68.  
874,109. VOCOL. Monsanto Company. SN 306,794. Pub. 5-20-69. Filed 9-6-68.  
874,110. THT. Matthey Bishop, Inc. SN 314,585. Pub. 5-20-69. Filed 12-16-68.

### Class 7 — Cordage

- 874,111. SAFE-D. Roy Norton, d.b.a. Safe-D Products Co. SN 309,395. Pub. 5-20-69. Filed 10-10-68.

### Class 8 — Smokers' Articles, Not Including Tobacco Products

- 874,112. B POLITE. Sta-Rite Ginnie Lou, Inc. SN 313,484. Pub. 5-20-69. Filed 12-3-68.  
874,113. R AND SWORD DESIGN. A. Oppenheimer & Company, Inc. SN 314,108. Pub. 5-20-69. Filed 12-10-68.

### Class 10 — Fertilizers

- 874,114. WASATCH CHEMICAL W AND DESIGN. Wasatch Chemical Company. SN 305,771. Pub. 5-20-69. Filed 8-22-68.  
874,115. TERICO. Standard Oil Company. SN 306,111. Pub. 12-24-68. Filed 8-28-68.  
874,116. SCOTCH GARDENER. Occidental Petroleum Corporation. SN 306,503. Pub. 2-18-69. Filed 9-3-68.  
874,117. FERTILIFE. Organic Compost Corporation. SN 311,293. Pub. 5-20-69. Filed 11-4-68.  
874,118. FERTI LIFE (LOGO). Organic Compost Corporation. SN 311,294. Pub. 5-20-69. Filed 11-4-68.

### Class 12 — Construction Materials

- 874,119. CORUNDITE. The Joseph Dixon Crucible Company. SN 286,649. Pub. 5-20-69. Filed 12-11-67.  
874,120. TRIM TILT. Caldwell Manufacturing Company. SN 287,797. Pub. 5-20-69. Filed 12-29-67.  
874,121. CEBUS. Centerprise Building Systems Limited. SN 288,779. Pub. 5-20-69. Filed 1-15-68.  
874,122. VERTAFOAM AND DESIGN. Vertecs Corporation. SN 290,036. Pub. 5-20-69. Filed 1-31-68.  
874,123. FIBERDOME AND DESIGN. Fiberdome, Incorporated. SN 311,475. Pub. 5-20-69. Filed 11-6-68.

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- 874,124. RELESFORM. Boise Cascade Corporation. SN 312,012. Pub. 5-20-69. Filed 11-13-68.
- 874,125. X-90. Masonite Corporation. SN 314,099. Pub. 5-20-69. Filed 12-10-68.
- 874,126. RUF X-90. Masonite Corporation. SN 314,100. Pub. 5-20-69. Filed 12-10-68.
- 874,127. COLORLOK X-90. Masonite Corporation. SN 314,101. Pub. 5-20-69. Filed 12-10-68.
- 874,128. PROVINCIAL X-90. Masonite Corporation. SN 314,102. Pub. 5-20-69. Filed 12-10-68.
- 874,129. WEATHER X-90. Masonite Corporation. SN 314,103. Pub. 5-20-69. Filed 12-10-68.
- 874,130. MOONSPOT. Masonite Corporation. SN 314,581. Pub. 5-20-69. Filed 12-10-68.
- 874,131. UCC AND DESIGN. United Cement Company. SN 314,835. Pub. 5-20-69. Filed 12-18-68.
- 874,132. NODACO. Noda Plywood Manufacturing Co., Ltd. SN 315,093. Pub. 5-20-69. Filed 12-23-68.
- 874,149. SANTOQUENCH. Monsanto Company. SN 302,430. Pub. 5-20-69. Filed 7-10-68.
- 874,150. ESSENCE OF CHRISTMAS. Bluegate Candle Company. SN 302,486. Pub. 5-20-69. Filed 7-11-68.
- 874,151. QVO. The Standard Oil Company. SN 303,713. Pub. 5-20-69. Filed 7-26-68.
- 874,152. MELINA. Shell Oil Company. SN 304,020. Pub. 5-20-69. Filed 7-31-68.
- 874,153. SUPER-TAP. Cook's Industrial Lubricants, Inc. SN 305,035. Pub. 5-20-69. Filed 8-13-68.
- 874,154. TAP-MATE. Cook's Industrial Lubricants, Inc. SN 305,036. Pub. 5-20-69. Filed 8-13-68.
- 874,155. GHP AND DESIGN. Farmland Industries, Inc. SN 305,321. Pub. 5-20-69. Filed 8-16-68.
- 874,156. CL 60. Sno-Trik Company. SN 305,760. Pub. 5-20-69. Filed 8-22-68.
- 874,157. FASTEST GAS IN THE WEST. Husky Oil Company of Delaware. SN 313,782. Pub. 5-20-69. Filed 12-6-68.

### Class 13—Hardware and Plumbing and Class 17—Tobacco Products Steam-Fitting Supplies

- 874,094. (See Class 2 for this trademark.)
- 874,133. STI (DESIGN). Swiss-Tech, Inc. SN 268,999. Pub. 5-20-69. Filed 4-12-67.
- 874,134. WEAROX. Western Gold and Platinum Company. MULTIPLE CLASS (Classes 13, 23, 34, and 35). SN 274,680. Pub. 5-20-69. Filed 6-23-67.
- 874,135. POOLMAID. Whitaker Construction Company. SN 280,661. Pub. 5-20-69. Filed 9-18-67.
- 874,136. R-1. Ridgewood Instrument Company. SN 289,833. Pub. 5-20-69. Filed 1-29-68.
- 874,137. PUNCH-TABS. Vance Industries, Inc. SN 294,760. Pub. 5-20-69. Filed 4-2-68.
- 874,138. PULSE-KIT. Pulsation Controls Corporation. SN 299,861. Pub. 5-20-69. Filed 6-6-68.
- 874,139. ALLEN HEAD. The Allen Manufacturing Company. SN 305,904. Pub. 5-20-69. Filed 8-28-68.
- 874,140. GAX. Gax Corporation. MULTIPLE CLASS (Classes 13 and 35). SN 306,705. Pub. 5-20-69. Filed 9-6-68.
- 874,141. FLEXLINE. Universal Metal Hose Company. SN 307,522. Pub. 5-20-69. Filed 9-16-68.
- 874,142. HILLWARE. Hillside Metal Ware Co. SN 310,778. Pub. 5-20-69. Filed 10-29-68.
- 874,143. CLAY-TWIN. Clayton Corporation. SN 317,421. Pub. 5-20-69. Filed 1-24-69.
- 874,158. PERILLY'S AND DESIGN. Perilly's Tobacco Manufacturers (Proprietary) Limited. SN 296,343. Pub. 5-20-69. Filed 4-23-68.
- 874,159. MOYA AND DESIGN. Carlos A. Fuente, d.b.a. Arturo Fuente Cigar Factory. SN 299,226. Pub. 5-20-69. Filed 5-28-68.

### Class 18—Medicines and Pharmaceutical Preparations

- 874,160. TROPHINEX. Ortho Pharmaceutical Corporation. SN 271,066. Pub. 4-2-68. Filed 5-9-67.
- 874,161. TESULOID. E. R. Squibb & Sons, Inc. SN 303,837. Pub. 5-20-69. Filed 7-29-68.

### Class 19—Vehicles

- 874,162. UNIT RIG & EQUIPMENT CO. AND DESIGN. Unit Rig & Equipment Co. SN 277,734. Pub. 5-20-69. Filed 8-7-67.
- 874,163. MISCELLANEOUS DESIGN. Unit Rig & Equipment Co. SN 277,735. Pub. 5-20-69. Filed 8-7-67.
- 874,164. FERRARI. Ferrari Soc. p. Az. Esercizio Fabbriche Automobili e Corse. SN 286,253. Pub. 5-20-69. Filed 12-5-67.
- 874,165. TELETRANS. Docutel Corporation. SN 292,190. Pub. 5-20-69. Filed 2-29-68.
- 874,166. TYCO. Tyco Automotive Corp. MULTIPLE CLASS (Classes 19 and 23). SN 306,000. Pub. 5-20-69. Filed 8-26-68.
- 874,167. IMAGINEERING. Southwest Factories, Inc. MULTIPLE CLASS (Classes 19, 23, and 24). SN 310,424. Pub. 5-20-69. Filed 10-24-68.
- 874,168. BUCKLE BUTLER. Inventive Industries, Inc. SN 311,332. Pub. 5-20-69. Filed 11-5-68.

### Class 15—Oils and Greases

- 874,146. R-R 6723 AND DESIGN. Strohmeyer & Arpe Company. SN 301,463. Pub. 5-20-69. Filed 6-26-68.
- 874,147. R-R 6715 AND DESIGN. Strohmeyer & Arpe Company. SN 301,464. Pub. 5-20-69. Filed 6-26-68.
- 874,148. ENMIST. Standard Oil Company. SN 301,647. Pub. 5-20-69. Filed 6-26-68.

### Class 21—Electrical Apparatus, Machines, and Supplies

- 874,169. CD AND DESIGN. Central Dynamics Ltd. SN 243,221. Pub. 5-20-69. Filed 4-12-66.
- 874,170. COLOR CAPTAIN. Technical Appliance Corporation. SN 261,892. Pub. 5-20-69. Filed 1-3-67.

- 874,171. CINCINNATI. The Cincinnati Time Recorder Company. MULTIPLE CLASS (Classes 21, 23, 26, and 27). SN 270,311. Pub. 5-20-69. Filed 5-1-67.
- 874,172. MUSIC MAKER AND DESIGN. The Ditchburn Organization, Inc. SN 291,664. Pub. 5-20-69. Filed 2-23-68.
- 874,173. FUSA-FLEX. General Electric Company. SN 293,713. Pub. 5-20-69. Filed 3-20-68.
- 874,174. PICOREED. C. P. Clare & Company. SN 297,168. Pub. 5-20-69. Filed 5-2-68.
- 874,175. DECO-TEL. American Telecommunications Corporation. SN 299,820. Pub. 5-20-69. Filed 6-6-68.
- 874,176. AL-FLEX. Aluminum Company of Canada, Limited. SN 300,668. Pub. 5-20-69. Filed 6-18-68.
- 874,177. TNETEK. T.N.E. Incorporated. SN 303,877. Pub. 5-20-69. Filed 7-30-68.
- 874,178. H.S.F.M. Charles Messenger. SN 304,006. Pub. 5-20-69. Filed 7-31-68.
- 874,179. FORTUNE. Rolecor of America, Inc. SN 304,396. Pub. 5-20-69. Filed 8-5-68.
- 874,180. SPAT. Sprague Electric Company. SN 304,506. Pub. 5-20-69. Filed 8-6-68.
- 874,181. OMNY-PAC. Methode Electronics, Inc. SN 304,944. Pub. 5-20-69. Filed 8-12-68.
- 874,182. SAKI AND DESIGN. Saki Magnetics, Inc. SN 305,251. Pub. 5-20-69. Filed 8-15-68.
- 874,183. FERROGRAPH. The Ferrograph Company Limited. SN 306,471. Pub. 5-20-69. Filed 9-3-68.
- 874,184. SCANNAIR. Appalachian Electronic Instruments, Inc. SN 308,179. Pub. 5-20-69. Filed 9-25-68.
- 874,185. ELCOMATIC. Elco Elevator Corporation. SN 308,774. Pub. 5-20-69. Filed 10-3-68.
- 874,186. LI'L CAPT'N. Union Carbide Corporation. SN 308,830. Pub. 5-20-69. Filed 10-3-68.
- 874,187. RL AND DESIGN. Radiant Lamp Corporation. SN 308,919. Pub. 5-20-69. Filed 10-4-68.
- 874,188. CORRTHERM. Sola Basic Industries, Inc. SN 316,871. Pub. 5-20-69. Filed 1-17-69.
- 874,198. SUPER CHIEF. C. M. McClung & Co., Inc. SN 280,717. Pub. 5-20-69. Filed 9-19-67.
- 874,199. HARTFORD. The Hartford Special Machinery Company. SN 286,140. Pub. 5-20-69. Filed 12-4-67.
- 874,200. PME AND DESIGN. P. Kenneth Hunton. SN 286,147. Pub. 5-20-69. Filed 12-4-67.
- 874,201. AEROFLEX. Joh. Kleinfewefers Söhne. SN 288,326. Pub. 5-20-69. Filed 1-8-68.
- 874,202. SCANDO. Alimak-Verken Aktiebolag. SN 291,474. Pub. 5-20-69. Filed 2-20-68.
- 874,203. NIKKISO. Nippon Kikai Kasei Kaisha, Ltd. SN 291,627. Pub. 5-20-69. Filed 2-21-68.
- 874,204. Z-MILL. Textron Inc. SN 293,065. Pub. 5-20-69. Filed 3-12-68.
- 874,205. BEEVEL AND DESIGN. William Van Lederman, d.b.a. Beevel Products. SN 295,862. Pub. 5-20-69. Filed 4-17-68.
- 874,206. ARCT. Ateliers Roannais de Constructions Textiles, S.A. SN 296,937. Pub. 5-20-69. Filed 4-30-68.
- 874,207. HOOVER AND DESIGN. Hoover Ball and Bearing Company. SN 299,131. Pub. 5-20-69. Filed 5-27-68.
- 874,208. SOL-TAC. Baughman Manufacturing Company, Inc. SN 299,938. Pub. 5-20-69. Filed 6-7-68.
- 874,209. SNORKEL. Maremont Corporation, d.b.a. Saco-Lowell Maremont. SN 300,465. Pub. 5-20-69. Filed 6-14-68.
- 874,210. LITTL COMPUTER. Littlecomputers, Inc. SN 300,657. Pub. 5-20-69. Filed 6-18-68.
- 874,211. HF HANFORD FORGE. Washington Forge, Incorporated. SN 301,985. Pub. 5-20-69. Filed 7-3-68.
- 874,212. CAPISTRANO. Onelda Ltd. SN 302,441. Pub. 5-20-69. Filed 7-10-68.
- 874,213. ELECTROMATIC. The Huffman Manufacturing Company. SN 306,777. Pub. 5-20-69. Filed 9-6-68.
- 874,214. PASSANTA. Hermann Kronseder, d.b.a. Hermann Kronseder Maschinenfabrik. SN 306,783. Pub. 5-20-69. Filed 9-6-68.
- 874,215. FARMALON. Orange Roller Bearing Co., Inc. SN 306,800. Pub. 5-20-69. Filed 9-6-68.
- 874,216. PRESTO. The Cleveland Trencher Company. SN 307,006. Pub. 5-20-69. Filed 9-10-68.
- 874,217. STEIN. Trim-Master Corporation. SN 307,153. Pub. 5-20-69. Filed 9-11-68.
- 874,218. RAYGO RHINO. Raygo, Inc. SN 297,345. Pub. 4-1-69. Filed 5-6-68.
- 874,219. LYNCRIFT. Washington Forge, Incorporated. SN 307,599. Pub. 5-20-69. Filed 9-17-68.
- 874,220. AUTUMN ROSE. Washington Forge, Incorporated. SN 307,600. Pub. 5-20-69. Filed 9-17-68.
- 874,221. COMPRESSO-DRI. Air Techniques Incorporated. SN 309,004. Pub. 5-20-69. Filed 10-7-68.
- 874,222. EFAMATIC. George H. Alexander Machinery Limited. SN 309,150. Pub. 5-20-69. Filed 10-8-68.
- 874,223. ECO. John Wood Company. MULTIPLE CLASS (Classes 23 and 26). SN 315,712. Pub. 5-20-69. Filed 12-5-68.
- 874,224. THE BLAZOR. Eversharp, Inc. SN 316,372. Pub. 5-20-69. Filed 1-13-69.
- 874,225. THE INCREDIBLE. Eversharp, Inc. SN 316,373. Pub. 5-20-69. Filed 1-13-69.
- 874,226. CHEESE-CAKE. Eversharp, Inc. SN 316,374. Pub. 5-20-69. Filed 1-13-69.
- 874,227. THE GIRL THING. Eversharp, Inc. SN 316,376. Pub. 5-20-69. Filed 1-13-69.
- 874,228. MIL-PAC. SFM Corporation. SN 316,683. Pub. 5-20-69. Filed 1-15-69.

### Class 22—Games, Toys, and Sporting Goods

- 874,189. AGENT. Colt's Inc. SN 291,023. Pub. 5-20-69. Filed 2-14-68.
- 874,190. HEADACHE. Kohner Bros., Inc. SN 296,840. Pub. 5-20-69. Filed 4-29-68.
- 874,191. WOODES WOOD TILE CRAFT. Kohner Bros., Inc. SN 296,842. Pub. 5-20-69. Filed 4-29-68.
- 874,192. M AND DESIGN. Mattel, Inc. SN 298,287. Pub. 5-20-69. Filed 5-16-68.
- 874,193. FRANCIE. Mattel, Inc. SN 307,169. Pub. 5-20-69. Filed 9-12-68.

### Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

- 874,134. (See Class 13 for this trademark.)
- 874,166. (See Class 19 for this trademark.)
- 874,167. (See Class 19 for this trademark.)
- 874,171. (See Class 21 for this trademark.)
- 874,194. THOR. Onelda Ltd. SN 268,215. Pub. 2-27-68. Filed 4-3-67.
- 874,195. GEO-CENTRIC. Univis Inc. SN 274,138. Pub. 5-20-69. Filed 6-19-67.
- 874,196. WILCOX-CRITTENDEN ETC. AND DESIGN. North and Judd Manufacturing Company. SN 275,161. Pub. 5-20-69. Filed 6-30-67.
- 874,197. STOPPLE. T. D. Williamson, Inc. SN 278,261. Pub. 5-20-69. Filed 8-14-67.

### Class 24—Laundry Appliances and Machines

- 874,167. (See Class 19 for this trademark.)



**Class 25 — Locks and Safes**

874,229. 3 STAR SECURITY AND DESIGN. Eagle Lock Corporation. SN 299,333. Pub. 5-20-69. Filed 5-29-68.

**Class 26 — Measuring and Scientific Appliances**

874,171. (See Class 21 for this trademark.)  
 874,223. (See Class 23 for this trademark.)  
 874,230. STERLING LIQUID SALTER. International Salt Company. SN 271,149. Pub. 5-20-69. Filed 5-10-67.  
 874,231. FOX VALLEY AND DESIGN. Fox Valley Instrument Company. SN 273,953. Pub. 5-20-69. Filed 6-15-67.  
 874,232. SAGE 1. Dero Research and Development Corporation. SN 277,349. Pub. 5-20-69. Filed 8-2-67.  
 874,233. PARA-BLENDIC. Conforma Laboratories, Inc. SN 288,657. Pub. 5-20-69. Filed 10-23-67.  
 874,234. VGC. Visual Graphics Corporation. SN 292,645. Pub. 5-20-69. Filed 3-6-68.  
 874,235. SK. Science Kit, Inc. SN 296,459. Pub. 5-20-69. Filed 4-24-68.  
 874,236. SENSOMAT. Allied Impex Corp. SN 299,193. Pub. 5-20-69. Filed 5-28-68.  
 874,237. ELEMOTO. Ernest Grundlehner. SN 299,456. Pub. 5-20-69. Filed 5-31-68.  
 874,238. TSC AND DESIGN. Time Systems Corporation. SN 306,283. Pub. 5-20-69. Filed 8-29-68.  
 874,239. LEEDAL. Leedal, Incorporated. SN 306,973. Pub. 5-20-69. Filed 9-3-68.  
 874,240. VERI-WIDE 100. Burlingh Brooks Inc. SN 309,436. Pub. 5-20-69. Filed 10-11-68.  
 874,241. DMI AND DESIGN. Donnelly Mirrors, Inc. SN 309,550. Pub. 5-20-69. Filed 10-14-68.  
 874,242. JIFFY CHECKER. James S. Luster. SN 310,678. Pub. 5-20-69. Filed 10-28-68.

**Class 27 — Horological Instruments**

874,171. (See Class 21 for this trademark.)  
 874,243. PAUL SAISON. Tucker-Lowenthal Co. SN 307,692. Pub. 5-20-69. Filed 9-18-68.

**Class 28 — Jewelry and Precious-Metal Ware**

874,244. GEM-SAKE. Phillip Silverstein, d.b.a. Phil Jewelers, Inc. SN 287,693. Pub. 5-20-69. Filed 12-8-67.  
 874,245. SKYLINE. Abraham Zaczorsky & Sons, Inc. SN 293,877. Pub. 5-20-69. Filed 3-21-68.  
 874,246. DOTS. Mida Mfg. Inc. SN 301,856. Pub. 5-20-69. Filed 7-2-68.  
 874,247. THE DIFFERENT DRUMMER. The Different Drummer, Ltd. MULTIPLE CLASS (Classes 28 and 39). SN 306,726. Pub. 5-20-69. Filed 9-6-68.  
 874,248. AMR (DESIGN). The Arthur M. Ross Company, Inc. SN 309,402. Pub. 5-20-69. Filed 10-10-68.  
 874,249. B.J. Beatrix Jewelry Company. SN 309,541. Pub. 5-20-69. Filed 10-14-68.  
 874,250. MINI-CLIP FOR MAXI-COMFORT. Coro, Inc. SN 311,236. Pub. 5-20-69. Filed 11-4-68.  
 874,251. DAGGER AND DESIGN. The Woodlin Shirt Corp. SN 312,582. Pub. 5-20-69. Filed 11-18-68.  
 874,252. GRANDE IMPERIALE. Buccellati Silver, Ltd. SN 316,732. Pub. 5-20-69. Filed 1-16-69.

**Class 29 — Brooms, Brushes, and Dusters**

874,253. DUST-TEX. American Uniform Company. SN 307,958. Pub. 5-20-69. Filed 9-23-68.

**Class 31 — Filters and Refrigerators**

874,094. (See Class 2 for this trademark.)  
 874,095. (See Class 2 for this trademark.)

**Class 32 — Furniture and Upholstery**

874,254. ENVIRONMENT 70. Thayer Coggin, Inc. SN 301,607. Pub. 5-20-69. Filed 6-28-68.  
 874,255. ZAMARA. Waldron Furniture Manufacturing Corp. SN 306,003. Pub. 5-20-69. Filed 8-26-68.  
 874,256. CAMEO-CRAFT. Butler-Johnson Corporation. SN 308,272. Pub. 5-20-69. Filed 9-26-68.

**Class 33 — Glassware**

874,257. PARSOL. Compagnie de Saint-Gobain. SN 289,876. Pub. 5-20-69. Filed 1-30-68.  
 874,258. CHEMCOR. Corning Glass Works. SN 293,480. Pub. 5-20-69. Filed 3-18-68.  
 874,259. CHROM O SPHERES. Prismo Safety Corporation. SN 307,236. Pub. 5-20-69. Filed 9-12-68.

**Class 34 — Heating, Lighting, and Ventilating Apparatus**

874,134. (See Class 13 for this trademark.)  
 874,260. BRULE. Brulé Incinerator Corporation. SN 288,277. Pub. 5-20-69. Filed 1-8-68.  
 874,261. THERMO-SILL. Federal Pacific Electric Company. SN 302,064. Pub. 5-20-69. Filed 7-5-68.  
 874,262. STEINEN DYNA-COIN. Wm. Steinen Mfg. Co. SN 303,452. Pub. 5-20-69. Filed 7-23-68.  
 874,263. ZONE-A-VENT. Anderson Products, Inc. SN 309,538. Pub. 5-20-69. Filed 10-14-68.  
 874,264. CHEVRON. Standard Oil Company of California. SN 310,256. Pub. 5-20-69. Filed 10-22-68.  
 874,265. CHEVRON (DESIGN). Standard Oil Company of California. SN 310,257. Pub. 5-20-69. Filed 10-22-68.

**Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires**

874,134. (See Class 13 for this trademark.)  
 874,140. (See Class 13 for this trademark.)  
 874,266. GT. The General Tire & Rubber Company. SN 257,779. Pub. 8-15-67. Filed 11-2-66.  
 874,267. NULOX. Pioneer Oilsealing & Moulding Company Limited. SN 314,110. Pub. 5-20-69. Filed 12-10-68.

**Class 36 — Musical Instruments and Supplies**

874,268. CART/ABLE. Belle Wood Inc., assignee, by mesne assignment, of Borg-Warner Corporation. SN 279,527. Pub. 5-20-69. Filed 9-1-67.  
 874,269. RECORDS BY PETE AND DESIGN. The Petersea Company. SN 308,132. Pub. 5-20-69. Filed 9-25-68.

**Class 37 — Paper and Stationery**

874,270. DEXTER AND DESIGN. The Dexter Corporation. MULTIPLE CLASS (Classes 37 and 42). SN 260,144. Pub. 2-18-69. Filed 12-6-66.  
 874,271. SK FORMS AND DESIGN. S-K Forms Company. SN 289,128. Pub. 5-20-69. Filed 1-18-68.  
 874,272. REMKLIP. Sperry Rand Corporation. SN 291,298. Pub. 5-20-69. Filed 2-16-68.  
 874,273. SMART NOUVEAU. Gibson Greeting Cards, Inc. SN 293,510. Pub. 5-20-69. Filed 3-18-68.  
 874,274. CONSOBOOKSHELL. Consolidated Papers, Inc. SN 300,433. Pub. 5-20-69. Filed 6-14-68.  
 874,275. CARLAM. Laminating & Coating Corporation. SN 300,526. Pub. 5-20-69. Filed 6-17-68.  
 874,276. HUDSON AND DESIGN. Hudson Pulp & Paper Corp. SN 301,069. Pub. 5-20-69. Filed 6-21-68.  
 874,277. ULTRA-BOARD. Hoerner Waldorf Corporation. SN 301,623. Pub. 5-20-69. Filed 6-28-68.  
 874,278. NIBLET. Cory Corporation. SN 301,718. Pub. 5-20-69. Filed 7-1-68.  
 874,279. PATRICIAN THE LEATHER CRAFT LINE. Keith Clark, Inc. SN 304,737. Pub. 5-20-69. Filed 8-9-68.  
 874,280. MINI-TAXI. Eversharp, Inc. SN 305,608. Pub. 5-20-69. Filed 8-21-68.  
 874,281. KORO-PAK. Malanco, Incorporated. SN 306,065. Pub. 5-20-69. Filed 8-27-68.  
 874,282. ALL START. Star Office Supply Co. Inc. SN 308,639. Pub. 5-20-69. Filed 10-1-68.  
 874,283. SHOWRAP. Roll-O-Sheets, Inc. SN 310,249. Pub. 5-20-69. Filed 10-22-68.  
 874,284. CHEXCLUSIVE CHECKS. Security Pacific National Bank. SN 310,736. Pub. 5-20-69. Filed 10-29-68.  
 874,285. SOUP 'N SANDWICH AND DESIGN. Ashuelot Paper Company. SN 310,832. Pub. 5-20-69. Filed 10-30-68.  
 874,286. MILWHEEL. Milprint, Inc. SN 311,691. Pub. 5-20-69. Filed 11-8-68.

**Class 38 — Prints and Publications**

874,287. PROTECTO. Jean Jacques Pollquin, d.b.a. Pharmacie Pollquin Enrg. MULTIPLE CLASS (Classes 38 and 101). SN 275,008. Pub. 5-20-69. Filed 6-29-67.  
 874,288. READING TIME AND DESIGN. Professors & Teachers Aids, Inc. SN 283,273. Pub. 5-20-69. Filed 10-24-67.  
 874,289. KAUMARK. Kaumagraph Company. SN 285,432. Pub. 5-20-69. Filed 11-22-67.  
 874,290. BASIS FOR PROFIT. John E. Bonnett, d.b.a. John Bonnett Associates. SN 295,010. Pub. 5-20-69. Filed 4-5-68.  
 874,291. BSCS. The Regents of the University of Colorado. SN 298,354. Pub. 5-20-69. Filed 5-16-68.  
 874,292. ROLLS AND DESIGN. Rolls Offset Printing Company, Inc. SN 298,864. Pub. 5-20-69. Filed 5-22-68.  
 874,293. ROLLS. Rolls Offset Printing Company, Inc. SN 298,865. Pub. 5-20-69. Filed 5-22-68.  
 874,294. PENN CENTRAL POST. Penn Central Company. SN 299,377. Pub. 5-20-69. Filed 5-29-68.

874,295. URBAN WORLD. Xerox Corporation. SN 299,611. Pub. 5-20-69. Filed 6-3-68.  
 874,296. STITCH 'N SEW. Tower Press, Inc. SN 300,496. Pub. 5-20-69. Filed 6-14-68.  
 874,297. COPYAD. Commercial Reproducing Company. SN 307,428. Pub. 5-20-69. Filed 9-16-68.  
 874,298. IT'S STILL A MYSTERY! Lee Gebhard and Walter Wagner (partnership). SN 308,346. Pub. 5-20-69. Filed 9-27-68.  
 874,299. DESIGN OF TWO LADIES. Pivot Point International, Inc. SN 309,183. Pub. 5-20-69. Filed 10-8-68.  
 874,300. THE DROPOUTS. United Feature Syndicate, Inc. SN 309,799. Pub. 5-20-69. Filed 10-16-68.  
 874,301. WHISPER TONES. All Phase Color Corporation. SN 311,806. Pub. 5-20-69. Filed 11-12-68.  
 874,302. GLOBE WITH ENCIRCLING RINGS (DESIGN). Universal City Studios, Inc. SN 313,455. Pub. 5-20-69. Filed 12-2-68.  
 874,303. UNIVERSAL AND DESIGN OF GLOBE WITH ENCIRCLING RINGS. Universal City Studios, Inc. SN 313,456. Pub. 5-20-69. Filed 12-2-68.  
 874,304. MIND ALIVE. Columbia Broadcasting System, Inc. SN 316,497. Pub. 5-20-69. Filed 1-14-69.  
 874,305. BINKYS BUDDIES. National Periodical Publications, Inc. SN 317,917. Pub. 5-20-69. Filed 1-30-69.

**Class 39 — Clothing**

874,247. (See Class 28 for this trademark.)  
 874,306. BARLETTA ETC. AND DESIGN. Barletta Shoe Company. SN 232,273. Pub. 5-20-69. Filed 11-8-65.  
 874,307. TRUCK 'N TRACTOR. Springfoot, Inc. SN 273,320. Pub. 5-20-69. Filed 6-7-67.  
 874,308. ORBIT AND DESIGN. Orbit Manufacturing, Inc. SN 278,524. Pub. 5-20-69. Filed 8-17-67.  
 874,309. IMPORT CORNER. Marco Polo Imports Ltd. SN 279,954. Pub. 5-20-69. Filed 9-8-67.  
 874,310. ELASFIT. Toyo Rayon Co., Ltd. MULTIPLE CLASS (Classes 39 and 42). SN 285,286. Pub. 5-20-69. Filed 11-21-67.  
 874,311. MOUNTAINEERS AND DESIGN. Welco Enterprises, Inc. SN 288,901. Pub. 5-20-69. Filed 1-15-68.  
 874,312. CABRITO. La Industrial de Punto C.A. SN 289,103. Pub. 5-20-69. Filed 1-18-68.  
 874,313. VICKI LYNN. Samuel Kassow Co., Inc. SN 289,697. Pub. 5-20-69. Filed 1-26-68.  
 874,314. PARKLANE. Parklane Hosiery Company, Inc. SN 291,092. Pub. 3-4-69. Filed 2-14-68.  
 874,315. JET ABOUTS. Jet-Abouts, Inc. SN 291,518. Pub. 5-20-69. Filed 2-20-68.  
 874,316. CASA DE SEVILLA AND DESIGN. George Cohen Clothing Co., Inc. SN 294,552. Pub. 5-20-69. Filed 4-1-68.  
 874,317. PARADER. Gentex Corporation. SN 294,615. Pub. 5-20-69. Filed 4-1-68.  
 874,318. STEVEN SCOTT. Shutzer Industries Inc. SN 295,058. Pub. 5-20-69. Filed 4-5-68.  
 874,319. MURRELL. The Murrell Corporation. SN 295,662. Pub. 5-20-69. Filed 4-15-68.  
 874,320. THUNIT. Westland Gummiwerke GmbH & Co. SN 297,474. Pub. 5-20-69. Filed 5-6-68.  
 874,321. PHINEAS CREED. A. Rivetz Co., Inc. SN 298,045. Pub. 5-20-69. Filed 5-13-68.  
 874,322. BLOOMER GIRL. Carolina Bloomer Company, Incorporated. SN 299,001. Pub. 5-20-69. Filed 5-24-68.  
 874,323. FABRI-CEL. W. R. Grace & Co. MULTIPLE CLASS (Classes 39 and 42). SN 299,121. Pub. 5-20-69. Filed 5-27-68.  
 874,324. PRETTY SOFT. Carnival Creations, Inc. SN 299,217. Pub. 5-13-69. Filed 5-28-68.  
 874,325. EXPAND-O-BAND. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 299,232. Pub. 5-20-69. Filed 5-28-68.



874,326. RAGE OF CALIFORNIA. Ingenue of California, Inc., d.b.a. Rage of California. SN 299,629. Pub. 5-20-69. Filed 6-4-68.

874,327. BEL-AIR. Broadway-Hale Stores, Inc. SN 300,867. Pub. 5-20-69. Filed 6-20-68.

874,328. MONGELLI. H. Freeman & Son, Inc. SN 302,406. Pub. 5-20-69. Filed 7-10-68.

874,329. PHINEAS CREED AND DESIGN. A. Rivetz Co., Inc. SN 302,448. Pub. 5-20-69. Filed 7-10-68.

874,330. ORIGINAL CAMPANILE BY DEE AND DESIGN. H. Paul Dee, d.b.a. Paul Dee Company. SN 303,401. Pub. 5-20-69. Filed 7-23-68.

874,331. JOE'S CLOTHES. Foster Industries, Inc. SN 303,608. Pub. 5-20-69. Filed 7-25-68.

874,332. CHESTER-HARRIS. Teplick Clothes, Inc. SN 303,842. Pub. 5-20-69. Filed 7-29-68.

874,333. BESPOKE TAILORED AND DESIGN. Grieco Bros., Inc. SN 303,912. Pub. 5-20-69. Filed 7-30-68.

874,334. TUFF-MATE. Diana Stores Corporation. SN 304,322. Pub. 5-20-69. Filed 8-5-68.

874,335. BRUCE MACINTYRE. Diana Stores Corporation. SN 304,323. Pub. 5-20-69. Filed 8-5-68.

874,336. ADLER 72. Burlington Industries, Inc. SN 305,712. Pub. 5-20-69. Filed 8-22-68.

874,337. ARTPLUS. Jack Kreiss Hosiery, Inc. SN 308,210. Pub. 5-20-69. Filed 9-25-68.

874,338. FREJERE. J. Freezer & Son, Inc. SN 308,482. Pub. 5-20-69. Filed 9-30-68.

874,339. GUY SPRITES. The Villager, Inc. SN 315,624. Pub. 5-20-69. Filed 12-31-68.

## Class 40—Fancy Goods, Furnishings, and Notions

874,340. TRX. Hilborn-Hamburger Co., Inc. SN 314,158. Pub. 5-20-69. Filed 12-11-68.

## Class 41—Canes, Parasols, and Umbrellas

874,341. RED CIRCLE (DESIGN). Telesco Brophey Limited. SN 292,977. Pub. 5-20-69. Filed 3-11-68.

## Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

874,270. (See Class 37 for this trademark.)

874,310. (See Class 39 for this trademark.)

874,323. (See Class 39 for this trademark.)

874,342. MISTER FABRIC. Mister Fabric, Inc. SN 291,994. Pub. 5-20-69. Filed 2-27-68.

874,343. WEATHER SHED. New Coatings Incorporated. SN 297,692. Pub. 5-20-69. Filed 5-8-68.

874,344. THE RUBYSHAH COLLECTION. Lannean Tapijten Fluweelweverij N.V. SN 298,131. Pub. 5-20-69. Filed 5-14-68.

874,345. A "DESIGN 99" FABRIC AND DESIGN. Indian Head Inc. SN 300,451. Pub. 5-20-69. Filed 6-14-68.

874,346. INSTANT LINEN. Pat Baird Ship's Wheel, Inc. SN 301,904. Pub. 5-20-69. Filed 7-3-68.

874,347. DOLLY MADISON AND DESIGN. Dolly Madison, Inc. SN 304,678. Pub. 5-20-69. Filed 8-8-68.

874,348. DANSURE. Dan River Mills, Incorporated. SN 305,114. Pub. 5-20-69. Filed 8-14-68.

874,349. HI-STEP. General Felt Industries, Inc. SN 313,786. Pub. 5-20-69. Filed 12-6-68.

## Class 43—Thread and Yarn

874,350. BRUNSMET. Brunswick Corporation. SN 305,113. Pub. 5-20-69. Filed 8-14-68.

## Class 44—Dental, Medical, and Surgical Appliances

874,144. (See Class 14 for this trademark.)

874,351. ULTRA-AIR. Black Dentapriees, Inc. SN 300,551. Pub. 5-20-69. Filed 6-17-68.

874,352. BP BARAPIO AND DESIGN. Barataud et Fola "Etablissement Barapio." SN 303,762. Pub. 5-20-69. Filed 7-29-68.

874,353. R & R REGALLOY AND DESIGN. The Dentists' Supply Company of New York. SN 306,225. Pub. 5-20-69. Filed 8-29-68.

874,354. CRYOPTOR. Air Reduction Company, Incorporated, d.b.a. Ohio Medical Products. SN 309,347. Pub. 5-20-69. Filed 10-10-68.

874,355. HYDRO DENT. The Hydro Dent Company. SN 309,647. Pub. 5-20-69. Filed 10-15-68.

874,356. PLASTICAST. Solar Laboratories, Inc. SN 310,252. Pub. 5-20-69. Filed 10-22-68.

874,357. BETACAST. Solar Laboratories, Inc. SN 310,255. Pub. 5-20-69. Filed 10-22-68.

874,358. PIC O' MINT AND DESIGN. Jay Dee Manufacturing Company, Inc. SN 314,568. Pub. 5-20-69. Filed 12-16-68.

874,359. VENT AID. Michigan Instruments, Inc. SN 315,427. Pub. 5-20-69. Filed 12-30-68.

874,360. AID 2 AND DESIGN. Anesthesia, Inhalation Therapy Distributors, Inc. SN 315,617. Pub. 5-20-69. Filed 12-31-68.

## Class 45—Soft Drinks and Carbonated Waters

874,361. PAPPY'S BREW. Farmer's Daughter, Inc. SN 238,066. Pub. 5-20-69. Filed 2-4-66.

874,362. MB (DESIGN). Martin-Brower Corporation. SN 289,597. Pub. 5-20-69. Filed 1-25-68.

874,363. FREVO AND DESIGN. Copa Guarana, Inc. SN 297,390. Pub. 5-20-69. Filed 5-6-68.

874,364. EVENING CHILL. General Mills, Inc. SN 308,347. Pub. 5-20-69. Filed 9-27-68.

## Class 46—Foods and Ingredients of Foods

874,365. CG CONTINENTAL GRAIN AND DESIGN. Continental Grain Company. SN 251,121. Pub. 1-10-67. Filed 7-27-66.

874,366. ITALIAN MAIDE AND DESIGN. George Amerise, d.b.a. Hagleton Macaroni Company. SN 252,800. Pub. 5-20-69. Filed 8-22-66.

874,367. COFFEE MAGIC. A & W International, Inc., by assignment and change of name from United Fruit Company. SN 263,856. Pub. 1-30-68. Filed 2-2-67.

874,368. HERITAGE HOUSE. Fisher Foods, Inc., d.b.a. Fisher, Fario, Costa, Super Markets. SN 264,815. Pub. 6-25-68. Filed 2-16-67.

874,369. KRO-LEWSKA. J. S. Hoffman Company. SN 275,525. Pub. 5-20-69. Filed 7-7-67.

874,370. STUFF. O.J.M. Co. SN 278,230. Pub. 5-20-69. Filed 8-14-67.

874,371. QUIK STIX AND DESIGN. Lamb-Weston, Inc., d.b.a. Vita-Bite Foods, Co. SN 286,539. Pub. 5-20-69. Filed 12-8-67.

874,372. ". . . AND." Continental Coffee Company. SN 288,679. Pub. 5-20-69. Filed 1-12-68.

874,373. CHAMBOURCY. Chamboourcy S.A. SN 292,889. Pub. 5-20-69. Filed 3-11-68.

874,374. DYNAPOWER. The Dietene Company. SN 295,808. Pub. 10-1-68. Filed 4-17-68.

874,375. TWEEDLE DEE. The Wander Company, d.b.a. Ovaltine Food Products. SN 301,108. Pub. 5-20-69. Filed 6-21-68.

874,376. TWEEDLE DUM. The Wander Company, d.b.a. Ovaltine Food Products. SN 301,109. Pub. 5-20-69. Filed 6-21-68.

874,377. ONLY THE GOOD PERKS THROUGH! General Foods Corporation. SN 301,618. Pub. 5-20-69. Filed 6-28-68.

874,378. UB ETC. AND DESIGN. Uncle Ben's, Inc. SN 302,577. Pub. 5-20-69. Filed 7-12-68.

874,379. CHOCTAW MAID AND DESIGN. R & R Processors, Inc. SN 304,710. Pub. 5-20-69. Filed 8-8-68.

874,380. FUN 'N SUN-SICLE. Consolidated Foods Corporation, d.b.a. Joe Lowe Company. SN 305,203. Pub. 5-20-69. Filed 8-15-68.

874,381. MCCOWANS OF SCOTLAND AND DESIGN. The Nestle Company, Inc. SN 305,617. Pub. 5-20-69. Filed 8-21-68.

874,382. PIZZA HOUND AND DESIGN. Pizza Dog, Inc. SN 305,976. Pub. 5-20-69. Filed 8-26-68.

874,383. KING SMOOTHIE. American Whipped Products, Inc. SN 306,210. Pub. 5-20-69. Filed 8-29-68.

874,384. BLUE CHANNEL ATLANTIC AND DESIGN. The Blue Channel Corporation. SN 306,425. Pub. 5-20-69. Filed 9-3-68.

874,385. OSEM. Osem Export (1962) Limited. SN 306,682. Pub. 5-20-69. Filed 9-5-68.

874,386. RANG AND DESIGN. Tonnema N.V. SN 307,151. Pub. 5-20-69. Filed 9-11-68.

874,387. SUGAR GLEN. R. J. Reynolds Foods, Inc. SN 312,641. Pub. 5-20-69. Filed 11-20-68.

## Class 47—Wines

874,388. CHATEAU NEWPORT. Foremost-McKesson, Inc., d.b.a. Chateau Portside Wine Cellars. SN 284,302. Pub. 5-20-69. Filed 11-7-67.

## Class 48—Malt Beverages and Liquors

874,389. M AND DESIGN. Molson Breweries Limited. SN 291,416. Pub. 5-20-69. Filed 2-19-68.

874,390. COURAGE. Courage Barclay & Simonds Limited. SN 302,305. Pub. 5-20-69. Filed 7-9-68.

## Class 49—Distilled Alcoholic Liquors

874,391. COLONEL REBEL AND DESIGN. Rebel Distributing Company, Inc. SN 288,854. Pub. 5-20-69. Filed 1-15-68.

874,392. ESTRATTI BERTOLINI AND DESIGN. S. A. S. Antonio Bertolini. SN 290,885. Pub. 5-20-69. Filed 2-12-68.

874,393. DANIEL BOONE. Old Boone Distillery Co. SN 298,853. Pub. 5-20-69. Filed 5-22-68.

874,394. MISCELLANEOUS DESIGN. Glenmore Distilleries Company. SN 299,666. Pub. 5-20-69. Filed 6-4-68.

874,395. JAMIE '08. R. Stevenson Taylor and Company Limited. SN 301,098. Pub. 5-20-69. Filed 6-21-68.

874,396. TOLTEC. Joseph E. Seagram & Sons, Inc. SN 311,339. Pub. 5-20-69. Filed 11-5-68.

874,397. TOLTECA. Joseph E. Seagram & Sons, Inc. SN 311,340. Pub. 5-20-69. Filed 11-5-68.

## Class 50—Merchandise Not Otherwise Classified

874,398. ASTRO GARDEN. C. George Rust, assignee of RX Plastic Company. SN 293,574. Pub. 5-20-69. Filed 3-18-68.

874,399. MISCELLANEOUS DESIGN. Krain & Canton, Inc. SN 303,318. Pub. 5-20-69. Filed 7-22-68.

874,400. HOLLY HOUSE. Krain & Canton, Inc. SN 303,320. Pub. 5-20-69. Filed 7-22-68.

874,401. MERITE. Monogram Models, Inc. SN 304,009. Pub. 5-20-69. Filed 7-31-68.

874,402. KIDDY SAKE AND DESIGN. Loretta Swartz, d.b.a. Robert Swartz & Associates. SN 307,765. Pub. 5-20-69. Filed 9-19-68.

874,403. MULTIVISION 5. Multimatic Displays, Inc. SN 310,243. Pub. 5-20-69. Filed 10-22-68.

## Class 51—Cosmetics and Toilet Preparations

874,404. FOR THE WOMAN IN YOUR WIFE. Hilton Hotels Corporation. SN 294,049. Pub. 5-20-69. Filed 3-25-68.

874,405. BRECK. John H. Breck, Inc. SN 298,412. Pub. 5-20-69. Filed 5-17-68.

874,406. SCULPT. Roffler Sculptur-Kut National Franchised System, Inc. SN 300,371. Pub. 5-20-69. Filed 6-13-68.

874,407. PAN ULTRA. Cummins Pharmaceutical Company, Inc. SN 300,689. Pub. 5-20-69. Filed 6-18-68.

874,408. BEAUTY FINISH. Warner-Lambert Pharmaceutical Company. SN 304,271. Pub. 5-20-69. Filed 8-2-68.

874,409. HE MAN. La Maur, Inc., d.b.a. The House of Style. SN 304,474. Pub. 5-20-69. Filed 8-6-68.

874,410. MISTER BRECK. John H. Breck, Inc. SN 305,530. Pub. 5-20-69. Filed 8-20-68.

874,411. SYN-SET. Tovar Tresses, Inc. SN 305,578. Pub. 5-20-69. Filed 8-20-68.

874,412. MR. BRECK. John H. Breck, Inc. SN 306,632. Pub. 5-20-69. Filed 9-5-68.

874,413. JON PAUL. Frank Samson, d.b.a. Jon Paul. SN 306,806. Pub. 5-20-69. Filed 9-6-68.

874,414. A/S. April Showers, Inc. SN 306,866. Pub. 5-20-69. Filed 9-9-68.

874,415. DAINTEX. Demert & Dougherty, Inc. SN 306,891. Pub. 5-20-69. Filed 9-9-68.

## Class 52—Detergents and Soaps

874,416. PETRO-SORB. The Johnson-March Corporation, d.b.a. Johnson-March Corporation, and Waverly Mineral Products Co. SN 294,052. Pub. 5-20-69. Filed 3-25-68.

874,417. GILT EDGE. Central Soya Company, Inc., d.b.a. Central Soya. SN 302,595. Pub. 5-20-69. Filed 7-12-68.

874,418. PRINCESS PRIM. Piggly Wiggly Corporation. SN 303,440. Pub. 5-20-69. Filed 7-23-68.

874,419. JON PAUL. Frank Samson, d.b.a. Jon Paul. SN 306,807. Pub. 5-20-69. Filed 9-6-68.

874,420. STARLIGHT. Lever Brothers Company. SN 309,203. Pub. 5-20-69. Filed 10-9-68.



## Service Marks

## Class 100—Miscellaneous

- 874,421. CANADIAN AMERICAN CHALLENGE CUP AND DESIGN. Sports Car Club of America, Incorporated. SN 257,730. Pub. 5-20-69. Filed 11-1-68.
- 874,422. INTERNATIONAL DIVING CLUB AND DESIGN. Divers International Inc. SN 259,906. Pub. 5-20-69. Filed 12-2-68.
- 874,423. PERI-SCAN. American Contractors, Inc. SN 268,566. Pub. 5-20-69. Filed 4-7-67.
- 874,424. TSC. Wayne Manufacturing Company. SN 286,221. Pub. 5-20-69. Filed 12-4-67.
- 874,425. TOTAL SANITATION CONCEPT. Wayne Manufacturing Company. SN 286,222. Pub. 5-20-69. Filed 12-4-67.
- 874,426. CCI AND DESIGN. Care Centers, Inc. SN 292,177. Pub. 5-20-69. Filed 2-29-68.
- 874,427. BOW AND ARROW. Thunderbird Motel Corporation. SN 293,758. Pub. 5-20-69. Filed 3-20-68.
- 874,428. POW-WOW. Thunderbird Motel Corporation. SN 293,759. Pub. 5-20-69. Filed 3-20-68.
- 874,429. TOTEM POLE. Thunderbird Motel Corporation. SN 293,760. Pub. 5-20-69. Filed 3-20-68.
- 874,430. RENDEZ-VOUS SERVICE. G.C. Public Relations Department di Pierina Grottolo Bertl. SN 298,663. Pub. 5-20-69. Filed 5-7-68.
- 874,431. IRD. International Research and Development Corporation. SN 299,137. Pub. 5-20-69. Filed 5-27-68.
- 874,432. GCO AND DESIGN. GC Optronics, Inc. SN 306,133. Pub. 5-20-69. Filed 8-28-68.
- 874,433. MISCELLANEOUS DESIGN. Schleider Caterers, Inc. SN 316,392. Pub. 5-20-69. Filed 1-13-69.

## Class 101—Advertising and Business

- 874,287. (See Class 38 for this trademark.)
- 874,434. AUTOHAUS INTERNATIONAL INCORPORATED AND DESIGN. Autohaus International, Inc. MULTIPLE CLASS (Classes 101 and 103). SN 285,969. Pub. 5-20-69. Filed 3-6-67.
- 874,435. S-S-SARNA INC. S. S. Sarna, Inc. SN 273,530. Pub. 5-20-69. Filed 8-9-67.
- 874,436. SUPERGIRLS. Supergirls Enterprises, Ltd., assignee of Supergirls. SN 276,908. Pub. 5-20-69. Filed 7-27-67.
- 874,437. TECHNOMIC RESEARCH ASSOCIATES. Technomic Research Associates, Inc. SN 277,313. Pub. 5-20-69. Filed 8-1-67.
- 874,438. TECHNOMIC. Technomic Research Associates, Inc. SN 277,314. Pub. 5-20-69. Filed 8-1-67.
- 874,439. CROSS WORD AND DESIGN. Herron-Klehzle, Inc. SN 277,916. Pub. 5-20-69. Filed 8-9-67.
- 874,440. VULSET. Caywood-Schiller, Associates. SN 282,357. Pub. 5-20-69. Filed 10-12-67.
- 874,441. COMPAT-F. Caywood-Schiller, Associates. SN 282,358. Pub. 5-20-69. Filed 10-12-67.
- 874,442. FLAMING BULL. Flaming Bull, Inc. SN 284,463. Pub. 5-20-69. Filed 11-9-67.
- 874,443. SUPERPHONE. American Express Company. SN 286,987. Pub. 5-20-69. Filed 12-15-67.
- 874,444. U-TOTEM. Fairmont Foods Company. SN 289,289. Pub. 5-20-69. Filed 1-22-68.
- 874,445. CREATIVITE. Goodwin, Dannenbaum, Littman & Wingfield, Incorporated. SN 290,096. Pub. 5-20-69. Filed 2-1-68.

- 874,446. ED THE EDUCATIONAL DIRECTORY AND DESIGN. American University Press Services, Inc. SN 290,152. Pub. 5-20-69. Filed 2-2-68.
- 874,447. NTI AND DESIGN. A. C. Nielsen Company. SN 290,875. Pub. 5-20-69. Filed 2-12-68.
- 874,448. GLOBE AND MICROMETER (DESIGN). A. C. Nielsen Company. SN 290,876. Pub. 5-20-69. Filed 2-12-68.
- 874,449. NAC. A. C. Nielsen Company. SN 290,877. Pub. 5-20-69. Filed 2-12-68.
- 874,450. B AND CIRCLE DESIGN. Burroughs Corporation. SN 292,342. Pub. 5-20-69. Filed 3-4-68.
- 874,451. PLAYBOY. HMH Publishing Co. Inc. SN 292,374. Pub. 5-20-69. Filed 3-4-68.
- 874,452. PACIFIC ENTERPRISE. Pacific Enterprise. SN 298,347. Pub. 5-20-69. Filed 5-16-68.
- 874,453. MISCELLANEOUS DESIGN. Office Overload Co. Ltd. SN 300,734. Pub. 5-20-69. Filed 6-18-68.
- 874,454. ELF AND DESIGN. Roberts Brothers, Inc. SN 302,132. Pub. 5-20-69. Filed 7-5-68.
- 874,455. K AND DESIGN. Perry H. Koplik & Sons, Inc. SN 307,933. Pub. 5-20-69. Filed 9-23-68.
- 874,456. I AND ROOF DESIGN. Infodata Systems Inc. SN 313,108. Pub. 5-20-69. Filed 11-26-68.
- 874,457. INFODATA. Infodata Systems Inc. SN 313,109. Pub. 5-20-69. Filed 11-26-68.
- 874,458. ICT AND DESIGN. Inter Continental Thrift, Inc. SN 314,761. Pub. 5-20-69. Filed 12-18-68.
- 874,459. DESIGN OF ARROWS. Associated Enterprises, Inc. SN 315,136. Pub. 5-20-69. Filed 12-24-68.

## Class 102—Insurance and Financial

- 874,460. THE BANK THAT SERVES... DAYTIME, NIGHT-TIME... SATURDAY, TOO! Citizens Bank of Maryland. SN 271,597. Pub. 5-20-69. Filed 5-16-67.
- 874,461. EURO-CLEAR. Morgan Guaranty Trust Company of New York. SN 303,432. Pub. 5-20-69. Filed 7-23-68.
- 874,462. QUIK-APP. Harris Trust and Savings Bank. SN 303,611. Pub. 5-20-69. Filed 7-25-68.
- 874,463. SUCCESS NEEDS A GOOD BANK. National Boulevard Bank of Chicago. SN 303,818. Pub. 5-20-69. Filed 7-29-68.
- 874,464. COLLEGE & CAREER VIVERE DISCE AND DESIGN. National Liberty Life Insurance Company. SN 306,441. Pub. 5-20-69. Filed 9-3-68.
- 874,465. INTEGON CORPORATION AND DESIGN. Integon Corporation. SN 313,301. Pub. 5-20-69. Filed 11-20-68.

## Class 103—Construction and Repair

- 874,434. (See Class 101 for this trademark.)
- 874,466. GAS CONSUMERS SERVICE AND DESIGN. Gas Consumers Association. SN 272,827. Pub. 5-20-69. Filed 6-1-67.
- 874,467. UNIWASH AND DESIGN. Uniwash, Inc. SN 301,106. Pub. 5-20-69. Filed 6-21-68.

## Class 105—Transportation and Storage

- 874,468. XPORTAINER. International Forwarding Co. SN 301,625. Pub. 5-20-69. Filed 6-28-68.
- 874,469. RR DESIGN. Riteway Rentals, Inc. SN 303,705. Pub. 5-20-69. Filed 7-26-68.
- 874,470. TURBOCRUISER. The Greyhound Corporation. SN 313,421. Pub. 5-20-69. Filed 12-2-68.

## Class 107—Education and Entertainment

## Collective Membership Marks

- 874,471. THE 3 E'S THE CORE OF EDUCATION FOR DEMOCRACY AND DESIGN. Emerald Bristow (Mrs. K. Nell Stradley). SN 282,674. Pub. 5-20-69. Filed 10-17-67.
- 874,472. JEFFERSON AIRPLANE. Jefferson Airplane, Inc. SN 295,928. Pub. 5-20-69. Filed 4-18-68.

## Class 200

- 874,473. CHAINE DES ROTISSEURS AND DESIGN. Confrerie de la Chaîne des Rotisseurs. SN 266,643. Pub. 5-20-69. Filed 3-14-67.
- 874,474. IWSI AND DESIGN. International Work Simplification Institute, Inc. SN 277,178. Pub. 5-20-69. Filed 7-31-67.

## SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

## SECTION 1

(Combined Certificates)

- 874,475. J. & J. Wiggin Limited, Bloxwich, Walsall, England. SN 216,375. Filed P.R. 4-13-65; Am. S.R. Jan. 9, 1969.

## WIGGIN

Priority claimed under Sec. 44(d) on British Reg. No. 877,103, dated Mar. 19, 1965. Owner of British Reg. No. B893,543, dated Apr. 22, 1966.

## Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Link Chains and Parts Thereof for General Industrial Use (Int. Cl. 6).

## Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Marine Hardware—Namely, Pulley Blocks for the Rigging of Sailing Vessels (Int. Cl. 7).

## SECTION 2

## Class 13—Hardware and Plumbing and Class 32—Furniture and Upholstery Steam-Fitting Supplies

- 874,478. Selz Corporation, d.b.a. Warehouse Storage Systems Co., Perkasi, Pa. SN 298,872. Filed P.R. 5-22-68; Am. S.R. 5-20-69.

## AUTO-LOCK

For Merchandise Storage Racks for Warehousing (Int. Cl. 20).  
First use May 13, 1968.

## Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

- 874,475. See Section 1 (Combined Certificate).

## Class 36—Musical Instruments and Supplies

- 874,479. Singer Products Company, Inc., New York, N.Y. SN 298,978. Filed P.R. 5-28-68; Am. S.R. 5-21-69.

## PREMIERE

For Magnetic Recording Tapes (Int. Cl. 9).  
First use January 1964.

## Class 37—Paper and Stationery

- 874,480. Lake Chemical Co., Chicago, Ill. SN 231,689. Filed P.R. 10-27-65; Am. S.R. 4-7-69.

## LACQUER-STIK

For Crayon-Like Marking Implement for Marking Surfaces With Colors (Int. Cl. 16).  
First use August 1947.

## Class 28—Jewelry and Precious-Metal Ware

- 874,477. Locking Devices, Inc., Pontiac, Mich. SN 285,336. Filed P.R. 11-21-67; Am. S.R. 4-9-69.

## SECURE LOC

For Clasp for Jewelry (Int. Cl. 14).  
First use Sept. 11, 1965.



874,481. Blaisdell, Inc., Bethayres, Pa., by change of name from Blaisdell Pencil Company, Bethayres, Pa. SN 271,588. Filed P.R. 5-16-67; Am. S.R. 4-10-69.

### STA-THIN

For Ink Markers (Int. Cl. 16).  
First use Mar. 1, 1967.

874,482. Codo Manufacturing Corporation, Leedsdale, Pa. SN 275,746. Filed P.R. 7-11-67; Am. S.R. 4-17-69.

### CLEAN ZONE

For Spirit Master Units (Int. Cl. 16).  
First use Nov. 4, 1966.

874,483. Bemiss-Jason Corporation, Palo Alto, Calif. SN 276,807. Filed P.R. 7-26-67; Am. S.R. 4-4-69.

### FADELESS

For Art Paper—Namely, Paper for Sculpture, Finger Painting, Silk Screen, Ditto, Multilith, Crayon Resistant, Paints, Inks, and Art Craft (Int. Cl. 16).  
First use March 1958.

### Class 38—Prints and Publications

874,484. Parents' Magazine Enterprises, Inc., New York, N.Y. SN 269,207. Filed P.R. 4-14-67; Am. S.R. 5-15-69.

### GROWING-UP READING PROGRAM

For Series of Books (Int. Cl. 16).  
First use Feb. 20, 1967.

874,485. Chary Publications, Inc., New York, N.Y. SN 292,467. Filed P.R. 3-5-68; Am. S.R. 3-25-69.

### PATIENT AID PRODUCT NEWS

For Magazine Published for the Purpose of Publicizing Patient Aids and Convalescent Products and Equipment (Int. Cl. 16).  
First use Nov. 27, 1967.

874,486. HDC Publications, Inc., New York, N.Y. SN 294,621. Filed P.R. 4-1-68; Am. S.R. 4-4-69.

### DESIGNER-DECORATOR NEWS

For Monthly Tabloid Trade Magazine Directed to Interior and Exterior Furnishings for Homes, Industrial, Commercial, and Institutional Purposes (Int. Cl. 16).  
First use Mar. 21, 1968.

874,487. Robert N. Hutchinson, d.b.a. Heavy Duty Trucking, Newport Beach, Calif. SN 295,027. Filed P.R. 4-5-68; Am. S.R. 4-16-69.

### HEAVY DUTY TRUCKING

For Trade Journal (Int. Cl. 16).  
First use Jan. 2, 1968.

874,488. Robert N. Hutchinson, d.b.a. Western Trucking News Service, Newport Beach, Calif. SN 295,028. Filed P.R. 4-5-68; Am. S.R. 4-10-69.

### WESTERN TRUCKING NEWS SERVICE

For Trade Newsletter (Int. Cl. 16).  
First use Oct. 4, 1965.

874,489. World Trade Publications, Inc., Conroe, Texas. SN 312,625. Filed P.R. 11-19-68; Am. S.R. 4-16-69.

### WORLD DREDGING & MARINE CONSTRUCTION

For Magazine Published Monthly and/or Bi-Monthly (Int. Cl. 16).  
First use January 1965.

### Class 46—Foods and Ingredients of Foods

874,490. Borden, Inc., New York, N.Y., by change of name from The Borden Company, New York, N.Y. SN 278,082. Filed P.R. 8-11-67; Am. S.R. 4-30-69.

### BIG 10

For Ready to Bake Biscuits (Int. Cl. 30).  
First use July 28, 1965.

874,491. North Pacific Cannery & Packers, Inc., Portland, Oreg. SN 280,450. Filed P.R. 9-15-67; Am. S.R. 5-16-69.

### TATER-BARS

For Frozen Shredded Hash Brown Potatoes (Int. Cl. 29).  
First use Aug. 25, 1967.

874,492. North American Mushroom Co., Tinley Park, Ill. SN 304,617. Filed P.R. 8-7-68; Am. S.R. 4-17-69.

### Real-jel

For Canned Fruit-Flavored and Vegetable-Flavored Jellied Desserts (Int. Cl. 30).  
First use Apr. 15, 1968.

### Class 49—Distilled Alcoholic Liquors

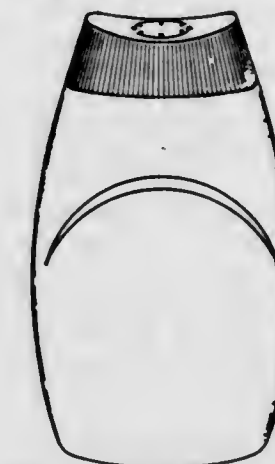
874,493. Carbonell y Compania de Cordoba S.A., Cordoba, Spain. SN 306,333. Filed 8-9-68.



The words "Tres Oros" translated into English mean "three gold." Owner of Spanish Reg. No. 115,654, dated Oct. 22, 1941; and U.S. Reg. Nos. 440,911, 532,955, and 538,370. For Brandy (Int. Cl. 33).

### Class 51—Cosmetics and Toilet Preparations

874,494. Johnson & Johnson, New Brunswick, N.J. SN 271,258. Filed P.R. 5-11-67; Am. S.R. 3-24-69.



The mark comprises the configuration of the container for the goods. The drawing is lined for shading and does not represent color.

For Body Powder (Int. Cl. 3).  
First use at least as early as Oct. 27, 1966.

874,495. Yardley of London, Inc., Totowa, N.J. SN 273,823. Filed P.R. 6-13-67; Am. S.R. 5-5-69.

### LITTLE BOY BLUE

For Eye Shadow (Int. Cl. 3).  
First use Jan. 10, 1967.

874,496. Yardley of London, Inc., Totowa, N.J. SN 274,110. Filed P.R. 6-16-67; Am. S.R. 5-5-69.

### DOLLY MAUVE

For Eye Shadow (Int. Cl. 3).  
First use May 24, 1967.

874,497. Lanvin-Charles of the Ritz, Inc., New York, N.Y. SN 299,279. Filed P.R. 5-29-68; Am. S.R. 5-14-69.

### MAKEUP PLUS

For Skin Cream (Int. Cl. 3).  
First use May 10, 1968.

### TRADEMARK REGISTRATIONS RENEWED

- |  |   |
|--|---|
| 32,739. THE OVERLAND. Cl. 17 (Int. Cl. 34). 4-18-1899.                   | 507,134. PECTINA-AGAR EN DEXTRO MALTO. Cl. 18 (Int. Cl. 5). 3-1-49. |
| 73,546. MYSTIC. Cl. 15 (Int. Cl. 4). 4-27-09.                            | 507,898. FLXIBLE. Cl. 19 (Int. Cl. 12). 3-22-49.                    |
| 73,888. CRESCO. Cl. 1 (Int. Cl. 18). 6-1-09.                             | 508,413. KOOLHEAD. Cl. 13 (Int. Cl. 6). 4-12-49.                    |
| 243,325. JOLLY JESTER. Cl. 22 (Int. Cl. 28). 6-19-28.                    | 508,745. COLE LEGAL RECORD. Cl. 37 (Int. Cl. 16). 4-19-49.          |
| 253,435. "OIL" AND DIAMOND DESIGN. Cl. 15 (Int. Cl. 4). 2-26-29.         | 509,211. EVANS AND DESIGN. Cl. 8 (Int. Cl. 34). 5-3-49.             |
| 256,338. PARACORD. Cl. 39 (Int. Cl. 25). 5-14-29.                        | 509,310. DOUBL-TITE. Cl. 23 (Int. Cl. 7). 5-3-49.                   |
| 256,508. THUNDERER. Cl. 22 (Int. Cl. 9). 5-21-29.                        | 509,652. WEARWELL. Cl. 35 (Int. Cl. 17). 5-10-49.                   |
| 256,524. "OVEN-TESTED." Cl. 46 (Int. Cl. 30). 5-21-29.                   | 509,681. AWAKE. Cl. 38 (Int. Cl. 16). 5-10-49.                      |
| 257,049. KENWOOD. Cl. 42 (Int. Cl. 24). 5-28-29.                         | 509,794. PROPEPTANS. Cl. 18 (Int. Cl. 5). 5-10-49.                  |
| 259,231. HAMILTON BEACH. Cl. 21 (Int. Cls. 7 and 9). 7-23-29.            | 509,815. DURO TEST U-LINE. Cl. 21 (Int. Cl. 11). 5-17-49.           |
| 259,754. "PENN-DRAKE" AND LABEL DESIGN. Cl. 15 (Int. Cl. 4). 8-6-29.     | 509,835. CHERRY-A-LET. Cl. 46 (Int. Cl. 30). 5-17-49.               |
| 260,470. FORD. Cl. 23 (Int. Cl. 12). 8-27-29.                            | 509,861. COCKTAIL DELIGHT. Cl. 46 (Int. Cl. 29). 5-17-49.           |
| 262,771. CAL-PA-BE. Cl. 18 (Int. Cl. 5). 10-22-29.                       | 509,940. FLEETWOOD. Cl. 17 (Int. Cl. 34). 5-17-49.                  |
| 262,772. BORO-THYCE. Cl. 18 (Int. Cl. 5). 10-22-29.                      | 509,950. NEPTUNE. Cl. 27 (Int. Cl. 14). 5-17-49.                    |
| 262,773. INCENDO. Cl. 18 (Int. Cl. 5). 10-22-29.                         | 509,993. ARNOLD SORENSIN. Cl. 46 (Int. Cl. 29). 5-17-49.            |
| 262,868. LACTIKOL. Cl. 18 (Int. Cl. 5). 10-29-29.                        | 510,104. CREAMETTE. Cl. 46 (Int. Cl. 30). 5-24-49.                  |
| 263,019. "BLUE WALTZ" AND DESIGN. Cl. 51 (Int. Cl. 3). 10-29-29.         | 510,187. PICTURE OF SWAN. Cl. 28 (Int. Cl. 14). 5-31-49.            |
| 263,060. FAMOUS JOY. Cl. 45 (Int. Cl. 32). 10-29-29.                     | 510,260. CORY. Cl. 13 (Int. Cl. 21). 5-31-49.                       |
| 263,604. BIG STUMP. Cl. 46 (Int. Cl. 31). 11-5-29.                       | 510,261. WINTHROP. Cl. 18 (Int. Cl. 5). 5-31-49.                    |
| 263,730. KENO. Cl. 27 (Int. Cl. 14). 11-12-29.                           | 510,469. SHRINK-SET. Cl. 39 (Int. Cl. 25). 5-31-49.                 |
| 263,799. "GOLD MEDAL" ETC. AND DESIGN. Cl. 7 (Int. Cl. 22). 11-12-29.    | 510,852. CORRECT. Cl. 37 (Int. Cl. 16). 6-14-49.                    |
| 442,694. MERIDIAN. Cl. 37 (Int. Cl. 16). 5-10-49.                        | 511,060. FORMOCO AND DESIGN. Cl. 27 (Int. Cl. 14). 6-14-49.         |
| 442,715. SOREX. Cl. 37 (Int. Cl. 16). 5-17-49.                           | 511,061. FORMOCO AND DESIGN. Cl. 25 (Int. Cls. 6 and 12). 6-14-49.  |
| 442,798. WH. Cl. 13 (Int. Cl. 6). 5-31-49.                               | 511,125. STRONG BOY. Cl. 25 (Int. Cl. 6). 6-21-49.                  |
| 442,828. BACHELOR'S BAIT AND DESIGN. Cl. 51 (Int. Cl. 3). 6-7-49.        | 511,137. BELK'S RED CAMEL. Cl. 39 (Int. Cl. 25). 6-21-49.           |
| 442,865. SUNOCO. Cl. 6 (Int. Cls. 1, 2, 3, 4, and 5). 6-7-49.            | 511,312. HEILEX. Cl. 16 (Int. Cl. 2). 6-21-49.                      |
| 442,869. SUNTUNE. Cl. 15 (Int. Cl. 4). 6-7-49.                           | 511,401. IVALITE. Cl. 21 (Int. Cl. 11). 6-21-49.                    |
| 442,913. LUCIFER. Cl. 21 (Int. Cl. 9). 6-21-49.                          | 511,590. THE BESTFIT. Cl. 27 (Int. Cl. 14). 6-23-49.                |
| 443,022. SECONOMY LINE QUALITY AND DESIGN. Cl. 13 (Int. Cl. 21). 7-5-49. | 511,758. O. F. MOSSBERG & SONS INC. Cl. 9 (Int. Cl. 13). 7-5-49.    |
| 443,023. SECO. Cl. 13 (Int. Cl. 21). 7-5-49.                             | 512,023. DIMAURO. Cl. 18 (Int. Cl. 5). 7-5-49.                      |
| 443,139. DESIGN OF A BEAR. Cl. 23 (Int. Cls. 7 and 8). 7-26-49.          | 512,075. GLADDING. Cl. 22 (Int. Cl. 28). 7-12-49.                   |
| 443,219. BEAR. Cl. 23 (Int. Cls. 7 and 8). 8-16-49.                      | 512,076. G AND FISH DESIGN. Cl. 22 (Int. Cl. 28). 7-12-49.          |
| 443,255. ENCO. Cl. 23 (Int. Cl. 7). 8-23-49.                             | 512,139. ALLIANCE. Cl. 15 (Int. Cl. 4). 7-12-49.                    |
| 443,322. PLAY PEN SHOES AND DESIGN. Cl. 39 (Int. Cl. 25). 8-30-49.       | 512,186. BOWTIE (DESIGN). Cl. 14 (Int. Cl. 6). 7-12-49.             |
| 443,395. LINDE. Cl. 28 (Int. Cl. 14). 9-27-49.                           | 512,289. FOMOCO AND DESIGN. Cl. 14 (Int. Cl. 6). 7-12-49.           |
| 503,815. CHINACOLOR. Cl. 38 (Int. Cl. 16). 11-9-48.                      | 512,636. FOMOCO AND DESIGN. Cl. 8 (Int. Cl. 34). 7-19-49.           |
| 505,630. SPEED-BRITE AND DESIGN. Cl. 16 (Int. Cl. 3). 1-11-49.           | 512,727. DAUNTLESS. Cl. 22 (Int. Cl. 28). 7-26-49.                  |
| 506,888. NATIONAL LIVE STOCK PRODUCER. Cl. 38 (Int. Cl. 16). 2-22-49.    | 512,915. FOMOCO AND DESIGN. Cl. 23 (Int. Cl. 12). 7-26-49.          |
|  | 512,999. INVINCIBLE. Cl. 22 (Int. Cl. 28). 8-2-49.                  |
|  | 513,073. GRAMERCY PARK. Cl. 39 (Int. Cl. 25). 8-2-49.               |



- 513,075. MALCOLM STUART. Cl. 49 (Int. Cl. 33). 8-2-49.  
 513,103. BREWED WITH PURE ROCKY MOUNTAIN SPRING WATER AND DESIGN. Cl. 48 (Int. Cls. 32 and 33). 8-2-49.  
 513,138. CHEALLOY. Cl. 14 (Int. Cl. 6). 8-2-49.  
 513,213. FOMOCO AND DESIGN. Cl. 32 (Int. Cl. 12). 8-2-49.  
 513,272. ST. REGIS. Cl. 2 (Int. Cl. 16). 8-9-49.  
 513,951. MOSSBERG. Cl. 9 (Int. Cl. 13). 8-23-49.  
 513,980. HUDSON. Cl. 13 (Int. Cl. 6). 8-23-49.  
 514,029. R AND DESIGN. Cl. 26 (Int. Cl. 9). 8-23-49.  
 514,030. R. Cl. 26 (Int. Cl. 9). 8-23-49.  
 514,072. KNICKERBOCKERS. Cl. 17 (Int. Cl. 34). 8-23-49.  
 514,188. DRAKEOL. Cl. 15 (Int. Cl. 4). 8-23-49.  
 514,370. HOTEL BAR. Cl. 46 (Int. Cl. 29). 8-20-49.  
 514,402. SUMALOOM. Cl. 39 (Int. Cl. 25). 8-30-49.  
 514,461. FLEXAIRE. Cl. 39 (Int. Cl. 25). 8-30-49.  
 514,592. HAPPY MEDIUMS. Cl. 39 (Int. Cl. 25). 8-30-49.  
 514,671. MANBEE. Cl. 26 (Int. Cl. 9). 9-6-49.  
 514,672. SAFETY PHLARE. Cl. 23 (Int. Cl. 9). 9-6-49.  
 514,704. KUROVA. Cl. 26 (Int. Cl. 9). 9-6-49.  
 514,800. SIGNODE. Cl. 12 (Int. Cl. 19). 9-6-49.  
 514,895. BACIGUENT. Cl. 18 (Int. Cl. 5). 9-6-49.  
 515,021. HOUGHTO-QUENCH. Cl. 15 (Int. Cl. 4). 9-13-49.  
 515,025. AUTH'S. Cl. 46 (Int. Cl. 29). 9-13-49.  
 515,200. REALTORS. Cl. 102 (Int. Cl. 36). 9-13-49.  
 515,296. MID MATE. Cl. 39 (Int. Cl. 25). 9-20-49.  
 515,570. WINTON. Cl. 27 (Int. Cl. 14). 9-27-49.  
 515,571. ELBON. Cl. 27 (Int. Cl. 14). 9-27-49.  
 515,659. SIGNODE. Cl. 13 (Int. Cl. 6). 9-27-49.  
 515,719. MAR-TEMP. Cl. 15 (Int. Cl. 4). 9-27-49.  
 515,735. CAREY. Cl. 34 (Int. Cls. 6 and 11). 9-27-49.  
 515,736. MIAMI-CAREY. Cl. 34 (Int. Cl. 11). 9-27-49.  
 515,753. SLOWTEN. Cl. 18 (Int. Cl. 5). 9-27-49.  
 515,760. DEPO. Cl. 18 (Int. Cl. 5). 9-27-49.  
 516,231. RCA AND DESIGN. Cl. 21 (Int. Cls. 9 and 11). 10-11-49.  
 516,264. DURAMATIC. Cl. 21 (Int. Cl. 9). 10-11-49.  
 516,398. HEATHERTON. Cl. 39 (Int. Cl. 25). 10-18-49.  
 516,399. LOCKWOOD. Cl. 13 (Int. Cl. 6). 10-18-49.  
 516,402. BAG BALM. Cl. 18 (Int. Cl. 5). 10-18-49.  
 516,442. STURDITWIST. Cl. 39 (Int. Cl. 25). 10-18-49.  
 516,443. VANE-CALVERTS. Cl. 16 (Int. Cl. 2). 10-18-49.  
 516,488. BOOK OF THE MONTH CLUB AND DESIGN. Cl. 38 (Int. Cl. 16). 10-18-49.  
 516,877. RED JUICE. Cl. 17 (Int. Cl. 34). 10-25-49.  
 517,405. CTC CHICAGO TRANSFORMER AND DESIGN. Cl. 21 (Int. Cl. 9). 11-8-49.

## TRADEMARK REGISTRATIONS CANCELED

## Section 7(d)

- 767,305. O.J. ETC. AND DESIGN. Cl. 101. 3-24-64.  
 767,306. O.J. Cl. 101. 3-24-64.

## Section 8

- 750,736. REGENEVER. Cl. 6. 6-11-63.  
 750,912. FUN-TIME. Cl. 38. 6-11-63.

The following registrations issued June 18, 1963

- 751,100. DE KALB. Cl. 1.  
 751,105. UAP AND DESIGN. Cl. 2.  
 751,108. JANA. Cl. 3.  
 751,112. SPARTAN. Cl. 4.  
 751,118. HY SOL TAC. Cl. 5.  
 751,121. SANTA RITA. Cl. 7.  
 751,123. FINESE. Cl. 8.  
 751,126. PANELGLAS. Cl. 12.  
 751,128. LIGHT-FIX. Cl. 12.  
 751,130. ANTIQUE ASHTONE. Cl. 12.  
 751,134. HUNTER AND DESIGN. Cl. 12.  
 751,143. DUOFLEX. Cl. 13.  
 751,145. CONSOLIDATED. Cl. 13.  
 751,147. KLIK. Cl. 13.  
 751,148. REFRACTOMET ETC. AND DESIGN. Cl. 14.  
 751,152. EMITE. Cl. 14.  
 751,155. LONG ISLAND AND DESIGN. Cl. 17.  
 751,163. BOVINDEROL. Cl. 18.  
 751,165. PANCANAL. Cl. 18.  
 751,167. CAYTUSSIN. Cl. 18.  
 751,168. STAR LABEL (DESIGN). Cl. 19.  
 751,169. CUSTOM ROYAL. Cl. 19.  
 751,172. CLARION AND DESIGN. Cl. 19.  
 751,173. LINDA. Cl. 19.  
 751,174. T/I. Cl. 21.  
 751,176. FANCIFUL DESIGN. Cl. 21.  
 751,180. TYLESSENT. Cl. 21.  
 751,181. PANEL-AIR. Cl. 21.  
 751,186. DYNALOGIC. Cl. 21.  
 751,187. ACON. Cl. 21.  
 751,188. FONECADDY. Cl. 21.  
 751,200. SUMP'N. Cl. 22.  
 751,205. LADY DOLLY. Cl. 22.  
 751,206. SOPHISTIBUGS. Cl. 22.  
 751,207. PRO-PAR. Cl. 22.  
 751,209. TWISTER. Cl. 22.  
 751,210. BEAVER AND DESIGN. Cl. 22.  
 751,215. PAK-O-VAC. Cl. 23.  
 751,217. COLUMBIA MARKING TOOLS AND DESIGN. Cl. 23.  
 751,219. SPANGALOY. Cl. 23.  
 751,220. DURA-BOSSED. Cl. 23.  
 751,221. MERCURY. Cl. 23.  
 751,224. VAC-PAC. Cl. 23.  
 751,225. SOLVOMAT. Cl. 23.  
 751,236. JIM DANDY AND DESIGN. Cl. 25.  
 751,238. 2 IN 1. Cl. 26.  
 751,240. FORMULAMATIC. Cl. 26.  
 751,253. BE. Cl. 28.  
 751,257. DDA 14KT AND DESIGN. Cl. 28.  
 751,262. JU AND DESIGN. Cl. 28.  
 751,267. M.B. AND DESIGN. Cl. 28.  
 751,269. BTF. Cl. 28.  
 751,273. CK (DESIGN). Cl. 28.  
 751,275. FLIP MITT. Cl. 29.  
 751,276. MEDI+GUARD. Cl. 32.  
 751,277. LEGSUP. Cl. 32.  
 751,278. GAMEMASTER. Cl. 32.  
 751,279. BRIDGEMASTER. Cl. 32.  
 751,290. PARKER-PAK. Cl. 35.  
 751,293. WANDRE. Cl. 36.  
 751,294. REPRESENTATION OF A GROTESQUE HUMAN. Cl. 36.  
 751,296. BATTLE. Cl. 36.  
 751,303. RED BOOK. Cl. 38.  
 751,305. ICS PL-100. Cl. 38.  
 751,306. COACH-EZE AND DESIGN. Cl. 38.  
 751,312. THE YOUNG CONSERVATIVES. Cl. 38.  
 751,319. JONI JAY. Cl. 39.  
 751,323. BARDINI. Cl. 39.  
 751,326. MISSILE CLOTH. Cl. 39.  
 751,328. FLORSHEIM SHOES THAYER MCNEIL AND DESIGN. Cl. 39.  
 751,342. ROYAL TUFT. Cl. 42.  
 751,343. BRASHEER. Cl. 42.  
 751,344. AVCOT. Cl. 42.  
 751,345. PLAIDTUNE. Cl. 42.  
 751,347. FABROLEEN. Cl. 42.  
 751,349. TUPPERCRAFT. Cl. 42.  
 751,352. PAVELLE. Cl. 43.  
 751,353. MED-EQUIP AND DESIGN. Cl. 44.  
 751,357. SEP-CLIPS. Cl. 44.  
 751,359. HOT SOX. Cl. 44.  
 751,360. COLOBEL. Cl. 44.  
 751,361. J.W. & S. Cl. 44.  
 751,362. DESIGN OF A PINWHEEL. Cl. 44.  
 751,366. DILLY. Cl. 45.  
 751,372. PARKER'S AND DESIGN. Cl. 46.  
 751,373. DANISH KNIGHT. Cl. 46.  
 751,374. REPRESENTATION OF A CHEF. Cl. 46.  
 751,376. AGD-CREAM. Cl. 46.  
 751,377. ADG-CREAM. Cl. 46.  
 751,379. IT'S LOVE AT FIRST BITE! Cl. 46.  
 751,388. ROSE NADIN. Cl. 46.  
 751,389. PRINCESA. Cl. 46.  
 751,390. LADY ELLEN. Cl. 46.  
 751,396. K AND DESIGN. Cl. 46.  
 751,402. PIONEERWAY. Cl. 46.

- 751,403. RED COMBWAY. Cl. 46.  
 751,407. GOLDEN DEVIL. Cl. 49.  
 751,409. BUSBY. Cl. 49.  
 751,415. MARIANNE. Cl. 50.  
 751,416. ROTO-POR. Cl. 50.  
 751,417. LAWN SPATS. Cl. 50.  
 751,419. T.K.O. Cl. 51.  
 751,428. TERRAN. Cl. 100.  
 751,429. METRO AND DESIGN. Cl. 100.  
 751,432. PHONE-A-THON. Cl. 101.  
 751,434. ISBRANDTSEN MOBILE TRADE FAIR. Cl. 101.  
 751,435. SILVER DART PLAN. Cl. 102.  
 751,441. DIAL HAVEN. Cl. 103.  
 751,443. S.O.S. ONE HOUR CLEANERS ETC. AND DESIGN. Cl. 103.  
 751,448. SA AND DESIGN. Cl. 107.  
 751,453. U.S. MONUMENT GUILD AND DESIGN. Cl. A.  
 751,454. LIVING LIGHT ETC. AND DESIGN. Cl. A.  
 751,455. SHOPKART. Cl. 2.  
 751,458. C.B.L.O. Cl. 22.

- 751,459. SCORE METER. Cl. 22.  
 751,460. FANCIFUL DESIGN OF WORD ADJUST. Cl. 22.  
 751,461. MONACO. Cl. 22.  
 751,464. FIRE CONTROL. Cl. 23.  
 751,465. PUF'N'IRON. Cl. 24.  
 751,468. DUNLAP. Cl. 46.

## Section 18

- 434,654. AMPLITONE. Cl. 21. 12-2-47.  
 540,285. "THE WARREN AXE" AND DESIGN. Cl. 23. 4-3-51.  
 759,204. "PINTA" PRODUCTS INC. AND DESIGN. Cl. 28. 10-29-63.  
 792,853. EMPRESS AND DESIGN. Cl. 19. 7-20-65.  
 813,202. THE INTRUDERS. Cl. 107. 8-16-66.  
 831,042. DAPT-A-FILE. Cl. 32. 6-27-67.  
 831,656. ADAPT A BACK. Cl. 39. 7-4-67.  
 844,993. "MARIEINTA" AND DESIGN. Cl. 28. 2-27-68.  
 857,597. BLUE-J. Cl. 46. 9-24-68.

## TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

- 256,886. RED SPOT. Cl. 12. 5-28-29. Red Spot Paint & Varnish Co., also doing business as Evansville Paint & Varnish Co., Evansville, Ind. Amended to appear:

is deleted, and the drawing is amended to appear as follows:



- 512,498. SPECIAL BLACK. Cl. 37. 7-19-49. The Joseph Dixon Crucible Company, Jersey City, N.J. Corrected: In the certificate, lines 4 and 16, in the heading, signature and in the statement, column 1, line 1, before "Joseph" The should be inserted.

- 512,499. WONDER. Cl. 37. 7-19-49. The Joseph Dixon Crucible Company, Jersey City, N.J. Corrected: In the certificate, lines 4 and 16, in the heading, signature and in the statement, column 1, line 1, before "Joseph" The should be inserted.

- 766,005. POTATO MAN (DESIGN). Cl. 46. 3-3-64. Frito-Lay, Inc., Dallas, Tex. Amended: In the statement, column 2, lines 6 and 7, "; not later than May 1, 1938 as to Lay's"

- 769,661. OLD MAMMY'S. Cl. 46. 5-12-64. Morgan Packing Company, Inc., doing business as Scottsburg Canning Co., Austin, Ind. Corrected: In the statement, column 2, line 4, "with" should be deleted and and should be inserted.

- 769,662. ROYAL GEM. Cl. 46. 5-12-64. Morgan Packing Company, Inc., doing business as Scottsburg Canning Co., Austin, Ind. Corrected: In the statement, column 2, line 4, "with" should be deleted and and should be inserted.

- 770,899. LEANING FIGURE (DESIGN). Cl. 42. 6-2-64. Klopman Mills, Inc., Rockleigh, N.J.; Amended: In the statement, column 1, after line 3, , now located at Rockleigh, N.J. 07647 is inserted.

- 859,732. CLUB. Cl. 39. 11-5-68. A. Sagner's Son, Frederick, Md. Amended: In the statement, column 2, line 3, "ties, handkerchiefs," is deleted and in lines 6 and 7, "handkerchiefs," is deleted.

## REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

## Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

- 339,920. Oct. 27, 1936. The Baer & Wilde Company, Attleboro, Mass. Pub. by Swank, Inc., Attleboro, Mass.

**SWANK**

For Wallets, Billfolds, Key Cases, etc.

## Class 8 — Smokers' Articles, Not Including Tobacco Products

- 343,229. Feb. 16, 1937. The Baer & Wilde Company, assignor to Swank Products, Inc., Attleboro, Mass. Pub. by Swank, Inc., Attleboro, Mass.

**SWANK**

For Ash Trays, Cigarette Boxes, etc.



**Class 28 — Jewelry and Precious-Metal Ware Class 39 — Clothing**

244,634. July 24, 1928. The Baer & Wilde Co., Attleboro, Mass. Pub. by Swank, Inc., Attleboro, Mass.

**SWANK**

For Collar Holders Formed Wholly or in Part of Precious Metal (Int. Cl. 14).

441,472. Nov. 30, 1948. Alpco, Inc., Providence, R.I. Pub. by Aro-Sac Inc., Providence, R.I.

*Aro-Sac*

For Jewelry for Personal Wear or Adornment, Not Including Watches (Int. Cl. 14).

**Class 29 — Brooms, Brushes, and Dusters**

329,397. Oct. 29, 1935. The Baer & Wilde Company, Attleboro, Mass. Pub. by Swank, Inc., Attleboro, Mass.

**SWANK**

For Military Brush Sets, Brush and Shoe Cleaner Sets, etc.

**Class 32 — Furniture and Upholstery**

341,515. Dec. 8, 1936. Swank Products, Inc., Attleboro, Mass. Pub. by Swank, Inc., Attleboro, Mass.

**SWANK**

For Tie Racks and Picture Frames.

**Class 33 — Glassware**

343,639. Mar. 2, 1937. The Baer & Wilde Company, assignor to Swank Products, Inc., Attleboro, Mass. Pub. by Swank, Inc., Attleboro, Mass.

**SWANK**

For Glass Drinking Novelties—Namely, Bottles, Decanter Sets and Liquor Sets, Comprising Liquor Decanters, Bottles, Drinking Glasses, Glass Jars, Glass Steins, Liquor Glasses, Glass Spoons, Glass Slippers, and Glass Jiggers.

252,469. Feb. 5, 1929. McCain-Wright, Inc., St. Louis, Mo. Pub. by Swopes Red Cross Shoes, Inc., St. Louis, Mo.

**ARCHCREST**

For Women's Shoes Made of Leather, Fabric, and Rubber, or Combinations Thereof (Int. Cl. 25).

253,708. Mar. 5, 1929. The Bearfoot Sole Company, Inc., Boston, Mass. Pub. by Bearfoot Corporation, Wadsworth, Ohio.

*Bearfoot*

For Soles of Rubber Composition or Its Equivalent for Boots and Shoes (Int. Cl. 25).

255,146. Apr. 16, 1929. The Heath Spring & Notions Company Limited, Reddith, England. Pub. by registrant.

**ST. GEORGE**

For Arm Bands, Except Those Made of Precious Metal (Int. Cl. 25).

**Class 40 — Fancy Goods, Furnishings, and Notions**

340,191. Nov. 3, 1936. The Baer & Wilde Company, assignor to Swank Products, Inc., Attleboro, Mass. Pub. by Swank, Inc., Attleboro, Mass.

**SWANK**

For Toilet Sets, Not Made of Precious Metals, etc.

**Class 46 — Foods and Ingredients of Foods**

225,640. Mar. 22, 1927. Willards Chocolates Limited, Toronto, Ontario, Canada. Pub. by registrant.

**SWEET MARIE**

For Confectionery, Particularly Chocolates.

252,247. Jan. 29, 1929. The Pompelan Corporation, Baltimore, Md. Pub. by registrant.



For Olive Oil (Int. Cl. 29).

442,372. Apr. 5, 1949. The Flying Tigers (American Volunteer Group-Chinese Air Force) Incorporated, Los Angeles, Calif. Pub. by registrant.

**FLYING TIGERS**

For Cereal Breakfast Food (Int. Cl. 30).

**Class 52 — Detergents and Soaps**

250,855. Dec. 18, 1928. Elmer Rauh, d.b.a. The Gumption Products Company, Dayton, Ohio. Pub. by Gumption Products Limited, London, England.

**GUMPTION**

For Soap With Detergent Properties (Int. Cl. 3).



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AUGUST 5, 1969

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- A & A Trading Corp., New York, N.Y. 751,187, canc. Cl. 21.  
A.M.S. Distributing Co., d.b.a. American Sport Co., Oakland, Calif. 874,097, pub. 5-20-69. Cl. 3.  
A & W International, Inc., Santa Monica, Calif., from United Fruit Co., Boston, Mass. 874,307, pub. 1-30-68. Cl. 46.  
Abbott Labs., North Chicago, Ill. 874,104, pub. 5-20-69. Cl. 8.  
Abdulla & Co. Ltd., London, England. 751,155, canc. Cl. 17.  
Abex Corp.: See—  
American Brake Shoe Co.  
Accesso Corp., Seattle, Wash. 751,180-1, canc. Cl. 21.  
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Air Reduction Co., Inc., d.b.a. Ohio Medical Products, New York, N.Y. 874,354, pub. 5-20-69. Cl. 44.  
Air Techniques Inc., New Hyde Park, N.Y. 874,221, pub. 5-20-69. Cl. 23.  
Ajax Plastic Products, Inc., Des Plaines, Ill. 874,094, pub. 5-20-69. Multiple Class (Classes 2, 13, and 31).  
All Phase Color Corp., Los Angeles, Calif. 874,301, pub. 5-20-69. Cl. 38.  
Alexander, George H., Machinery Ltd., Birmingham, England. 874,222, pub. 5-20-69. Cl. 23.  
Allmak-Verken Aktiebolag, Skelleftea, Sweden. 874,202, pub. 5-20-69. Cl. 23.  
Allen Mfg. Co., The, Hartford, Conn. 874,139, pub. 5-20-69. Cl. 13.  
Alliance Oil Corp., New York, N.Y. 512,139, ren. 8-5-69. Cl. 15.  
Allied Impex Corp., New York, N.Y. 874,236, pub. 5-20-69. Cl. 28.  
Alpco, Inc., by Aro-Sac Inc., Providence, R.I. 441,472, 12(c) pub. 8-5-69. Cl. 28.  
Aluminum Co. of Canada, Ltd., Montreal, Quebec, Canada. 874,176, pub. 5-20-69. Cl. 21.  
Amdre-Lee: See—  
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American Brake Shoe Co., to Abex Corp., New York, N.Y. 513-138, ren. 8-5-69. Cl. 14.  
American Contractors, Inc., Mohnton, Pa. 874,423, pub. 5-20-69. Cl. 100.  
American Cyanamid Co., Wayne, N.J. 874,107, pub. 5-20-69. Cl. 6.  
American Express Co., New York, N.Y. 874,443, pub. 5-20-69. Cl. 101.  
American Net & Twine Co., Boston, Mass., to Indian Head Inc., New York, N.Y. 263,799, ren. 8-5-69. Cl. 7.  
American Oil Works Co., Titusville, to Pennsylvania Refining Co., Butler, Pa. 259,754, ren. 8-5-69. Cl. 15.  
American Sport Co.: See—  
A.M.S. Distributing Co.  
American Telecommunications Corp., Los Angeles, Calif. 874-175, pub. 5-20-69. Cl. 21.  
American Thermoform Corp., Culver City, Calif. 751,215, canc. Cl. 23.  
American Uniform Co., Cleveland, Tenn. 874,253, pub. 5-20-69. Cl. 29.  
American University Press Services, Inc., New York, N.Y. 874,446, pub. 5-20-69. Cl. 101.  
American Whipped Products, Inc., Glendale, N.Y. 874,383, pub. 5-20-69. Cl. 46.  
Amerise George, d.b.a. Hazleton Macaroni Co., Hazleton, Pa. 874,366, pub. 5-20-69. Cl. 46.  
Anderson Products, Inc., Newtonville, Mass. 874,263, pub. 5-20-69. Cl. 34.  
Anesthesia, Inhalation Therapy Distributors, Inc., Portland, Oreg. 874,360, pub. 5-20-69. Cl. 44.  
Angelus Shoe Polish Co., Culver City, Calif. 874,098, pub. 5-20-69. Cl. 4.  
Appalachian Electronic Instruments, Inc., Roncerverte, W. Va. 874,184, pub. 5-20-69. Cl. 21.  
April Showers, Inc., New York, N.Y. 874,414, pub. 5-20-69. Cl. 51.  
Arnolt Corp., Warsaw, Ind. 511,401, ren. 8-5-69. Cl. 21.  
Aro-Sac Inc.: See—  
Alpco, Inc.  
Artifer Chemische Fabrik Dr. Lohmann & Co., Hamburg, Germany. 874,099, pub. 5-20-69. Cl. 4.  
Artistic Foundations, Inc., to Flexees International, Inc., New York, N.Y. 514,461, ren. 8-5-69. Cl. 39.  
Ashuelot Paper Co., Hinsdale, N.H. 874,285, pub. 5-20-69. Cl. 37.  
Associated Enterprises, Inc., Paoli, Pa. 874,459, pub. 5-20-69. Cl. 101.  
Ateliers Roannais De Constructions Textiles, S.A., Roanne, France. 874,206, pub. 5-20-69. Cl. 23.  
Auth Sausage Co., Inc.: See—  
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Auth-Loffler, Inc., to Auth Sausage Co., Inc., Washington, D.C. 515,025, ren. 8-5-69. Cl. 46.  
Autohaus International, Inc., Clearwater, Fla. 874,434, pub. 5-20-69. Multiple Class (Classes 101 and 103).  
B-F Industries, Inc., Hurst, Tex. 751,147, canc. Cl. 13.  
B & H Jewelry Co., Inc., New York, N.Y. 751,253, canc. Cl. 28.  
Baer & Wilde Co., The, by Swank, Inc., Attleboro, Mass. 244-634, 12(c) pub. 8-5-69. Cl. 28.  
Baer & Wilde Co., The, by Swank, Inc., Attleboro, Mass. 329-397, 12(c) pub. 8-5-69. Cl. 29.  
Baer & Wilde Co., The, by Swank, Inc., Attleboro, Mass. 339-920, 12(c) pub. 8-5-69. Cl. 3.  
Baer & Wilde Co., The, assor. to Swank Products, Inc., by Swank, Inc., Attleboro, Mass. 340,191, 12(c) pub. 8-5-69. Cl. 40.  
Baer & Wilde Co., The, assor. to Swank Products, Inc., by Swank, Inc., Attleboro, Mass. 343,229, 12(c) pub. 8-5-69. Cl. 8.  
Baer & Wilde Co., The, assor. to Swank Products, Inc., by Swank, Inc., Attleboro, Mass. 343,639, 12(c) pub. 8-5-69. Cl. 33.  
Baird, Pat, Ship's Wheel, Inc., La Grange, Ill. 874,346, pub. 5-20-69. Cl. 42.  
Barataud et Fils, "Etablissement Barapio," Collonge-Bellerive (Geneva), Switzerland. 874,352, pub. 5-20-69. Cl. 44.  
Barietta Shoe Co., Chicago, Ill. 874,306, pub. 5-20-69. Cl. 39.  
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Barth & Dreyfuss, Inc., d.b.a. Barth & Dreyfuss and as Royal Terry of California, Los Angeles, Calif. 751,342, canc. Cl. 42.  
Baucum, Perry G., d.b.a. Frigid Equipment Co., Mobile, Ala. 751,188, canc. Cl. 21.  
Baughman Mfg. Co., Inc., Jerseyville, Ill. 874,208, pub. 5-20-69. Cl. 23.  
Bear Mfg. Co.: See—  
Manbee Equipment Co., Inc.  
Bearfoot Corp.: See—  
Bearfoot Sole Co., Inc., The, Boston, Mass., by Bearfoot Corp., Wadsworth, Ohio. 253,706, 12(c) pub. 8-5-69. Cl. 39.  
Beatrice Jewelry Co., Pawtucket, R.I. 874,249, pub. 5-20-69. Cl. 28.  
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Belk Brothers Co.: See—  
Belk-Stevens Co.  
Belk-Stevens Co., Winston-Salem, N.C., to Belk Brothers Co., Charlotte, N.C. 511,137, ren. 8-5-69. Cl. 39.  
Bellaplast, Heller & Co., Wiesbaden-Schierstein, Germany. 874,092, pub. 5-20-69. Cl. 2.  
Belle Wood Inc., from Borg-Warner Corp., Chicago, Ill. 874,268, pub. 5-20-69. Cl. 36.  
Bemis-Jason Corp., Palo Alto, Calif. 874,483, Cl. 37.  
Bernard Industries, Inc., New York, N.Y. 751,323, canc. Cl. 39.  
Bigelow, Cheney, Wire Works: See—  
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Bigelow, Cheney, Wire Works, Inc., from Cheney Bigelow Wire Works, Springfield, Mass. 751,143, canc. Cl. 13.  
Bishop Freeman Co., Evanston, Ill. 751,465, canc. Cl. 24.  
Black Dentaprices, Inc., Miami, Fla. 874,351, pub. 5-20-69. Cl. 44.  
Blaisdell, Inc., from Blaisdell Pencil Co., Bethayres, Pa. 874,481, Cl. 37.  
Blaisdell Pencil Co.: See—  
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Bloomington Limestone Corp., The, Bloomington, Ind. 751,130, canc. Cl. 12.  
Blue Channel Corp., The, Port Royal, S.C. 874,384, pub. 5-20-69. Cl. 46.  
Bluegate Candle Co., Montara, Calif. 874,150, pub. 5-20-69. Cl. 15.  
Boise Cascade Corp.: See—  
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Boise Cascade Corp., Boise, Idaho. 874,124, pub. 5-20-69. Cl. 12.  
Bon Ton Findings: See—  
Cohen, Carl.  
Bonnelt, John, Associates: See—  
Bonnelt, John E.  
Bonnelt, John E., d.b.a. John Bonnelt Associates, Chicago, Ill. 874,290, pub. 5-20-69. Cl. 38.  
Book-of-the-Month Club, Inc., New York, N.Y. 516,488, ren. 8-5-69. Cl. 38.  
Borden Co., The: See—  
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Borg-Warner Corp.: See—  
Belle Wood Inc.  
Borgfeldt, Geo., & Co., New York, N.Y., to Helen McKay O'Brien, Pleasantville, N.Y. 243,325, ren. 8-5-69. Cl. 22.  
Bradley, Milton, Co., Springfield, Mass. 751,461, canc. Cl. 22. Cl. 51.  
Breck, John H., Inc., Wayne, N.J. 847,405, pub. 5-20-69.  
Breck, John H., Inc., Wayne, N.J. 874,410, pub. 5-20-69. Cl. 51.  
Breck, John H., Inc., Wayne, N.J. 874,412, pub. 5-20-69. Cl. 51.  
Broadway-Hale Stores, Inc., Los Angeles, Calif. 874,327, pub. 5-20-69. Cl. 39.  
Brock, Earl, d.b.a. Brock Specialty Co., St. Louis, Mo. 751,209, canc. Cl. 22.  
Brock Specialty Co.: See—  
Brock, Earl.



- Brown & Williamson Tobacco Corp., Louisville, Ky. 516,877, ren. 8-5-69. Cl. 17.  
 Brule Incinerator Corp., Blue Island, Ill. 874,260, pub. 5-20-69. Cl. 34.  
 Brunswick Corp., Chicago, Ill. 874,350, pub. 5-20-69. Cl. 43.  
 Buccellati Silver, Ltd., New York, N.Y. 874,252, pub. 5-20-69. Cl. 28.  
 Burleigh Brooks Inc., Englewood, N.J., 874,240, pub. 5-20-69. Cl. 26.  
 Burlington Industries, Inc., New York, N.Y., 874,336, pub. 5-20-69. Cl. 39.  
 Burroughs Corp., Detroit, Mich. 874,450, pub. 5-20-69. Cl. 101.  
 Burton, Parsons Chemicals, Inc., Washington, D.C. 874,102, pub. 5-20-69. Cl. 6.  
 Butler-Johnson Corp., San Jose, Calif. 874,256, pub. 5-20-69. Cl. 32.  
 Cahners Publishing Co., Inc., d.b.a. Practical Builder, Boston, Mass. 751,454, can. Cl. A.  
 Cahokia Flour Co., St. Louis, Mo. 751,390, can. Cl. 46.  
 Care Centers, Inc., Carlisle, Ohio. 874,426, pub. 5-20-69. Cl. 100.  
 Carey, Philip, Corp.: See—  
 Carey, Philip Mfg. Co., The.  
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 Carnival Creations, Inc., New York, N.Y. 874,324, pub. 5-13-69. Cl. 39.  
 Carolina Bloomer Co., Inc., Elkin, N.C. 874,322, pub. 5-20-69. Cl. 39.  
 Carronell y Compania de Cordoba S.A., Cordoba, Spain. 874,493, Cl. 49.  
 Cataract Refining & Mfg. Co., Buffalo, N.Y., to Cato Oil & Grease Co., Oklahoma City, Okla. 73,546, ren. 8-5-69. Cl. 15.  
 Cato Oil & Grease Co.: See—  
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 Caywood-Schiller Associates, Chicago, Ill. 874,440-1, pub. 5-20-69. Cl. 101.  
 Cel-U-Dex Inc., Newburgh, N.Y. 831,042, can. Cl. 32.  
 Centerprise Building Systems Ltd., St. James, London, England. 874,121, pub. 5-20-69. Cl. 12.  
 Central Dynamics Ltd., Pointe Claire, Quebec, Canada. 874,169, pub. 5-20-69. Cl. 21.  
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 Central Soya Co., Inc., d.b.a. Central Soya, Fort Wayne, Ind. 874,417, pub. 5-20-69. Cl. 52.  
 Chambourcy S.A., Clamart, Hauts de Seine, France. 874,373, pub. 5-20-69. Cl. 46.  
 Character Creations: See—  
 Manthorne, Helen M.  
 Chary Publications, Inc., New York, N.Y. 874,485, Cl. 38.  
 Chateau Portside Wine Cellars: See—  
 Foremost-McKesson, Inc.  
 Chatham Mfg. Co.: See—  
 Huyck, F. C., & Sons.  
 Choreo Enterprises, Inc., Hollywood, Calif. 751,294, can. Cl. 36.  
 Cincinnati Time Recorder Co., The, Cincinnati, Ohio. 874,171, pub. 5-20-69. Multiple Class (Classes 21, 23, 26, and 27).  
 Citizens Bank of Maryland, Riverdale, Md. 874,460, pub. 5-20-69. Cl. 102.  
 Cladwell Mfg. Co., Rochester, N.Y. 874,120, pub. 5-20-69. Cl. 12.  
 Clare, C. P., & Co., Chicago, Ill. 874,174, pub. 5-20-69. Cl. 21.  
 Clayton Corp., St. Louis, Mo. 874,143, pub. 5-20-69. Cl. 13.  
 Clearstar Headwear, Inc., New York, N.Y. 751,459, can. Cl. 22.  
 Cleveland Trencher Co., The, Cleveland, Ohio. 874,216, pub. 5-20-69. Cl. 23.  
 Clinsbell, Virgil L., Loveland, Colo. 874,095, pub. 5-20-69. Cl. 31.  
 Codo Mfg. Corp., Leesdale, Pa. 874,482, Cl. 37.  
 Cohen, Carl, d.b.a. Bon Ton Findings, New York, N.Y. 751,269, can. Cl. 23.  
 Cohen, George, Clothing Co., Inc., New York, N.Y. 874,316, pub. 5-20-69. Cl. 39.  
 Cohen, Joseph H., & Sons, Inc., New York, N.Y. 751,326, can. Cl. 39.  
 Colonial Provision Co., Inc., Boston, Mass. 751,374, can. Cl. 46.  
 Colt's Inc., Hartford, Conn. 874,189, pub. 5-20-69. Cl. 22.  
 Columbia Broadcasting System, Inc., New York, N.Y. 874,304, pub. 5-20-69. Cl. 38.  
 Columbus Auto Parts Co., The, Columbus, Ohio. 751,458, can. Cl. 22.  
 Commercial Reproducing Co., Detroit, Mich. 874,297, pub. 5-20-69. Cl. 38.  
 Compagnie de Saint-Gobain, Neuilly-sur-Seine, Hauts-de-Seine, France. 874,257, pub. 5-20-69. Cl. 33.  
 Companhia Sisaal Do Brasil-Cosibra, Rio de Janeiro, Brazil. 751,121, can. Cl. 7.  
 Conform Labs., Inc., Norfolk, Va. 874,233, pub. 5-20-69. Cl. 26.  
 Confrerie de la Chaine des Rotisseurs, Paris, France. 874,473, pub. 5-20-69. Cl. 200.  
 Consolidated Foods Corp., d.b.a. Joe Lowe Co., Englewood, N.J. 874,380, pub. 5-20-69. Cl. 46.  
 Consolidated Papers, Inc., Wisconsin Rapids, Wis. 874,274, pub. 5-20-69. Cl. 37.  
 Consolidated Pipe Co. of America, Stow, Ohio. 751,145, can. Cl. 13.  
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 Continental Advertising, Inc., Denver, Colo. 750,912, can. Cl. 38.  
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 Continental Optical Co., Inc., Indianapolis, Ind., to Textron Inc., Rochester, N.Y. 514,704, ren. 8-5-69. Cl. 26.  
 Conway Credit Corp., Chicago, Ill. 751,435, can. Cl. 102.  
 Cook's Industrial Lubricants, Inc., Linden, N.J. 874,153-4, pub. 5-20-69. Cl. 15.  
 Coors, Adolph, Co., Golden, Colo. 513,103, ren. 8-5-69. Cl. 48.  
 Copa Guarana, Inc., Salt Lake City, Utah. 874,363, pub. 5-20-69. Cl. 45.  
 Copolymer Rubber & Chemical Corp., Baton Rouge, La. 874,087, pub. 5-20-69. Cl. 1.  
 Corning Glass Works, Corning, N.Y. 874,258, pub. 5-20-69. Cl. 33.  
 Coro, Inc., Providence, R.I. 874,250, pub. 5-20-69. Cl. 28.  
 Cory Corp., Chicago, Ill. 510,260, ren. 8-5-69. Cl. 13.  
 Cory Corp., Chicago, Ill. 874,278, pub. 5-20-69. Cl. 37.  
 Courage Barclay & Simonds Ltd., London, England. 874,390, pub. 5-20-69. Cl. 45.  
 Courtaulds, Ltd., London, England. 751,352, can. Cl. 43.  
 Creamette Co., The, Minneapolis, Minn. 510,104, ren. 8-5-69. Cl. 46.  
 Creese & Cook Co., Inc., Danvers, Mass. 73,888, ren. 8-5-69. Cl. 1.  
 Cummins Pharmaceutical Co., Inc., Beaumont, Tex. 874,407, pub. 5-20-69. Cl. 51.  
 Dairy Association, Co., Inc., Lyndonville, Vt. 516,402, ren. 8-5-69. Cl. 18.  
 Dalare Associates, to Dalare Associates, Inc., Philadelphia, Pa. 509,794, ren. 8-5-69. Cl. 18.  
 Dalare Associates, Inc.: See—  
 Dalare Associates.  
 Dan River Mills, Inc., Danville, Va. 874,348, pub. 5-20-69. Cl. 42.  
 Davol Rubber Co., Providence, R.I. 751,417, can. Cl. 50.  
 De Kalb Agricultural Assn., Inc., De Kalb, Ill. 751,100, can. Cl. 1.  
 Dee, H. Paul, d.b.a. Paul Dee Co., Marshalltown, Iowa. 874,330, pub. 5-20-69. Cl. 39.  
 Dee, Paul, Co.: See—  
 Dee, H. Paul.  
 Demert & Dougherty, Inc., Chicago, Ill. 874,415, pub. 5-20-69. Cl. 51.  
 Dental Corp. of America, Washington, D.C. 751,357, can. Cl. 44.  
 Dentists' Supply Co. of New York, The, York, Pa. 874,353, pub. 5-20-69. Cl. 44.  
 Dero Research & Development Corp., Huntington, N.Y. 874,232, pub. 5-20-69. Cl. 26.  
 Dexter Corp., The, Windsor Locks, Conn. 874,270, pub. 2-18-69. Multiple Class (Classes 37 and 42).  
 Dial Haven, Inc., Monroe, N.Y. 751,441, can. Cl. 103.  
 Diana Stores Corp., North Bergen, N.J. 874,334-5, pub. 5-20-69. Cl. 39.  
 Dietene Co., The, Minneapolis, Minn. 874,374, pub. 10-1-68. Cl. 46.  
 Different Drummer, Ltd., The, New York, N.Y. 874,247, pub. 5-20-69. Multiple Class (Classes 28 and 39).  
 Di Mauro, J., & Sons, Ansonia, Conn. 512,023, ren. 8-5-69. Cl. 18.  
 Ditchburn Organization, Inc., The, Chicago, Ill. 874,172, pub. 5-20-69. Cl. 21.  
 Divers International Inc., New Haven, Conn. 874,422, pub. 5-20-69. Cl. 100.  
 Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 512,498-9, cor. Cl. 37.  
 Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 874,119, pub. 5-20-69. Cl. 12.  
 Docutel Corp., Dallas, Tex. 874,165, pub. 5-20-69. Cl. 19.  
 Dolly Madison, Inc., New York, N.Y. 874,347, pub. 5-20-69. Cl. 42.  
 Donnelly Mirrors, Inc., Holland, Mich. 874,241, pub. 5-20-69. Cl. 26.  
 Duensing Industries: See—  
 Duensing, Maurice W.  
 Duensing, Maurice W., d.b.a. Duensing Industries, San Mateo, Calif. 751,359, can. Cl. 44.  
 Dukor Industries, Inc., from Dura-Vent Corp. of California, Redwood City, Calif. pub. 5-20-69. Cl. 3.  
 Dunlap Freezer Co., Humboldt, Tenn. 751,468, can. Cl. 46.  
 Dura Electric Lamp Co., Inc., Newark, N.J. 516,264, ren. 8-5-69. Cl. 21.  
 Dura-Vent Corp. of California: See—  
 Dukor Industries, Inc.  
 Durex Products, Inc., Hillside, N.J. 262,868, ren. 8-5-69. Cl. 18.  
 Duro-Test Corp., North Bergen, N.J. 509,815, ren. 8-5-69. Cl. 21.  
 Eagle Lock Corp., Terryville, Conn., 874,229, pub. 5-20-69. Cl. 25.  
 El-Ar Enterprises, Inc., New York, N.Y. 751,277, can. Cl. 32.  
 Elco Elevator Corp., Washington, D.C. 874,185, pub. 5-20-69. Cl. 21.  
 Emerald Bristow (Mrs. K. Nell Stradley), Washington, D.C. 874,471, pub. 5-20-69. Cl. 107.  
 Endicott Johnson Corp., Endicott, N.Y. 256,338, ren. 8-5-69. Cl. 39.  
 Engelhardt, A. L., Co., Los Angeles, Calif. 874,144, pub. 5-20-69. Multiple Class (Classes 14 and 44).  
 Essex International, Inc.: See—  
 Essex Wire Corp.  
 Essex Wire Corp., Chicago, Ill. and Detroit, Mich., to Essex International, Inc., Fort Wayne, Ind. 517,405, ren. 8-5-69. Cl. 21.  
 Estwing Mfg. Co., Inc., Rockford, Ill. 751,221, can. Cl. 23.

- Etablissements Jean Gallet Fils & Cie (Societe A Responsabilite Limitee), Ain, France. 751,173, can. Cl. 19.  
 Evans Case Co., North Attleboro, Mass., to The Hilsinger Corp., Plainville, Mass. 509,211, ren. 8-5-69. Cl. 8.  
 Eversharp, Inc., Milford, Conn. 874,224-7, pub. 5-20-69. Cl. 23.  
 Eversharp, Inc., Milford, Conn. 874,280, pub. 5-20-69. Cl. 37.  
 Exquisite Form Industries, Inc., New York, N.Y. 831,656, can. Cl. 39.  
 Fairmont Foods Co., Omaha, Nebr. 874,444, pub. 5-20-69. Cl. 101.  
 Farmer's Daughter, Inc., Evansville, Ind. 874,361, pub. 5-20-69. Cl. 45.  
 Farmland Industries, Inc., Kansas City, Mo. 874,155, pub. 5-20-69. Cl. 15.  
 Fast-Fix, Inc.: See—  
 Global Construction Devices, Inc.  
 Federal Pacific Electric Co., Newark, N.J. 874,261, pub. 5-20-69. Cl. 34.  
 Ferrari S.O.C.p.A., Esercizio Fabbriche Automobili E Corse, Modena, Italy. 874,164, pub. 5-20-69. Cl. 19.  
 Ferrograph Co. Ltd., The, London, England. 874,183, pub. 5-20-69. Cl. 21.  
 Fiberdome, Inc., Lake Mills, Wis. 874,123, pub. 5-20-69. Cl. 12.  
 Fire Control Products, Inc., Linden, N.J. 751,464, can. Cl. 23.  
 First Texas Chemical Mfg. Co., to First Texas Pharmaceuticals, Inc., Dallas, Tex. 262,771-3, ren. 8-5-69. Cl. 18.  
 First Texas Pharmaceuticals, Inc.: See—  
 First Texas Chemical Mfg. Co.  
 Fisher, Fazio, Costa, Super Markets: See—  
 Fisher Foods, Inc.  
 Fisher Foods, Inc., d.b.a. Fisher Fazio Costa, Super Markets, Cleveland, Ohio. 874,366, pub. 6-25-69. Cl. 46.  
 Flaming Bull, Inc., Mission, Kans. 874,442, pub. 5-20-69. Cl. 101.  
 Flexees International, Inc.: See—  
 Artistic Foundations, Inc.  
 Florida Citrus Commission, Lakeland, Fla. 767,305-6, can. Cl. 101.  
 Florsheim Shoe Co.: See—  
 International Shoe Co.  
 Flying Tigers (American Volunteer Group—Chinese Air Force) Inc., The, Los Angeles, Calif. 442,372, 12(c) pub. 8-5-69. Cl. 46.  
 Ford Motor Co., Dearborn, Mich. 260,470, ren. 8-5-69. Cl. 23.  
 Ford Motor Co., Dearborn, Mich. 511,060-1, ren. 8-5-69. Cl. 27.  
 Ford Motor Co., Dearborn, Mich. 512,289, ren. 8-5-69. Cl. 14.  
 Ford Motor Co., Dearborn, Mich. 512,636, ren. 8-5-69. Cl. 8.  
 Ford Motor Co., Dearborn, Mich. 512,915, ren. 8-5-69. Cl. 23.  
 Ford Motor Co., Dearborn, Mich. 513,213, ren. 8-5-69. Cl. 32.  
 Ford Products Corp., Valley Cottage, N.Y. 874,093, pub. 5-20-69. Cl. 2.  
 Foremost-McKesson, Inc., d.b.a. Chateau Portside Wine Cellars, New York, N.Y. 874,358, pub. 5-20-69. Cl. 47.  
 Foster Industries, Inc., New York, N.Y. 874,331, pub. 5-20-69. Cl. 39.  
 Fox Valley Instrument Co., Cheboygan, Mich. 874,231, pub. 5-20-69. Cl. 26.  
 Freeman, H., & Son, Inc., Philadelphia, Pa. 874,328, pub. 5-20-69. Cl. 39.  
 Freezer, J., & Son, Inc., New York, N.Y. 874,338, pub. 5-20-69. Cl. 39.  
 Frigid Equipment Co.: See—  
 Baucum, Perry C.  
 Frito-Lay, Inc., Dallas, Tex. 766,005, Am. 7(d). Cl. 46.  
 Fuente, Arturo, Cigar Factory: See—  
 Fuente, Carlos A.  
 Fuente, Carlos A., d.b.a. Arturo Fuente Cigar Factory, Tampa, Fla. 874,159, pub. 5-20-69. Cl. 17.  
 G.C. Optronics, Inc., Ann Arbor, Mich. 874,432, pub. 5-20-69. Cl. 100.  
 G.C. Public Relations Department di Pierina Grottole Berti, Milan, Italy. 874,430, pub. 5-20-69. Cl. 100.  
 Gaa Consumers Association, Scarsdale, N.Y. 874,466, pub. 5-20-69. Cl. 103.  
 Gax Corp., Houston, Tex. 874,140, pub. 5-20-69. Multiple Class (Classes 13 and 35).  
 Gebhard, Lee, and Walter Wagner, South Miami, Fla. 874,298, pub. 5-20-69. Cl. 38.  
 Gelgy Chemical Corp., Ardsley, N.Y. 874,105, pub. 5-20-69. Cl. 6.  
 General Detroit Corp., The, Detroit, Mich., to General Fire Extinguisher Corp., Northbrook, Ill. 514,672, ren. 8-5-69. Cl. 23.  
 General Dynamics Corp., Rochester, N.Y. 751,186, can. Cl. 21.  
 General Electric Co., Schenectady, N.Y. 874,173, pub. 5-20-69. Cl. 21.  
 General Felt Industries, Inc., Chicago, Ill. 874,349, pub. 5-20-69. Cl. 42.  
 General Fire Extinguisher Corp.: See—  
 General Detroit Corp., The.  
 General Foods Corp., White Plains, N.Y. 874,377, pub. 5-20-69. Cl. 46.  
 General Mills, Inc.: See—  
 Washburn Crosby Co.  
 General Mills, Inc., Minneapolis, Minn. 874,364, pub. 5-20-69. Cl. 45.  
 General Motors Corp., Detroit, Mich. 874,100, pub. 5-20-69. Cl. 4.  
 General Time Corp.: See—  
 Western Clock Co.  
 General Tire & Rubber Co., The, Akron, Ohio. 874,266, pub. 8-15-67. Cl. 35.  
 Gentex Corp., New York, N.Y. 874,317, pub. 5-20-69. Cl. 39.  
 Geotechnics & Resources, Inc., White Plains, N.Y. 751,428, can. Cl. 100.  
 Gibson Greeting Cards, Inc., Cincinnati, Ohio. 874,273, pub. 5-20-69. Cl. 37.  
 Gladding, B. F., & Co., Inc., to Gladding Corp., South Otselle, N.Y. 512,075-6, ren. 8-5-69. Cl. 22.  
 Gladding, B. F., & Co., Inc., to Gladding Corp., South Otselle, N.Y. 512,727, ren. 8-5-69. Cl. 22.  
 Gladding, B. F., & Co., Inc., to Gladding Corp., South Otselle, N.Y. 512,999, ren. 8-5-69. Cl. 22.  
 Gladding Corp.: See—  
 Gladding, B. F., & Co., Inc.  
 Glenmore Distilleries Co., Louisville, Ky. 874,394, pub. 5-20-69. Cl. 49.  
 Global Construction Devices, Inc., from Fast-Fix, Inc., Fort Lee, N.J. 751,128, can. Cl. 12.  
 Global Plastics Inc., Beverly Hills, Calif. 751,276, can. Cl. 32.  
 Globe Bottling Co.: See—  
 Kanner, Abe.  
 Goodwin, Dannenbaum, Littman & Wingfield, Inc., Houston, Tex. 874,445, pub. 5-20-69. Cl. 101.  
 Grace, W. R., & Co., New York, N.Y. 874,323, pub. 5-20-69. Multiple Class (Classes 39 and 42).  
 Granat Bros., Inc., Dallas, Tex. 509,950, ren. 8-5-69. Cl. 27.  
 Graniteville Co., Graniteville, S.C. 751,344, can. Cl. 42.  
 Grauer, Bill, Productions, Inc., New York, N.Y. 751,296, can. Cl. 36.  
 Grave, F. D., & Son, Inc.: See—  
 Osterweis, Lewis, & Sons.  
 Greyhound Corp., The, Chicago, Ill. 874,470, pub. 5-20-69. Cl. 105.  
 Grieco Bros., Inc., Lawrence, Mass. 874,333, pub. 5-20-69. Cl. 39.  
 Grundlehner, Ernest, Spring Lake, N.J. 874,237, pub. 5-20-69. Cl. 26.  
 Gumption Products Co., The: See—  
 Raub, Elmer.  
 Gumption Products Ltd.: See—  
 Raub, Elmer.  
 Gunite Foundries, Corp., Rockford, Ill., to Kelsey-Hayes Co., Romulus, Mich. 512,186, ren. 8-5-69. Cl. 14.  
 HDC Publications, Inc., New York, N.Y. 874,486, Cl. 38.  
 HMM Publishing Co., Inc., Chicago, Ill. 874,451, pub. 5-20-69. Cl. 101.  
 Hach Chemical Co., Ames, Iowa. 750,736, can. Cl. 6.  
 Hales & Hunter Co., Chicago, Ill. 751,402-3, can. Cl. 46.  
 Hall, Robert, Clothes: See—  
 Hall, Robert, Clothes, Inc.  
 Hall, Robert, Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. 874,325, pub. 5-20-69. Cl. 39.  
 Hamac-Hansella Aktiengesellschaft, from Hamac-Hansella Aktiengesellschaft Maschinenfabrik Viersen, Viersen, Rhineland, Germany. 751,225, can. Cl. 23.  
 Hamac-Hansella Aktiengesellschaft Maschinenfabrik Viersen: See—  
 Hamac-Hansella Aktiengesellschaft.  
 Hamilton Beach Mfg. Co., to Scovill Mfg. Co., Racine, Wis. 259,231, ren. 8-5-69. Cl. 21.  
 Harris Trust & Savings Bank, Chicago, Ill. 874,462, pub. 5-20-69. Cl. 102.  
 Hartford Special Machinery Co., The, Simsbury, Conn., 874,199, pub. 5-20-69. Cl. 23.  
 Hazleton Macaroni Co.: See—  
 Amerise, George.  
 Heath Spring & Notion Co. Ltd., The, Reddith, England. 255,146, 12(c) pub. Cl. 39.  
 Heavy Duty Trucking: See—  
 Hutchinson, Robert N.  
 Hell Process Equipment Corp., Cleveland, Ohio. 511,312, ren. 8-5-69. Cl. 16.  
 Herron-Klenzie, Inc., Wilton, Conn. 874,439, pub. 5-20-69. Cl. 101.  
 Hickey-Freeman Co., to Hickey-Freeman Co., Inc., Rochester, N.Y. 514,402, ren. 8-5-69. Cl. 39.  
 Hickey-Freeman Co., Inc.: See—  
 Hickey-Freeman Co.  
 Hilborn-Hamburger Co., Inc., New York, N.Y. 874,340, pub. 5-20-69. Cl. 40.  
 Hillside Metal Ware Co., Hillside, N.J. 874,142, pub. 5-20-69. Cl. 13.  
 Hilsinger Corp., The: See—  
 Evans Case Co.  
 Hilton Hotels Corp., Chicago, Ill. 874,404, pub. 5-20-69. Cl. 51.  
 Hoerner Waldorf Corp., St. Paul, Minn. 874,277, pub. 5-20-69. Cl. 37.  
 Hoffman Candy Co.: See—  
 Hoffman, E. A., Candy Co. Inc.  
 Hoffman, E. A., Candy Co. Inc., to Hoffman Candy Co., Los Angeles, Calif. 509,835, ren. 8-5-69. Cl. 46.  
 Hoffman, J. S., Co., Chicago, Ill. 874,369, pub. 5-20-69. Cl. 46.  
 Hoover Ball & Bearing Co., Saline, Mich. 874,207, pub. 5-20-69. Cl. 23.  
 Horder's, Inc., Chicago, Ill., to Boise Cascade Corp., Boise, Idaho. 508,745, ren. 8-5-69. Cl. 37.  
 Hotel Bar Foods, Inc.: See—  
 Lowenfels, Frederick F., & Son.  
 Houghton, E. F., & Co., Philadelphia, Pa. 515,021, ren. 8-5-69. Cl. 16.  
 Houghton, E. F., & Co., Philadelphia, Pa. 515,719, ren. 8-5-69. Cl. 16.



House of Style, The: See—  
 La Maur, Inc.  
 Howard Paper Mills, Inc., Dayton, Ohio, to St. Regis Paper Co., New York, N.Y. 510,852, ren. 8-5-69. Cl. 37.  
 Hudson, H. D., Mfg. Co., Chicago, Ill. 513,960, ren. 8-5-69. Cl. 13.  
 Hudson, J. & Co., Hockley, Birmingham, England, to J. Hudson & Co. (Whistles) Ltd., Birmingham, England. 256,508, ren. 8-5-69. Cl. 22.  
 Hudson, J. & Co. (Whistles) Ltd.: See—  
 Hudson, J. & Co.  
 Hudson Pulp & Paper Corp., New York, N.Y. 874,276, pub. 5-20-69. Cl. 37.  
 Huffman Mfg. Co., The, Miamisburg, Ohio. 874,213, pub. 5-20-69. Cl. 23.  
 Hunter Engineering Co., Riverside, Calif. 751,134, can. Cl. 12.  
 Hutton, P. Kenneth, Plainfield, Conn. 874,200, pub. 5-20-69. Cl. 28.  
 Husky Oil Co. of Delaware, Denver, Colo. 874,157, pub. 5-20-69. Cl. 15.  
 Hutchinson, Robert N., d.b.a. Heavy Duty Trucking, Newport Beach, Calif. 874,487-8, Cl. 38.  
 Huyck, F. C. & Sons, Rensselaer and Albany, N.Y., to Chatham Mfg. Co., Elkin, N.C. 257,049, ren. 8-5-69. Cl. 42.  
 Hydro Dent Co., The, Los Angeles, Calif. 874,355, pub. 5-20-69. Cl. 44.  
 Hysol Corp., Olean, N.Y. 751,118, can. Cl. 5.  
 Iico Corp.: See—  
 Lockwood Hardware Mfg. Co.  
 Illinois Canning Co., The, Hoopeston, Ill. 751,379, can. Cl. 46.  
 Indian Head Inc.: See—  
 American Net & Twine Co.  
 Indian Head Inc., New York, N.Y. 874,345, pub. 5-20-69. Cl. 42.  
 Infodata Systems Inc., Rochester, N.Y. 874,456-7, pub. 5-20-69. Cl. 101.  
 Ingene of California, Inc., d.b.a. Rage of California, Los Angeles, Calif. 874,326, pub. 5-20-69. Cl. 39.  
 Integon Corp., Winston-Salem, N.C. 874,465, pub. 5-20-69. Cl. 102.  
 Inter Continental Thrift, Inc., San Francisco, Calif. 874,458, pub. 5-20-69. Cl. 101.  
 International Forwarding Co., Chicago, Ill. 874,468, pub. 5-20-69. Cl. 105.  
 International Research & Development Corp., Worthington, Ohio. 874,431, pub. 5-20-69. Cl. 100.  
 International Salt Co., Clarks Summit, Pa. 874,230, pub. 5-20-69. Cl. 26.  
 International Shoe Co., d.b.a. Florsheim Shoe Co., Chicago, Ill. 751,328, can. Cl. 39.  
 International Textbook Co., Scranton, Pa. 751,305, can. Cl. 38.  
 International Work Simplification Institute, Inc., Cleveland, Ohio. 874,474, pub. 5-20-69. Cl. 260.  
 Inventive Industries, Inc., Chicago, Ill. 874,168, pub. 5-20-69. Cl. 19.  
 Isbrandtsen Co., Inc., New York, N.Y. 751,434, can. Cl. 101.  
 It's-A-Dilly Co., The, Postdam, N.Y. 751,366, can. Cl. 45.  
 Jadov, B. Inc., to B. Jadov & Sons, Inc., New York, N.Y. 511,590, ren. 8-5-69. Cl. 27.  
 Jadov, B. & Sons, Inc.: See—  
 Jadov, B. Inc.  
 Jana Handbags, Inc., New York, N.Y. 751,108, can. Cl. 3.  
 Jay Dee Mfg. Co., Inc., Brooklyn, N.Y. 874,358, pub. 5-20-69. Cl. 44.  
 Jefferson Airplane, Inc., San Francisco, Calif. 874,472, pub. 5-20-69. Cl. 107.  
 Jet-Abouts, Inc., New York, N.Y. 874,315, pub. 5-20-69. Cl. 39.  
 Jim Dandy Safe Equipment Co.: See—  
 Ohnmacht, Willard.  
 Johns-Manville Corp., New York, N.Y. 751,126, can. Cl. 12.  
 Johnson & Johnson, from Personal Products Corp., New Brunswick, N.J. 751,362, can. Cl. 44.  
 Johnson & Johnson, d.b.a. Permacel, New Brunswick, N.J. 874,476, Cl. 26.  
 Johnson & Johnson, New Brunswick, N.J. 874,494, Cl. 51.  
 Johnson-March Corp.: See—  
 Johnson-March Corp., The.  
 Johnson-March Corp., The, d.b.a. Johnson-March Corp., and Waverly Mineral Products Co., Philadelphia, Pa. 874,416, pub. 5-20-69. Cl. 52.  
 Jon Paul: See—  
 Samson, Frank.  
 Joseph & Feiss Co., The, to The Joseph & Feiss Co., Cleveland, Ohio. 515,298, ren. 8-5-69. Cl. 39.  
 Joseph & Feiss Co., The, to The Joseph & Feiss Co., Cleveland, Ohio. 516,398, ren. 8-5-69. Cl. 39.  
 Joseph & Feiss Co., The, to The Joseph & Feiss Co., Cleveland, Ohio. 516,442, ren. 8-5-69. Cl. 39.  
 Joubert Cie, Inc., to The Nestle-LeMur Co., New York, N.Y. 263,019, ren. 8-5-69. Cl. 51.  
 Kanner, Abe, d.b.a. Globe Bottling Co., to Abe Kanner, Los Angeles, Calif. 263,060, ren. 8-5-69. Cl. 45.  
 Kassow, Samuel, Co., Inc., Jenkintown, Pa. 874,313, pub. 5-20-69. Cl. 39.  
 Kaumagraph Co., Wilmington, Del. 874,289, pub. 5-20-69. Cl. 38.  
 Keith Clark, Inc., New York, N.Y. 874,279, pub. 5-20-69. Cl. 37.  
 Kelsey-Hayes Co.: See—  
 Gunite Foundries Corp.  
 Kemper, Charles, d.b.a. Charles Kemper Mfg. Jeweler, New York, N.Y. 751,273, can. Cl. 28.  
 Kemper, Charles, Mfg. Jeweler: See—  
 Kemper, Charles.

King Electronics, Inc., Pasadena, Calif. 751,176, can. Cl. 21.  
 King-Kratz Corp., St. Louis County, Mo. 874,103, pub. 5-20-69. Cl. 6.  
 Kleinewefers, Joh., Sohne, Krefeld, Germany. 874,201, pub. 5-20-69. Cl. 23.  
 Klopman Mills, Inc., Rocklight, N.J. 770,899, Am. 7(d). Cl. 42.  
 Kohner Bros., Inc., East Paterson, N.J. 874,190-1, pub. 5-20-69. Cl. 22.  
 Koplitz, Perry H. & Sons, Inc., New York, N.Y. 874,453, pub. 5-20-69. Cl. 101.  
 Krain & Canton, Inc., Bloomfield, N.J. 874,399-400, pub. 5-20-69. Cl. 50.  
 Kreiss, Jack, Holsey, Inc., New York, N.Y. 874,337, pub. 5-20-69. Cl. 39.  
 Krembel, Frank, Jr., Detroit, Mich. 751,217, can. Cl. 23.  
 Kronseder, Hermann, d.b.a. Hermann Kronseder Maschinenfabrik, Bavaria, Germany. 874,214, pub. 5-20-69. Cl. 23.  
 Kronseder, Hermann, Maschinenfabrik: See—  
 Kronseder, Hermann.  
 La Industrial de Punto C.A., Caracas, Venezuela. 874,312, pub. 5-20-69. Cl. 39.  
 La Maur, Inc., d.b.a. The House of Style, Minneapolis, Minn. 874,409, pub. 5-20-69. Cl. 51.  
 Laco Corp.: See—  
 Pompano Corp., The.  
 Lake Chemical Co., Chicago, Ill. 874,480, Cl. 37.  
 Lakeside Laboratories, Inc., Milwaukee, Wis. 751,167, can. Cl. 18.  
 Lamb-Weston, Inc., d.b.a. Vita-Bite Foods Co., Portland, Oreg. 874,371, pub. 5-20-69. Cl. 46.  
 Laminating & Coating Corp., Schaumburg, Ill. 874,275, pub. 5-20-69. Cl. 37.  
 Lang Jewelry Co., Providence, R.I. 510,187, ren. 8-5-69. Cl. 28.  
 Lanneau Tapijt-En Fluweelweverij N.V., Zuidstraat-Harebeke (Kortrijk), Belgium. 874,344, pub. 5-20-69. Cl. 42.  
 Lanvin-Charles of the Ritz, Inc., New York, N.Y. 874,497, Cl. 51.  
 Leedal, Inc., Chicago, Ill. 874,239, pub. 5-20-69. Cl. 26.  
 Lever Brothers Co., New York, N.Y. 874,420, pub. 5-20-69. Cl. 52.  
 Liquidmatic Corp. of America, Newark, N.J. 751,416, can. Cl. 50.  
 Litticomputers, Inc., Denver, Colo. 874,210, pub. 5-20-69. Cl. 23.  
 Locking Devices, Inc., Pontiac, Mich. 874,477, Cl. 28.  
 Lockwood Hardware Mfg. Co., to Iico Corp., Fitchburg, Mass. 516,399, ren. 8-5-69. Cl. 13.  
 Loomis, Ltd., Oakland, Md. 751,376-7, can. Cl. 46.  
 Lowe, Joe, Co.: See—  
 Consolidated Foods Corp.  
 Lowenfels, Frederick F. & Son, to Hotel Bar Foods, Inc., New York, N.Y. 514,370, ren. 8-5-69. Cl. 46.  
 Lucifer Societe Anonyme: See—  
 Magnetos Lucifer, Societe Anonyme.  
 Luster, James S., San Diego, Calif. 874,242, pub. 5-20-69. Cl. 26.  
 Macklin Co., Jackson, Mich. 751,112, can. Cl. 4.  
 Magnetos Lucifer, Societe Anonyme, Carouge, Geneva, to Lucifer Societe Anonyme, Geneva, Switzerland. 442,913, ren. 8-5-69. Cl. 21.  
 Malanco, Inc., Blue Island, Ill. 874,281, pub. 5-20-69. Cl. 37.  
 Manbee Equipment Co., Inc., Chicago, Ill., to Bear Mfg. Co., Rock Island, Ill. 514,671, ren. 8-5-69. Cl. 26.  
 Manchester Knitted Fashions, Inc., Manchester, N.H., to Tubular Textile Machinery Corp., Woodside, N.Y. 510,469, ren. 8-5-69. Cl. 39.  
 Manhattan Wire Goods Co., Inc., Long Island City, N.Y. 751,455, can. Cl. 2.  
 Manthorne, Helen Marian, d.b.a. Character Creations, Rochdale, Mass. 751,205-6, can. Cl. 22.  
 Marco Polo Imports Ltd., New York, N.Y. 874,309, pub. 5-20-69. Cl. 39.  
 Maremont Corp., d.b.a. Saco-Lowell Maremont, Chicago, Ill. 874,209, pub. 5-20-69. Cl. 23.  
 Mar-Jac Products, Inc., Chicago, Ill. 751,419, can. Cl. 51.  
 Martin-Brower Corp., Chicago, Ill. 874,362, pub. 5-20-69. Cl. 45.  
 Masonite Corp., Chicago, Ill. 874,125-30, pub. 5-20-69. Cl. 12.  
 Master Lock Co., Milwaukee, Wis. 511,125, ren. 8-5-69. Cl. 25.  
 Mattel, Inc., Hawthorne, Calif. 874,192-3, pub. 5-20-69. Cl. 22.  
 Matthew Bishop, Inc., Malvern, Pa. 874,110, pub. 5-20-69. Cl. 6.  
 McCain-Wright, Inc., by Swopes Red Cross Shoes, Inc., St. Louis, Mo. 252,469, 12(c) pub. Cl. 39.  
 McClosky, Florence T., Philadelphia, Pa. 751,360, can. Cl. 44.  
 McClung, C. M. & Co., Inc., Knoxville, Tenn. 874,198, pub. 5-20-69. Cl. 23.  
 Med-Equip Co., Houston, Tex. 751,353, can. Cl. 44.  
 Melrose-Drover Ltd., Leith, Scotland. 513,075, ren. 8-5-69. Cl. 49.  
 Melville Shoe Corp.: See—  
 Miles Shoes Inc.  
 Messenger, Charles, North Hollywood, Calif. 874,178, pub. 5-20-69. Cl. 21.  
 Methode Electronics, Inc., Chicago, Ill. 874,181, pub. 5-20-69. Cl. 21.  
 Metro Business Forms: See—  
 Van Der Linden, Douglas.  
 Michigan Instruments, Inc., Grand Rapids, Mich. 874,359, pub. 5-20-69. Cl. 44.  
 Mida Mfg. Inc., Philadelphia, Pa. 874,246, pub. 5-20-69. Cl. 28.

Miles Shoes Inc., to Melville Shoe Corp., New York, N.Y. 514,592, ren. 8-5-69. Cl. 39.  
 Milprint, Inc., Milwaukee, Wis. 874,286, pub. 5-20-69. Cl. 37.  
 Minor, Robert S., Newark, N.J. 751,432, can. Cl. 101.  
 Mister Fabric, Inc., New York, N.Y. 874,342, pub. 5-20-69. Cl. 42.  
 Mobile Holdings Corp., Cypress, Calif. 751,172, can. Cl. 19.  
 Molson Breweries Ltd., E. Montreal, Quebec, Canada. 874,389, pub. 5-20-69. Cl. 48.  
 Monogram Models, Inc., Morton Grove, Ill. 874,401, pub. 5-20-69. Cl. 50.  
 Monsanto Co., St. Louis, Mo. 874,109, pub. 5-20-69. Cl. 6.  
 Monsanto Co., St. Louis, Mo. 874,149, pub. 5-20-69. Cl. 15.  
 Morgan Guaranty Trust Co. of New York, Paris, France. 874,461, pub. 5-20-69. Cl. 102.  
 Morgan, Howard H., d.b.a. Morgan Incubator Sales & Service, Corona, Calif. 751,224, can. Cl. 23.  
 Morgan Incubator Sales & Service: See—  
 Morgan, Howard H.  
 Morgan Packing Co., Inc., d.b.a. Scottsburg Canning Co., Austin, Ind. 760,661-2, cor. Cl. 46.  
 Morris, Philip, & Co. Ltd., Inc., to Philip Morris Inc., New York, N.Y. 609,940, ren. 8-5-69. Cl. 17.  
 Morris, Philip, Inc.: See—  
 Morris, Philip, & Co. Ltd. Inc.  
 Mossberg, O. F. & Sons, Inc., New Haven, Conn. 511,758, ren. 8-5-69. Cl. 9.  
 Mossberg, O. F. & Sons, Inc., New Haven, Conn. 513,951, ren. 8-5-69. Cl. 9.  
 Motor Parts Co., assor. to Amplitone, Inc., Philadelphia, Pa. 434,654, can. Cl. 21.  
 Muller, John F., New York, N.Y. 751,415, can. Cl. 50.  
 Multimate Displays, Inc., Great Neck, N.Y. 874,403, pub. 5-20-69. Cl. 50.  
 Muroff Bros., Inc., New York, N.Y. 751,267, can. Cl. 28.  
 Murrell Corp., The, New York, N.Y. 874,319, pub. 5-20-69. Cl. 39.  
 Naconle Publishing Co.: See—  
 Waddington, Wm. H., Jr.  
 Nadin, Rose: See—  
 Old Betty Plant's Ltd.  
 Narvon Mines Ltd.: See—  
 Narvon Products, Inc.  
 Narvon Products, Inc., d.b.a. Narvon Mines Ltd., Lancaster, Pa. 874,106, pub. 5-20-69. Cl. 6.  
 National Assn. of Real Estate Boards, Chicago, Ill. 515,200, ren. 8-5-69. Cl. 102.  
 National Boulevard Bank of Chicago, Chicago, Ill. 874,463, pub. 5-20-69. Cl. 102.  
 National Liberty Life Insurance Co., Valley Forge, Pa. 874,464, pub. 5-20-69. Cl. 102.  
 National Periodical Publications, Inc., New York, N.Y. 874,305, pub. 5-20-69. Cl. 38.  
 Neal House Inc., East Hampton, Conn. 751,460, can. Cl. 22.  
 Nestle Co., Inc., The, White Plains, N.Y. 874,381, pub. 5-20-69. Cl. 46.  
 Nestle-LeMur Co., The: See—  
 Joubert Cie, Inc.  
 New Coatings Inc., Boston, Mass. 874,343, pub. 5-20-69. Cl. 42.  
 New York Fine Jewelry Co., New York, N.Y. 751,257, can. Cl. 28.  
 New York World-Telegram Corp., New York, N.Y. 751,303, can. Cl. 38.  
 Nielsen, A. C. Co., Chicago, Ill. 874,447-9, pub. 5-20-69. Cl. 101.  
 Nippon Kikai Kasei Kaisha Ltd., Shibuya-ku, Tokyo, Japan. 874,203, pub. 5-20-69. Cl. 23.  
 Noble, Don, & Co., Inc., Chicago, Ill. 751,293, can. Cl. 36.  
 Noda Plywood Mfg. Co., Ltd., Shimizu-shi, Shizuoka Prefecture, Japan. 874,132, pub. 5-20-69. Cl. 12.  
 Norcor Mfg. Co., Inc., Green Bay, Wis. 751,278-9, can. Cl. 32.  
 North American Mushroom Co., Tinley Park, Ill. 874,492, Cl. 46.  
 North Pacific Cannery & Packers, Inc., Portland, Oreg. 874,491, Cl. 46.  
 North & Judd Mfg. Co., New Britain, Conn. 874,196, pub. 5-20-69. Cl. 23.  
 Norton, Roy, d.b.a. Safe-D Products Co., Milwaukee, Wis. 874,111, pub. 5-20-69. Cl. 7.  
 O.J.M. Co., Denver, Colo. 874,370, pub. 5-20-69. Cl. 46.  
 O'Brien, Helen M.: See—  
 Borgfeldt, Geo. & Co.  
 Occidental Petroleum Corp., Los Angeles, Calif. 874,116, pub. 2-18-69. Cl. 10.  
 Office Overload Co. Ltd., Toronto, Ontario, Canada. 874,453, pub. 5-20-69. Cl. 101.  
 Ohio Medical Products: See—  
 Air Reduction Co., Inc.  
 Ohnmacht, Willard, d.b.a. Jim Dandy Safe Equipment Co. Carbondale, Pa. 751,236, can. Cl. 25.  
 Old Betty Plant's Ltd., d.b.a. Rose Nadin, Hanley, Stoke-On Trent, England. 751,388, can. Cl. 46.  
 Old Boone Distillery Co., Cincinnati, Ohio. 874,393, pub. 5-20-69. Cl. 49.  
 Omanoff, Arthur A., d.b.a. Omanoff Caviar Co., to Sidney Schonfeld, New York, N.Y. 509,993, ren. 8-5-69. Cl. 46.  
 Omanoff Caviar Co.: See—  
 Omanoff, Arthur A.  
 Onelda Ltd., Onelda, N.Y. 874,194, pub. 2-27-68. Cl. 23.  
 Onelda Ltd., Onelda, N.Y. 874,212, pub. 5-20-69. Cl. 23.  
 Oppenheimer, A. & Co., Inc., Maywood, N.J. 874,113, pub. 5-20-69. Cl. 8.  
 Orange Roller Bearing Co., Inc., Orange, N.J. 874,215, pub. 5-20-69. Cl. 23.

Orbit Mfg., Inc., Helen, Ga. 874,308, pub. 5-20-69. Cl. 39.  
 Organic Compost Corp., Germantown, Wis. 874,117-18, pub. 5-20-69. Cl. 10.  
 Ortho Pharmaceutical Corp., Raritan, N.J. 874,160, pub. 4-2-68. Cl. 18.  
 Osem Export (1962) Ltd., Tel Aviv, Israel. 874,385, pub. 5-20-69. Cl. 46.  
 Osterweil, Lewis, & Sons, to F. D. Grave & Son, Inc., New Haven, Conn. 514,072, ren. 8-5-69. Cl. 17.  
 Ovaltine Food Products: See—  
 Wander Co., The.  
 P.W. & B. Co., The, Orlando, Fla. 751,306, can. Cl. 38.  
 Pacific Enterprise, Palo Alto, Calif. 874,452, pub. 5-20-69. Cl. 101.  
 Palazzolo, Andrew, d.b.a. Andre-Lee, New York, to J. Palazzolo Son, Inc., New Hyde Park, N.Y. 442,828, ren. 8-5-69. Cl. 51.  
 Palazzolo, J. Son, Inc.: See—  
 Palazzolo, Andrew.  
 Parents' Magazine Enterprises, Inc., New York, N.Y. 874,484, Cl. 38.  
 Parker Products, Inc., Holliston, Mass. 751,372, can. Cl. 46.  
 Parker-Hannifin Corp., Cleveland, Ohio. 751,290, can. Cl. 35.  
 Parklane Hosiery Co., Inc., Great Neck, N.Y. 874,314, pub. 3-4-69. Cl. 39.  
 Patch, E. L. Co., The, Stoneham, Mass., to Smith, Miller & Patch, Inc., New York, N.Y. 515,753, ren. 8-5-69. Cl. 18.  
 Penn Central Co., Philadelphia, Pa. 874,294, pub. 5-20-69. Cl. 38.  
 Pennsylvania Refining Co.: See—  
 American Oil Works Co.  
 Pennsylvania Refining Co., Butler, Pa. 514,188, ren. 8-5-69. Cl. 15.  
 Perfect Photo, Inc., Philadelphia, Pa. 751,238, can. Cl. 26.  
 Perilly's Tobacco Mfrs. (Proprietary) Ltd., Johannesburg, Republic of South Africa. 874,158, pub. 5-20-69. Cl. 17.  
 Permacel: See—  
 Johnson & Johnson.  
 Personal Products Corp.: See—  
 Johnson & Johnson.  
 Pet Inc.: See—  
 Sue Ann Food Products Corp.  
 Petersen Co., The, Los Angeles, Calif. 874,269, pub. 5-20-69. Cl. 36.  
 Pfeining, Fred D., Co., Columbus, Ohio. 751,240, can. Cl. 26.  
 Pharmacie Poliquin Eng.: See—  
 Poliquin, Jean J.  
 Phil Jewelers, Inc.: See—  
 Silverstein, Phillip.  
 Pierce, S. S. Co., Boston, Mass. 32,739, ren. 8-5-69. Cl. 17.  
 Piggy Wiggly Corp., Jacksonville, Fla. 874,418, pub. 5-20-69. Cl. 52.  
 Pinta Products, Inc., Johnston, R.I. 759,204, can. Cl. 28.  
 Pinta Products, Inc., Providence, R.I. 844,993, can. Cl. 28.  
 Pioneer Oilsealing & Moulding Co. Ltd., Marfleet, Hull, Yorkshire, England. 874,267, pub. 5-20-69. Cl. 35.  
 Pivot Point International, Inc., Chicago, Ill. 874,299, pub. 5-20-69. Cl. 38.  
 Pizza Dog, Inc., Detroit, Mich. 874,382, pub. 5-20-69. Cl. 46.  
 Poliquin, Jean J., d.b.a. Pharmacie Poliquin Eng., Trois-Rivieres, Quebec, Canada. 874,287, pub. 5-20-69. Multiple Class (Classes 38 and 101).  
 Polyplastex United, Inc., Union, N.J. 874,091, pub. 5-20-69. Cl. 1.  
 Pompano Corp., The, by Laco Corp., Baltimore, Md. 252,247, 12(c) pub. 8-5-69. Cl. 48.  
 Powell Muffler Co., Inc., Chicago, Ill. 751,220, can. Cl. 23.  
 Practical Builder: See—  
 Cahners Publishing Co., Inc.  
 Preston, Horace G., Co., Detroit, Mich. 509,652, ren. 8-5-69. Cl. 35.  
 Prismo Safety Corp., Huntingdon, Pa. 874,259, pub. 5-20-69. Cl. 33.  
 Professors & Teachers Aids, Inc., Phoenix, Ariz. 874,288, pub. 5-20-69. Cl. 38.  
 Pro-Par Products, San Marino, Calif. 751,207, can. Cl. 22.  
 Pulsation Controls Corp., Santa Paula, Calif. 874,138, pub. 5-20-69. Cl. 13.  
 R & R Processors, Inc., Carthage, Miss. 874,379, pub. 5-20-69. Cl. 46.  
 RX Plastic Co.: See—  
 Rust, C. George.  
 Radiant Lamp Corp., Hightstown, N.J. 874,187, pub. 5-20-69. Cl. 21.  
 Radio Corp. of America, New York, N.Y. 516,23, ren. 8-5-69. Cl. 21.  
 Rage of California: See—  
 Ingene of California, Inc.  
 Raney Packers, Forterville, Calif. 857,597, can. Cl. 46.  
 Raub, Elmer, d.b.a. The Gumption Products Co., Dayton, Ohio, by Gumption Products Ltd., London, England. 250,855, 12(c) pub. 8-5-69. Cl. 52.  
 Raygo, Inc., Minneapolis, Minn. 874,218, pub. 4-1-69. Cl. 23.  
 Rebel Distributing Co., Inc., Jackson, Miss. 874,391, pub. 5-20-69. Cl. 49.  
 Red Owl Stores, Inc., Hopkins, Minn. 751,389, can. Cl. 46.  
 Red Spot Paint & Varnish Co., d.b.a. Evansville Paint & Varnish Co., Evansville, Ind. 258,886, Am. 7(d). Cl. 12.  
 Regents of the University of Colorado, The, Boulder, Colo. 874,291, pub. 5-20-69. Cl. 38.  
 Regia Chemical Co., Chicago, Ill. 874,108, pub. 5-20-69. Cl. 6.  
 Renfrow, Roberta G., d.b.a. Roberta's Dress Shop, Perry, Fla. 751,200, can. Cl. 22.  
 Rexall Drug & Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 751,349, can. Cl. 42.



Rexall Drug & Chemical Co., d.b.a. Action Plastics Co., Los Angeles, Calif. 874,090, pub. 5-20-69. Cl. 1.  
 Reynolds, R. J., Foods, Inc., New York, N.Y. 874,387, pub. 5-20-69. Cl. 46.  
 Ridgewood Instrument Co., Grandview, Mo. 874,136, pub. 5-20-69. Cl. 13.  
 Riker Laboratories, Inc., Northridge, Calif. 751,165, canc. Cl. 28.  
 Rimer, Inc., Clinton, S.C. 792,853, canc. Cl. 19.  
 Riteway Rentals, Inc., Elizabeth, N.J. 874,469, pub. 5-20-69. Cl. 105.  
 Rivetz, A., Co., Inc., Boston, Mass. 874,321, pub. 5-20-69. Cl. 39.  
 Rivetz, A., Co., Inc., Boston, Mass. 874,329, pub. 5-20-69. Cl. 39.  
 Roberta's Dress Shop: See—  
 Renfrow, Roberta G.  
 Roberts Brothers, Inc., Mobile, Ala. 874,454, pub. 5-20-69. Cl. 101.  
 Rockwell Mfg. Co., Pittsburgh, Pa. 514,029-30, ren. 8-5-69. Cl. 26.  
 Romer Sculptur-Kut National Franchised System, Inc., Ambridge, Pa. 874,406, pub. 5-20-69. Cl. 51.  
 Rolecor of America, Inc., White Plains, N.Y. 874,179, pub. 5-20-69. Cl. 21.  
 Roll-O-Sheets, Inc., St. Louis, Mo. 874,283, pub. 5-20-69. Cl. 37.  
 Rolls Offset Printing Co., Inc., New York, N.Y. 874,292-3, pub. 5-20-69. Cl. 38.  
 Rosenstein Bros., Paterson, N.J. 751,343, canc. Cl. 42.  
 Ross, Arthur M., Co., Inc., The, Los Angeles, Calif. 874,248, pub. 5-20-69. Cl. 28.  
 Royal Terry of California: See—  
 Barth & Dreyfuss, Inc.  
 Rust, C. George, Redwood City, Calif., from RX Plastic Co., San Carlos, Calif. 874,398, pub. 5-20-69. Cl. 50.  
 S. A. S. Antonio Bertolini, Turin, Italy. 874,392, pub. 5-20-69. Cl. 49.  
 SFM Corp., Union, N.J. 874,228, pub. 5-20-69. Cl. 23.  
 S-K Forms Co., Philadelphia, Pa. 874,271, pub. 5-20-69. Cl. 37.  
 S.O.S. One Hour Cleaners, Inc., Lexington, Ky. 751,443, canc. Cl. 103.  
 Saco-Lowell Marmont: See—  
 Marmont Corp.  
 Safage-Transport, Paris (Seine), France. 751,168, canc. Cl. 19.  
 Safe-D Products Co.: See—  
 Norton, Roy.  
 Sagner's, A., Son, Frederick, Md. 859,732, Am. 7(d). Cl. 39.  
 St. Lawrence Mfg. Co., Inc., Giffard, Quebec, Canada. 751,210, canc. Cl. 22.  
 St. Regis Paper Co.: See—  
 Howard Paper Mills, Inc.  
 St. Regis Paper Co., New York, N.Y. 513,272, ren. 8-5-69. Cl. 2.  
 Saki Magnetics, Inc., Santa Monica, Calif. 874,182, pub. 5-20-69. Cl. 21.  
 Samson, Frank, d.b.a. Jon Paul, Millburn, N.J. 874,413, pub. 5-20-69. Cl. 51.  
 Samson, Frank, d.b.a. Jon Paul, Millburn, N.J. 874,419, pub. 5-20-69. Cl. 52.  
 Sarna, S. S., Inc., New York, N.Y. 874,435, pub. 5-20-69. Cl. 101.  
 Schenley Distillers, Inc., New York, N.Y. 751,409, canc. Cl. 49.  
 Schleider Caterers, Inc., Baltimore, Md. 874,433, pub. 5-20-69. Cl. 100.  
 Schonfeld, Sidney: See—  
 Omanoff, Arthur.  
 Schwartz, Martin J., New York, N.Y. 751,123, canc. Cl. 8.  
 Science Kit, Inc., Tonawanda, N.Y. 874,235, pub. 5-20-69. Cl. 26.  
 Scovill Mfg. Co.: See—  
 Hamilton Beach Mfg. Co.  
 Seagram, Joseph E., & Sons, Inc., Lawrenceburg, Ind. 751,407, canc. Cl. 49.  
 Seagram, Joseph E., & Sons, Inc., New York, N.Y. 874,396-7, pub. 5-20-69. Cl. 49.  
 Seco Co., Inc., St. Louis, Mo. 443,022-3, ren. 8-5-69. Cl. 13.  
 Security Pacific National Bank, Los Angeles, Calif. 874,284, pub. 5-20-69. Cl. 37.  
 Seis Corp., d.b.a. Warehouse Storage Systems Co., Perkasie, Pa. 874,478, Cl. 32.  
 Sequoia Foothill Fruit Growers, Woodlake, Calif. 263,604, ren. 8-5-69. Cl. 46.  
 Shell Oil Co., New York, N.Y. 874,152, pub. 5-20-69. Cl. 15.  
 Shutter Industries Inc., Lawrence, Mass. 874,318, pub. 5-20-69. Cl. 39.  
 Signode Corp.: See—  
 Signode Steel Strapping Co.  
 Signode Steel Strapping Co., to Signode Corp., Chicago, Ill. 514,800, ren. 8-5-69. Cl. 12.  
 Signode Steel Strapping Co., to Signode Corp., Chicago, Ill. 515,659, ren. 8-5-69. Cl. 13.  
 Silverstein, Phillip, d.b.a. Phil Jewelers, Inc., Anderson, S.C. 874,244, pub. 5-20-69. Cl. 28.  
 Singer Products Co., Inc., New York, N.Y. 874,479. Cl. 36.  
 Smith, Miller & Patch, Inc.: See—  
 Patch, E. L., Co., The.  
 Sno-Trik Co., Solon, Ohio. 874,156, pub. 5-20-69. Cl. 15.  
 Sola Basic Industries, Inc., Milwaukee, Wis. 874,188, pub. 5-20-69. Cl. 21.  
 Solar Laboratories, Inc., Inglewood, Calif. 874,356-7, pub. 5-20-69. Cl. 44.  
 Sorg Paper Co., The, Middletown, Ohio. 442,694, ren. 8-5-69. Cl. 37.

Sorg Paper Co., The, Middletown, Ohio. 442,715, ren. 8-5-69. Cl. 37.  
 Southwest Factories, Inc., Oklahoma City, Okla. 874,167, pub. 5-20-69. Multiple Class (Classes 18, 23, and 24).  
 Spang & Co., Butler, Pa. 751,219, canc. Cl. 23.  
 Sperry Rand Corp., New York, N.Y. 874,272, pub. 5-20-69. Cl. 37.  
 Sports Arenas, Inc., Yonkers, N.Y. 751,448, canc. Cl. 107.  
 Sports Car Club of America, Inc., Westport, Conn. 874,421, pub. 5-20-69. Cl. 100.  
 Sprague Electric Co., North Adams, Mass. 874,180, pub. 5-20-69. Cl. 21.  
 Springfoot, Inc., Charleston, W. Va. 874,307, pub. 5-20-69. Cl. 39.  
 Squibb, E. R. & Sons, Inc., New York, N.Y. 874,161, pub. 5-20-69. Cl. 18.  
 Standard Horse Nail Corp., New Brighton, Pa. 508,413, ren. 8-5-69. Cl. 13.  
 Standard Oil Co., Flemington, N.J. 874,115, pub. 12-24-68. Cl. 10.  
 Standard Oil Co., Flemington, N.J. 874,148, pub. 5-20-69. Cl. 15.  
 Standard Oil Co., The, Cleveland, Ohio. 874,151, pub. 5-20-69. Cl. 15.  
 Standard Oil Co. of California, San Francisco, Calif. 874,264-5, pub. 5-20-69. Cl. 34.  
 Star Office Supply Co., Inc., New York, N.Y. 874,282, pub. 5-20-69. Cl. 37.  
 Sta-Rite Ginne Lou, Inc., Shelbyville, Ill. 874,112, pub. 5-20-69. Cl. 8.  
 Stelnen Wm., Mfg. Co., Parsippany, N.J. 874,262, pub. 5-20-69. Cl. 34.  
 Stepan Chemical Co., Northfield, Ill. 874,088-9, pub. 5-20-69. Cl. 1.  
 Sterling Drug Inc.: See—  
 Winthrop Chemical Co., Inc.  
 Strohmeyer & Arpe Co., New York, N.Y. 874,146-7, pub. 5-20-69. Cl. 15.  
 Sue Ann Food Products Corp., Chicago, Ill., to Pet Inc., St. Louis, Mo. 509,861, ren. 8-5-69. Cl. 46.  
 Sun Oil Co., Philadelphia, Pa. 442,865, ren. 8-5-69. Cl. 6.  
 Sun Oil Co., Philadelphia, Pa. 442,869, ren. 8-5-69. Cl. 15.  
 Supergirls: See—  
 Supergirls Enterprises, Ltd.  
 Supergirls Enterprises, Ltd., from Supergirls, New York, N.Y. 874,436, pub. 5-20-69. Cl. 101.  
 Sutone Corp., Paramount, Calif. 751,169, canc. Cl. 19.  
 Svenska Knappe Aktiebolaget, Jarna, Sweden. 751,396, canc. Cl. 46.  
 Swank, Inc.: See—  
 Baer & Wilde Co., The.  
 Swank Products, Inc.  
 Swank Products, Inc., by Swank, Inc., Attleboro, Mass. 341,515, 12(c) pub. 8-5-69. Cl. 32.  
 Swank Products, Inc.: See—  
 Baer & Wilde Co., The.  
 Swartz, Loretta, d.b.a. Robert Swartz & Associates, Wilmette, Ill. 874,402, pub. 5-20-69. Cl. 50.  
 Swartz, Robert, & Associates: See—  
 Swartz, Loretta.  
 Swiss-Tech, Inc., Delavan, Wis. 874,133, pub. 5-20-69. Cl. 13.  
 Swopes Red Cross Shoes, Inc.: See—  
 McCain-Wright, Inc.  
 Syracuse Pharmacal Co., Inc., Syracuse, N.Y. 751,163, canc. Cl. 18.  
 T.N.E. Inc., Jefferson County, Mo. 874,177, pub. 5-20-69. Cl. 21.  
 Taylor, R. Stevenson, & Co. Ltd., Dunbartonshire, Scotland. 874,395, pub. 5-20-69. Cl. 49.  
 Technical Appliance Corp., Sherburne, N.Y. 874,170, pub. 5-20-69. Cl. 21.  
 Technomic Research Associates, Inc., Chicago, Ill. 874,437-8, pub. 5-20-69. Cl. 101.  
 Telesco Brophy Ltd., Montreal, Quebec, Canada. 874,341, pub. 5-20-69. Cl. 41.  
 Teplick Clothes, Inc., Philadelphia, Pa. 874,332, pub. 2-18-69. Cl. 39.  
 Texas Instruments Inc., Dallas, Tex. 751,174, canc. Cl. 21.  
 Textron Inc.: See—  
 Continental Optical Co., Inc.  
 Textron Inc., Providence, R.I. 874,101, pub. 5-20-69. Cl. 6.  
 Textron Inc., Cheshire, Conn. 874,204, pub. 5-20-69. Cl. 23.  
 Thayer Coggin, Inc., High Point, N.C. 874,254, pub. 5-20-69. Cl. 32.  
 Thunderbird Motel Corp., Minneapolis, Minn. 874,427-9, pub. 5-20-69. Cl. 100.  
 Time Systems Corp., Mountain View, Calif. 874,238, pub. 5-20-69. Cl. 26.  
 Tonnema N.V., Sneek, Netherlands. 874,386, pub. 5-20-69. Cl. 46.  
 Top Form Mills, Inc., New York, N.Y. 751,319, canc. Cl. 39.  
 Tovar Treasures, Inc., New York, N.Y. 874,411, pub. 5-20-69. Cl. 51.  
 Tower Press, Inc., Danvers, Mass. 874,296, pub. 5-20-69. Cl. 38.  
 Toyo Rayon Co., Ltd., Chuo-Ku, Tokyo, Japan. 874,310, pub. 5-20-69. Multiple Class (Classes 39 and 42).  
 Trim-Master Corp., Temple, Pa. 874,217, pub. 5-20-69. Cl. 23.  
 Tubular Textile Machinery Corp.: See—  
 Manchester Knitted Fashions, Inc.  
 Tucker-Lowenthal Co., Chicago, Ill. 874,243, pub. 5-20-69. Cl. 27.  
 Tupperware: See—  
 Rexall Drug & Chemical Co.

Tyco Automotive Corp., Huntington Station, N.Y. 874,166, pub. 5-20-69. Multiple Class (Classes 19 and 23).  
 Udell, Max, Sons & Co., Inc., New York, N.Y. 513,073, ren. 8-5-69. Cl. 39.  
 Uncle Ben's, Inc., Houston, Tex. 874,378, pub. 5-20-69. Cl. 46.  
 Ungar, Josef, New York, N.Y. 751,262, canc. Cl. 28.  
 Union Carbide Corp., New York, N.Y. 874,186, pub. 5-20-69. Cl. 21.  
 Unit Rig & Equipment Co., Tulsa, Okla. 874,162-3, pub. 5-20-69. Cl. 19.  
 United Aircraft Products, Inc., Dayton, Ohio. 751,105, canc. Cl. 2.  
 United Cement Co., West Point, Miss. 874,131, pub. 5-20-69. Cl. 12.  
 United Features Syndicate, Inc., New York, N.Y. 874,300, pub. 5-20-69. Cl. 38.  
 United Fruit Co.: See—  
 A & W International, Inc.  
 U.S. Monument Guild, Inc., Brooklyn, N.Y. 751,453, canc. Cl. A.  
 U.S. Oil Co., East Providence, R.I. 253,435, ren. 8-5-69. Cl. 15.  
 Universal City Studios, Inc., New York, N.Y. 874,302-3, pub. 5-20-69. Cl. 38.  
 Universal-Cyclops Steel Corp., Bridgeville, Pa. 751,148, canc. Cl. 14.  
 Universal Metal Hose Co., Chicago, Ill. 874,141, pub. 5-20-69. Cl. 13.  
 Univia Inc., Fort Lauderdale, Fla. 874,195, pub. 5-20-69. Cl. 23.  
 Uniwash, Inc., Los Angeles, Calif. 874,467, pub. 5-20-69. Cl. 103.  
 Upjohn Co., The, to The Upjohn Co., Kalamazoo, Mich. 514,895, ren. 8-5-69. Cl. 18.  
 Upjohn Co., The, to The Upjohn Co., Kalamazoo, Mich. 515,760, ren. 8-5-69. Cl. 18.  
 Van Buskirk, Leshner W., Easton, Pa. 751,152, canc. Cl. 14.  
 Vance Industries, Inc., Chicago, Ill. 874,137, pub. 5-20-69. Cl. 13.  
 Van Der Linden, Douglas, d.b.a. Metro Business Forms, Washington, D.C. 751,429, canc. Cl. 100.  
 Vane-Calvert Paint Co., St. Louis, Mo. 516,443, ren. 8-5-69. Cl. 16.  
 Van Lederman, William, d.b.a. Bevel Products, Burbank, Calif. 874,205, pub. 5-20-69. Cl. 23.  
 Verteca Corp., Kirkland, Wash. 874,122, pub. 5-20-69. Cl. 12.  
 Villager, Inc., The, Philadelphia, Pa. 874,339, pub. 5-20-69. Cl. 59.  
 Visual Graphics Corp., New York, N.Y. 874,234, pub. 5-20-69. Cl. 26.  
 Vita-Bite Foods Co.: See—  
 Lamb-Weston, Inc.  
 Waddington, Wm. H., Jr., d.b.a. Nacole Publishing Co., Chicago, Ill. 751,312, canc. Cl. 38.  
 Waldron Furniture Mfg. Corp., Waldron, Ark. 874,255, pub. 5-20-69. Cl. 32.  
 Wallach, Stanley, d.b.a. Stanley Wallach & Sons, Chestnut Hill, Mass. 751,373, canc. Cl. 46.  
 Wallach, Stanley, & Sons: See—  
 Wallach, Stanley.  
 Wander Co., The, d.b.a. Ovaltine Food Products, Villa Park, Ill. 874,375-6, pub. 5-20-69. Cl. 46.  
 Warehouse Storage Systems Co.: See—  
 Seis Corp.  
 Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 874,408, pub. 5-20-69. Cl. 51.  
 Warren Axe & Tool Co., Warren, Pa. 540,285, canc. Cl. 23.

Wasatch Chemical Co., Salt Lake City, Utah. 874,114, pub. 5-20-69. Cl. 10.  
 Washburn Crosby Co., to General Mills, Inc., Minneapolis, Minn. 256,524, ren. 8-5-69. Cl. 46.  
 Washington Forge, Inc., Englestown, N.J. 874,211, pub. 5-20-69. Cl. 23.  
 Washington Forge, Inc., Englestown, N.J. 874,219-20, pub. 5-20-69. Cl. 23.  
 Watchtower Bible & Tract Society, Inc., to Watchtower Bible & Tract Society of New York, Inc., Brooklyn, N.Y. 509,681, ren. 8-5-69. Cl. 38.  
 Watchtower Bible & Tract Society of New York, Inc.: See—  
 Watchtower Bible & Tract Society, Inc.  
 Watson, R. & W., Ltd., Linwood, Scotland. 751,347, canc. Cl. 42.  
 Waverly Mineral Products Co.: See—  
 Johnson-March Corp., The.  
 Wayne Mfg. Co., Pomona, Calif. 874,424-5, pub. 5-20-69. Cl. 100.  
 Weaver, John E., Monmouth, Ill. 818,202, canc. Cl. 107.  
 Welco Enterprises, Inc., Waynesville, N.C. 874,311, pub. 5-20-69. Cl. 39.  
 Western Clock Co., Peru, Ill., to General Time Corp., Stamford, Conn. 263,730, ren. 8-5-69. Cl. 27.  
 Western Gold & Platinum Co., Belmont, Calif. 874,134, pub. 5-20-69. Multiple Class (Classes 13, 23, 34, and 35).  
 Western Trucking News Service: See—  
 Hutchinson, Robert N.  
 Westland Gummiwerke G.m.b.H. & Co., Westerhausen, Germany. 874,320, pub. 5-20-69. Cl. 39.  
 Whitaker Construction Co., Tucson, Ariz. 874,135, pub. 5-20-69. Cl. 13.  
 Whittet-Higgins Co., to Whittet-Higgins Co., Providence, R.I. 442,798, ren. 8-5-69. Cl. 13.  
 Wiggins, J. & J., Ltd., Bloxwich, Walsall, England. 874,475. Multiple Class (Classes 13 and 23).  
 Willard's Chocolates Ltd., by Willards Chocolates Ltd., Toronto, Canada. 225,640, 12(c) pub. 8-5-69. Cl. 46.  
 Willards Chocolates Ltd.: See—  
 Willard's Chocolates Ltd.  
 Williamson, T. D., Inc., Tulsa, Okla. 874,197, pub. 5-20-69. Cl. 23.  
 Windsor-Lloyd Products, Inc., Philadelphia, Pa. 509,310, ren. 8-5-69. Cl. 23.  
 Winthrop Chemical Co., Inc., assor. to Winthrop Stearns Inc., to Sterling Drug Inc., New York, N.Y. 510,261, ren. 8-5-69. Cl. 18.  
 Winthrop Stearns Inc.: See—  
 Winthrop Chemical Co., Inc.  
 Winton Watch Co., Inc., New York, N.Y. 515,570-1, ren. 8-5-69. Cl. 27.  
 Wiss, J., & Sons Co., Newark, N.J. 751,361, canc. Cl. 44.  
 Wood, John, Co., Muskegon, Mich. 874,223, pub. 5-20-69. Multiple Class (Classes 23 and 26).  
 Woodfield Fabrics, Inc., New York, N.Y. 751,345, canc. Cl. 42.  
 Woodlin Shirt Corp., The, Carteret, N.J. 874,251, pub. 5-20-69. Cl. 28.  
 World Trade Publications, Inc., Conroe, Tex. 874,489. Cl. 38.  
 Xerox Corp., Rochester, N.Y. 874,295, pub. 5-20-69. Cl. 38.  
 Yardley of London, Inc., Totowa, N.J. 874,495-6. Cl. 51.  
 Yawata Iron & Steel Co., Ltd., Marunouchi, Chiyoda-Ku, Tokyo, Japan. 874,145, pub. 5-20-69. Cl. 14.  
 Zacrotsky, Abraham, & Sons, Inc., Miami, Fla. 874,245, pub. 5-20-69. Cl. 28.



## Number 2

## 317



2,729,748.—*Denis M. Robinson*, Arlington, Mass. APPARATUS FOR STERILIZING FOODS, DRUGS AND OTHER SUBSTANCES BY SCANNING ACTION OF HIGH-ENERGY ELECTRONS. Patent dated Jan. 3, 1956. Disclaimer filed June 27, 1969, by the assignee, *High Voltage Engineering Corporation*.

Hereby enters this disclaimer to claims 1-5 and 9-15 of said patent.

3,302,680.—*Frank C. Rote and Rollin H. Spelman*, Akron, Ohio. LOW MOISTURE CONTENT PNEUMATIC TIRE CARCASS RUBBERIZED LAMINATES AND VULCANIZABLE RUBBERY POLYMERS USED THEREIN. Patent dated Feb. 7, 1967. Disclaimer filed Feb. 24, 1969, by the assignee, *The General Tire & Rubber Company*.

Hereby enters this disclaimer to claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 15, 16 and 17 of said patent.

3,310,111.—*Joseph P. Pavlich, and David G. Calvert*, Tulsa, Okla. METHOD OF CONTROLLING SOLIDS IN FLUIDS FROM WELLS. Patent Dated Mar. 21, 1967. Dis-

claimer filed Jan. 23, 1969, by the assignee, *The Dow Chemical Company*.

Hereby enters this disclaimer to claims 1, 3, 4, 5, 8 and 9 of said patent.

3,420,921.—*Herold E. Sorstokke*, New City, N.Y. PROCESS FOR PREPARATION OF DIALKYL PHOSPHONATES. Patent dated Jan. 7, 1969. Disclaimer filed July 3, 1969, by the assignee, *Stauffer Chemical Company*.

Hereby enters this disclaimer to claims 1, 2, 3, 4 and 5 of said patent.

3,422,474.—*Jacob S. Kamborian*, Boston, *Allen C. Harriman*, Brockton, *Geoffrey T. Jones*, Walpole, and *Karl F. Varnberger*, Tewksbury, Mass. METHOD AND APPARATUS FOR USE IN LASTING SHOES. Patent dated Jan. 21, 1969. Disclaimer filed Apr. 17, 1969, by the assignee, *Jacob S. Kamborian*.

Hereby enters this disclaimer to claims 151 through 154 and 156 of said patent.

## PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

## CONDITION OF PATENT APPLICATIONS AS OF JULY 28, 1969

PATENT EXAMINING GROUPS		Actual Filing Date of Oldest New Case Awaiting Action
*Denotes oldest new application.		
<b>CHEMICAL EXAMINING GROUPS</b>		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director.....	Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-03-67
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director.....	Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	*12-08-66
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—L. J. BERCOVITZ, Director.....	Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pre-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	2-13-67
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director.....	Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	1-06-67
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director.....	Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	1-19-67
<b>ELECTRICAL EXAMINING GROUPS</b>		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director.....	Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	1-02-68
SECURITY, GROUP 220—S. BOYD, Director.....	Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	*10-31-66
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director.....	Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	1-05-67
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director.....	Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	6-05-67
PHYSICS, GROUP 260—R. L. EVANS, Director.....	Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	10-11-67
DESIGNS, GROUP 290—S. BOYD, Director.....	Industrial Arts; Household, Personal and Fine Arts.	11-22-68
<b>MECHANICAL EXAMINING GROUPS</b>		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director.....	Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	4-01-68
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director.....	Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*12-01-67
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director.....	Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Trolley; Printing; Typewriters; Stationery; Information Dissemination.	1-03-68
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director.....	Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	7-01-68
FIXED CONSTRUCTIONS, SUPPORTS AND HARDWARE, GROUP 350—T. J. HICKEY, Director.....	Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	4-26-68
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director.....	Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	2-05-68
Total number of pending applications (excluding Designs).....		183,624
Total number of Design applications pending.....		3,081

Expiration of patents: The patents within the range of numbers indicated below expire during August 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 660, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents..... Numbers 2,605,466 to 2,608,698, inclusive  
Plant Patents..... Numbers 1,117 to 1,123, inclusive



# DECISIONS IN PATENT AND TRADEMARK CASES

## U.S. Court of Customs and Patent Appeals

IN RE RALPH L. YOUNG AND KINGSLEY E. HUMBERT, JR.

No. 8058. Decided December 5, 1968

[56 CCPA —; — F.2d —; 159 USPQ 725]

### 1. CLAIM—CONSTRUCTION OF CLAIMS—WORDS AND PHRASES—"SECURING."

"The limitation of 'securing,' as recited in claim 17, does not necessarily entail any 'bonding' \* \* \*"

### 2. PATENTABILITY—COMBINING REFERENCES—OBVIOUSNESS.

"Appellants have failed to appreciate that they cannot show nonobviousness by attacking the references individually where the rejection is based on a combination of references. *In re Goepfrich*, 30 CCPA 1181, 136 F.2d 918, 58 USPQ 324 (1943); *In re Mapelsden*, 51 CCPA 1123, 329 F.2d 321, 141 USPQ 30 (1964)."

### 3. SAME—PARTICULAR SUBJECT MATTER—"FILTERS."

The refusal of certain claims in an application entitled "Filters," as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 377,157.

AFFIRMED.

Ralph L. Young, James W. Dent, Donald J. Rich for appellants.

Joseph Schimmel (Fred W. Sherling, of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, RICH, SMITH, ALMOND, and BALDWIN, Associate Judges

BALDWIN, J., delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals,<sup>1</sup> affirming the Examiner's rejection of claims 14 and 16-18 in appellants' application<sup>2</sup> for "Filters" as unpatentable under 35 U.S.C. 103<sup>3</sup> over Vokes<sup>4</sup> combined with Pumps.<sup>5</sup>

### THE INVENTION

Appellants' invention relates to filters for fluids, such as air, and methods of their construction. The particular structural embodiment involved in the instant appeal is illustrated in FIGURE 8:

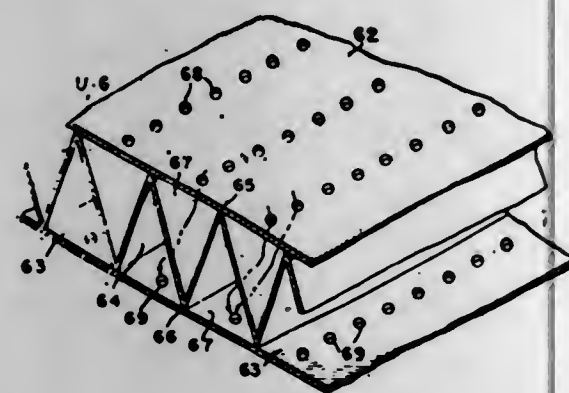


FIG. 8.

<sup>1</sup> The board consisted of Messrs. Dracopoulos and Brewrink, Examiners-in-Chief, and Reynolds, Acting Examiner-in-Chief. Mr. Brewrink wrote the opinion of the board.

<sup>2</sup> Serial No. 377,157, filed May 19, 1964, alleged to be a continuation of copending application Serial No. 846,745, filed October 15, 1959.

<sup>3</sup> Because of our decision as to the obviousness of claim 14 under 35 U.S.C. 103, we need not consider the rejection of claim 14 as incomplete under 35 U.S.C. 112 or the issues raised by the Solicitor in regard to the lack of specificity in appellants' reasons of appeal concerning allegations of error in the affirmance of the rejection of claim 14 under 35 U.S.C. 112.

<sup>4</sup> British Patent 401,287.

<sup>5</sup> British Patent 565,285.

This filter unit has a pleated core of filter paper 64 interposed between top and bottom filter paper walls 62 and 63. The V-shaped accordion pleats have alternate edges respectively bonded to sheets 62 and 63 by glue or other means, thereby forming a plurality of V-shaped cells 67. In operation, a fluid to be treated is passed through openings 68 in sheet 62 into a top V-shaped cell 67, through filter paper 64, into a bottom V-shaped cell 67, and out through openings 69 in sheet 63. The entire filter unit is disposed in a housing which is not shown in the figure reproduced above.

One claim to a filter unit and two claims to a method of manufacture thereof having been allowed by the Board, the claims on appeal here are directed to the method of making the filter unit. The appealed claims read:

14. The method of making a filter comprising providing a pair of separate flat end wall portions, providing holes in each of said end wall portions, providing a core section of preformed configuration defining a plurality of separate chambers with the core section having opposite edge portions, placing said core section between said end wall portions and adhering the opposite edge portions to the end wall portions with holes in one of said end wall portions being in communication with certain ones of said chambers, and the holes in the other end wall portion being in communication with other of said chambers, and placing the filter within a housing having an aligned central inlet and outlet opening.

16. The method of making a filter comprising providing a pair of separate end wall portions, providing holes in each of said end wall portions, providing a continuous integral one-piece sheet of filter paper material which is fluid pervious, forming pleats in said sheet of filter paper material, placing said sheet of filter paper material between said end wall portions so as to define a plurality of separate parallel cells disposed adjacent one another, and with the holes in one end wall portion in communication with alternate ones of the cells and the holes in the other end wall portion being in communication with intervening alternate cells.

17. The method of making a filter comprising providing a pair of separate flat end walls, providing holes in each of said flat end walls, providing a continuous integral one-piece sheet of filter paper material which is fluid pervious, repeatedly folding said sheet of filter paper material to provide accordion pleating therein, said accordion pleating including edges on each pleat, placing said sheet of filter paper material between said flat end walls with the pleat edges in contact with the end walls to define a plurality of separate parallel chambers, and securing said sheet of filter paper material and said end walls in operative position with the holes in one end wall in communication with alternate ones of said chambers and the holes in the other end wall in communication with intervening alternate chambers.

18. The method of making a filter comprising providing a pair of separate flat end wall portions comprising sheets of filter paper material and having flat inner faces, providing holes in each of said end wall portions, providing a continuous integral one-piece sheet of filter paper material which is fluid pervious, folding said sheet of filter paper material to provide a plurality of V-shaped pleats therein including edges which are substantially straight and disposed in space parallel relationship to one another, placing said pleated sheet of filter paper material between said end wall portions with the first plurality of pleat edges in contact with the flat inner surface of one of said end wall portions and the remaining plurality of pleat edges in contact with the flat inner surface of the other end wall portions, to define a plurality of separate parallel cells, and with the holes in one end wall portion being in communication with alternate ones of said cells and the holes in the other end wall portion being in communication with intervening alternate cells.

### THE REFERENCES

Vokes discloses a method of forming a filter in which a pleated filter element, formed from felt or fabric stitched to a light wire gauze, is positioned between flat parallel apertured sheets or end members.



Pumps discloses a method of forming a filter in which conical sections or rings are cut from a hollow filter paper cone. These rings are placed concentrically one within another, each alternate successive ring being inverted, thus making close contact with one another along the edges and forming a circular body having a zig-zag radial section. The rings are joined to one another along the edges and are attached to a pair of circular parallel apertured plates by an adhesive or cement which is placed in circular grooves in the plates in which the ring edges are also placed or seated.

#### THE REJECTION

The Examiner in the final rejection and in his answer held claims 14 and 16-18 to be unpatentable under 35 U.S.C. 103 over Vokes combined with Pumps, stating:

\* \* \* [Vokes] discloses the claimed method of preparing a filter excluding the use of filter paper and adhesively securing same to apertured sheets of paper or otherwise. \* \* \* [Pumps] teaches the use of filter paper and adhesive for securing apertured card board plates thereto. It would be obvious for one of ordinary skill in the art to utilize filter paper per se or in combination with adhesive and or card board apertured plates in the method taught by [Pumps] \* \* \* in view of [Vokes] \* \* \*.

The Examiner further stated regarding claim 14 that:

\* \* \* [Vokes] additionally teaches a filter housing having a central inlet and outlet \* \* \*. It would be obvious for one of ordinary skill in the art to prepare a filter by the method taught in [Pumps] \* \* \* as modified by [Vokes] \* \* \*.

The Board sustained the Examiner, stating that:

Claims 14, 16, 17 and 18 do not appear to us to recite the disclosed and argued assembly steps with the particularity urged by appellants as distinguishing over the references. In these claims, we find no requirement for attachment of the pleated folds to the end wall portions. In FIGURE 3 of Vokes, we find the physical assembly required and to reach this arrangement in a device using filter paper material as the pleated member does not appear to us to exceed what would be obvious from the references. Both Vokes and Pumps provide the alternate chambers and end walls with openings connecting to the chambers as recited.

#### OPINION

We agree with the Board that claims 14 and 16-18 recite a method which would be obvious from the prior art to a person of ordinary skill in the art.

Appellants argue that the Board erred in its determination that claims 14 and 16-18 fail to define anything unobvious over the prior art since they do not entail any "requirement for attachment of the pleated folds to the end wall portions." That statement by the Board recites two distinctive limitations, namely, that the filter material be *pleated* and *positively attached* to the end walls. Although claim 14 recites "adhering," there is no limitation that the core be "pleated"; and Pumps discloses bonding a core to end walls. [1] The limitation of "securing," as recited in claim 17, does not necessarily entail any "bonding," and Vokes certainly *secures* a pleated filter element between end walls. Claims 16 and 18 do not recite any type of "securing," by bonding or any other means.

[2] Appellants have failed to appreciate that they cannot show nonobviousness by attacking the references individually where the rejection is based on a combination of references. *In re Goepfrich*, 30 CCPA 1181, 136 F.2d 918, 58 USPQ 324 (1943); *In re Mapelsden*, 51 CCPA 1123, 329 F.2d 321, 141 USPQ 30 (1964).

[3] The decision is affirmed.  
AFFIRMED.

Judge Smith participated in the hearing of this case but died before a decision was reached.

#### U.S. Court of Customs and Patent Appeals

METHUEN INTERNATIONAL MILLS v. RAJINDEE FABRICS, INC.

No. 8096. Decided February 27, 1969

[56 CCPA —; 406 F.2d 1392; 160 USPQ 681]

#### 1. TRADEMARK—DISTINCTIVENESS—OPPOSITION—REGISTRATION OF "INDIA."

"We do not quarrel with the contention of the dissenting member of the Board that [the appellant opposer's registered mark] 'India' must be considered to be distinctive of appellant's goods."

#### 2. SAME—CONFUSING SIMILARITY—"INDIA" AND DESIGN MARK CONTAINING LEGENDS INCLUDING "INDIA VILLAGE" AS WELL AS "INDIA" FOR FABRICS.

"\* \* \* In the present instance, where the design accompanying and embodying the words 'An India Village fabric' and the purely descriptive phrase 'Hand Woven in India' forms so prominent a part of the mark, we look at the overall image presented by the mark. To us it appears that the image overwhelmingly suggests that the fabrics are associated with, or are the product of, craftwork from villages in India. This image, we believe, is sufficiently distinctive to set the proposed mark apart from any association with opposer's mark ["India"] so that the average purchaser would be unlikely to be confused by the application of the two marks to the same or similar goods."

APPEAL from Patent Office. Opposition No. 45,090.

AFFIRMED.

Robert G. McMorrow, Atkins, Law & McMorrow for appellant.  
Before WORLEY, Chief Judge, RICH, ALMOND and BALDWIN,  
Associate Judges

RICH, J., delivered the opinion of the court.

This appeal is from the decision of the Patent Office Trademark Trial and Appeal Board, 151 USPQ 723, dismissing appellant's opposition to application Serial No. 197,773 filed July 13, 1964 by appellee to register on the Principal Register the following mark:



Registration of the mark is sought for use on "Textile fabrics to be used in making men's shirts and sports coats, women's dresses, suits and shirts; men's and women's walk shorts and neckties."

Appellant's opposition is based on its registration and prior use of "India" in plain solid capital letters for "piece goods of worsted, cotton, synthetic fibers and combinations thereof."<sup>1</sup>

The sole issue is likelihood of confusion within the meaning of section 2(d) of the Trademark Act of 1946, as amended (15 U.S.C. 1052(d)).

<sup>1</sup> Reg. No. 623,563, registered on the Principal Register Mar. 20, 1956 to Methuen International Mills (Massachusetts corporation), also doing business as International Mills.



The Board majority indicated the word "India" to be geographical and stated:

As a general rule, trademarks involving a geographical term are "weak" and are entitled to a narrow scope of protection. \* \* \* This is particularly true here where the geographical significance of "India" in applicant's mark is apparent and would indicate an association with that country rather than with opposer. [Citations omitted.]

The Board majority concluded:

A reference to "India Village" would connote geographical origin in India. Considering the marks as a whole and the significance of the term "India" in applicant's mark, we are of the opinion that applicant's mark does not so resemble that of the opposer [as] to be likely to cause confusion.

The dissenting member of the Board was of the opinion that the Principal Register registration of "India" required that it be presumed that the mark served to identify and distinguish appellant's goods, and that as the word "India" appeared twice in appellee's proposed mark there would be a likelihood of confusion.

[1] We do not quarrel with the contention of the dissenting member of the Board that "India" must be considered to be distinctive of appellant's goods. The situation here, however, by virtue of the prominent design features of appellee's mark, resembles that faced by this court in *Goodall-Sanford, Inc. v. Tropical Garment Mfg. Co.*, 47 CCPA 821, 275 F.2d 736, 125 USPQ 189 (1960); *Cooperative Quality Marketing, Inc. v. Dean Milk Co.*, 50 CCPA 1138, 314 F.2d 552, 136 USPQ 644 (1963); and *Star Watch Case Co. v. Mido G. Schaeren & Co.*, SA, 52 CCPA 1770, 347 F.2d 894, 146 USPQ 190 (1965).

In *Goodall-Sanford*, for example, two competing marks for textile goods (as in the present instance) included in common the word "Palm," characterized in the opinion as having only weak trademark significance.<sup>2</sup> The mark "Royal Palm" sought to be registered was accompanied by a representation of a palm tree and the opposer's registered mark "Palm Beach" was accompanied by a representation of two palm branches. We there paid particular attention to the design accompanying the applicant's mark as follows:

As contrasted to the word and symbol imagery of appellant's mark, appellee's mark "Royal Palm" associated with the pictorial representation of a palm tree calls up to those who know it the mental image of a particular and spectacular tree, i.e., the so-called "Royal Palm (*Roystonea*), which is native to certain hammocks or islands in the Everglades and which is widely used in ornamental plantings in various parts of southern Florida. To those who do not know this specific tree, the words and the pictorial representation create a distinct impression of a palm tree.

We found that the overall image presented by the words "Royal Palm" in association with the design was sufficiently different from that presented by the registrant's mark to obviate the likelihood of confusion of an average purchaser.

[2] So too in the present instance, where the design accompanying and embodying the words "An India Village fabric" and the purely descriptive phrase "Hand Woven in India" forms so prominent a part of the mark, we look at the overall image presented by the mark.

<sup>2</sup> *Goodall-Sanford*, supra: "This conclusion also is supported by the fact that the word 'palm' is lacking in distinctiveness as a part of trademarks in the textile field and as such has only weak trademark significance. This is shown in the record here by 10 registrations of third parties in which the word 'palm' appears as a part of these marks for clothing and related goods."

To us it appears that the image overwhelmingly suggests that the fabrics are associated with, or are the product of, craftwork from villages in India. This image, we believe, is sufficiently distinctive to set the proposed mark apart from any association with opposer's mark so that the average purchaser would be unlikely to be confused by the application of the two marks to the same or similar goods.

We therefore affirm the Board's decision.

**AFFIRMED.**

## U.S. Court of Customs and Patent Appeals

IN RE ROBERT BEN BOOTH

No. 8018. Decided January 16, 1969

[56 CCPA —; 405 F.2d 588; 160 USPQ 328]

### 1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"FLUIDIZING SOLIDS IN AQUEOUS SUSPENSIONS."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Fluidizing Solids in Aqueous Suspensions" as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 179,287.

**AFFIRMED.**

*Samuel Branch Walker, Wm. P. Spielman (Harry H. Kline, of counsel)* for appellant.

*Joseph Schimmel (Lutrelle F. Parker, of counsel)* for the Commissioner of Patents.

Before WORLEY, Chief Judge, RICH, SMITH, ALMOND, and

BALDWIN, Associate Judges

RICH, J., delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals<sup>1</sup> affirming the Examiner's rejection of claims 1-3, 11, 12, 14, and 20 of application Serial No. 179,287, filed March 7, 1962, for "Fluidizing Solids in Aqueous Suspensions." Claims 17 and 18 stand allowed.

The issue is whether appellant's claimed invention is obvious and hence unpatentable under 35 U.S.C. 103.

The claimed invention relates to the treatment of a suspension of solid particles in water. The invention is particularly concerned with suspensions containing both coarse and fine particles. In suspensions of this type there is a tendency for the coarse particles to settle out more rapidly than the fine particles. This may result in the formation of a layer of coarse material at the bottom of a vessel used to contain the suspension, which may adversely affect the operation of agitators and other mechanical equipment. To avoid this problem, it has been known to add glue to the suspension to act as a suspending agent. However, this may not always be effective, particularly in acid solutions.

Appellant has found that a water-soluble polyelectrolyte resin such as polyacrylamide can be used to solve all of these problems effectively. Appellant found that these polyelectrolytes, when added in the proper amounts, will prevent the larger particles of a suspension from settling out prior to settling of the smaller particles. Appellant found that this treatment causes the formation of a uniform mixture of coarse

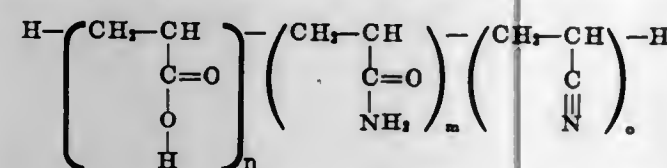
<sup>1</sup> The board consisted of Asp, Lidoff and Rosa, Examiners-in-Chief. Mr. Lidoff wrote the opinion of the board.



and fine solids which, when it eventually does settle out, forms a relatively light and fluid mass of sediment that is easily resuspended.<sup>2</sup>

Appellant claims both method and composition. As illustrative, method claim 1 and composition claim 11 are reproduced as follows:

1. In the handling and manipulation of a suspension of solids in water in which the solids range from comparatively coarse, which do not pass through 65 mesh, to very fine materials, which will pass through 325 mesh, and which suspension has a high solids content of at least about 30% solids, and which suspension when in a quiescent state tends to separate with the formation of a solid unwieldy cake which stalls agitators, the step which comprises adding to said water suspension of solids a small but effective amount of a suspending agent, from 0.005 to 5 pounds per ton of suspended solids of a water soluble polyelectrolyte resin, having the structure, in acid form:



where  $n$ ,  $m$  and  $o$  are whole numbers, and the groups within the parentheses may occur in random order and orientation, uniformly dispersing the polyelectrolyte throughout the suspension, agitating the suspension, thereby producing a suspension which is of uniform characteristics and from which the solids drop out as an unclassified readily resuspendable material.

11. A fluidized resuspendable mineral suspension pulp containing solids which do not pass through 65 mesh and fines which will pass through 325 mesh and substantially homogeneous throughout in which the fines are integrated with the coarse material by from 0.005 to 5 pounds per ton of solids of a water soluble polyelectrolyte, which is an ampholytic linear carbon chain vinyl polymer consisting essentially of recurring carbamylethylene and carboxyethylene linkages and salts thereof, having a weight average molecular weight in excess of 100,000, thereby producing a suspension which is of uniform characteristics and from which the solids drop out as an unclassified readily resuspendable material.

The claims stand rejected as directed to obvious subject matter under 35 U.S.C. 103 in view of an Australian Patent No. 200,682 to Pye having an effective date of Jan. 11, 1956.

Pye is directed to a method of treating suspensions of solids in water by the addition of acrylamide polymers. Of particular interest in the disclosure are Examples 4 and 5 which read:

*Example 4.*—A phosphate ore from the so-called "leach zone" overlying a Florida phosphate deposit was beneficiated by grinding and wet-screening with removal of the fraction of size less than 14 mesh and greater than 150 mesh, the latter consisting chiefly of silica impurities. The remaining solids, consisting chiefly of calcium phosphate and clay smaller than 150 mesh, were suspended in water to form a slurry containing 20 percent by weight of solids. To separate portions of this slurry, the acrylamide copolymer of Example 1 was added with stirring in the amount of 1 pound per ton of solids and in the form of aqueous solutions containing 0.04 and 0.02 percent by weight of the polymer, respectively. The treated slurries and a portion of the untreated slurry were maintained undisturbed in sedimentation vessels for a period of one hour. At this time the concentration of solids in the settled layer was determined. The results are reported in Table IV.

<sup>2</sup> The phenomenon is described and illustrated in the following passages from the Booth application:

It has now been found that by introducing from about 0.005 to 5 pounds per ton of suspended solids of a polyelectrolyte into the aqueous suspension there is a tendency for the finer particles to integrate with larger and give a composition of more uniform characteristics, and hence fluidize the suspension.

The effect which herein is called fluidizing, or anti-caking, or anti-packing, is rather difficult to explain theoretically. In certain tests, for instance, it is found that if a suspension of fine and coarse minerals is agitated, the material remains fluid and fairly easy to handle. If, however, stirring is stopped, the coarser solids rapidly drop out and thus form a stable dense layer. In contradistinction thereto by using the present polyelectrolytes there is formed a fluidized suspension in which the solids drop uniformly, if at all, as a homogeneous fluidized mass so that on moderate agitation the solids are again uniformly suspended.

*Example 5.*—The beneficiated "leach zone" ore of Example 4 was dispersed in water to form a slurry containing 45 percent by weight of solids. The slurry was found to filter very slowly and to give a filter cake containing only about 50 percent solids. A portion of the above slurry was admixed with an aqueous solution containing 0.04 percent by weight of the polyacrylamide of Example 1 in an amount sufficient to provide 1.8 pounds of polyacrylamide per ton of solids. The solids thereupon settled rapidly to separate a clear supernatant liquid layer and a lower layer containing 77.3 percent by weight of solids after 24 hours. The supernatant liquid was decanted and the solids worked gently with a paddle-like device with intermittent decantation of supernatant liquid to separate the product as a pasty solid containing 12.7 percent by weight of water.

The Board considered Example 4 to be directed to the treatment of "a remaining mixture of particulate solids, some particles being coarse particles which are retained on 14 mesh and others being relatively fine particles which pass through 150 mesh." This interpretation conflicts with an affidavit of appellant Booth of July 15, 1965 interpreting Example 4 of the Pye patent, stating:

That, in his opinion, to one skilled in phosphate ore technology and processing, there would be no doubt but that in said example it was only the materials smaller than 150 mesh that were suspended as a slurry and treated with the polymer. [Emphasis ours.]

In his answer, the Examiner accepted this interpretation of the range of particle size present in Pye's Example 4, saying:

Examiner also accepts the argument that the Pye reference is not clear as to the particle size used in Example 4. For the purposes of narrowing the issues, the Examiner will accept the interpretation of the appellant as to what is the particle size in Example 4, and present his arguments accordingly.

In view of the status of appellant Booth as an expert in the mineral dressing field and the acquiescence of the Examiner in Booth's understanding of the meaning of the language used in Pye Example 4, it appears to us that a correct interpretation of the size range of the particles present in the sample treated in Pye Example 4 is that they are all particles smaller than 150 mesh. Thus, we conclude that the Board erred to the extent that it adopted a contrary interpretation of the range of particle size disclosed in Pye Example 4.

The Board's reasoning in support of the rejection is not necessarily vitiated, however, by its error in interpretation of the range of particle size taught by Example 4 of Pye. The Board's reasoning was as follows:

Appellant's major argument and the determinative issue herein is based upon the contention that appellant's contribution is directed to a mixture of coarse and fine particles; whereas, it is alleged that Pye's compositions are composed of fine particles only. This argument does not apply to claim 14 which merely specifies "finely-divided solid material" and does not give either particle size or a range of particle sizes requiring the material to be the argued mixture of coarse and fine particles. As to this claim the rejection is quite obviously sustainable.

The remaining claims, while they do delineate a mixture containing both coarse particles which do not pass through 65 mesh and very fine particles which pass through 325 mesh do not prescribe the proportion of each. Hence, any mixture having at least some particles meeting the terms of the above described limitations is included in the claims. This loose description, in our opinion, does not patentably distinguish over the mixture treated in Pye which, in our opinion, also contains relatively coarse and relatively fine particles falling within a portion of appellant's range.

We agree with the Examiner that the properties of Pye's final compositions are, insofar as this record demonstrates, the same as that claimed by appellant.



On the record properly before us the Examiner's rejection will therefore be sustained.

In considering the positions taken by the parties, we first observe that appellant, in his brief, acknowledges that the treating agent is known and has been used in homogeneous ore pulps. What is in contention is whether a process using this agent to treat a suspension containing both coarse and fine particles, to avoid problems of forming a settled-out layer of *coarse* material, is obvious in view of the teachings of Pye.

To distinguish his process from Pye, appellant is forced to argue that whereas appellant's process operates on a suspension containing coarse and fine particles, Pye operates on a suspension containing finely-divided particles, which appellant would imply means *uniform* finely-divided particles. However, Pye discloses use of the treating agent on a suspension having particles of less than 150 mesh size which would include a mixture of particle sizes including the largest particles that will pass a 150 mesh screen as well as much smaller particles, including perhaps some that might pass a 325 mesh screen (corresponding to the lower limit claimed by appellant). Furthermore, the larger particles in this range may have a fairly rapid settling rate as pointed out in the following portion of the Solicitor's brief:

\* \* \* A view of any standard handbook will show that a 150 mesh has a nominal aperture of .105 mm. \* \* \* and that the time required for fine sand having a diameter of 0.1 mm. to settle 1 foot is only 38 seconds.<sup>1</sup> \* \* \*

Thus, Pye's Example 4 may reasonably be considered to teach the treatment of a suspension of particles, ranging in size from particles that would settle fairly freely to much smaller particles, with an acrylamide polymer for improving the settling characteristics of the suspension. Given this information it would, in our opinion, be within the ordinary skill of the art to modify the process to operate on suspensions including particles of the greater size and for the purposes disclosed by appellant. The rejection of the process claims is therefore affirmed.

As to composition claims 11 and 12, Example 4 of Pye can also be considered to teach treatment of a pulp comprising a layer of settled-out particles ranging in size from 150 mesh on down. Thus, Pye is an equally good reference under section 103 as against the composition claims and their rejection is also sustained.

[1] The decision of the Board is affirmed.

**AFFIRMED.**

Judge Smith participated in the hearing of this case but died before a decision was reached.

<sup>1</sup> Betz Handbook of Industrial Water Conditioning, Betz Laboratories, Inc., Philadelphia, Pa., fifth edition, 1957, p. 6.

### U.S. Court of Customs and Patent Appeals

DEREK NORMAN STEVENS v. HERMANN SCHMID AND EMIL KIRBACK

No. 8056. Decided February 13, 1969

[56 CCPA —; 406 F.2d 776; 160 USPQ 623]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—NEW ISSUE—INTERFERENCE.

"Prior to the brief for appellant in this court, Stevens in no way questioned Schmid's right to the benefit of his German filing date. Now, however, Stevens

notes that there is an error in the translator's affidavit filed with the translation of the certified German application and an error in the translation of the German Patent Office certificate. These errors, Stevens says, are fatal to Schmid's claim of priority since the time in which a correct 'sworn translation' should have been filed has already expired. Suffice it to say that this is not one of the extraordinary circumstances in which we will consider issues not raised below."

APPEAL from Patent Office. Interference No. 93,461.

**AFFIRMED.**

Hugh H. Drake, Donald P. Selvecki (George E. Frost, Warren E. Finken, Frank J. Soucek, of counsel) for appellant.

Paul M. Craig, Jr., Craig & Antonelli for appellees.

Before WORLEY, Chief Judge, RICH, ALMOND and BALDWIN,  
Associate Judges

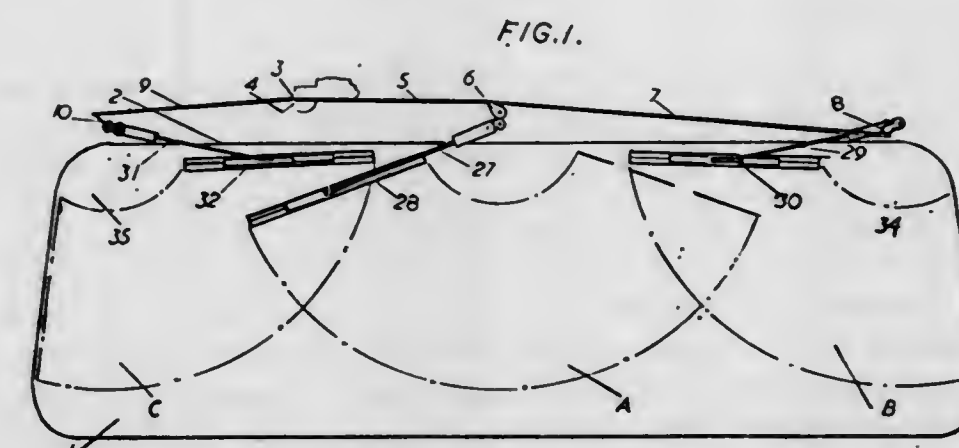
RICH, J., delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Patent Interferences, awarding priority to Schmid et al., in Interference No. 93,461, involving Schmid et al. (hereinafter "Schmid") application Serial No. 756,200, filed August 20, 1958, entitled "Windshield Wiper Arrangement" and Stevens application Serial No. 732,890, filed May 5, 1958, entitled "Windscreen Wiper Systems."<sup>1</sup>

The invention relates to windshield wiper systems such as those used on ordinary passenger automobiles. The single count of the interference reads:

1. A wiper system for a windscreen including, a pair of wiper blades, said wiper blades being oscillatable through strokes having overlapping paths over a portion of said windscreen, means for imparting conjoint oscillation to said wiper blades in phase opposition and for precluding interference between said wiper blades during movement through their overlapping paths. [Emphasis ours.]

The count language can be most easily understood by reference to FIGURE 1 of Stevens' U.S. application:



A pair of wiper blades 28 and 32 cooperating with a windshield 1 are oscillatable through strokes having overlapping paths, the region A swept by blade 28 overlapping, toward its left end, the right side of region C swept by blade 32. Blades 28 and 32 are driven by means including elements 6 and 10, respectively, so that the blades sweep back and forth "in phase opposition." That is, during one half-cycle, the blades move generally towards one another and during the next half-cycle, away from one another. This type of oscillation may be

<sup>1</sup> The real parties in interest are Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany, as assignee of Schmid and General Motors Corporation as assignee of Stevens.



contrasted to the "in phase" movement of blades 28 and 30 which move generally back and forth in unison.

Neither party took testimony, both parties relying on their respective foreign applications, the U.S. applications having been filed within the convention year. Schmid claimed, and was granted by the Board, the benefit of the filing date of German application No. D26304 II/63c, filed August 27, 1957, and was made senior party on that basis. Stevens claimed, but was *not* granted, the benefit of the filing date of British Provisional Specification No. 14,902/57, filed May 10, 1957 (hereinafter "British specification").

The sole issue is whether or not Stevens' British specification discloses support for the count;<sup>2</sup> if it does, Stevens must prevail because that application was filed before Schmid's German application. That the British specification discloses "a pair of wiper blades \* \* \* oscillatable through strokes having overlapping paths" over a portion of a windshield, is not disputed. Whether or not the British specification supports the count depends on whether it discloses "means for imparting conjoint oscillation to said wiper blades in phase opposition," as distinguished from oscillation in tandem or "in phase." The Board held it does not and we agree.

Appellant tries to find the necessary disclosure by deduction from what appears in the British specification drawings, FIGURES 1 and 2. The only description of these drawings reads:

The accompanying informal drawings illustrate diagrammatically a windscreen wiper system according to the invention arranged for use on a wrap-around screen, FIGURE 1 being the elevation of the windscreen with the wiper blades and arms arranged at the top of the windscreen, and FIGURE 2 being the perspective view of the same windscreen.

Stevens concedes that the British specification does not disclose, *in haec verba*, that two of the wiper blades move in phase opposition, but contends that the "necessary and only reasonable construction"<sup>3</sup> to be given the drawings and specification by one of ordinary skill in the art is that phase opposition was intended. Treating the drawings first, the Board said:

Both figures show three "wiper arm pivots" indicated by crossed lines, but neither figure shows any means for operating the pivots. In FIGURE 1 no structural part is shown extending from the pivots. FIGURE 2, however, shows full lines extending from the pivots, obviously indicating the wiper blade arms extending therefrom; and all three wiper blade arms are shown in a terminal position towards the left of the figure, positions they would occupy if they were arranged to operate *in phase* with each other. In the case of two of the pivots in FIGURE 2 the other terminal position of the corresponding blade is shown, with the position of the wiper blade arms shown by dashed lines. Those two dashed lines extend from their pivot towards the right of the figure, and the wiper arms they represent could only be so shown if they were arranged to be operated in phase with each other. Thus the drawings \* \* \* explicitly disclose that the wiper arms operate in phase with each other. [Emphasis ours.]

The only comment which Stevens makes in regard to this finding of the Board is that "appellant contends that those lines merely represent limits of wiper arm movement, one form for the left and another for

[1] Prior to the brief for appellant in this court, Stevens in no way questioned Schmid's right to the benefit of his German filing date. Now, however, Stevens notes that there is an error in the translator's affidavit filed with the translation of the certified German application and an error in the translation of the German Patent Office certificate. These errors, Stevens says, are fatal to Schmid's claim of priority since the time in which a correct "sworn translation" should have been filed has already expired. Suffice it to say that this is not one of the extraordinary circumstances in which we will consider issues not raised below.

<sup>3</sup> *Krohn v. Olsel*, 54 CCPA 1260, 373 F.2d 992, 153 USPQ 57; *Binstead v. Littmann*, 44 CCPA 839, 242 F.2d 766, 118 USPQ 279.

the right." We are of the opinion that the Board's interpretation of the figures is the necessary and only reasonable one.

Stevens also relies on the statement in the British specification that

The auxiliary wiper arms and blades are each arranged for oscillation throughout arcs of substantially 90° between a substantially horizontal and a substantially vertical position, and their paths of movement partially overlap portions of that of the main wiper arm and blade which is arranged for oscillation throughout a greater arc. [Emphasis ours.]

According to Stevens, this necessarily means that the *auxiliary* blades move simultaneously from the horizontal to the vertical and thus in phase opposition,<sup>4</sup> and that this in turn must mean that *one* of the auxiliary blades is in phase opposition with the center blade. Stevens' interpretation appears to be, as appellee says, "a hindsight approach prompted by the exigencies of the situation." At best, it is not the necessary and only reasonable interpretation, for, as we read the above-quoted sentence, it merely describes the arcs that are wiped by the auxiliary blades and such a description is equally correct whether these blades are actuated in phase or in phase opposition. Moreover, the sentence immediately following that just referred to is explanatory and reads:

Thus the auxiliary wiper arms and blades may each operate over an arcuate region which extends from near a side edge of the windscreen to near the upper (or lower) edge thereof; and the main arm and blade may operate over a central arcuate region each end of which overlaps that end of the arcuate region of an auxiliary blade which is adjacent the upper (or lower) edge of the windscreen, the auxiliary arms and blades moving through arcs of substantially 90° and the main arm and blade through an arc of, say, 140°. [Emphasis ours.]

This leaves no doubt that the disclosure relied upon by Stevens is only descriptive of the areas wiped by the three windshield wiper blades and does not suggest the type of actuation to be imparted to them.

Stevens also urges that the disclosure that FIGURE 1 is "the elevation of the windscreen with the wiper blades and arms arranged at the top of the windscreen" (emphasis ours) does not describe simply an end of a wiper area as being at the top, but instead shows that, when parked, the wiper blades as well as the wiper arms are arranged at the top of the windshield. And, says Stevens, all the blades and arms can be at the top of the windscreen only if two adjacent ones operate in phase opposition. The fallacy of this argument, however, becomes manifest once it is observed that no blades or arms are shown or even indicated in FIGURE 1; thus, the necessary and only reasonable interpretation is that the *pivots* are at the top of the windshield, rather than at the bottom, and necessarily, then, the blades and arms attached thereto must also be generally at the top rather than at the bottom, which is disclosed as an alternative.

Stevens' remaining arguments are based on the drawings in the British specification and specifically the existence of an "offset" between the top edge of the windshield and the left terminal position of the center blade. It is argued that

The person skilled in the prior art would know that such an arrangement of the respective terminal positions would be most unusual in any system and certainly would *never* be contemplated in a tandem system where the wipers moved in phase. He would recognize that this particular arrangement was adopted by Stevens in his British provisional specification *only* because it was the solution to interference in the phase-opposition situation. [Emphasis quoted.]

<sup>4</sup> Stevens reasons: Had in-phase operation of the two auxiliary blades been meant, then one of those blades would have been described as oscillating between a substantially horizontal and a substantially vertical position while the other oscillated between a substantially vertical position and a substantially horizontal position.



We cannot accept appellant's argument. It seems to us that Stevens, in his British specification, quite clearly contemplated the terminal positions shown in his "informal" drawings, including the "offset" from the upper edge of the windshield, with a *tandem* system. In his FIGURE 2 he shows "diagrammatically" all three wiper blades operating in tandem because they are all simultaneously shown in full lines at the left-hand limits of the areas they wipe, and, conversely, the right-hand limits are shown in broken lines. There is nothing in FIGURE 1 inconsistent with FIGURE 2 since FIGURE 1 contains no indication of wiper blades at all. What meager showing the British specification does contain certainly does not necessarily call for phase opposition operation. It points distinctly to in phase operation.

We therefore agree with the Board that the British specification does not disclose support for the limitation of the count reading "means for imparting conjoint oscillation to said wiper blades in phase opposition." Accordingly the decision of the Board is affirmed.

**AFFIRMED.**

### U.S. Court of Customs and Patent Appeals

IN RE THE GENERAL TIRE & RUBBER COMPANY

No. 8059. Decided January 16, 1969

[56 CCPA —; 404 F.2d 1396; 160 USPQ 415]

#### 1. TRADEMARK—REGISTRABILITY—ORNAMENTATION—*In re Swift and Co.* DISTINGUISHED.

"In resolving the opposing positions taken by the parties, we find significant the following quoted portion of the Commissioner's brief: 'However, white stripes are so common on the sidewalls of tires as to have created in the minds of purchasers a type of tires known as whitewalls. This situation does not exist as to white stripes placed on containers or other articles. \* \* \* This it seems to us, reaches the heart of the matter. The general public, it is well known, has long been familiar with whitewalls as a dress or ornamentation for tires. It therefore seems to us that a typical purchaser, having the idea that whitewall indicia is primarily for ornamentation, would be more likely to consider a 3-ring whitewall as just a refinement of this general ornamental concept, rather than as a trademark. This it seems distinguishes the present situation from *Swift* because, although *Swift's* two spaced polka dot bands might be considered a special species of polka dot banding, there was no general understanding of the public in *Swift* that polka dot banding, even in a single band, was a commonly adopted and well known form of ornamentation for cylindrical containers for household commodities.'

APPEAL from Patent Office. Serial No. 192,032.

**AFFIRMED.**

*Joe E. Daniels, Liddy, Sullivan, Hart, Daniels & Baxley* (Francis J. Sullivan, of counsel) for appellant.

*Joseph Schimmel* (Fred W. Sherling, of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, and Judges RICH, ALMOND, BALDWIN, and KIRKPATRICK<sup>1</sup>

KIRKPATRICK, J., delivered the opinion of the court.

The General Tire & Rubber Company appeals from a decision of the Trademark Trial and Appeal Board<sup>2</sup> refusing appellant's application<sup>3</sup> for registration of a mark for pneumatic tires described as

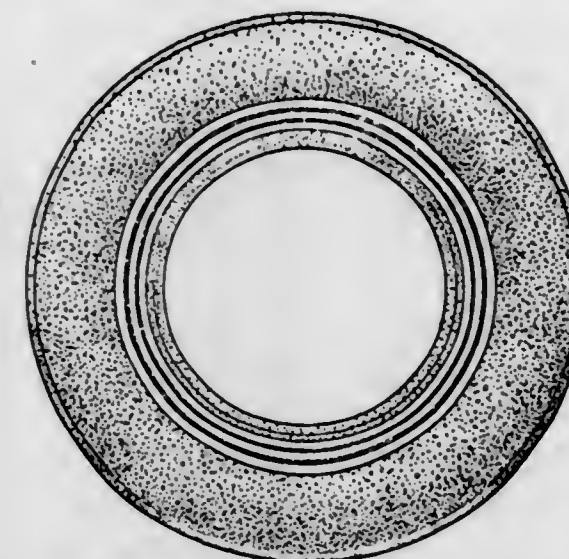
<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

<sup>2</sup> The board consisted of Leach, Waldstreicher and Lefkowitz, members. Mr. Waldstreicher wrote the opinion, 151 USPQ 214.

<sup>3</sup> Serial No. 192,032, filed April 27, 1964, for "Pneumatic Tires."

consisting of three narrow white concentric rings of approximately equal width applied to the outer surface of a dark sidewall tire.

An illustration of the mark applied to a tire, in accordance with a substitute drawing filed in appellant's trademark application, follows:



The Board considered the mark to be no more than ornamentation and refused registration, saying:

It is apparent that tire trim, be it wide or narrow whitewalls, thin stripe white or colored, dual striped, triple striped or even checkered, has been and is considered to be ornamental, decorative, or a means of dressing up a car rather than as a trademark indicating origin in any particular manufacturer. We agree with the Examiner of Trademarks that the subject matter of the application is not registrable.

On appeal, appellant argues that the mark is unique and distinctive of the product and should, therefore, be registrable as a trademark notwithstanding its ornamental qualities. Appellant draws attention to a decision of this court in *In re Swift and Co.*, 42 CCPA 1048, 223 F.2d 950, 106 USPQ 286 (1955), which involved an application for registration of a mark comprising two, spaced, rectangular, polka dot bands encircling the exterior of a cylindrical can of household cleanser. In allowing registration of this mark, this court stated:

It is axiomatic, of course, that a trademark must be distinctive in order to accomplish its function of indicating the producer of the article to which it is applied, and, with particular regard to symbols and devices, should be displayed with such prominence as will enable easy recognition. That appellant's design will instantaneously be recognized by the ordinary purchaser as a pattern of polka dot banding cannot admit of serious dispute. While to some extent it may thus be considered a commonplace design, we believe it is distinctive and does not retain its purely abstract significance as a common and merely ornamental design when applied in its particular form to the label of a can of household cleanser. We think a definite and lasting impression will be created by use of the design in association with appellant's product whereby the average consumer will regard it as an unmistakable, certain, and primary means of identification pointing distinctly to the commercial origin of such product. \* \* \*

Appellant argues that the presently considered mark comes within the language of the above quoted portion of *Swift* and that we should therefore be guided by that decision.

Appellee, however, takes the position that the present situation more closely resembles that faced by this court in *In re Burgess*, 27 CCPA 1297, 112 F.2d 820, 46 USPQ 39 (1940). The mark therein, sought to be registered, comprised alternating black and white stripes applied to the exterior of dry batteries and flashlight cases. In affirming the refusal of trademark registration, this court stated:

We think it is apparent from the record that appellant's alleged trademark is a mere "dress" which gives a distinctive external appearance to appellant's



goods; that it is such distinctive appearance which is recognized by "some" of the purchasing public as indicating appellant's goods; and that appellant's design is merely a colored label or dress of black and white alternating stripes, the office of which (design) is not to point out distinctly the origin or ownership of the articles to which the label is affixed. \* \* \*

[1] In resolving the opposing positions taken by the parties, we find significant the following quoted portion of the Commissioner's brief:

However, white stripes are so common on the sidewalls of tires as to have created in the minds of purchasers a type of tires known as whitewalls. This situation does not exist as to white stripes placed on containers or other articles. \* \* \*

This, it seems to us, reaches the heart of the matter. The general public, it is well known, has long been familiar with whitewalls as a dress or ornamentation for tires. It therefore seems to us that a typical purchaser, having the idea that whitewall indicia is primarily for ornamentation, would be more likely to consider a 3-ring whitewall as just a refinement of this general ornamental concept, rather than as a trademark. This it seems distinguishes the present situation from *Swift* because, although *Swift*'s two spaced polka dot bands might be considered a special species of polka dot banding, there was no general understanding of the public in *Swift* that polka dot banding, even in a single band, was a commonly adopted and well known form of ornamentation for cylindrical containers for household commodities.

For this reason, it seems to us that the present situation more nearly resembles that present in *Burgess* where the insignia was considered to be merely ornamentation. We therefore affirm the decision of the Board.

AFFIRMED.

## PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,624,634, G. A. Lyon, WHEEL COVER; 2,624,639, same; 3,252,315, W. W. Muench, APPARATUS FOR MANUFACTURING WHEEL COVERS, filed Feb. 21, 1967, D.C., E.D. Mich. (Detroit), Doc. 29583, *Rockwell-Standard Corporation v. Gar Wood Industries, Inc.* Stipulation and order of dismissal with prejudice; first counterclaim without prejudice; as to second counterclaim with prejudice, Mar. 27, 1969.

2,624,639. (See 2,624,634.)

2,648,729, M. J. Noregaard, LOCK RELEASE OPERATED SWITCH, filed Apr. 14, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69-697-JWC, *Card Key Systems v. General Automated Systems, et al.*

2,649,674, H. L. Bartelt, PACKAGING MACHINE, filed Jan. 8, 1966, D.C. Mass. (Boston), Doc. 66-106-J, *Bartelt Engineering Company, Inc. v. Pneumatic Scale Corporation*. Judgment, claim 16 is invalid, Apr. 15, 1969.

2,674,728, J. T. Potter, THREE DIMENSIONAL MEMORY DEVICE; 3,263,223, G. E. Zenzefils, CAP SCATTER CORRECTION APPARATUS, filed Mar. 5, 1969, D.C., S.D. Ind. (Indianapolis), Doc. IP69-C-116, *Potter Instrument Company, Inc. v. Control Data Corporation and Oicene-Illinois, Inc.*

2,676,471, W. M. Pierce, Jr., METHOD FOR MAKING AND DISTRIBUTING SNOW, filed May 23, 1966, D.C., W.D.N.Y. (Buffalo), Doc. C-11,847, *Larchmont Engineering, Inc. v. Ratnick Industries, Inc., Bristol Mountain, Inc., Frederick W. Sarkis and H. Ronald Ratnik*. Consent decree as to certain defendants, Ratnik Industries, Inc. and H. Ronald Ratnik, Mar. 12, 1969.

2,688,906, R. J. Dokopli, METHOD AND MEANS FOR THE MANUFACTURE OF FLEXIBLE TUBES (PIPES), filed Mar. 12, 1969, D.C., Conn. (New Haven), Doc. 13025, *American Flexpipe Company v. The Wiremold Company*.

2,694,692, Amos, McCurdy and McIntyre, METHOD OF MAKING LINEAR INTERPOLYMERS OF MONOVINYL AROMATIC COMPOUNDS AND A NATURAL OR SYNTHETIC RUBBER, filed Dec. 30, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c2485, *The Dow Chemical Company v. Standard Oil Co. (Ind.) et al.*

2,702,049, M. M. Seeloff, FLUID VALVE, filed June 11, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1059, *Versa Products Co., Inc. v. Flick Reedy Corp.* On stipulation, order cause dismissed without prejudice, Mar. 21, 1969.

2,713,447, G. L. Maner, PORTABLE PACKING STAND, filed Sept. 24, 1963, D.C., E.D. Calif. (Fresno), Doc. 41781, *Maner Packers Inc. v. Arrothead Farms, Inc.* Ordered defendant's motion to dismiss granted as this cause of action was merged onto the judgment in the case entitled *Maner Packers Inc. v. Arrothead Farms, Inc.* Case 2505-ND, Mar. 26, 1969.

2,721,569, V. Militano, TILTABLE GARDEN UMBRELLA, filed Mar. 19, 1969, D.C., S.D.N.Y., Doc. 69-C-1100, *Finkel Umbrella Frame Company Inc. v. Sun-Umbrella Inc.*

2,727,069, J. P. M. Van Waes, PREPARATION OF UREA, filed Mar. 7, 1969, D.C., E.D. Tenn. (Chattanooga), Doc. 5545, *Stamcarbond, N.V. v. Farmers Chemical Association, Inc.* Same, filed Mar. 25, 1969, D.C., Del. (Wilmington), Doc. 3690, *Stamcarbond, N.V. v. Arkla Chemical Corporation*.

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and judgment entered in favor of plaintiff on counterclaim of defendant, Wiley Mfg. Co.

2,736,323, E. G. McDonough, PERMANENT WAVYING SOLUTIONS AND METHOD, filed Apr. 8, 1969, D.C., Ct. of App., 4th Cir., Doc. 13,391, *Tidewater Patent Development Company, Inc. v. K. M. Kitchen and Virginia M. Kitchen, doing business as K. M. Kitchen Beauty Supply Company*.

2,893,004. (See 2,897,497.)

2,897,497, L. H. Finneburgh, Jr., SELECTIVE MULTIPLE CHANNEL TV ANTENNAS; 2,893,004, J. K. Kobler, DUAL BAND ANTENNA ARRAY; Re. 24,413, R. S. Weiss, RADIO FREQUENCY ANTENNAS, filed Oct. 25, 1967, D.C., S.D. Tex. (Houston), Doc. 67-H-819, *Finney Manufacturing Co. and Lewis H. Finneburgh, Jr. v. Electronic Components Distributors, Inc.* Order of dismissal, with prejudice as to all alleged acts of unfair competition and all alleged acts of infringement of the patents in suit and of Kearse Patent 2,872,681, which have occurred prior to the entry of this order; but without prejudice to the plaintiff with respect to any act of alleged infringement occurring after the date of this order, May 12, 1969.

2,962,709, L. Michels, SELECTIVELY OPERABLE STROBE MARKING CIRCUIT; 2,975,413, Landee, Deen, Fling, Shaw, Davis, Johnston and Bennett, SIMPLIFIED GROUND CONTROLLED APPROACH SYSTEM INCLUDING ADAPTATIONS FOR SURVEILLANCE, PRECISION APPROACH, TAXI AND HEIGHT FINDING; 2,976,521, T. J. Johnson, Jr., PERIODIC REFERENCE SIGNAL MODULATION METHOD AND APPARATUS FOR REPRESENTING THE POSITION OF A DEVICE; 3,026,517, Nameth and Stein, RADAR SCANNING SYSTEM, filed Jan. 27, 1969, U.S. Ct. of Cl., Doc. 46-69, *Ist Giffillan Inc. v. United States of America*.

2,975,413. (See 2,962,709.)

2,976,521. (See 2,962,709.)

2,992,651. (See 3,296,190.)

3,026,517. (See 2,962,709.)

3,091,360, B. Edwards, NESTABLE CUP; 3,139,213, same, filed Mar. 6, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c480, *Illinois Tool Works Inc. v. Solo Cup Company, Inc.*

3,125,641, D. R. Von Recklinghausen, APPARATUS FOR INDICATING STEREOPHONIC BROADCASTING TRANSMISSION AND THE LIKE; 3,296,378, Fish, Jr. and Russell, MONOPHONIC-STEREOPHONIC AUTOMATIC SWITCHING AND DEMODULATOR CIRCUIT; 3,348,154, Fish, Jr. and Von Recklinghausen, SIGNAL MIXING AND CONVERSION APPARATUS EMPLOYING FIELD EFFECT TRANSISTOR

WITH SQUARE LAW OPERATION, filed Nov. 26, 1968, D.C., S.D.N.Y., Doc. 68-C-4688, *H. H. Scott, Inc. v. Fisher Radio Corp.*

3,139,213. (See 3,091,360.)

3,175,040. (See 3,299,946.)

3,252,315. (See 2,624,634.)

3,259,157, E. E. Runnion, PRODUCTION OF DIMENSIONAL LUMBER FROM SMALL-DIAMETER LOGS; 3,344,826, L. A. Mitten, PRODUCTION OF PULP CHIPS AND STUD LUMBER FROM PEELER CORES, filed Apr. 3, 1969, D.C., W.D. Wash. (Seattle), Doc. 8225, *Ernest E. Runnion and Hawker Siddeley Canada Ltd. v. Stetson-Ross Machine Co., Inc. and Pope & Talbot, Inc.* Same, filed Apr. 7, 1969, D.C., Idaho (Boise), Doc. C-1-69-28, *Ernest E. Runnion et al. v. Adco West Machinery Manufacturing, Inc.*

3,263,223. (See 2,674,738.)

3,296,378. (See 3,125,641.)

3,298,190, C. B. Harker, FREEZING CONDITION CONTROL; 2,992,651, M. Krofta, STOCK CONSISTENCY INDICATOR, filed July 10, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c221, *The Cornelius Company, Milos Krofta v. Beatrice Foods Co., C.T. Corporation System*.

3,299,946, D. R. Von Recklinghausen, MOUNTING AND HEAT SINK DEVICE FOR ELECTRICAL COMPONENTS; 3,175,040, same, BALANCED STEREOPHONIC DEMODULATOR APPARATUS, filed Nov. 27, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68-C-1204, *H. H. Scott, Inc. v. Sansui Electronics Corp.*

3,344,826. (See 3,259,157.)

3,348,154. (See 3,125,641.)

3,366,911, Wilson, Budd and Van Benthuyssen, ELECTRICAL CONTROL WITH PANEL MOUNTING MEANS; 3,370,261, J. D. Benthuyssen, ELECTRICAL SWITCH AND COMBINATION ELECTRICAL RESISTOR AND SWITCH, filed July 22, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1362, *CTS Corporation v. P. R. Mallory & Co., Inc.* On stipulation complaint and counterclaim dismissed, Feb. 28, 1969.

3,370,261. (See 3,366,911.)

3,423,644, M. Mintz, ELECTROLYTIC CELL WITH HOUSING COMPRISING ELECTRODE AND SEAL POSITIONS; 3,423,648, same, ELECTROLYTIC CELL WITH ELECTRICALLY CONDUCTIVE MASKING SURFACE, filed Mar. 28, 1969, D.C., Md. (Baltimore), Doc. 20615-C, *The Bissett-Berman Corporation v. Miller Research Corporation*.

3,423,648. (See 3,423,644.)

Re. 24,413. (See 2,897,497.)



AUGUST 12, 1969

**26,639**

**No Drawing. Original No. 3,361,775, dated Jan. 2, 1968,  
Ser. No. 410,295, Nov. 10, 1964. Application for reissue  
Apr. 11, 1968, Ser. No. 729,861**

**Int. Cl. C07f 7/22; C08g 22/42; C09k 3/18**

U.S. Cl. 260—408 5 Claims
$$\text{OCH}_2\text{CH}_2\text{NHCH}_2\text{CH}_2\text{O}$$

i.e., diethanolamine free of its hydroxyl hydrogen atoms.

**26,640**

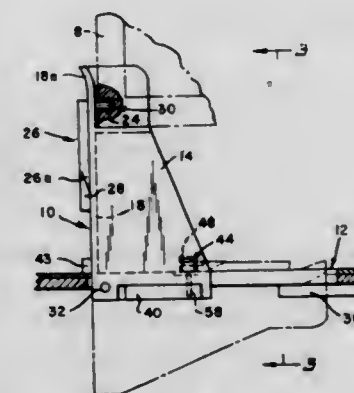
**Edwin B. Connerat, 6122 Woodmont Road,  
Alexandria, Va. 22307**

Original No. 3,321,162, dated May 23, 1967, Ser. No. 494,207, Oct. 8, 1965. Application for reissue Oct. 25, 1967, Ser. No. 689,733

Int. Cl. B60p 7/10

U.S. Cl. 248—119

## 17 Claims



865 O.G.—14

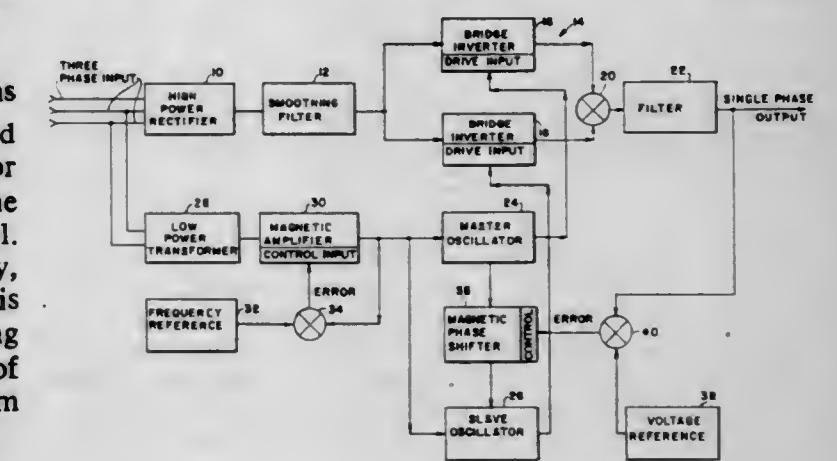
**26,641**

**Philip D. Corey, Crozet, Va., assignor to General Electric Company, a corporation of New York**  
Original No. 3,248,635, dated Apr. 26, 1966, Ser. No. 124,467, July 17, 1961. Application for reissue Apr. 22, 1968, Ser. No. 741,821

Int. Cl. H02m 3/22, 5/40

U.S. Cl. 321—4

### 37 Claims



Apparatus for converting power of one frequency to a different frequency includes a rectifier circuit changing an input into D.C. power, a regulated, D.C. supply voltage source, an oscillator circuit operated at a stable frequency by the voltage source, and an inverter circuit having as an input the D.C. power, the inverter circuit being driven by the oscillator circuit to produce a power output of the desired frequency. Voltage regulation of the power output may be accomplished by providing a master and a slave oscillator in the oscillator circuit, an output of the master oscillator being coupled to the slave oscillator through a magnetic phase shifter, and by providing corresponding inverters in the inverter circuit whose outputs are vectorially combined. By comparing the power output voltage with a voltage reference, any difference therebetween is applied as a correction voltage to control the magnetic phase shifter so that the phase displacement between master and slave oscillations and the corresponding inverters can be varied. Frequency regulation may be accomplished by comparison of the D.C. supply voltage with a frequency reference voltage and control thereby of a magnetic amplifier within the voltage source. Various embodiments of the oscillators including magnetic coupled multivibrators are illustrated, as well as embodiments of the magnetic phase shifter including various magnetic amplifiers and a saturable reactor.

26.642

**Louis Bender, Scotch Plains, N.J., assignor of  
one-half to Leo Miller, Plainfield, N.J.**

**Louis Bender, Scotch Plains, N.J., assignor of one-half to Leo Miller, Plainfield, N.J.**  
Original No. 3,182,420, dated May 11, 1965, Ser. No. 248,668, Dec. 31, 1962. Application for reissue June 29, 1966, Ser. No. 564,709

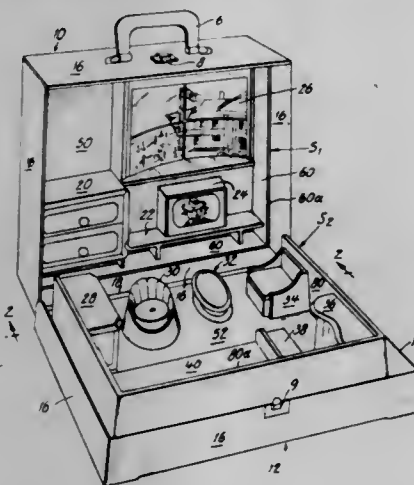
Int. Cl. A63h 3/52, 33/42; B65d 5/50

U.S. Cl. 46—12

A carrying case of two box-like portions hinged together and having a molded plastic sheet secured to the inner face of each portion. The sheets are formed to define upstanding objects simulating the interior of a room.



or other environment when the case is open, and when the case is closed the objects of one portion project into the



other portion and side walls of one box-like portion lie within corresponding walls of the other portion.

26,643

**BRAKING SYSTEM**

Harvison C. Holland, 230 22nd St.,  
Santa Monica, Calif. 90402

Original No. 3,258,298, dated June 28, 1966, Ser. No. 436,411, Feb. 15, 1965, which is a continuation-in-part of application Ser. No. 225,526, Sept. 24, 1962. Application for reissue Dec. 29, 1967, Ser. No. 698,070

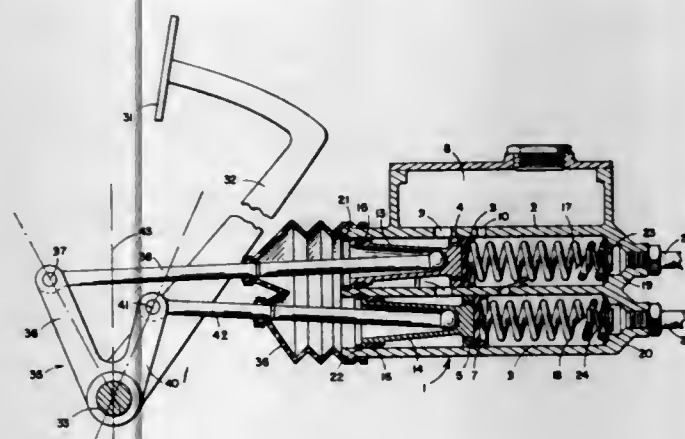
Int. Cl. B60t 8/02

U.S. Cl. 303—6

17 Claims

A braking arrangement including two hydraulic sys-

tems, one for the front wheels and the other for the rear wheels, each system having a master cylinder arranged so that upon movement of the actuator the piston in the system for the front wheels accelerates relative to the piston for the system for the rear wheels so that the ratio of the stopping force at the front wheels to that at the rear



wheels increases with increased braking effort, the systems producing sufficient movement of the pistons to take into account the relative stiffnesses of the two systems so that stopping forces are produced at the front and rear wheels to provide maximum braking effort without skidding.

**PLANT PATENTS**

GRANTED AUGUST 12, 1969

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,916

**DOGWOOD TREE**

Fernando C. Boyd, Jr., McMinnville, Tenn., assignor to Boyd Nursery Company, Inc., McMinnville, Tenn., a corporation of Tennessee

Filed Oct. 25, 1967, Ser. No. 678,120

Int. Cl. A01h 5/02

U.S. Cl. Plt.—51

1 Claim

1. A new and distinct variety of dogwood tree, substantially as herein shown and described, characterized particularly as to novelty by a general similarity of the plant and flowers, except for its foliage, to the species botanically known as *Cornus florida*, but being distinguished from all other varieties of the aforesaid species by the unique combination of a rapid, upright growing habit, a distinctive and attractive leaf coloration ranging from Moderate Yellow-Green to Strong Yellow-Green over an irregular central area, with the surrounding leaf margin being Vivid Yellow in a border of irregular width and suffused irregularly along the leaf veins towards and into the central area of the leaf, constant retention of the leaf color throughout the growing season from early spring to late fall when the green color becomes an attractive maroon color, and the yellow color becomes suffused with pink, and the ability to grow in full sun without losing or diminishing the striking foliage colors.

2,917

**MAPLE TREE**

William Flemer III, Princeton, N.J., assignor to Tresearch, Kingston, N.J., a partnership

Filed Dec. 5, 1967, Ser. No. 688,279

Int. Cl. A01h 5/12

U.S. Cl. Plt.—51

1 Claim

1. A new and distinct variety of maple tree, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a more rapid and more full-headed habit of growth than the variety known as "Sentry" (unpatented), a more dense and compact form than the sugar maple variety known as "Columnare," with even the young trees forming a dense, narrow, rectangular head of foliage, leathery, dark green foliage which is resistant to physiological leaf scorch and completely free thereof when other varieties grown adjacent thereto under the same conditions become badly disfigured by such leaf scorch, the ability to complete its growth early in the season, with consequent freedom from injury from leaf hopper feeding, and a distinctive, attractive and exceptionally brilliant orange fall coloring of the foliage.

**PATENTS**

GRANTED AUGUST 12, 1969

**GENERAL AND MECHANICAL**

3,460,163

**WOMEN'S RAIN HOOD**

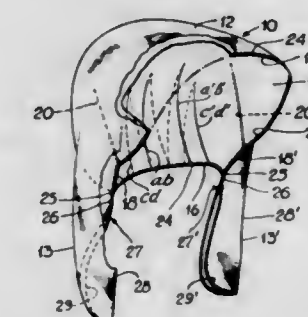
Ruth C. Erbb, 2 Sutton Place S.,  
New York, N.Y. 10022

Filed Aug. 9, 1966, Ser. No. 571,203

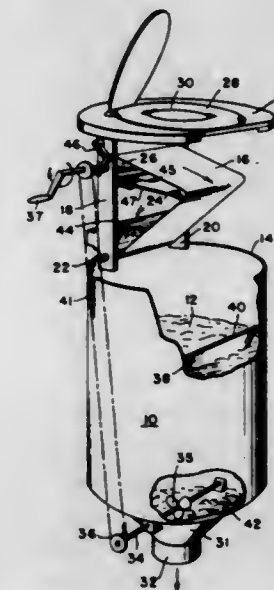
Int. Cl. A42b 1/06, 7/00

U.S. Cl. 2—204

4 Claims



A women's ornamental rain hood having a waterproof plastic liner and a water resistant fabric cover with elongated depending tie extensions. The head-enveloping crown portion is contoured and pleated to freely receive bouffant hairdos as well as uniform headgear worn by women in airline service, military service, and other service personnel.



3,460,166

**MULTITEMPERATURE SWIMMING POOL**

Karl Weber, Box 509, Rancho Santa Fe, Calif. 92067

Filed June 26, 1967, Ser. No. 648,609

Int. Cl. E04h 3/16

U.S. Cl. 4—172

8 Claims

3,460,164

**DISPOSABLE, NESTABLE BEDPAN**

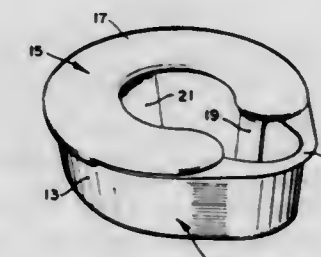
Temple C. Patton, 105 Oxford Terrace,  
Westfield, N.J. 07090

Filed Dec. 13, 1966, Ser. No. 601,475

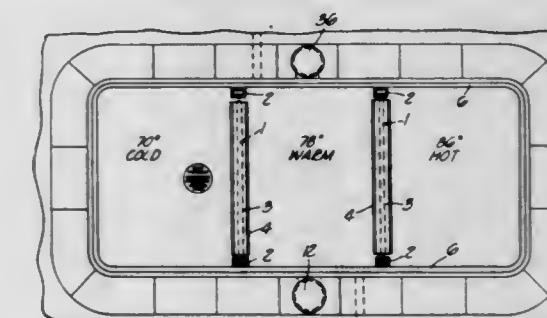
Int. Cl. A61g 9/00

U.S. Cl. 4—112

6 Claims



A two-part disposable, nestable bedpan for collection of body wastes which comprises an open-topped receptacle and a removable top section which comprises a seat which engages the upper edge of the open-topped receptacle. Both the open-topped receptacle and the seat are designed so that they are nestable with a plurality of other like receptacles and seats respectively, thereby effecting a substantial reduction in the spaced required to store the bedpans.



3,460,165

**MECHANICAL-FLUSH CHEMICAL TOILET**

Neil L. Drobny, Columbus, Ohio, assignor to the United States of America as represented by the Secretary of the Navy

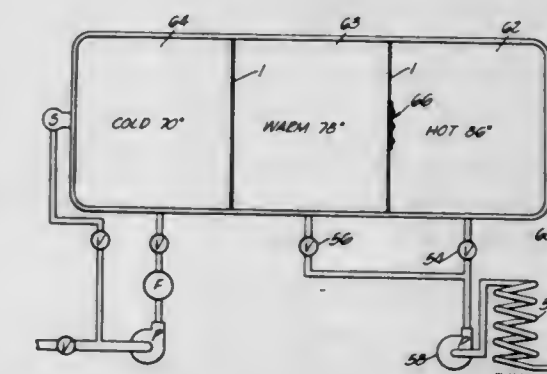
Filed Oct. 7, 1966, Ser. No. 586,337

Int. Cl. A47k 11/02; A61l 11/00

U.S. Cl. 4—115

7 Claims

A mechanical-flushing chemical toilet having a con-



The purpose of this invention is to provide means for heating a swimming pool at an economic rate and/or to provide a high temperature side for therapeutic purposes and a regular temperature side for family swimming which is adaptable to most existing swimming pools.



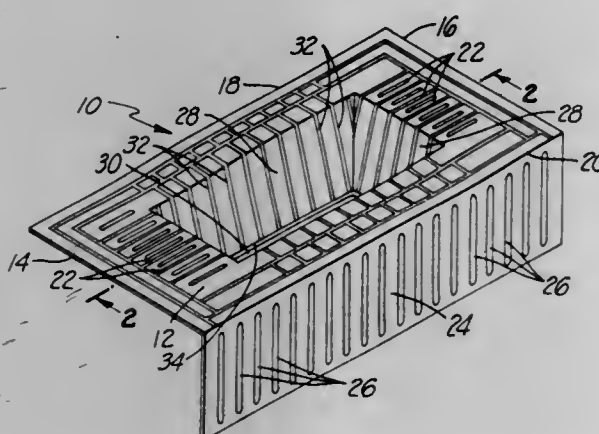
3,460,167

**BATHTUB COVER**

William H. Benjamin, 14002 Eastbrook,  
Bellflower, Calif. 90706  
Filed May 9, 1967, Ser. No. 637,244  
Int. Cl. A47k 13/00

U.S. Cl. 4-173

1 Claim



A protective cover for bathtubs is disclosed which is formed from a self-supporting, somewhat flexible sheet of plastic. This cover is formed so as to be capable of engaging the normally exposed edges of a bathtub and overlaying all normally exposed portions of such a tub. It includes a centrally formed depression area which engages the central region of the bottom of a normal bathtub so as to hold the cover against undesirable slipping. The entire cover is designed so that it can be used with virtually any commonly encountered bathtub.

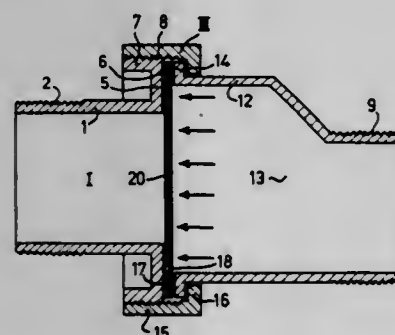
3,460,168

**DRAINAGE SYSTEM FOR SINKS, LAVATORIES AND THE LIKE**

Gabriel Louis De Bruyne, 44 Avenue de la Foret de  
Soignes, Rhode-St. Genese, Belgium  
Filed Sept. 20, 1966, Ser. No. 580,677  
Claims priority, application Belgium, Sept. 22, 1965,  
669,967; May 10, 1966, 27,887  
Int. Cl. E03c 1/18

U.S. Cl. 4-189

8 Claims



A drainage system for sinks, lavatories and the like and concerns a device for preventing the rising and backflow of foams coming from waste water.

3,460,169

**BEDSTEADS OR THE LIKE**

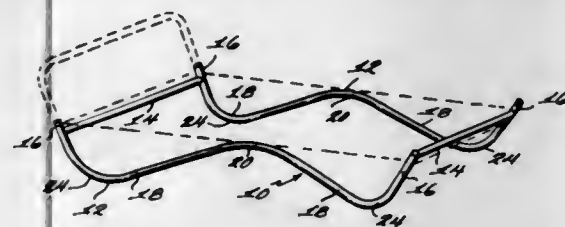
Maximilian Heller, 716-720 Seven Sisters Road,  
Tottenham, London, N. 15, England  
Filed July 15, 1966, Ser. No. 565,562  
Int. Cl. A47c 19/00

U.S. Cl. 5-131

2 Claims

A bedstead comprising a carrier frame and a mattress base carried thereby. The carrier frame comprises a pair

of longitudinal side members connected at their ends. The carrier frames extend upwardly toward the central part



thereof and the mattress base is supported at its ends by the narrow ends of said frame and at its middle by the summit of the upward extension of said side members.

3,460,170

**SLEEPING BAGS**

Mervyn Watts Ozler, 1101 S. Mattis Ave.,  
Champaign, Ill. 61820  
Filed Sept. 20, 1967, Ser. No. 669,142  
Int. Cl. A47g 9/08, 9/00

U.S. Cl. 5-343

5 Claims



A light weight, low cost sleeping bag comprising an outer layer of impervious material and an inner layer of paper which is constructed with a seam having sufficient openings to provide adequate ventilation. The bag is manufactured by initially fastening together two panels constructed of a paper layer laminated to an impervious layer such as plastic along a portion of their marginal edges with the impervious layers facing each other and subsequently inverting the bag as formed so that the impervious layers are on the outside and the seam and paper layers are on the inside.

3,460,171

**PROCESS FOR THE CONTINUOUS DYEING OF ARTICLES MADE FROM POLYACRYLONITRILE FIBERS WITH CATIONIC DYESTUFFS**

Walter Hees, Cologne-Hohenberg, Germany, assignor to  
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen,  
Germany, a corporation of Germany  
No Drawing. Filed May 13, 1966, Ser. No. 549,801  
Claims priority, application Germany, May 19, 1965,  
F 46,084

Int. Cl. D06p 1/68, 3/00; C09b 67/00

U.S. Cl. 8-169

9 Claims

A process for continuous dyeing of polyacrylonitrile materials and fibers with cationic dyestuffs padded in the presence of a mixture prepared from

- (1) Esters of polyhydric aliphatic alcohols with lower aliphatic carboxylic acids, and
- (2) From the reaction product of alkylene oxide with aliphatic or aromatic compounds containing active hydrogen atoms.

3,460,172

**LEAD SCREW MACHINE TOOL**

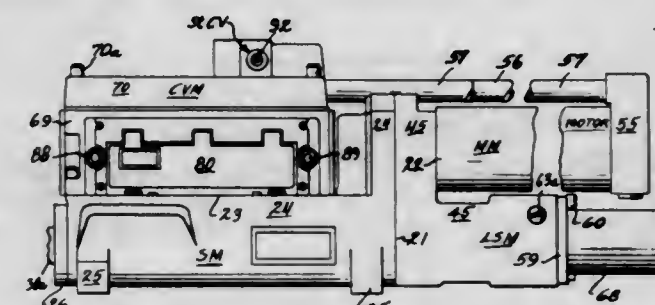
Stanley F. Snyder, Bryan, Ohio, assignor to The Aro  
Corporation, a corporation of Delaware  
Filed June 13, 1966, Ser. No. 557,113  
Int. Cl. B23g 5/00, 1/16; B23b 47/22

U.S. Cl. 10-129

10 Claims

A machine tool having a tool carrying spindle with lead screw means to advance the spindle and thereby the tool into the work. Novel no backlash means is pro-

vided for connecting the spindle to the lead screw through an intermediate shaft having no backlash connections at each end of the shaft. The machine tool is assembled in modules for convenience of individual module repair and any slight misalignment between modules is taken care of by the no backlash connections. The machine tool includes a valve module with manually selective and auto-



matic controls for advance and retraction of the tool carried by the spindle. The controls include fluid pressure operated direction control and on-off valves, a start control valve, a retract control valve, and a stop control valve, the latter three operable to control the direction control and on-off valves by the supply of fluid under pressure thereto for actuating them.

3,460,173

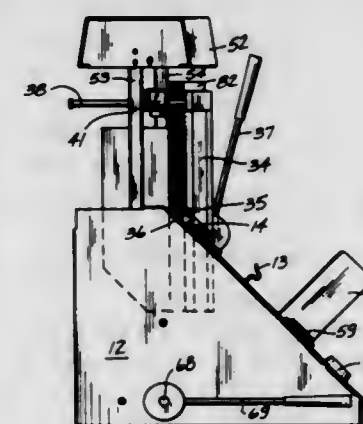
**BINDING MACHINE**

William D. Stuerz, Glenview, Ill., assignor to Wilson  
Jones Company, Niles, Ill., a corporation of Delaware  
Continuation-in-part of application Ser. No. 507,480,  
Nov. 12, 1965. This application Sept. 19, 1967, Ser.  
No. 668,881

Int. Cl. B42c 19/00

U.S. Cl. 11-1

1 Claim



A binding device is shown which includes a supporting frame. A first sheet support is resiliently mounted and includes a plate member projecting from the frame. A motor is connected to the first sheet support to permit this support to be jogged.

A pivotally movable second sheet support is also connected to the frame in spaced relationship with the first sheet support; a movable compressor member is carried by the second support. An elongated housing carries a heater therewithin and is movable into and out of operative position with the second sheet support.

3,460,174

**DEVICE AND METHOD FOR ROUNDING BOOK COVERS**

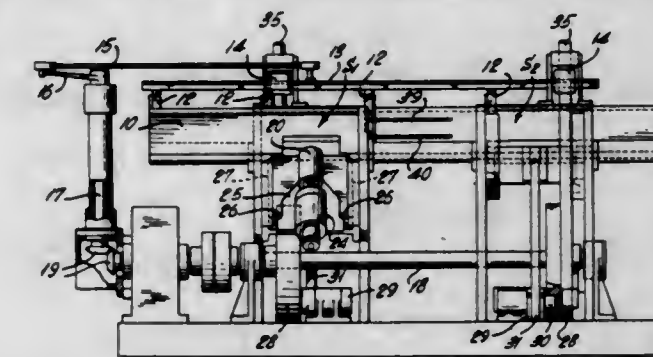
Karl Fomm, Ferdinand-Lasalle-Strasse 17,  
Leipzig, C1, Germany  
Filed June 13, 1966, Ser. No. 557,203  
Int. Cl. B42c 13/00, 19/00; B42d 3/00

U.S. Cl. 11-5

3 Claims

A device and method for rounding book covers. The book is received on and automatically moved along a sup-

port means to a first rounding station where a first rounding means automatically acts on the book to round the connection between one of the covers thereof with the back of the book. Then the book is automatically turned



through 90° and is received in this latter condition automatically at a second rounding station where it is again acted upon so as to round the connection between the other cover and the back of the book.

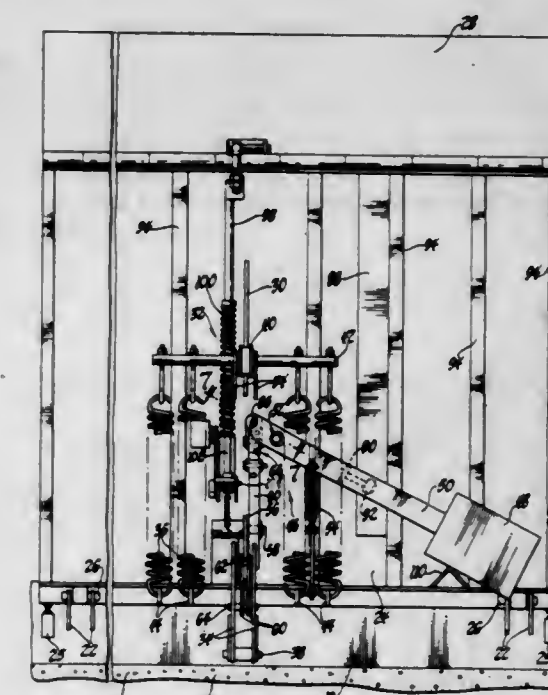
3,460,175

**DOCKBOARD ASSEMBLY**

Robert C. Beckwith, Milwaukee, Wis., and Robert W.  
Hecker, Jr., Clare, Mich., assignors to Loomis Machine  
Company, Clare, Mich., a corporation of Michigan  
Filed Aug. 2, 1967, Ser. No. 657,989  
Int. Cl. B65g 11/12, 11/18; E01d 15/00

U.S. Cl. 14-71

14 Claims



A dockboard assembly comprising a support means attached to a loading dock and a ramp pivotally connected at a first end thereof to the support means and adapted through a pivotal lip at the second end thereof for coaction with a vehicle whereby traffic may move over the ramp between the dock and the vehicle. The ramp is pivotal between various lowered positions and a substantially vertical stored position. Lift springs are included for urging the ramp toward the raised position. A weight arm is pivotally connected to the bottom of the ramp and supports a weight at one end thereof. The weight arm coacts with linkage at the other end thereof to be pivoted thereby for moving the weight between a low moment position adjacent the end of the ramp pivotally attached to the support means and a high moment position adjacent the distal or second end of the ramp to overcome the biasing means and maintain the ramp in a lowered position. There is also included a second spring means urging the weight toward the low moment position adjacent the pivotal connection of the ramp to the support structure so that when the weight



is moved from the high moment position to the low moment position, the lift springs pivot the ramp from the lowered position to the vertical raised position.

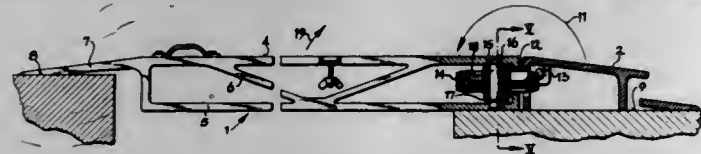
3,460,176

**TRANSLOADING BRIDGE**

Kurt Alten, Ringstr 14, Wennigsen am Deister, Germany  
Filed May 1, 1967, Ser. No. 635,129  
Claims priority, application Germany, May 2, 1966,  
A 52,337  
Int. Cl. E01d 15/12

U.S. Cl. 14—72

3 Claims



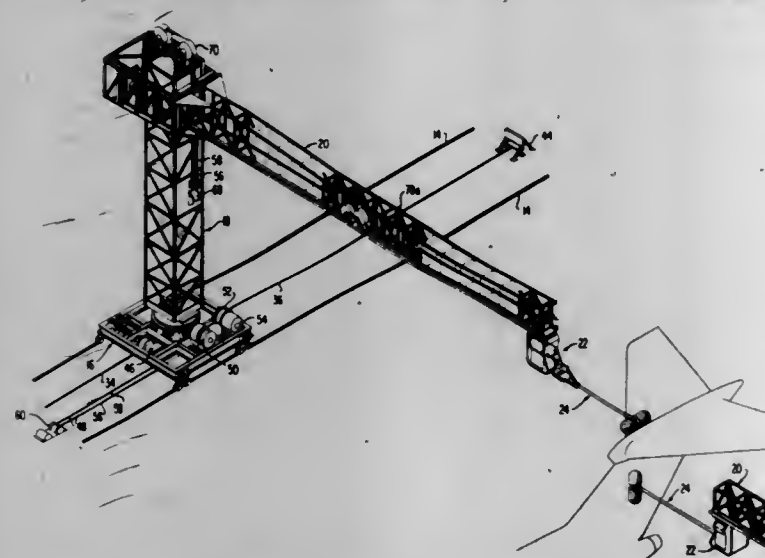
The present invention concerns a manually movable transloading bridge in which the wheels for supporting the bridge during its movement are journaled in the main bridge member at that end portion thereof which is adjacent to the tiltable ascent thereof, so that when the bridge is in operation, by far the major portion of the wheels is covered by the main bridge member while the remainder of the wheels is covered by the respective adjacent tiltable ascent.

3,460,177

**AIRCRAFT WASHING SYSTEM**

Richard W. Rhinehart, Huntsville, Henry L. Conn, Athens, and Howard E. Morris, Florence, Ala., assignors to Brown Engineering Company, Inc., Huntsville, Ala., a corporation of California  
Filed Aug. 28, 1967, Ser. No. 663,694  
Int. Cl. B60s 3/04; B64f 5/00; A47l 11/38  
U.S. Cl. 15—21

23 Claims



For washing aircraft or similarly large structures, a system including a tower movable horizontally along a fixed path on the ground surface, an arm supported on, and projecting from the tower towards the aircraft to be washed and a mobile unit including a washing brush assembly movable along the arm towards and away from the aircraft. To obtain the desired washing level, the arm is movable vertically along the tower which may also be rotated to further position the arm at various angles to the fixed path on the ground surface. In addition to being movable along the arm, the mobile unit is also rotatable relative to the arm to place the brush assembly at various angles relative to the arm. At the extremity of the brush assembly one or more rotatable cleaning brushes are engageable with the aircraft for washing. An extendible and retractable boom in the brush assembly positions the brush adjacent the aircraft surface and the brush assembly may be pivoted relative to the mobile unit to

press the brush against the aircraft surface for washing. Further adjustment of the brush may be achieved by rotating the extendible and retractable boom. Detergent or other washing fluid may also be dispensed from the brush assembly through nozzles located adjacent the brushes. Cable systems are employed to translate the tower, arm and mobile unit. Hydraulic motors drive the cable systems, and the associated power lines are wound on drums supported on the components to accommodate their different positions.

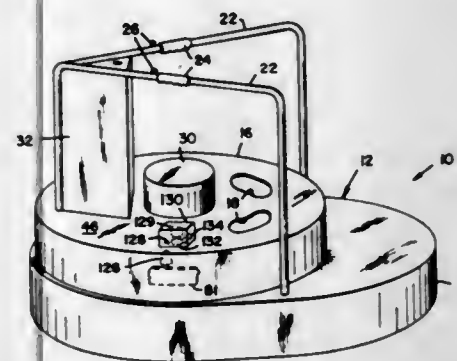
3,460,178

**SHOESHINE MACHINE**

Jacques M. Lecouturier, 3538 Pierce St., San Francisco, Calif. 94123, and Janis I. Abele, Novato, and Max P. Schlenger, San Rafael, Calif.; said Abele and Schlenger assignors to said Lecouturier  
Filed Sept. 25, 1967, Ser. No. 670,355  
Int. Cl. A47l 23/02, 23/18

U.S. Cl. 15—31

13 Claims



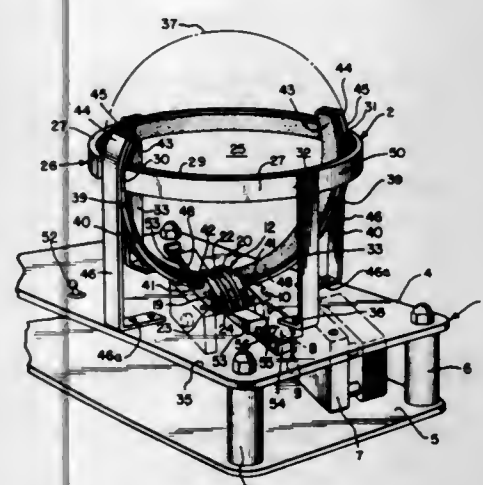
A shoeshine machine having a plurality of rotatable brushes mounted on a turntable for rotation therewith along a circular path. Means is provided to position each of a pair of shoes along a circumferential line closely adjacent to such circular path so as to be engaged one after another by successive brushes as the latter move with the turntable. The brushes are divided into a number of pairs for engaging opposite sides of the shoes and the brushes of each pair are staggered relative to each other so as to be as close as possible to the shoes while rotating in a manner to maintain the shoes on the circumferential line.

3,460,179

**BOWLING BALL CLEANER**

Otto F. Falckenberg, 3721 N. Greenview Ave., Chicago, Ill. 60613, and Dieter H. Urban, 4637 N. Hermitage Ave., Chicago, Ill. 60640  
Filed Nov. 30, 1967, Ser. No. 687,056  
Int. Cl. A47l 11/02; A63b 71/00  
U.S. Cl. 15—97

7 Claims



A bowling ball cleaner having a resilient ball-supporting structure with ball-engaging cleaning material, the structure supporting the ball upon a roller having an elas-

tomeric material surface incorporating means to simultaneously rotate the ball about a plurality of axes, the support-structure reducing the weight upon the roller to an extent so as to permit rotation of the ball without frustrating the action of the roller which would occur if the entire weight of the ball were loaded upon the roller.

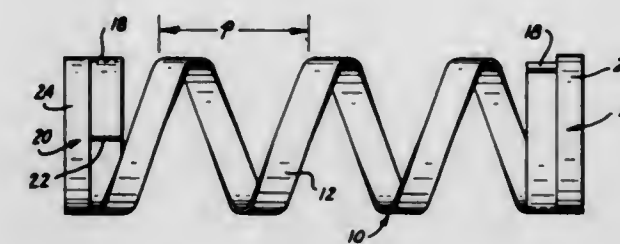
3,460,180

**INTERNAL CLEANING DEVICE FOR PIPE LINES**

Harry J. Girard, Houston, Tex., assignor of one-half to Mary M. Knapp, Houston, Tex.  
Filed June 15, 1967, Ser. No. 646,318  
Int. Cl. B08b 9/02

U.S. Cl. 15—104.06

2 Claims



A pipe line cleaning device to be propelled through a pipe line by a pressure differential therein and including a helically coiled spring-like scraping member shaped for scraping contact with the internal surface of the pipe, and seal forming elements at the ends of the coil positioned for sealing contact with the internal surface of the pipe, whereby a compressive force is exerted on the coil by the pressure of fluid flowing in the line to increase the radial force of the coil on the pipe. The coil is preferably formed with a cutting edge positioned to scrape the internal surface of the pipe to cut away accumulated foreign material thereon.

3,460,181

**DIP STICK GUIDE AND WIPER**

William J. Denver, 601 Nicholson St., Joliet, Ill. 60435  
Filed Jan. 4, 1968, Ser. No. 695,748  
Int. Cl. G01f 23/04

U.S. Cl. 15—210

3 Claims U.S. Cl. 15—235.4



A combined dip stick guide tube and wiper that may be provided as original equipment on the reservoir or as an attachment to a conventional dip stick guide tube. In the preferred embodiment, the tube part of the combination comprises a tubular element having apertures or openings in the opposite sides thereof, and the wiper comprises a pliant tube slipped over the apertured portion of the tubular element, said pliant tube being manually squeezable through said openings into engagement with the dip stick, so as to wipe the stick clean as it is withdrawn from the reservoir, and upon release flexing out of the tubular ele-

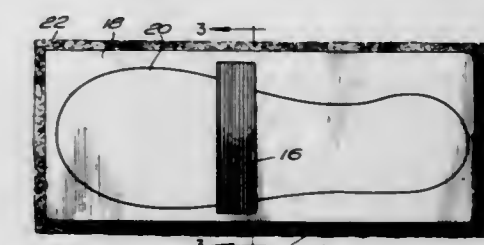
3,460,182

**CLEANING PAD**

Joseph A. Grande, Jr., 28 Clemence St., Cranston, R.I. 02910  
Filed Aug. 14, 1967, Ser. No. 660,492  
Int. Cl. A47l 1/06, 13/16, 13/282

U.S. Cl. 15—227

2 Claims



A pad for cleaning floors and the like including a relatively rigid backing member having a foot receiving surface and to which a strap is secured adjacent to the edges thereof, a scouring member of fibrous construction being bonded to the under surface of the rigid member and having marginal edges of greater longitudinal and lateral dimension than said rigid member for purposes of cleaning edges and corners of a floor when the pad is attached to the foot of a user.

3,460,183

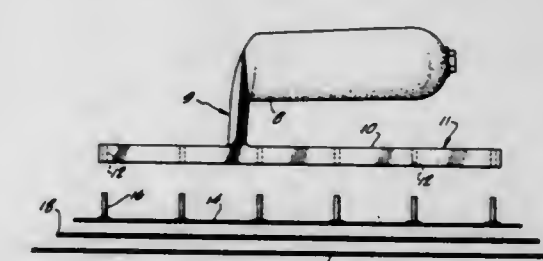
**TROWEL**

Eugene M. Harrington, 3672 Holboro Drive, Los Angeles, Calif. 90027  
Filed Mar. 10, 1967, Ser. No. 622,197  
Int. Cl. E01c 19/12

U.S. Cl. 15—210

3 Claims U.S. Cl. 15—235.4

2 Claims



A trowel having its handle bonded to the trowel blade by an adhesive.

3,460,184

**AUTOMATIC CONVERSION SYSTEM FOR A SCRUBBING AND LIQUID PICKUP APPLIANCE**

Robert F. Dyer, North Canton, Ohio, assignor, by mesne assignments, to The Hoover Company, Wilmington, Del., a corporation of Delaware  
Filed Nov. 15, 1966, Ser. No. 594,624  
Int. Cl. A47l 5/30, 7/02

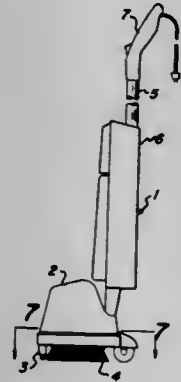
U.S. Cl. 15—320

26 Claims

A floor scrubbing and drying appliance includes automatic conversion means for changing the device from a scrubbing condition to a liquid pickup condition by re-



versing the direction of rotation of a driving motor. A scrubbing brush is threaded on a vertical axis shaft driven by the motor so that the brush will move up or down the shaft depending upon the direction in which the



shaft is being rotated by a driving motor. Movement of the brush up and down the shaft automatically places a liquid pickup nozzle either in a raised and inactive position or in liquid pickup contact with the surface.

3,460,185

## VACUUM SWEEPING APPARATUS

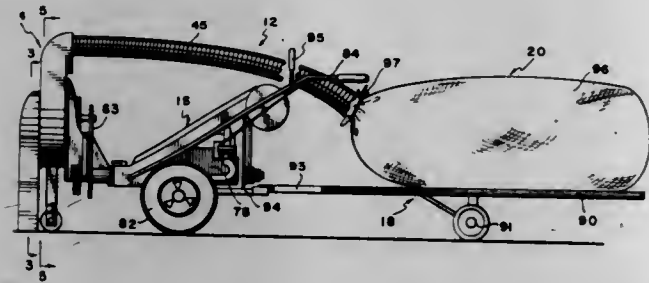
Themster Cook, 1736 N. Green, Wichita, Kans. 67214

Filed Sept. 6, 1966, Ser. No. 577,489

Int. Cl. E01h 1/08; A47I 9/14

U.S. Cl. 15—340

3 Claims



This invention is a vacuum cleaner apparatus usable with a tractor having a forwardly projecting vacuum intake head adapted to be placed flush with vertical surfaces during usage. Additionally, this invention is a cleaner apparatus including a housing means with inlet and discharge sections; vacuum supply means mounted within the housing means to create a vacuum pressure therethrough; nozzle means secured to the inlet section having an intake section positionable against a supporting surface; and a trailer means to support a container means thereon rearwardly or laterally of the housing means to receive the combination debris and air from the nozzle means.

3,460,186

## VACUUM TYPE STREET CLEANER

Clark A. Sherrill, 226 Heritage Place, and Lynn M. Barrette, 130 N. Academy St., both of Mooresville, N.C. 28115

Filed May 29, 1967, Ser. No. 641,889

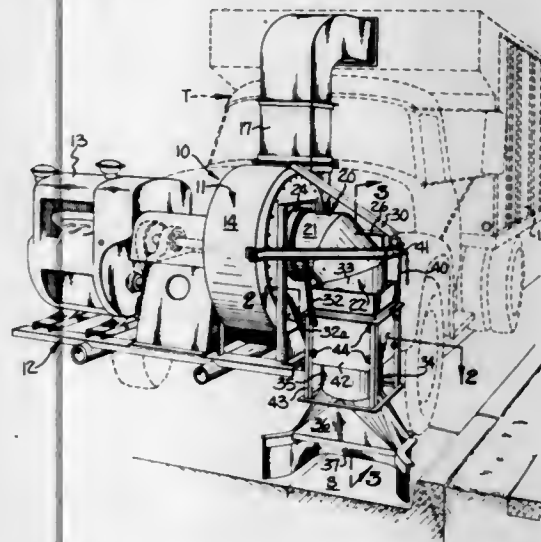
Int. Cl. E01h 1/08; A47b 5/34

U.S. Cl. 15—340

8 Claims

A vacuum type street cleaner having a suction conduit pivotally mounted so as to clear obstacles on the street surface, such pivoting being yieldably opposed by resilient means biasing the conduit into a normal operating posi-

tion, and wherein the conduit is also of telescopic construction so that its effective length is self-adjusting in



compensation of sudden major variations in street surface evenness.

3,460,187

## SUCTION CLEANERS WITH WHEEL ADJUSTMENT

Gordon Thomas Fillery, Biot, Alpes-Maritimes, France, assignor to Mauz &amp; Pfeiffer G.m.b.H. &amp; Co. KG, Stuttgart-Botnang, Germany, a German company

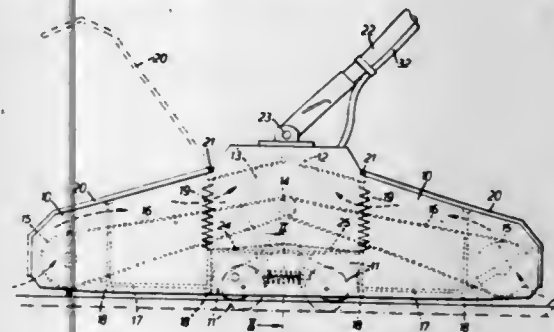
Filed Feb. 14, 1967, Ser. No. 615,958

Claims priority, application Great Britain, Feb. 18, 1966, 7,352/66

Int. Cl. A47I 5/34

U.S. Cl. 15—361

8 Claims



A suction cleaner is mounted on at least three spaced apart wheels which are simultaneously adjusted relatively to the casing of the cleaner so that upon adjustment the cleaner maintains the same disposition with respect to the floor surface.

3,460,188

## VACUUM CLEANER

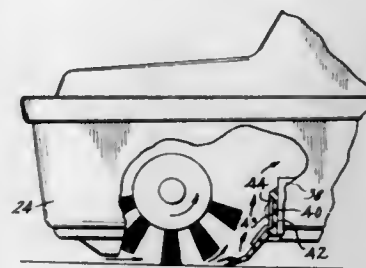
Wilton E. Boyd, Mayfield Heights, Ohio, assignor to General Electric Company, a corporation of New York

Filed Apr. 26, 1966, Ser. No. 545,280

Int. Cl. A47I 5/26, 9/04

U.S. Cl. 15—364

3 Claims



A manually movable household vacuum cleaner wherein a unique flexible pickup strip is positioned behind the vacuum cleaner air inlet opening.

3,460,189

## GARAGE DOOR ROLLER ASSEMBLY

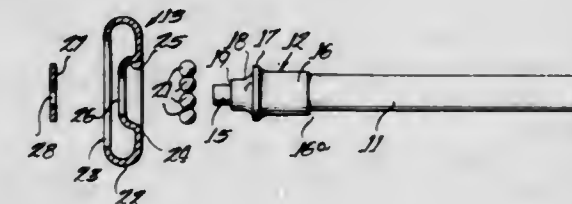
Samuel K. Wald and Robert M. Whittom, Rockford, Ill., assignors to Keystone Consolidated Industries, Inc., a corporation of Delaware

Filed Mar. 8, 1967, Ser. No. 621,483

Int. Cl. E05d 13/02

U.S. Cl. 16—98

4 Claims



Roller assemblies for an overhead garage door which are received in suitable tracks along both sides of the door, each roller assembly having a one-piece headed axle, a one-piece formed sheet metal roller, a plurality of ball bearings for the roller and a retaining washer to hold the roller and ball bearings on the axle. When assembled, the end of the axle is headed by means of a spinning operation.

3,460,190

## DOOR HINGE WITH MEANS FOR URGING TOWARD A PREDETERMINED POSITION

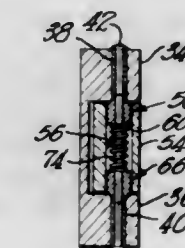
Robert D. MacDonald, Tecumseh, Mich., assignor to Cardinal of Adrian, Inc., Adrian, Mich., a corporation of Michigan

Filed Dec. 20, 1965, Ser. No. 514,835

Int. Cl. E05f 1/12

U.S. Cl. 16—189

1 Claim



A door hinge has compact and concealed components which urge the door toward a closed position and beyond the closed position when the door is closed. Consequently, there is no need for a latch of any sort which is expensive to install and subject to misalignment. Firm closing of the door also is assured. The concealed components result in an attractive hinge and reduce the chance for dirt to collect in the hinge and impair the operation.

3,460,191

## FOOD MOLDING MACHINE

Eugene F. Felstehausen, Hoopeston, Ill., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Dec. 15, 1966, Ser. No. 602,062

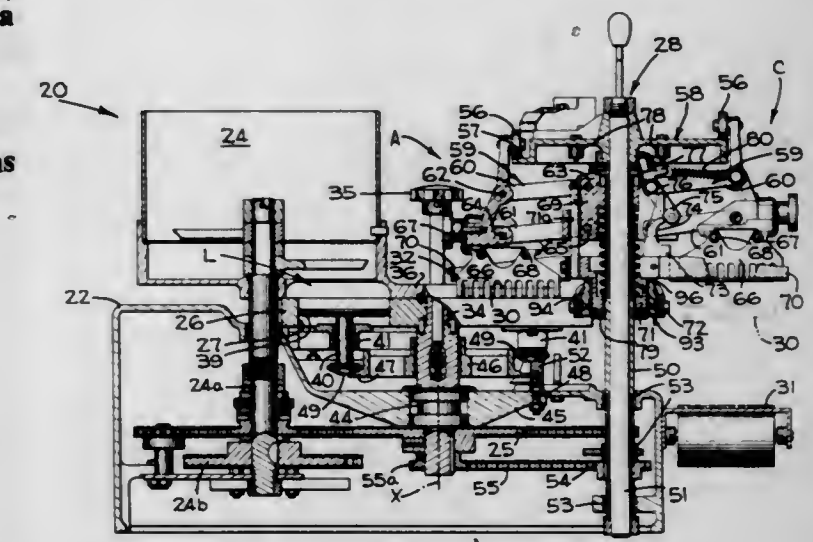
Int. Cl. A22c 7/00; B65g 15/02, 31/04

U.S. Cl. 17—32

5 Claims

The hamburger patty forming machine having a grill

member cooperating with patty pick up and discharge turret to discharge a formed patty cleanly from the turret at



a predetermined location by spring actuation of the grill member.

3,460,192

## MOLLUSK FLESH PROCESSOR

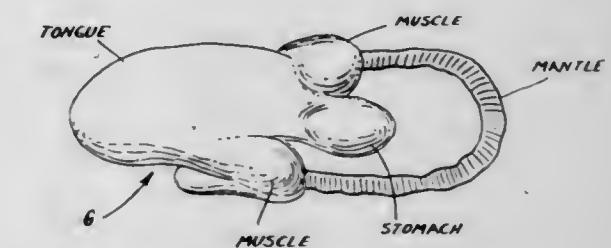
John Marvin, 805 Brush Hill Road, Milton, Mass. 02186, and Thomas Henderson, Jr., deceased, late of Millville, N.J., by Dorothy Henderson, administratrix, 3 Forrest Glen Drive E., Millville, N.J. 08332

Filed Jan. 23, 1967, Ser. No. 612,072

Int. Cl. A22b 3/08; A22c 29/00, 25/00

U.S. Cl. 17—45

14 Claims



Apparatus for processing mollusks so that the tongue, mantle-muscle, and stomach are selectively severed from the whole body of the mollusk and dispensed into containers that hold only common flesh parts of the mollusk to facilitate further processing thereof.

3,460,193

## CUTTER FOR REMOVING DARK MEAT IN FISH MEAT

Shigeru Yoshida, 5-28, 3-Chome, Mochimune, Shizuoka-shi, Shizuoka-ken, Japan

Filed July 10, 1967, Ser. No. 652,251

Claims priority, application Japan, Sept. 14, 1966, 41/60,971

Int. Cl. A22c 25/00; B26d 1/36, 3/02

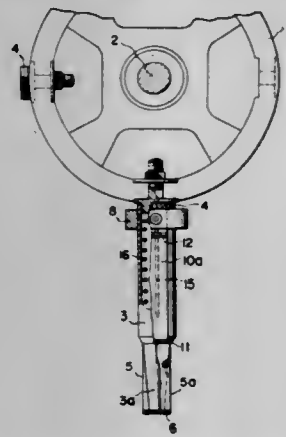
U.S. Cl. 17—61

4 Claims

Tool holders are mounted radially on the outer periphery of rotating flywheel and provided respectively with V-shaped cutting tools each formed by a pair of knife blades hinged at their outer end edges to an edge at the extreme outer tip of the corresponding tool holder to form a dihedral angle, which can be controllably varied by a mechanism actuated by centrifugal force as determined by the controllable speed of the flywheel or by a controllable hydraulic or electromagnetic actuator. The dihedral angles of all pairs of knife blades, which are sub-



stantially equal, are thus varied in unison to produce cutting action conforming to the configuration of dark meat



in fish meat being processed thereby to remove the dark meat.

3,460,194

# APPARATUS FOR DIMENSIONAL STABILIZATION OF THERMOPLASTIC FILM

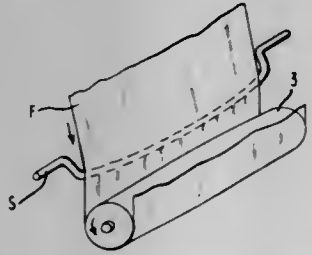
Gordon Welton Thompson, Clinton, Iowa, assignor to E. I. du Pont de Nemours and Company, Wilmington Del., a corporation of Delaware

Filed Sept. 8, 1965, Ser. No. 485,806

Int. Cl. B29c 25/00

U.S. Cl. 18-1

3 Claims



Apparatus for dimensionally stabilizing biaxially oriented, thermoplastic organic polymer film in continuous web form comprising, in succession, a driven film-feed roll, a plurality of closely spaced idler rolls positioned so that the film passing thereover contacts each roll for at least 90° of its circumference, a series of intermediate driven rolls, a driven takeup roll, a bowed film-spreading guide means immediately in advance of at least one intermediate driven roll, means for adjusting the speed of the driven rolls to permit retraction of the film, and means for heating the film.

3,460,195

# APPARATUS FOR AGGLOMERATING CARBONACEOUS MATERIALS

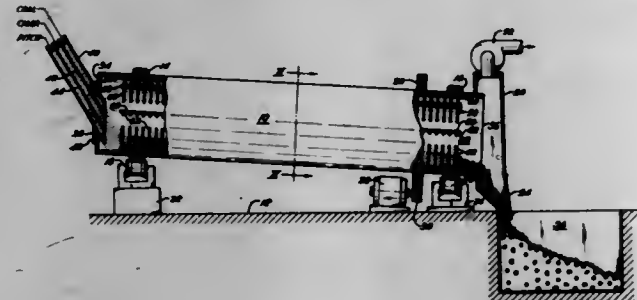
Arnold R. Erickson, Orange, Conn., assignor, by mesne assignments, to Consolidation Coal Company, a corporation of Delaware

Original application July 13, 1964, Ser. No. 382,293, now Patent No. 3,368,012, dated Feb. 6, 1968. Divided and this application July 11, 1967, Ser. No. 660,544

Int. Cl. C10b 1/10

U.S. Cl. 18-1

4 Claims



A rotary retort for agglomerating carbonaceous materials to form agglomerates of a preselected spectrum

of sizes. The retort has a cylindrical body with an internal cylindrical wall to which a plurality of longitudinally extending rakes are secured. The rakes have a plurality of tines extending radially inwardly toward the center of the cylindrical body portion and have a length of between one fourth and one third diameter of the cylindrical body portion leaving an unobstructed axial passageway in the cylindrical body portion.

3,460,196

# APPARATUS FOR TEMPERING AND COOLING A WEB OR STRAND OF THERMOPLASTIC MATERIAL COMPRISING A PLASTICIZER

Robert Ronald Laupman, Wjchen, Netherlands, assignor to N.V. Nederlandse Extrusie Maatschappij, Wjchen, Netherlands

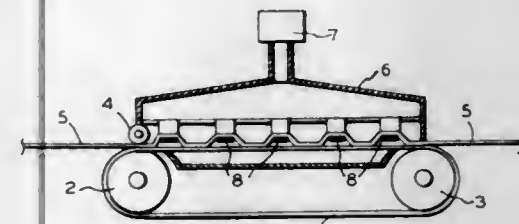
Original application Feb. 23, 1965, Ser. No. 434,355. Divided and this application Aug. 15, 1968, Ser. No. 752,835

Claims priority, application Netherlands, Feb. 20, 1964, 6401561; Apr. 24, 1964, 6404550, 6404551

Int. Cl. B29f 5/00

U.S. Cl. 18-1

1 Claim



An apparatus for relieving the shrinking stresses of a web or strand of thermoplastic material having a plasticizer and a temperature which is high relative to the ambient temperature wherein the material is passed on to a conveyor belt at a velocity equal to that of said conveyor belt. The material is cooled as it is conveyed on the conveyor belt. The material is subjected to breaking forces which together exceed the sum of the frictional forces between said material and said conveyor belt. This may be accomplished by transverse braking strips.

3,460,197

# SECTIONAL TIRE MOLD MECHANISM

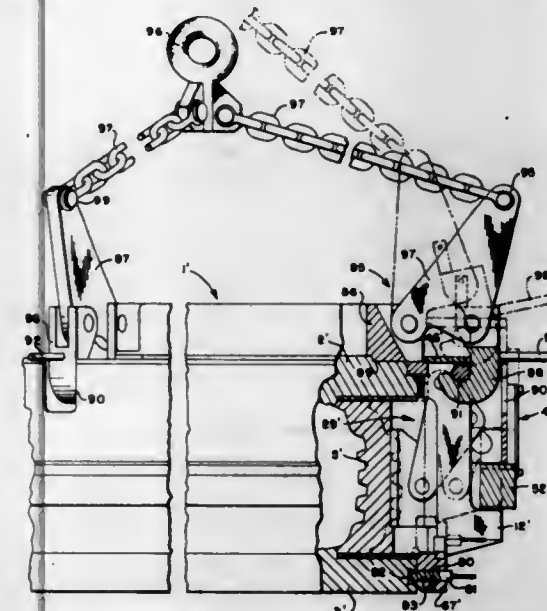
Armindo Cantarutti, Akron, and Stephen F. Breza, Cuyahoga Falls, Ohio, assignors to NRM Corporation, Akron, Ohio, a corporation of Ohio

Filed July 13, 1966, Ser. No. 564,829

Int. Cl. B29h 17/00, 5/02

U.S. Cl. 18-2

7 Claims



A sectional mold mechanism including an upper side wall mold section movable toward and away from a lower side wall mold section for closing and opening of said mold sections, and a plurality of tread mold sectors car-

ried by said upper mold section for radial inward movement between the closed mold sections upon actuation of a plurality of linkages by cams having closed cam tracks movable relative to the upper mold sections subsequent to the closing of the mold sections. A lifting device may be used to transport the sectional mold mechanism from one position to another upon latching the mold sections together and connecting the lifting device to an annular housing for the closed cam tracks which when lifted causes radial outward movement of the tread sectors prior to lifting of the mold sections.

3,460,198

# CONTAINER MOLDING, FILLING AND SEALING APPARATUS

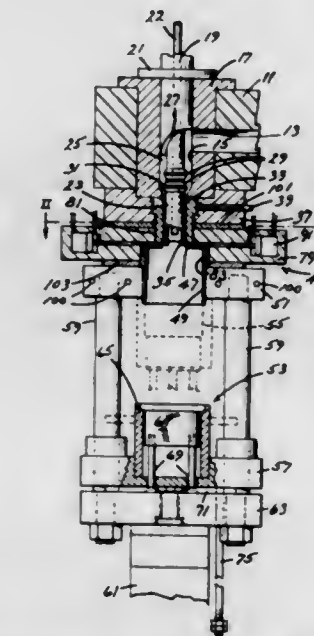
Thomas J. Dietz, Chester Heights, and William E. Meissner, Devon, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Oct. 5, 1965, Ser. No. 493,117

Int. Cl. B29c 3/00; B65b 3/02

U.S. Cl. 18-5

8 Claims



Molding apparatus in which a confined portion of a tube of flowable film-forming material having a closed end is expanded within a mold cavity and then sealed and severed from the remainder of such tube to provide a container having walls which are generally smooth and of uniform thickness.

3,460,199

# SPINNERET ASSEMBLY

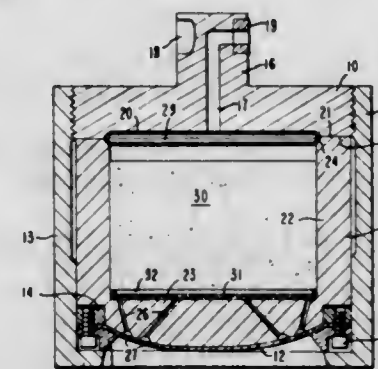
Robert S. Heckrotte, Wilmington, Del., Donald C. Kiscaden, Staunton, Va., and Nathaniel C. Wyeth, Mendenhall, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Aug. 11, 1967, Ser. No. 660,020

Int. Cl. D01d 3/00

U.S. Cl. 18-8

9 Claims



Spinneret assemblies are disclosed for thin spinnerets which are suitable for use at the relatively high pressures

3,460,200

# CABINET FOR AIR-STREAM COOLING OF FILAMENT SPUN FROM A POLYMERIC MELT

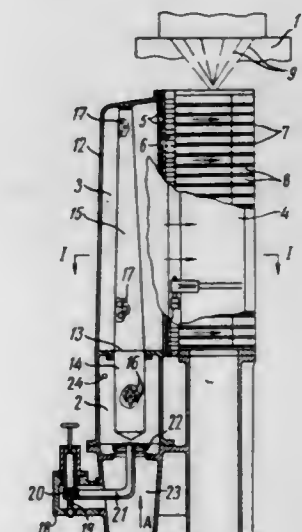
Alexandr Pavlovich Zaitsev, Ulitsa Shevchenko 16, kv. 93; Nikolai Fedorovich Klochko, Ulitsa Lenina 42, kv. 42; Leonid Fedorovich Marchenko, Ulitsa Tolstogo 106, kv. 8; Evgeny Petrovich Efodiev, Ulitsa Lenina 35, kv. 67; German Ionasovich Khused, Ulitsa Lenina 42-a, kv. 33; and Vladimir Mikhailovich Zafransky, Ulitsa Tolstogo 148, kv. 20, all of Chernigov, U.S.S.R.

Filed Aug. 25, 1966, Ser. No. 575,180

Int. Cl. B29b 3/00

U.S. Cl. 18-8

5 Claims



An apparatus for cooling melt spun synthetic filaments, having a quenching chamber with a back wall of foraminous material to introduce a stream of a cooling medium thereinto and two side walls, with parallel partitions forming a plurality of sections for guided passage of the cooling medium under uniform flow conditions. The partitions are of a shaped profile and form a channel for the passage of a bundle of filaments therethrough.

3,460,201

# CABINET FOR AIR-STREAM COOLING OF FILAMENT SPUN FROM A POLYMERIC MELT IN A SPINNING MACHINE

Alexandr Pavlovich Zaitsev, Ulitsa Shevchenko 16, kv. 93; Nikolai Fedorovich Klochko, Ulitsa Lenina 42, kv. 42; Leonid Fedorovich Marchenko, Ulitsa Tolstogo 106, kv. 8; Evgeny Petrovich Efodiev, Ulitsa Lenina 35, kv. 67; German Ionasovich Khused, Ulitsa Lenina 42-a, kv. 33; and Vladimir Mikhailovich Zafransky, Ulitsa Tolstogo 148, kv. 20, all of Chernigov, U.S.S.R.

Filed Mar. 2, 1967, Ser. No. 620,080

Int. Cl. B29b 3/00

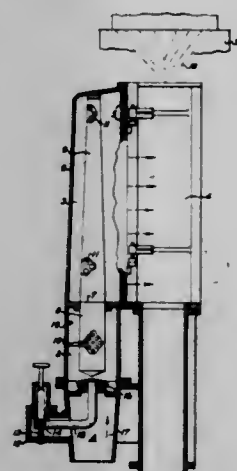
U.S. Cl. 18-8

5 Claims

A cabinet for air cooling filament spun from a polymeric melt, wherein the filament is passed through a cooling chamber which communicates with a pressure chamber via a perforate screen. A conduit is mounted inside the pressure chamber for feeding air into the cooling chamber, said conduit being provided with perforations in the portion of its surface which faces in a direction



opposite the filament being spun. At least one auxiliary chamber is connected to the pressure chamber via the conduit for damping air-stream pulsation. The conduit is of variable cross-section and perforations in the pressure



chamber diminish in size in a direction towards the spinning nozzle of the spinning machine. The portion of the conduit extending into the auxiliary chamber is of cylindrical construction and is perforated with holes of uniform size.

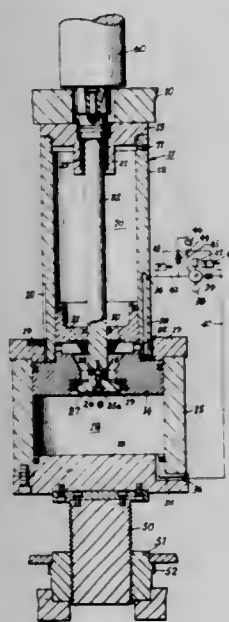
3,460,202

**HYDRAULIC RELEASABLE STOP DEVICE FOR PRESSES AND THE LIKE**  
Raymond John Graf, Cincinnati, and Carl William Koors, Harrison, Ohio, assignors to The Cincinnati Shaper Company, Cincinnati, Ohio, a corporation of Ohio  
Filed Apr. 28, 1967, Ser. No. 634,621

Int. Cl. B29c 3/06

U.S. Cl. 18—16

4 Claims



A hydraulic stop device for a platen of a compacting press or the like, which under hydraulic pressure can take the entire load of the press and which can be released for ejection purposes by the operation of a valve.

3,460,203

**INJECTOR PRESS FOR OBTAINING MULTICOLOURED PIECES IN PLASTIC MATERIAL**  
Paul Amedee Joseph Losserand, Route de Tamle-La Curiale 74, Faverges, Haute-Savoie, France  
Filed Dec. 2, 1966, Ser. No. 598,750  
Claims priority, application France, Dec. 11, 1965, 41,895

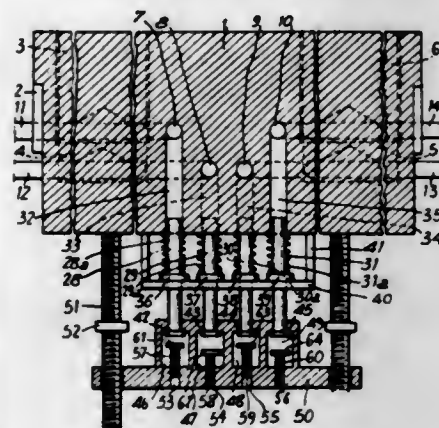
Int. Cl. B29f 1/12; B29c 3/04, 9/50

U.S. Cl. 18—30

4 Claims

An injection press for obtaining multicolored pieces of plastic material, comprising a plurality of melting pots

adapted to receive and melt colored materials, a nozzle plate connected to the melting pots through supply conduits and injection means adapted to inject melted materials into a mold. Said nozzle plate presents outlets dis-



3,460,204

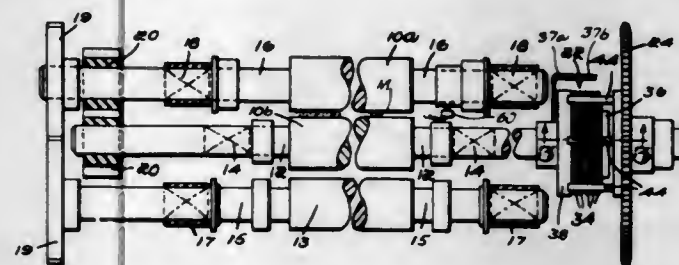
**AUTOMATIC ROLL STOP**

Irving C. Howes, North Andover, Mass., Little A. Anderson, Jr., Harmony, N.C., and Anthony Netti, Methuen, Mass., assignors to Davis & Furber Machine Company, North Andover, Mass., a corporation of Massachusetts  
Continuation-in-part of application Ser. No. 485,232, Sept. 7, 1965. This application Mar. 25, 1968, Ser. No. 717,070

Int. Cl. D01g 31/00, 23/00; D01b 1/10

U.S. Cl. 19—23

3 Claims



This invention relates to the textile machinery industry and more particularly to means for automatically stopping the rotation of feed rolls of a carding machine upon the entry therebetween of foreign material in the form of hard objects capable of damaging the teeth or wire on the rolls. The entry of the object between the rolls causes automatic disengagement of the clutch that drives the rolls. If the object is in the form of an electrical conductor, the clutch will be instantly opened by electrically operated means. If the object is a non-conductor, the clutch is electrically actuated after small angular slippage of the clutch.

3,460,205

**TEXTILE APPARATUS HAVING A COMBINED HEAD LIFTER AND RATCH ADJUSTMENT MECHANISM**

Steve W. Kundrach, South Euclid, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio

Filed Aug. 17, 1967, Ser. No. 661,327

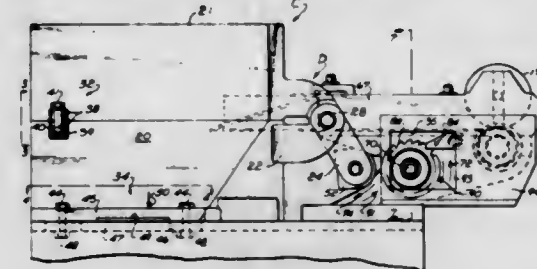
Int. Cl. D01g 27/00

U.S. Cl. 19—129

7 Claims

A textile apparatus including a gill box supported by a support for movement toward and from sliver drafting rolls positioned adjacent the output end of the gill box. The gill box has a lower section and an upper section pivotally connected to the lower section for angular

movement relative thereto. The textile apparatus further includes a means which is selectively operable to either move the entire gill box relative to the drafting rolls to adjust the "ratch" distance between the output end of the gill box and the nip of the sliver drafting rolls or to move the upper section of the gill box relative to the lower section. The means comprises first and second



3,460,206

**CORSAGE PIN CONSTRUCTION**

Phillip R. Pratt, Waterbury, Conn., assignor of fifty percent to Alyson Skipp Hoyland, doing business as The Ashland Company, Newfoundland, N.J.  
Filed Nov. 14, 1967, Ser. No. 682,965

Int. Cl. A45f 5/08

U.S. Cl. 24—6

4 Claims



An attaching device for supporting an article on a garment that has a pin with a shank portion and a head on one end of the shank. The shank is configured to form a point at its opposite end for passing the pin through a portion of the garment so that the head and point of the pin are exposed on the surface thereof. Advantageously an elongated band is provided having an unexpanded length shorter than the pin, the band having one end engaged with the pin adjacent the head and having its opposite end configured as a pocket. The band is resilient for elongation of the band into supporting engagement with the article to be worn on the garment and for positioning the pocket to receive the point of the pin to protect the body of the wearer.

3,460,207

**GOLF CLUB COVER FASTENER**

Andy C. Stewart, 4124 Maxwell Drive, Columbus, Ga. 31904  
Filed July 3, 1967, Ser. No. 651,013

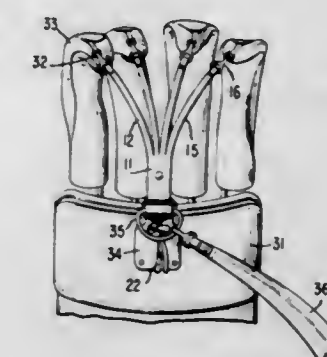
Int. Cl. A63b 57/00; A44b 21/00

U.S. Cl. 24—73

1 Claim

A fastener for securing covers for golf club woods to a golf club bag comprises a leather base having four

straps extending from it. At the end of each of the straps is a snap selectively connected to an eye fastener on the



golf club covers. At the end of the base remote from the straps, a further flexible strap holds the fastener assembly to the golf bag.

3,460,208

**SLIDING CLASP FASTENERS**

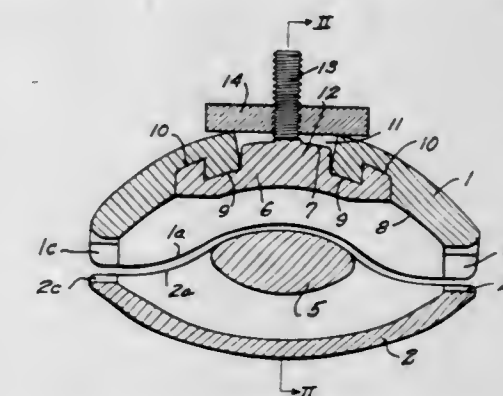
Ernest George Gerald Spalding, Welwyn Garden City, England, assignor to Flexigrip, Inc., a corporation of New York

Filed June 30, 1966, Ser. No. 561,822

Int. Cl. A44b 19/16

U.S. Cl. 24—201

14 Claims



A slider for joining or separating interlocking fastener strips having a body portion and a saddle portion held to the body portion with grooves sealingly receiving the fastener strips. The slider is formed of a first section and a second section with grooves, and the grooves having slots along their length with the sections being relatively movable to adjust the width of the slot. One section is also shiftable in position relative to the other section from a first position where the ends of the groove are the same size to a second position where one end of the groove is smaller.

3,460,209

**COUPLING**

Henry J. Modrey, Eagle Drive, Stamford, Conn. 06903

Filed Jan. 26, 1968, Ser. No. 700,953

Int. Cl. F16b 21/09; F15b 21/06

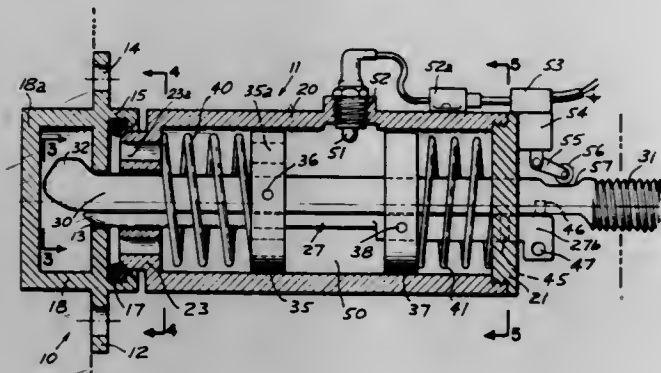
U.S. Cl. 24—211

11 Claims

There is disclosed a two-part coupling in which the engaging coupling member is locked to the receiving coupling member by lodging a clamping rod and a locking slide in a receiving opening of the receiving coupling member. Release of the coupling is effected by first withdrawing the locking slide from the receiving opening and then separating the clamping rod and with it the entire engaging coupling member from the receiving coupling



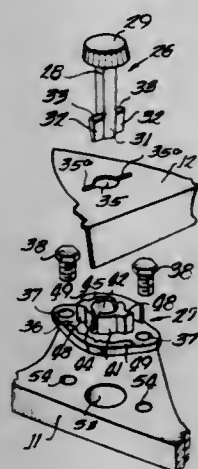
member. Both the engaging movement and the disengaging movement of the engaging coupling member are substantially linear movements. Separation of the engaging coupling member from the receiving coupling member is effected by generating within the engaging coupling member a pressure wave which first causes withdrawal of the locking slide thereby unlocking the clamping rod, and then ejection of the engaging coupling member from the receiving coupling member.



The coupling is designed especially for use under conditions under which the gravitational force is minimal or absent.

#### 3,460,210 RECORD CHANGER HOLDDOWN LATCH ASSEMBLY

Leslie M. Ellis, Capron, Ill., assignor to Keystone Consolidated Industries, Inc., a corporation of Delaware  
Filed July 18, 1966, Ser. No. 566,066  
Int. Cl. A44b 17/00; G11b 3/60  
U.S. Cl. 24—211 3 Claims



A holddown latch assembly for a resiliently mounted motorboard of a record changer where two or more latch members, each having a flange, are mounted on the base or pan of the record changer, and each latch member has a lower cylindrical portion extending into an opening in the base and an upper slightly tapered portion; the latch member having a central passage therethrough and a pair of diametrically opposite axially extending grooves in said passage. The lower end of the cylindrical portion is formed with a pair of oppositely disposed stops removed 90° from the grooves, and each groove in the tapered portion extends through the wall and has a pair of limiting shoulders adjacent the upper end, and vertically aligned converging slots merging into the grooves. A latch bolt completes the assembly and has an enlarged head and a generally cylindrical shank with a tapered free end, and a pair of diametrically opposed ribs in the free

end which are received in the grooves in the latch member.

#### 3,460,211 SPRING CLIP FOR ORNAMENTS

Paul Gaston, Rutherford, N.J., assignor to Musi Corporation, New York, N.Y.  
Filed May 14, 1968, Ser. No. 729,017  
Int. Cl. A43c 11/00

U.S. Cl. 24—252

9 Claims



A two-part hinged spring clip for mounting an ornament to the top of a shoe is described. A base part attaches to the ornament and has a spring tongue which exerts pressure on the tab of a catch part to prevent the clip from opening when in use. Bent fingers of the base part engage hinge fingers of the catch part to prevent separation of the parts. The catch part has a butterfly shape for stabilization of the ornament against movement and slippage and for maximum comfort in wear.

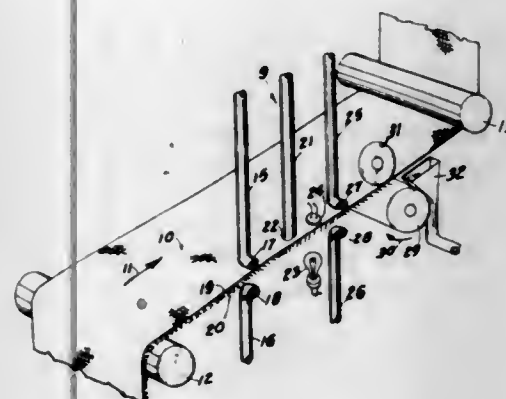
#### 3,460,212 FRINGE TRIMMING METHOD

Norman E. Elsas, Atlanta, and Thomas M. Bryan II, Jefferson, Ga., assignors of fifty percent each to Nemo Industries, Inc., Atlanta, Ga., and The Jefferson Mills, Incorporated, Jefferson, Ga., both corporations of Georgia

Filed May 25, 1967, Ser. No. 641,352  
Int. Cl. D06c 13/00

U.S. Cl. 26—10.4

4 Claims



Fringe trimming method for trimming the loose threads from the edge of fabric, wherein the fabric is moved along a predetermined path, the loose threads of the fringe are urged away from the fabric in a plane parallel to the fabric so as to unsnarl the individual threads from one another, the loose threads are urged in a direction normal to the plane of the fabric, the edge of the fabric determined, and the threads are urged away from and parallel to the surface of the fabric, whereupon cutting means sever the fringe from the fabric.

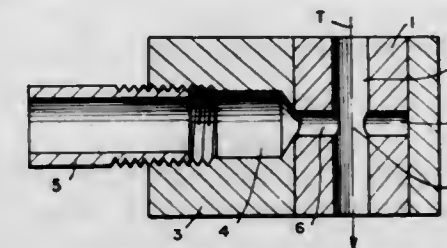
#### 3,460,213 APPARATUS FOR CONVOLUTION OF THREAD OR YARN FILAMENTS

Kurt Ensslin, Wassenberg, Peter Heinen, Oberbruch, and Josef Rongen, Karken, Germany, assignors to Glanzstoff AG, Wuppertal, Germany  
Filed Jan. 22, 1968, Ser. No. 699,392

Claims priority, application Germany, Feb. 1, 1967, G 49,149; Mar. 16, 1967, G 49,587; June 19, 1967, G 50,414; Dec. 14, 1967, G 38,555, G 51,892  
Int. Cl. G02g 1/16

U.S. Cl. 28—1.4

30 Claims



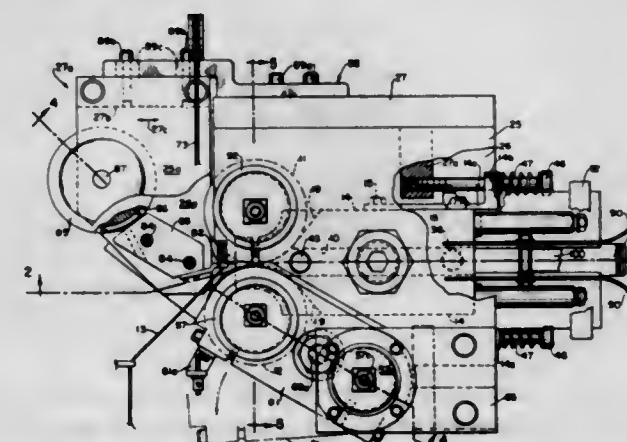
Improved apparatus for the convolution of the individual filaments of at least one multifilament thread or yarn by means of an air jet wherein a shaped body has a thread channel or passageway therethrough and a nozzle bore for the jet of air entering one side of the thread channel with a baffle chamber or bored opening coaxial with the nozzle bore on the opposite side of the thread channel. The treatment of the thread or yarn is improved and a reduction in the consumption of air is achieved provided that certain limitations in the dimensions of various parts are strictly observed, e.g. the diameter of the nozzle bore should be at least equal to or greater than the diameter of the baffle chamber, and the sum of the depth of the baffle chamber and the height of the thread channel corresponding to its diameter at the jet zone should be at least about 2.2 times the smallest diameter of the baffle chamber. The diameter of the thread channel should be sufficiently small over at least a portion of its length, however, to prevent the thread which is being treated from completely being driven out of the path of the air jet. Another improvement includes a spiral or helical partition of the jet nozzle bore. Still another variation includes means to flatten the thread or yarn just before it enters the thread channel. Other improvements and modifications are described herein.

#### 3,460,214 HIGH TEMPERATURE STUFFER CRIMPING APPARATUS

James R. Hodges, Wilmington, Del., assignor to Joseph Bancroft and Sons Co., Wilmington, Del., a corporation of Delaware  
Filed Aug. 23, 1966, Ser. No. 574,366  
Int. Cl. D02g 3/00; D04h 17/00

U.S. Cl. 28—1.7

11 Claims



A stuffer crimper including a pair of feed rolls mounted to feed a yarn into a crimping chamber. The feed rolls are mounted in eccentric bearings for adjustment. One

of the rolls is carried in a pivoted bracket and is gear driven by a driving gear positioned to produce a moment for urging the rolls together. The crimping chamber is spring mounted for expansion in two directions. The chamber discharges into a cooling zone from which the yarn is withdrawn and a feeler varies the feed ratio to maintain constant the discharge point.

#### 3,460,215 RELAXATION APPARATUS FOR A DRAW WINDER FOR SYNTHETIC THREADS

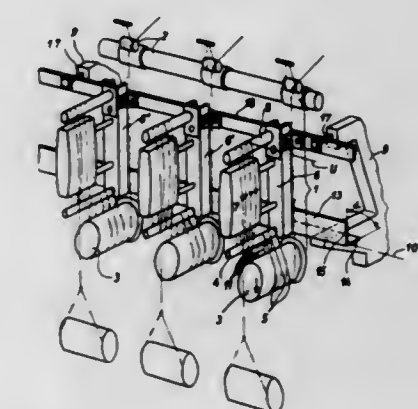
Felix Graf, Winterthur, Switzerland, assignor to Rieter Machine Works, Ltd., Winterthur, Switzerland, a corporation of Switzerland

Filed Dec. 7, 1967, Ser. No. 688,911  
Claims priority, application Switzerland, Feb. 20, 1967, 2,612/67

U.S. Cl. 28—62

Int. Cl. D02j 1/22

15 Claims



The relaxation apparatus is pivotally mounted with respect to the drawing roller of the draw winder in a precise manner about an axis perpendicular to the plane of the thread windings between the drawing roller and lower adjacent guide roller. In addition, the upper auxiliary guide roller is independently mounted for pivoting about an axis perpendicular to the plane of the thread windings between the heating element and auxiliary guide roller.

#### 3,460,216 AMINOALKYL SILICONE GLASS LUBRICANT

James K. Campbell and Harold A. Clark, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan  
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,378  
Int. Cl. C03b 37/00

U.S. Cl. 28—75

6 Claims

A size for glass fibers containing an amino silicone lubricant and an alkaline compound with or without starch and a volatile diluent. The size may be removed from the fiber by heating the fibers to a temperature of at least 200° F.

#### 3,460,217 TRANSFER DEVICE FOR NUT FASTENING MACHINE

Walter Leistner, Toronto, Ontario, Canada  
(251 Nantucket Blvd., Scarborough, Ontario, Canada)  
Filed Aug. 18, 1966, Ser. No. 573,402  
Int. Cl. B23p 23/04; B23q 7/10

U.S. Cl. 29—33

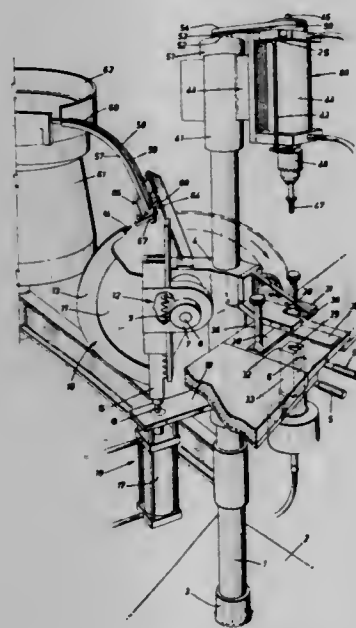
8 Claims

A machine is disclosed for positioning a fastening element in a workpiece. The machine includes means for moving a fastening element, such as a nut, from a source



of supply to the workpiece and means for fixing the element to the workpiece. There is also provided means for

product is placed in a jig with the components to be sealed being exposed. The jig and semiproduct are posi-

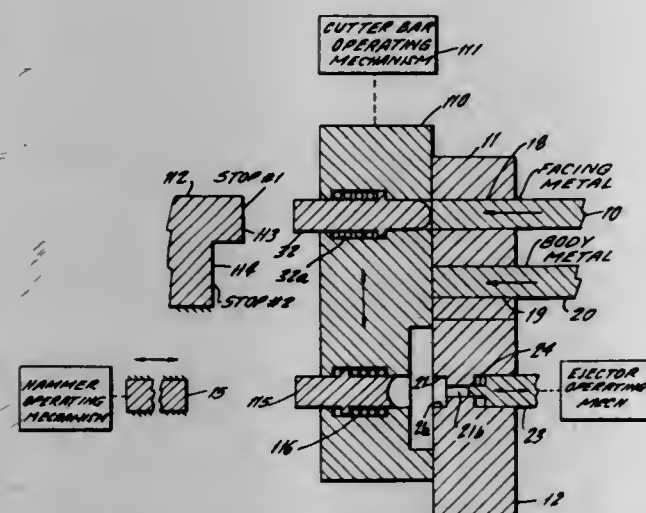


**3,460,218**  
**APPARATUS FOR FORMING COMPOSITE ELECTRICAL CONTACT USING A LINEARLY MOVING CUTTER BAR**

Childress B. Gwyn, Jr., Wethersfield, Conn., assignor to Talon, Inc., Meadville, Pa., a corporation of Pennsylvania

Filed Sept. 25, 1967, Ser. No. 670,154  
Int. Cl. B23b 11/00; B23k 1/00, 5/00  
U.S. Cl. 29—34

6 Claims



Apparatus for forming composite electrical contact elements by sequentially feeding stock materials into a linearly reciprocating cutter bar which shears the materials and moves them to a bonding station for forming and bonding the contact elements by cold heading operations.

**3,460,219**  
**METHOD OF MAKING ELECTRIC BULBS**

Hajime Shiragaki, Tokyo, Japan, assignor to Ichitaro Fukui, Ota-ku, Tokyo, Japan

Filed Oct. 18, 1966, Ser. No. 587,568  
Int. Cl. H01j 9/18

U.S. Cl. 29—25.13

1 Claim

A method for making an electric bulb in which a semi-

tioned in a heating zone in which a vacuum is developed and an inert gas introduced and the sealing effected.

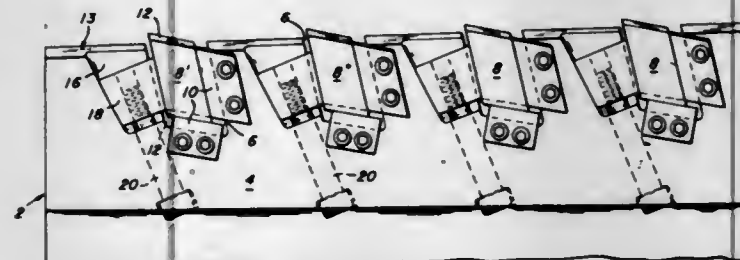
**3,460,220**  
**TOOL FOR PLANING PLATE EDGES**

Eugene B. Connelly, Churchill, Pa., assignor to United States Steel Corporation, a corporation of New Jersey

Filed Sept. 29, 1965, Ser. No. 491,241  
Int. Cl. B23d 1/18; B23p 15/38

U.S. Cl. 29—95.1

2 Claims



Tool of the invention includes a tool holder formed with a shank portion having a longitudinal edge, inclined outwardly from the leading end of the holder. Cutters of parallelogram shape are inserted in notches spaced along the inclined edge. Each cutter is fixed in position in its notch by positioning plates secured in overlapping relation to two adjacent sides of the notch. Each of the cutters projects from the inclined edge of the tool holder the same distance whereby a stepped cutting means is effected.

**3,460,221**  
**ELASTIC CALENDER ROLLER WITH COVER OF SYNTHETIC MATERIAL**

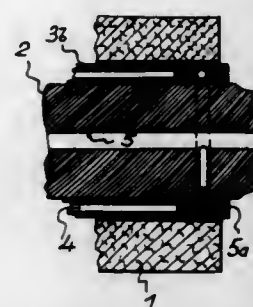
Alfred Korsch, Krefeld, Germany, assignor to Joh. Kleinewefers Sohne, Krefeld, Germany

Filed Sept. 26, 1966, Ser. No. 581,817  
Claims priority, application Germany, Sept. 29, 1965, K 57,258

Int. Cl. B21b 27/00

U.S. Cl. 29—113

1 Claim



An elastic calender roller which includes a steel core in radially spaced relationship thereto while an inflatable body is interposed between said core and said cover and is adapted to be inflated by fluid under pressure for frictionally and detachably holding said cover firmly to said core.

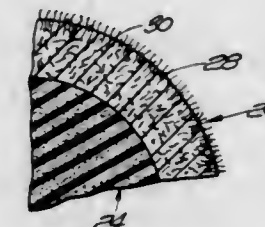
**3,460,222**  
**PAPER MANUFACTURING ROLL CONSTRUCTIONS AND PROCESSES**

Paul J. Mitchell, Jr., Griffin, Ga., assignor to SW Industries, Inc., Newton, Mass., a corporation of Massachusetts

Filed Dec. 30, 1966, Ser. No. 606,412  
Int. Cl. D21f 3/08

U.S. Cl. 29—120

4 Claims



In a paper making machine, following casting of the aqueous pulp suspension onto a moving web and partial drainage of water therefrom to form a wet sheet, water is pressed from the wet sheet by rolls that are characterized by a covering composed of an elastomer and a dispersion of hydrophobic fiber strands penetrating through the outer surface of the elastomer. Such rolls have superior release characteristics with respect to the wet sheet.

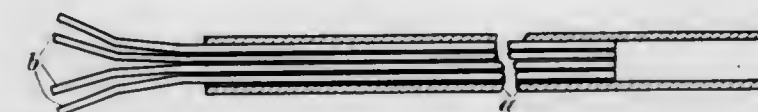
**3,460,223**  
**DEVICE FOR FIXING HOLES BY METHOD OF SMELTING, ESPECIALLY INTO BUILDING WALLS MADE OF CONCRETE, GRANITE, SANDSTONE OR LIMESTONE, AND METHOD OF PRODUCING THE DEVICE**

Zsolt György Bérczes, 8 Sandacker 8052, and Attila Bérczes, 328 Birmensdorferstr. 8055, both of Zurich, Switzerland

Filed Aug. 2, 1967, Ser. No. 657,922  
Int. Cl. B21f 45/00; F23b 13/26

U.S. Cl. 29—157

1 Claim



A method of forming a burner pipe for cutting holes in building walls made of concrete, granite, and similar materials is accomplished by inserting a bundle of fuse wires into the burner pipe so that a portion of the bundle of wires still projects from one end of the pipe and then spreading and bending the projecting ends of the wires outwardly from the axis of the pipe and finally inserting the projecting wires into the pipe so that they provide a self-locking engagement therewith.

**3,460,224**  
**VALVE BONNET CONSTRUCTION METHOD**

Marvin G. Combes, Castro Valley, and Harold T. Ray, Oakland, Calif., assignors to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California

Filed June 30, 1967, Ser. No. 650,488  
Int. Cl. B23k 31/02; B21d 53/00

U.S. Cl. 29—157.1

1 Claim

A method of constructing a valve bonnet enclosure of relatively thin metal by welding around the annular edges of two generally circular dished members with generally cylindrical outer rims to form a fluid tight enclosure. A fluid is then introduced through an opening in the en-

closure under sufficient pressure to cause the dished members to expand outward into a generally spherical surface configuration. The enclosure is cut away along a chord



and a flange is welded around the opening, conditioning the bonnet for attachment to a complementary valve body section.

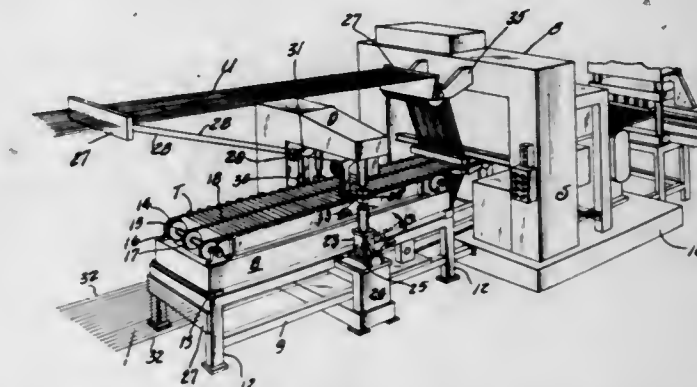
**3,460,225**  
**METHOD OF FORMING A WIRE CONDENSER MAT WELDER**

Rene G. Beauvais, Bay City, Mich., assignor to Resistance Welder Corporation, Bay City, Mich., a corporation of Michigan

Filed Sept. 26, 1966, Ser. No. 582,042  
Int. Cl. B21d 53/00; B23p 15/26

U.S. Cl. 29—157.3

7 Claims



A method of forming condenser mats by first welding at least one rigidifying wire across the loops of the condenser mats to insure proper spacing of the loops and then welding a wire field to the loops to complete the condenser mats.

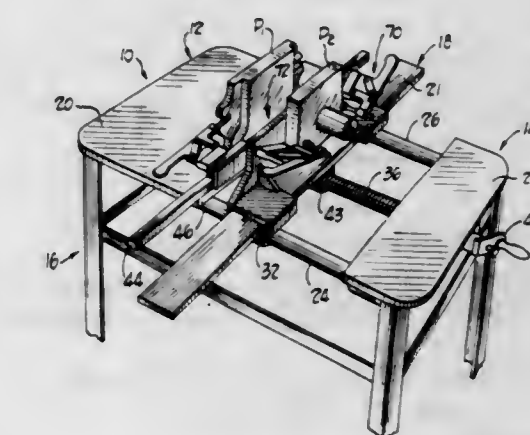
**3,460,226**  
**DIE SET MANIPULATOR**

Otto G. Hildebrand, 9094 Avery Road, Brecksville, Ohio 44141

Filed Apr. 20, 1967, Ser. No. 632,418  
Int. Cl. B25j 9/00; B25b 1/20

U.S. Cl. 29—200

6 Claims



A support for holding plates of a die set vertically and moving one horizontally relative to the other assembly



of a punch and die on the plates. One plate is clamped to a fixed support and the other to a movable support, each support having clamps and a locating surface for the die plates.

3,460,227

# APPARATUS FOR IMPLEMENTING PLACEMENT OF YARN PACKAGES ONTO ELASTIC HOLDING DEVICES

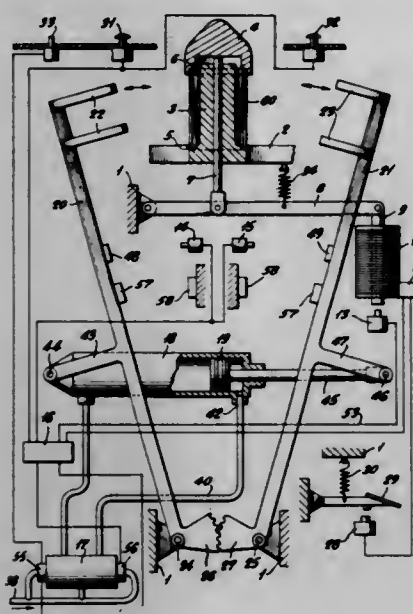
Heinrich Laumen, Hermann Steinbrech, and Udo Lochbuhler, Kelsterbach (Main), Germany, assignors to American Enka Corporation, Enka, N.C., a corporation of Delaware

Filed Sept. 8, 1966, Ser. No. 577,897

Claims priority, application Germany, Sept. 15, 1965, V 18,017

Int. Cl. B23p 19/04

U.S. Cl. 29—200



Apparatus for implementing placement of an elastic, radially compressible spool within the hollow portion of a warped yarn package having support means for positioning the spool in expanded condition, groove means on the support means, clamping means for radially compressing the spool and cap means operably associated with the support means for engaging the upper portion of the compressed spool and for inserting the lower portion of said spool into the groove means on said support. This apparatus includes control means for actuating the clamping and cap means in sequence whereby the spool is compressed, the cap and groove means retaining the compressed spool, the clamping means being movable out of engagement with the compressed spool to permit placement of a yarn package over the spool, said cap means being releasable from said spool to permit the spool to move out of the groove means and expand into wedging engagement with a yarn package placed over the compressed spool. Uniform release of the spool is achieved and damage to the wound threads due to abrasion is avoided.

3,460,228

# ROTARY SCRAP CHOPPER

Gordon C. Turner, Ellwood City, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware

Filed June 27, 1966, Ser. No. 560,708

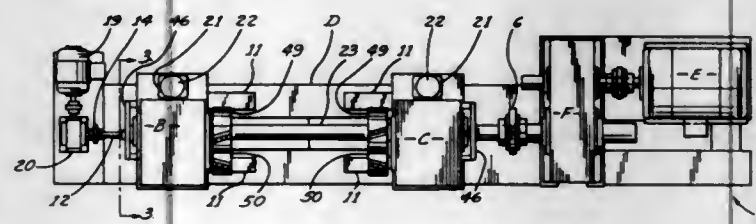
Int. Cl. B23d 15/02

U.S. Cl. 29—200

7 Claims

Apparatus for cutting long narrow lengths of scrap, such as those that are produced in continuously trimming

the edges of steel strip, into finite lengths. The construction in cooperation with a shearing head changer enables



the rotary shearing heads to be rapidly removed and replaced.

3,460,229

# INSERTION TOOL AND FOLLOWER

Orville F. Crew, Los Angeles, Verl L. Gardner, Midway City, and Samuel H. Gibson, Santa Ana, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

Filed Dec. 1, 1966, Ser. No. 598,458

Int. Cl. B25b 27/14

U.S. Cl. 29—203

3 Claims



A follower tool has a stem with an axial hole in the end to receive the tip of a male connector pin. This tool guides the male connector pin into the female receptacle on a panel board. An insertion tool has a stem which is hollow and which has a spiral guide slot cut through the wall at its end. The groove receives the electrical conductor to which the plug is attached and the plug male connector pin may thus be positioned with the insertion tool to follow the follower tool into engagement with the female receptacle on the panel board. The two tools, the follower tool in the rear of the panel board, and the insertion tool in front, may be used to insert the plug into and remove it from the panel in a cluttered field of many connectors and attached conductors.

3,460,230

# ELECTRICAL CONTACT ATTACHMENT APPARATUS

Norbert L. Moulin, Placentia, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Apr. 3, 1967, Ser. No. 627,983

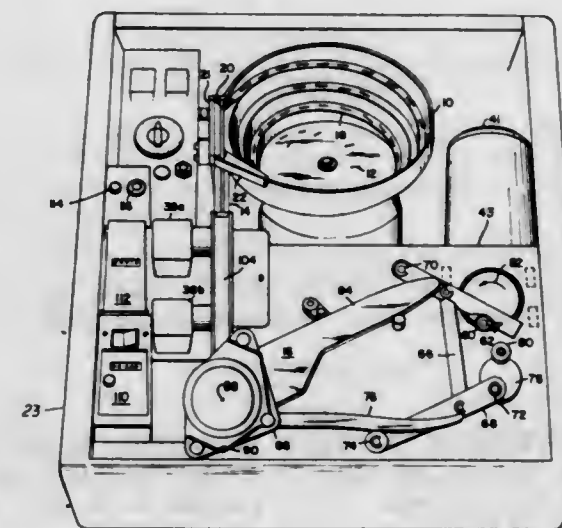
Int. Cl. B21d 37/00

U.S. Cl. 29—203

4 Claims

This disclosure describes an apparatus for semi-automatic crimping of electrical contacts to electrical conductors. The apparatus includes electro-mechanical ele-

ments which are controlled to operate a crimping tool to attach one electrical contact to a conductor during each cycle of operation of the machine. The cyclic control is



achieved through a motor-driven cam driving a mechanical linkage for operating the crimping tool and an electrical timing mechanism for controlling the rotation of the motor.

3,460,231

# APPARATUS FOR FEEDING AND MOUNTING ELASTIC RINGS ON CONTAINER BODIES

Werner E. Illgen and Karlheinz Stoffregen, Braunschweig, Germany, assignors to J. A. Schmalbach Aktiengesellschaft, Braunschweig, Germany

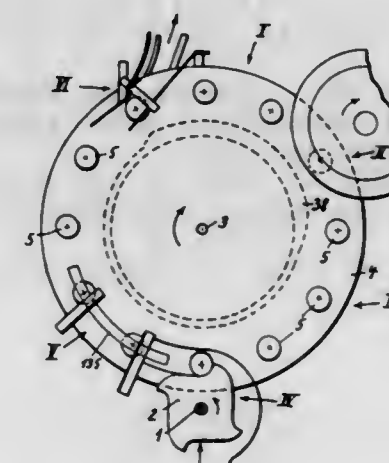
Filed Nov. 15, 1966, Ser. No. 594,422

Claims priority, application Germany, Nov. 15, 1965, Sch 38,046

Int. Cl. B23p 19/02

U.S. Cl. 29—208

21 Claims



A rotatable turret carries a series of expandable studs to which elastic sealing rings are fed individually from a supply stack; the studs thereafter expand to deposit each ring on a container fed to the turntable from another supply and, when the rings have been allowed to contrast on the containers they are discharged from the turntable.

3,460,232

# ROLL-WELDED RING FORMING PROCESS

Richard T. Pfaffenberger, Manhattan Beach, and Leonard R. Van Horik, Long Beach, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

Filed Oct. 24, 1965, Ser. No. 504,876

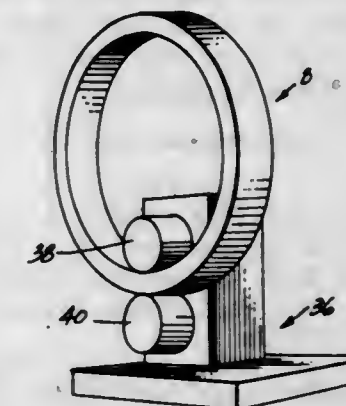
Int. Cl. B21h 1/00; B23k 31/06

U.S. Cl. 29—423

4 Claims

A roll-welded ring forming process for fabricating large

structural ring segments. A composite ring structure is sealed in a ring packed which is subjected to rolling under



heat and pressure to reduce its size and to bond abutting parts of the ring into an autogenous ring structure.

3,460,233

# ROLL-WELD PROCESS FOR SHAPE FORMING BODIES OF REVOLUTION

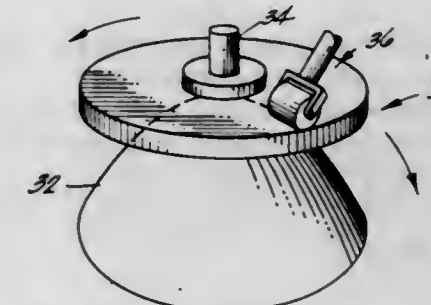
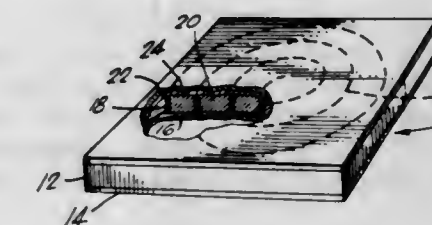
Richard T. Pfaffenberger, Manhattan Beach, and Leonard R. Van Horik, Long Beach, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

Filed Feb. 16, 1966, Ser. No. 529,605

Int. Cl. B21h 1/00

U.S. Cl. 29—423

5 Claims



A method of fabricating ribbed reinforced domes, or cone shaped structures and other bodies of revolution of heat resistant materials having a high strength-to-weight ratio by heating and spin or shear forming.

3,460,234

# METHOD OF INSTALLING A TERMINAL TO A PLATE

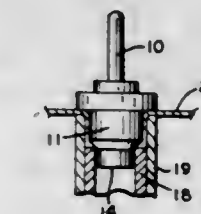
James Iantorno, Mamaroneck, N.Y., assignor to Sealectro Corporation, Mamaroneck, N.Y., a corporation of New York

Filed Nov. 10, 1966, Ser. No. 593,495

Int. Cl. B23p 11/00; H01r 9/00

U.S. Cl. 29—432.1

1 Claim



A method of mounting in an imperforate plate an electrical terminal supported in an insulating bushing with a



reduced lower section which consists in punching a hole in the plate by striking it with said lower reduced section while the lower face of the plate is supported by concentric female die elements, the male and female die elements flanging the metal around the hole downwardly and receiving the bushing in force fit relation.

3,460,235

**WELDING OF TRANSITION PIECES**

Thomas Marmaduke Roberts and Peter Thomas Houldcroft, Abington Hall, Cambridge, England, assignors to The Welding Institute, London, England, a body corporate of Great Britain

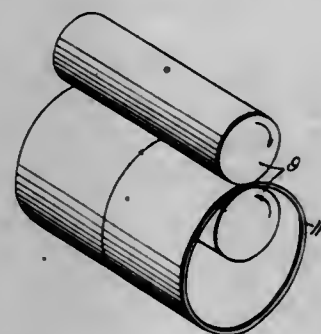
Filed Apr. 16, 1964, Ser. No. 360,292

Claims priority, application Great Britain, Apr. 22, 1963, 15,782/63

Int. Cl. B21h 1/00; B23k 11/02

U.S. Cl. 29—470.3

4 Claims



4. A method of forming a metallic transition piece of a given shape and thickness and comprising at least two metals, including the steps of butt welding a tube of one metal to a tube of another metal by friction welding and thereafter working by rolling the friction welded tube to reduce its thickness and to form a thin-walled cylindrical transition piece.

3,460,236

**METHOD OF MAKING NUCLEAR REACTOR FUEL ELEMENTS**

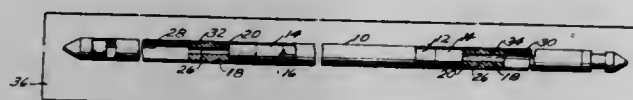
Albert A. Shoudy, Jr., Royal Oak, Mich., assignor to Atomic Power Development Associates, Inc., Detroit, Mich., a corporation of New York

Filed Apr. 20, 1967, Ser. No. 632,296

Int. Cl. G21c 21/02

U.S. Cl. 29—471.1

10 Claims



A method of fabricating a nuclear fuel element including the steps of filling a tube with fissionable fuel material, securing end closures to the ends thereof in sealed relationship with respect thereto, creep collapsing the tube onto the fuel material, making a hole in at least one of the end closures and attaching an axial fission gas plenum to that end closure.

3,460,237

**METHOD OF MAKING A NUCLEAR FUEL ELEMENT**

Donald R. McClintock, Irwin, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 275,884, Apr. 26, 1963. This application Dec. 20, 1966, Ser. No. 603,389

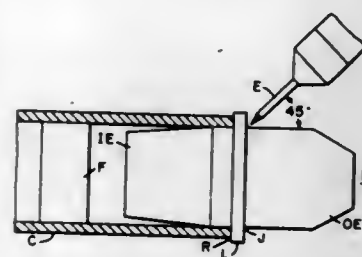
Int. Cl. B23k 9/00

U.S. Cl. 29—474.3

3 Claims

A method is disclosed of joining a plug, having a land, to tubular cladding for nuclear fuel. The tubular cladding

is very thin, about .010 inch, and may be composed of stainless steel. The joining is effected by fusion tungsten-



arc welding with the welding arc impinging at the junction of the land and outer extension of the plug.

3,460,238

**WIRE SEVERING IN WIRE BONDING MACHINES**

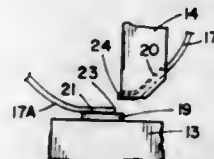
Harold L. Christy and Lee E. Folk, Phoenix, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Apr. 20, 1967, Ser. No. 632,362

Int. Cl. B26f 3/00; B65h 35/10

U.S. Cl. 29—481

3 Claims



A wire severing operation in a wire bonding machine comprising moving the bonding needle with holding pressure sufficient to frictionally engage the wire and insufficient to deform the wire away from the bond area for pulling the wire such that it breaks at one end of the bond.

3,460,239

**METHOD AND APPARATUS FOR LOCATING A CASTING PREPARATORY TO MACHINING THEREOF**

Maurice George Nix, Leamington Spa, England, assignor to Associated Engineering Limited, Leamington Spa, England, a British company

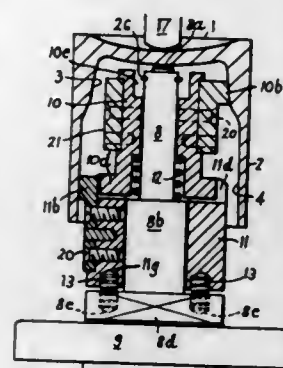
Filed July 19, 1965, Ser. No. 472,761

Claims priority, application Great Britain, July 22, 1964, 29,616/64

Int. Cl. B23p 15/10; B23q 17/18

U.S. Cl. 29—559

18 Claims



This invention relates to a method of accurately locating a hollow piston casting preparatory to machining the exterior surface thereof, which method comprises locating the casting by means of radial locating supports which engage the interior of the casting at a plurality of circumferentially spaced, radially fixed, points divided into two groups in two axially spaced annular zones of the interior of the casting to provide transverse centralising location, and centralising the casting by urging the points

of each group axially with respect to the casting and to the other group, to cause the points to come into wedging engagement with the parts of the interior of the casting in said spaced zones.

3,460,240

**MANUFACTURE OF SEMICONDUCTOR SOLAR CELLS**

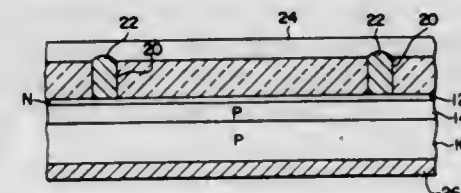
Krishan S. Tarneja, Pittsburgh, and Fred G. Ernick and Vito A. Rossi, Greensburg, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 24, 1965, Ser. No. 482,161

Int. Cl. H01k 7/08; H01l 15/02

U.S. Cl. 29—572

6 Claims



This disclosure relates to a method of manufacturing a solar cell which comprises growing layers of a semiconductor material on a foreign substrate.

3,460,241

**METHOD OF COUNTING SEMICONDUCTOR DEVICES ON THICK FILM CIRCUITS**

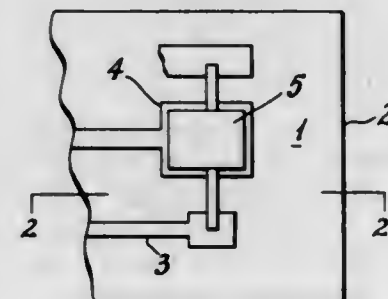
Nathan S. Ehrenberg, Oakhurst, N.J., assignor to The Bendix Corporation, a corporation of Delaware

Filed June 21, 1967, Ser. No. 647,742

Int. Cl. B01j 17/00; B23k 31/02

U.S. Cl. 29—590

2 Claims



A method of mounting silicon semiconductor elements on a thick film circuit utilizing a mixture of platinum and gold to form a gold silicon eutectic bond.

3,460,242

**METHOD FOR SECURING MOTOR WINDING HEADS**

Peter P. Grad, Woodstock, N.Y., assignor to Rotron Manufacturing Company, Inc., Woodstock, N.Y., a corporation of New York

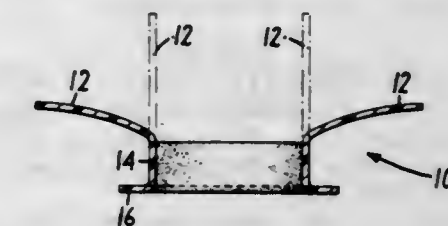
Original application Oct. 4, 1965, Ser. No. 492,607, now Patent No. 3,407,321, dated Oct. 22, 1968. Divided and this application July 3, 1968, Ser. No. 742,364

Int. Cl. H02k 15/00; H01f 7/06

U.S. Cl. 29—596

6 Claims

A method for securing the windings in a dynamoelectric machine to a winding frame, in which an end cap, having a radial flange at one end of a body portion and at least one resilient arm extending from the other end of the body portion, is placed against the end of the frame to be



When winding is complete, the resilient arm is released, whereby it returns toward its normal position to engage the end turns of the winding and keep them in place.

3,460,243

**MAXIMIZING OR CONTROLLING THE GAIN OF SONIC DELAY LINES**

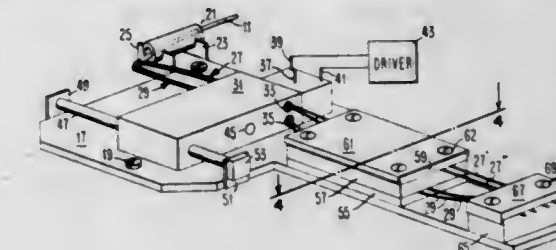
Joseph V. Riley, Vestal, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 29, 1964, Ser. No. 421,975

Int. Cl. H01p 11/00; H01q 13/00

U.S. Cl. 29—600

4 Claims



The gain of sonic delay lines operating in the torsional mode with magnetostrictive transducers can be maximized or controlled by assembling the magnetostrictive tapes utilized in such devices with a predetermined optimum tension. In order to minimize the change in tension over a temperature range, the assembly is mounted on a support or bracket having a similar co-efficient of expansion as that of the tapes. An additional factor is the annealing of the magnetostrictive tapes under predetermined optimum tension conditions.

3,460,244

**METHOD OF MANUFACTURING A MULTI-TRACK MAGNETIC HEAD**

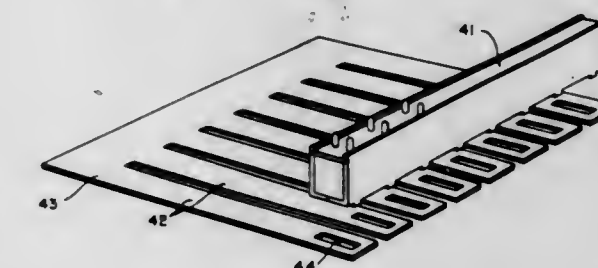
Jack L. Metz, Des Plaines, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware

Filed Sept. 10, 1965, Ser. No. 486,371

Int. Cl. H01f 7/06; G11b 5/42

U.S. Cl. 29—603

10 Claims

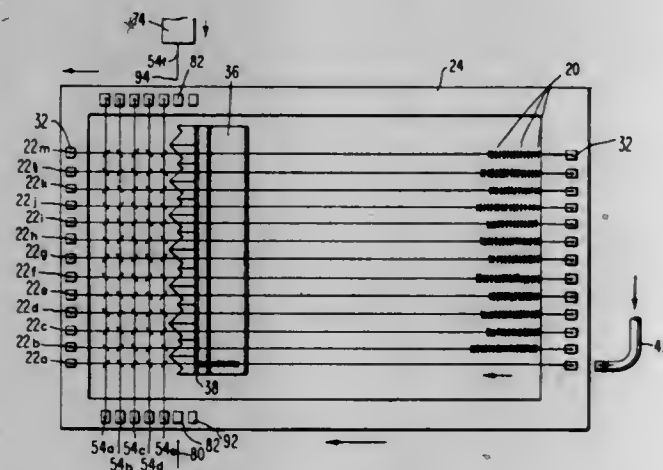


A method of manufacturing multi-track read/write heads for magnetic drum recorders or discs wherein a plurality of heads, in aligned integral form, are joined to



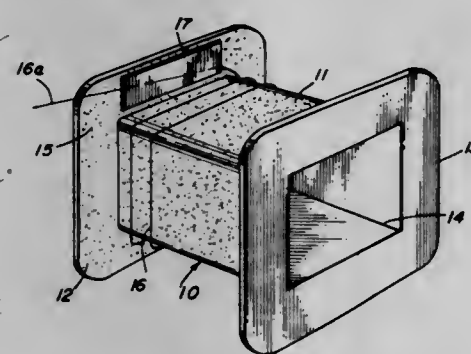
a plurality of furcations of a furcated sheet of spring material and then the heads are separated from one another while still retaining their aligned relationship.

**3,460,245**  
**METHOD FOR WIRING FERRITE CORE MATRICES**  
Herbert K. Hazel, Poughkeepsie, and Wolfgang F. Mueller, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Apr. 30, 1965, Ser. No. 452,101  
Int. Cl. H01f 7/06; B23p 19/04  
U.S. Cl. 29—604 11 Claims



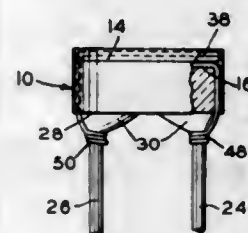
This specification describes the wiring of ferrite core matrices. First a number of wires with apertured ferrite elements strung on them are arranged side by side to form columns of ferrite elements that slide back and forth on the wires. Thereafter, one element on each length of wire is advanced to a wiring position to form a first selected row of ferrite elements. Then a row wire is inserted through the ferrite elements in the first selected row. After row wire is inserted, the ferrite elements of the row are tested. Once the ferrite cores in the first selected row test good, the process is repeated for a second row. Preferably, the selected row of ferrite elements is held in position by air directed at the elements.

**3,460,246**  
**COIL FORM METHOD OF MANUFACTURE**  
Richard L. Hatton, Elmhurst, Ill., assignor to Resinite Corporation, Wheeling, Ill., a corporation of Illinois  
Filed Sept. 10, 1965, Ser. No. 486,396  
Int. Cl. H01f 7/06; B65h 75/12  
U.S. Cl. 29—605 3 Claims



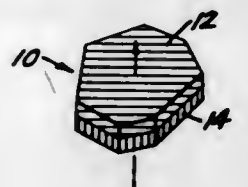
A method of manufacturing an inductor wherein a mold having a roughened surface direct developed by an electrical discharge results in a coil form having a surface roughness of the order of .00009-.0003 inch, thereafter winding a wire conductor on the form and taping the same.

**3,460,247**  
**METHOD OF MAKING A FLAT TOP COIL**  
Oliver J. Knutson, Colorado Springs, Colo., assignor, by mesne assignments, to Kaman Sciences Corporation, Colorado Springs, Colo., a corporation of Delaware  
Filed Feb. 1, 1966, Ser. No. 524,077  
Int. Cl. H04r 9/04; H01f 5/00  
U.S. Cl. 29—605 6 Claims



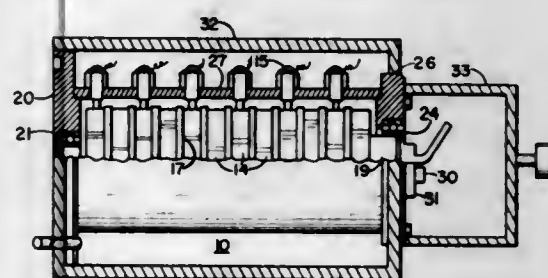
An open faced coil and method of making same which includes providing an insulated coil form and a heat vaporizable coil support in spaced relation, winding and securing a coil of wire onto the coil form and into the space between the coil form and the support. The coil form, support and coil are subject to an elevated temperature less than that which the coil form can withstand but sufficiently high to vaporize the support and leave one side of the coil exposed while maintaining the coil in wound configuration.

**3,460,248**  
**METHOD FOR MAKING MICROMAGNETS**  
Clarence R. Tate, 307 E. Court St., Fairfield, Ill. 62837  
Original application May 26, 1966, Ser. No. 553,087, now Patent No. 3,406,363, dated Oct. 15, 1968. Divided and this application Feb. 26, 1968, Ser. No. 708,270  
Int. Cl. H01f 7/06  
U.S. Cl. 29—607 7 Claims



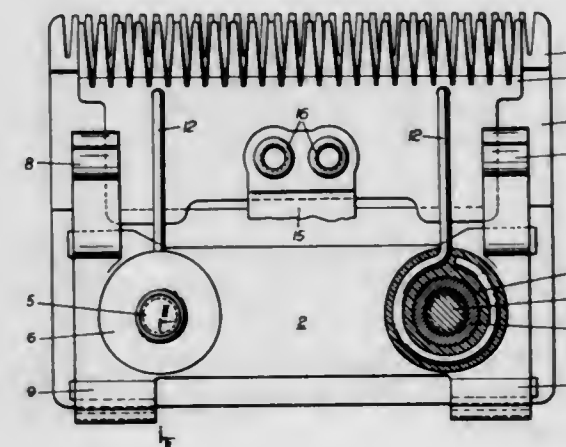
Method for producing magnetically actuable particles comprising providing at least two moldable compositions of contrasting colors, forming the compositions into a composite sheet, hardening the sheet, inducing a constant magnetization vector in the material and fracturing the sheet into tiny magnetized multi-colored particles.

**3,460,249**  
**METHOD OF MAKING CONTROLLERS**  
Leonard E. Aske, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware  
Filed May 2, 1966, Ser. No. 546,787  
Int. Cl. B23k 31/02  
U.S. Cl. 29—622 4 Claims



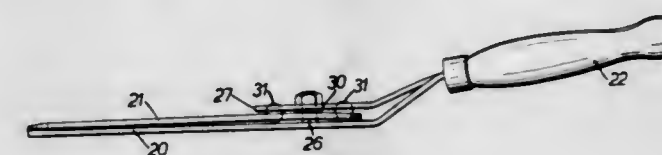
A rotatable member of a rotary type switch is obtained by bonding metallic commutation strips to inner ceramic rings at a high temperature and thereafter bonding the ceramic rings to a shaft at a lower temperature.

**3,460,250**  
**HAIR CLIPPERS**  
Erich Liska, Reltteregg, Post Hiltendorf, Austria, assignor to Payer-Lux Eduard Payer, Graz, Austria  
Filed June 7, 1967, Ser. No. 644,256  
Claims priority, application Austria, June 7, 1966, A 5,396/66  
Int. Cl. B26b 19/06  
U.S. Cl. 30—221 2 Claims



This invention relates to a hair-clipping head comprising a housing, a driven blade, a knife-edged comb and spring pressure means pressing the blade against the comb. Specifically, it is concerned with the spring pressure means and the mounting means therefor. In the hair-clipping head the spring pressure means include wire springs, one of each wire spring being mounted in a sliding member which is molded onto the end and is pivotally mounted on a lug provided on a retaining member securing the comb. Each of the other ends of the wire springs engage in a cavity provided on the driven blade.

**3,460,251**  
**SHEARS, SCISSORS AND OTHER HANDTOOLS**  
Roland W. G. Somervell, Beaconsfield, Buckinghamshire, and Nigel P. Kraty, Burnham, Buckinghamshire, England, assignors to Wilkinson Sword Limited, London, England, a British company  
Filed Mar. 22, 1967, Ser. No. 625,069  
Claims priority, application Great Britain, Mar. 29, 1966, 13,715/66  
Int. Cl. A01g 3/04, 3/00; B26b 13/00  
U.S. Cl. 30—248 7 Claims

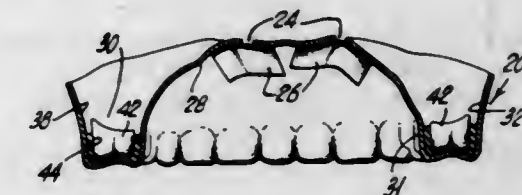


A pair of shears has a first blade rigid with a first handle and a second blade connected to a second handle through a coupling. The coupling includes two balls each partly seated in a recess in the second handle or a part movable therewith and in a recess in the second blade or a part movable therewith. When in use and shearing relatively tough material the balls partly ride out of the recesses thereby generating forces which act to bias the blades together in a direction perpendicular to the direction of movement of the blades.

In another embodiment the shears have handles which are arranged to move in a direction perpendicular to the direction of movement of the blades.

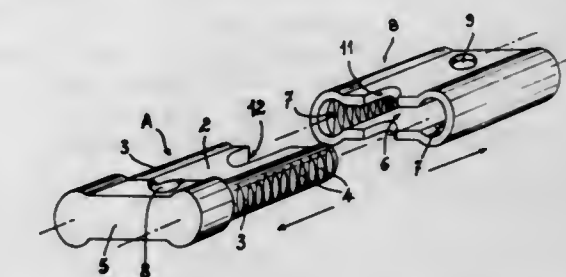
The invention is applicable to other shearing tools such as scissors, tin snips, secateurs and the like.

**3,460,252**  
**ARTICLE AND METHOD FOR FORMING A DENTURE**  
Sidney Schneider, Morristown, and Harry Katz, West Orange, N.J., assignors to Miracle Dental Products, Inc., Morris Plains, N.J., a corporation of New Jersey  
Filed May 2, 1967, Ser. No. 635,579  
Int. Cl. A61c 9/00 12 Claims



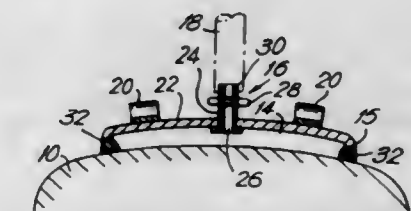
An article and method for forming a denture including a pre-formed tray having a set of teeth therein. A moldable resin is poured into the tray having a set of false teeth therein, and the tray is placed into an envelope. The user places the envelope into his mouth and by applying pressure to the resin through the envelope, a final denture is formed.

**3,460,253**  
**SPACING SYSTEM FOR DENTAL PROSTHESES**  
Henri Cammarata, 2 Rue General Ferrie, Grenoble, Isere, France  
Filed Apr. 13, 1966, Ser. No. 542,283  
Claims priority, application France, May 20, 1965, 46,017  
Int. Cl. A61c 13/22  
U.S. Cl. 32—5 5 Claims



A spacing arrangement for dental prostheses comprising a male section of a flat oval cross-section with rounded terminal surfaces having a serrated saw tooth outline facing in one direction and a female element provided with a flat oval bore corresponding to the outer outline of the male element and provided with at least one saw tooth facing in a direction opposed to that of first-mentioned serration teeth. One end of the female section receives and is engaged with one end of the male element, whereby the interengaging saw teeth allow adjustable removal of the male element while preventing its re-entry.

**3,460,254**  
**DENTAL METHODS AND DEVICES**  
Bernard I. Scheuer, 25 Walnut Drive, Tenafly, N.J. 07670  
Filed May 9, 1967, Ser. No. 637,227  
Int. Cl. A61c 7/00 22 Claims



The method and apparatus of securing dental devices on teeth by means of a partial vacuum. A dental device is provided having a recess extending inwardly so that

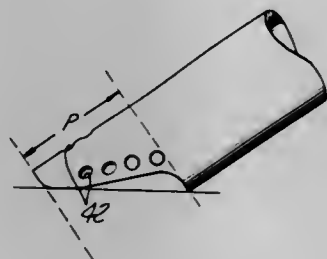


when the device is positioned on the tooth surface a chamber is defined between the device and the tooth surface. The chamber is then partially evacuated enabling external atmospheric air pressure to securely hold the device on the tooth surface. A valve is provided to permit maintenance of the evacuated condition within the chamber.

**3,460,255**  
**ORAL EVACUATOR**  
Clifford L. Hutson, 885 Cumberland Road,  
Glendale, Calif. 91202  
Filed Oct. 3, 1967, Ser. No. 672,544  
Int. Cl. A61c 17/04

U.S. Cl. 32—33

15 Claims

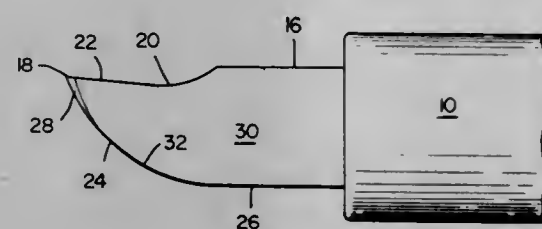


The end of a dentist's vacuum-actuated oral evacuator is cut off at an angle to provide an intake zone and auxiliary openings through the wall of the evacuator are provided in the intake zone.

**3,460,256**  
**HANDTOOL FOR ADJUSTING DENTURES**  
Ralph G. Fontana, 7645 Giusti Road,  
Forestville, Calif. 95436  
Filed July 10, 1967, Ser. No. 652,340  
Int. Cl. A61c 3/00

U.S. Cl. 32—40

4 Claims



A handtool for adjusting dentures having a handle, a cutting tip formed on a shank secured to the handle, the tip having an arcuate forward edge, a concave upper surface and a convex lower surface. These surfaces meet together to form an arcuate forward cutting edge which is faired into the flat side surface of the shank. The edges at which the side surfaces meet the convex lower surface form additional cutting edges.

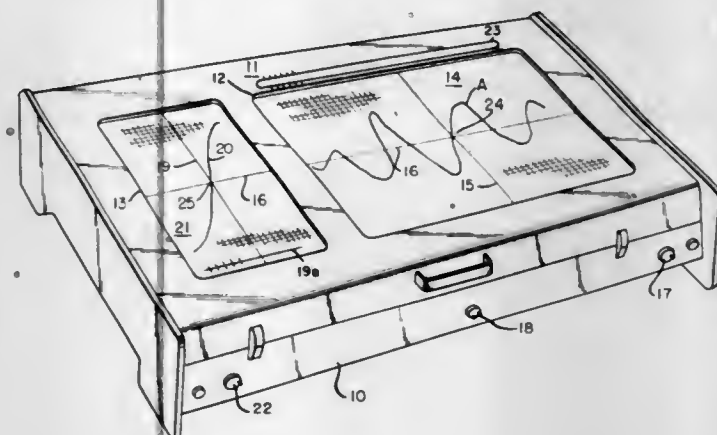
**3,460,257**  
**APPARATUS FOR GRAPHICAL ANALYSIS**  
Stephen W. Hobday, 219 Sycamore Road,  
Farnborough, Hants, England  
Filed Apr. 24, 1967, Ser. No. 633,013  
Int. Cl. G01c 21/20; G01b 3/14, 5/24

U.S. Cl. 33—1

3 Claims

The disclosure relates to apparatus for providing a numerical display of graphical information. Provision is made for a linearized output of non-linear data. The apparatus includes means for mounting and transporting the graphical data to be analyzed, movable cursors for deter-

mining the ordinate corresponding to any preselected abscissa, a cursor which effectively transfers the value of

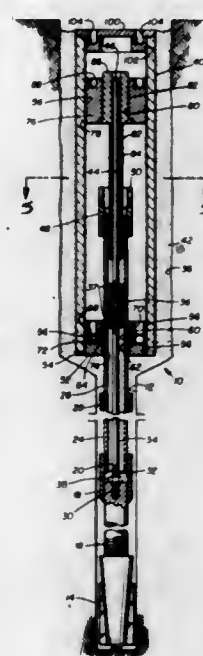


the ordinate to a linearizing curve, and a further cursor for determining the linearized value of the ordinate from the linearizing curve.

**3,460,258**  
**SINGLE POSITION EXTENSOMETER**  
Daniel Geary, Thomas E. McKewon, Richard S. Harris,  
and Herbert L. Bolen, Tulsa, Okla., assignors to Fenix  
& Scisson, Inc., a corporation of Oklahoma  
Filed June 22, 1967, Ser. No. 648,112  
Int. Cl. G01v 1/30

U.S. Cl. 33—1

7 Claims

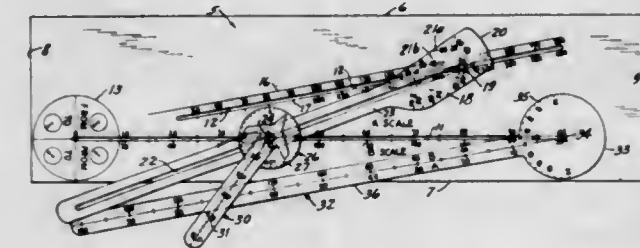


A device is described for measuring the movement of earth formations relative to the surface of the ground. One end of a rod string is anchored within the formation to be measured and terminates in a reference surface near the ground surface. A casing surrounds the rod string and is likewise anchored in the formation to be measured. A second casing extends downward a short distance from the earth surface and surrounds a portion of the anchored casing in sealing engagement to permit movement of the anchored casing while providing sealing means. The second casing includes a reference bushing which provides a reference surface for comparative measurement of distance from the reference surface of the rod string. Earth movement is determined by comparative measurements of this distance.

**3,460,259**  
**NAVIGATIONAL PLOTTER-COMPUTER**  
Robert C. Simpson, 911 8th Ave. N.,  
Lewistown, Mont. 59457  
Filed Aug. 10, 1967, Ser. No. 659,714  
Int. Cl. G01c 21/20

U.S. Cl. 33—1

5 Claims

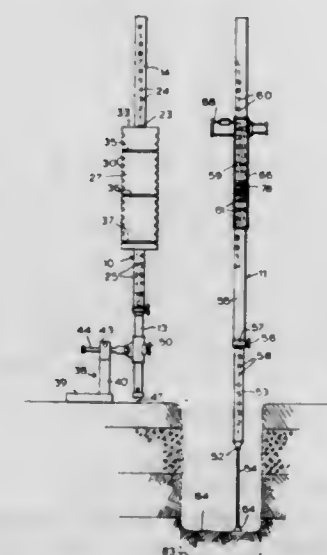


A navigational device adapted to aid pilots with navigational problems arising during cross-country flying, particularly as pertains to determining true course, true air speed, ground speed, and distances during the flight, and including means for giving a pilot a graphic picture of his location during flight.

**3,460,260**  
**GRADE SETTER**  
Oscar L. Sarlandt, 1647 Abranson Road,  
Santa Rosa, Calif. 95401  
Continuation of application Ser. No. 499,265, Oct. 21,  
1965. This application May 10, 1968, Ser. No. 728,365  
Int. Cl. G01c 9/00

U.S. Cl. 33—73

5 Claims



A target which carries markers at selectable levels is settable along a rod having oppositely progressing scales with a common zero at a predeterminable distance above the foot of the rod. Similar scales are provided on each of two opposite faces of a second rod. A slide thereon mounting a horizontal telescope has on one face a scale progressing downwardly from an upper telescope holder and on the other face a scale progressing upwardly from a lower telescope holder. Each face carries a cursor for correlating the slide scale with the adjacent rod scale seen through a longitudinal window.

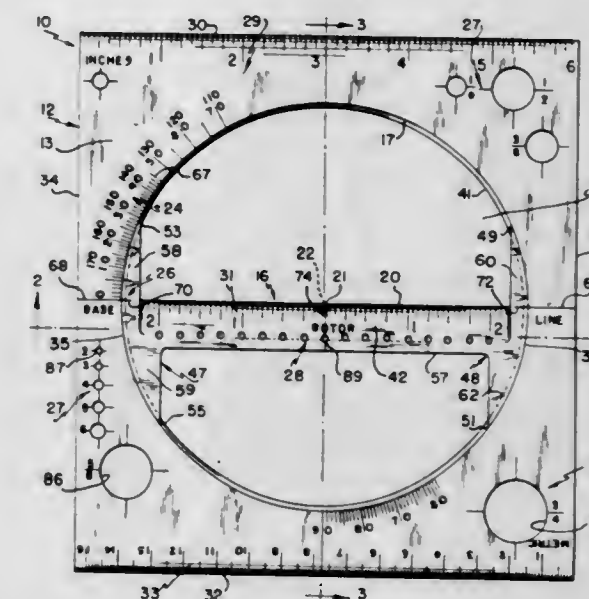
**3,460,261**  
**DRAFTING DEVICE**  
Arnold J. Frey, 7434 Craigmere Drive,  
Cleveland, Ohio 44130  
Filed Jan. 24, 1968, Ser. No. 700,091  
Int. Cl. B43i 13/02

U.S. Cl. 33—75

4 Claims

A drafting device including a frame-like support member having an opening, and an elongated rotatable mem-

ber mounted on the support member and extending transversely of the opening for relative rotational movement with respect to the support member. The support member and rotational member include indicia adapted for selective registration for drawing and/or determining angles. Both the support member and rotatable member

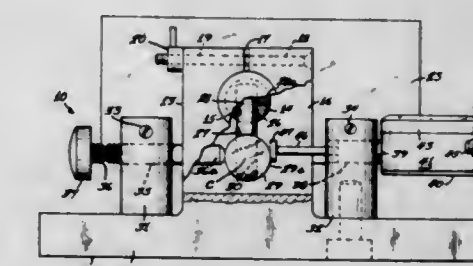


include means associated therewith for drawing and/or determining circles and straight lines, respectively. Measuring indicia is provided for determining the size and length of the circles and lines, respectively. The rotational member can be flexed for insertion in or removal from the support member.

**3,460,262**  
**ANGLE MEASURING DEVICE**  
Leon A. Chelmo, 2621 Major Ave. N., Minneapolis,  
Minn. 55422, and John E. Schuh, 5301 George Ave.  
N., Minneapolis, Minn. 55428  
Filed May 23, 1967, Ser. No. 640,575  
Int. Cl. G01b 3/56

U.S. Cl. 33—174

5 Claims



A workpiece surface angle inspection tool with tiltable table on a shaft supported on a base and having a pendulum arm engaged at one side by a screw to tilt the table and engaged at the other side by the feeler of a distance measuring dial indicator.

**3,460,263**  
**GAUGE AND SLIDING SUPPORTS THEREFOR**  
Erwin W. Graham, Willoughby, Ohio, assignor to The  
Pipe Machinery Company, Wickliffe, Ohio, a corpora-  
tion of Ohio  
Continuation-in-part of application Ser. No. 479,573,  
Aug. 13, 1965. This application Feb. 28, 1968, Ser.  
No. 713,562  
Int. Cl. G01b 3/00

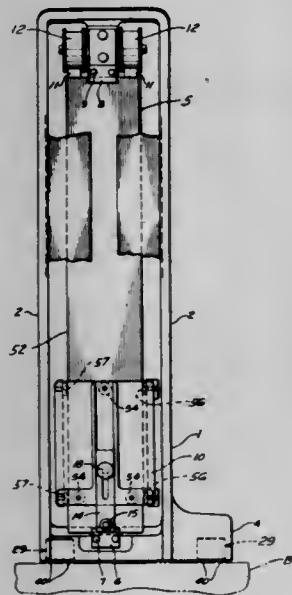
U.S. Cl. 33—174

10 Claims

A gauge member is provided with universally rockable slide pads which slidably support it on a planar surface of



a second gauge member. The second member carries a gauge bar in fixed position thereon. The pads are adjustable for tilting the second member as a whole to dispose the bar at preselected angular positions relative to the gauging surface. Generally three pads are provided and

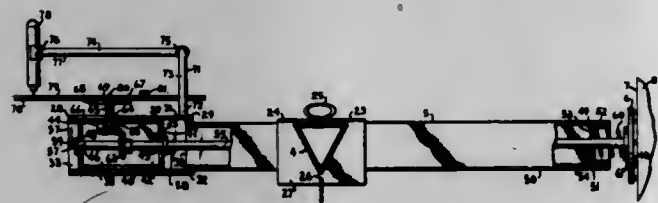


are arranged so that their axes define on the planar surface a right triangle. Each pad has a plurality of coplanar slide surface areas each of which is interrupted at its boundary so as to be isolated from the others, thus assuring proper sliding and weight distribution.

**3,460,264**  
**WHEEL ALIGNMENT CHECKING DEVICE**  
Edgar C. Cluchey, 832 Tauromee,  
Kansas City, Kans. 66101  
Filed Mar. 13, 1967, Ser. No. 622,606  
Int. Cl. G01b 5/24

U.S. Cl. 33-203.17

9 Claims



A device for checking and recording the alignment of motor vehicle wheels with the normal weight of the vehicle on the wheels, said device making a permanent record of the alignment deviation in one complete revolution of the wheels. The device consists of a mobile frame having a base member and a pair of side arms. Guide members having tire engaging surfaces on one end are mounted on the free end of each of the side arms. A measuring and recording head is movably mounted relative to one of the side arms and responsive to lateral movement and rotation of the pair of wheels being checked to record the alignment of the wheels.

**3,460,265**  
**METHODS OF DRYING**  
Horace L. Smith, Jr., 301 Lock Lane,  
Richmond, Va. 23226

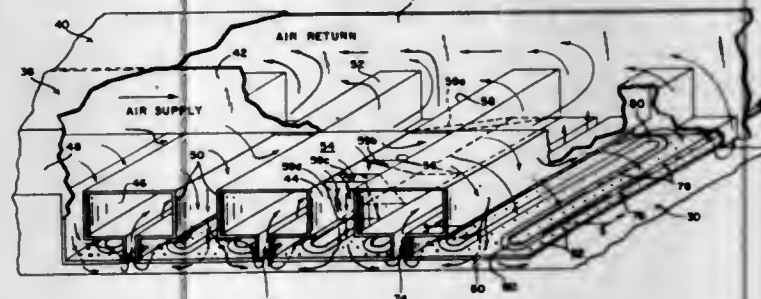
Original application Feb. 14, 1967, Ser. No. 615,966, now Patent No. 3,403,456, dated Oct. 1, 1968. Divided and this application Aug. 23, 1968, Ser. No. 754,928  
Int. Cl. F26b 3/04, 3/28, 13/04

U.S. Cl. 34-1

11 Claims

Methods of drying web, sheet, and similarly configured

material by the impingement of a fluid medium and, if



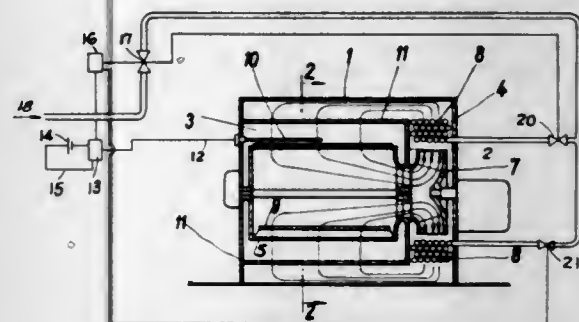
desired, the combination of radiant heating with fluid impingement.

**3,460,266**  
**PROCESS AND APPARATUS FOR THE HEAT-TREATMENT OF MATERIALS**  
Heinz Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to Vepa AG, Basel, Switzerland  
Filed Mar. 2, 1967, Ser. No. 620,182  
Claims priority, application Germany, Mar. 2, 1966, A 51,721

Int. Cl. F26b 3/12, 17/00

U.S. Cl. 34-26

18 Claims



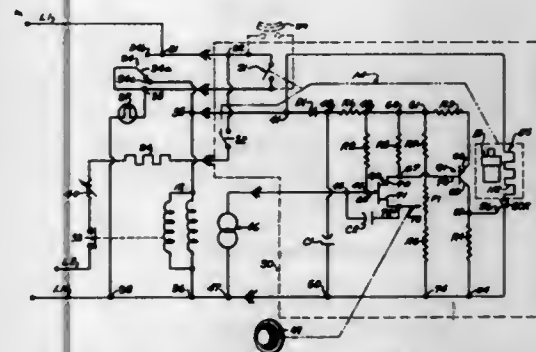
The present disclosure relates to a process and apparatus for the heat-treatment of materials which are conveyed on sieve drums subjected to a suction draft, wherein the temperature of the treatment medium, for example, air, which is drawn out of each sieve drum is controlled by sensing the temperature of said treatment medium at the surface of the material being treated.

**3,460,267**  
**DRYER CONTROL**  
Jerome L. Lorenz, Columbus, Ohio, assignor to Ramco Incorporated, Franklin County, Ohio, a corporation of Ohio

Filed Apr. 20, 1967, Ser. No. 632,329  
Int. Cl. F26b 3/02, 11/04, 21/10

U.S. Cl. 34-45

8 Claims



Drying apparatus having a control for terminating a drying cycle of the apparatus includes electrodes for engaging fabrics in the dryer to establish a conductive path therethrough and actuates a triggering circuit which energizes actuating means for terminating the drying cycle in

response to a predetermined low moisture content of the articles and in response to an accumulation of electrical energy applied to the actuating means which is preferably in the form of an electric heat motor.

**3,460,268**  
**DRILL ATTACHMENT FOR CLEANING PAINT APPLICATORS**

Carl F. Greathouse, Eastlake, Ohio, assignor of twenty-four and one-half percent each to Samuel C. Nicholson, Willowick, Ohio, and French Greathouse, Point Marion, Pa.

Filed Nov. 17, 1966, Ser. No. 595,141  
Int. Cl. A46b 17/06

U.S. Cl. 34-58

7 Claims



An attachment to hold a brush or a roller for rotation by a drill. A pair of parallel arms having openings are slidably secured on a bolt. A roller is held by moving the arms close together wedging them inside the roller. The ends of the arms being tapered to promote the wedging action. A brush is held by placing the arms on each side of a brush handle and bolts are passed through openings in the arms and in the handle.

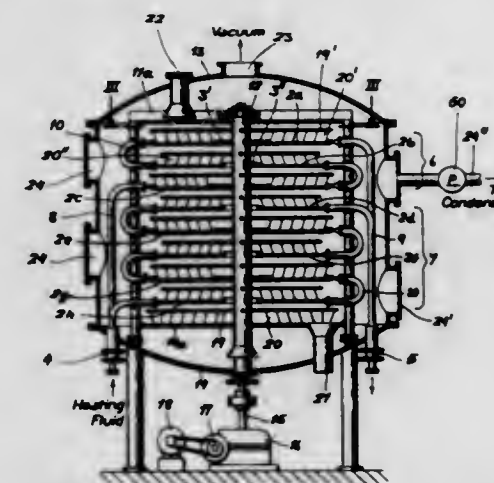
**3,460,269**  
**PROCESS AND APPARATUS FOR VACUUM-DRYING BULK MATERIALS**  
Heinz Gerhard Kessler, Munich, Germany, assignor to Krauss-Maffei A.G., Munich-Allach, Germany, a corporation of Germany

Filed Aug. 1, 1967, Ser. No. 657,683  
Claims priority, application Germany, Aug. 10, 1966, K 59,998

Int. Cl. F26b 17/16, 17/22

U.S. Cl. 34-92

7 Claims



Free-flowing bulk materials admixed with a sublimable substance (e.g., ice, such as frozen foodstuffs, are continuously treated in a vacuum chamber by being moved with constant agitation over successive hot surfaces advantageously to progressively lower levels with conse-

quently lower temperatures and partial pressures. These surfaces are formed by a stack of heated annular disks with alternately smaller and larger inner and outer diameters, the disks being swept by continuously rotating scraper blades acting radially inwardly in the case of the larger disks and radially outwardly in the case of the smaller disks whereby the goods are alternately pushed over the inner and outer edges of successive disks onto the next-lower disk and, finally, onto the floor of the chamber.

**3,460,270**  
**ADAPTIVE TRAINING SYSTEMS AND APPARATUS**

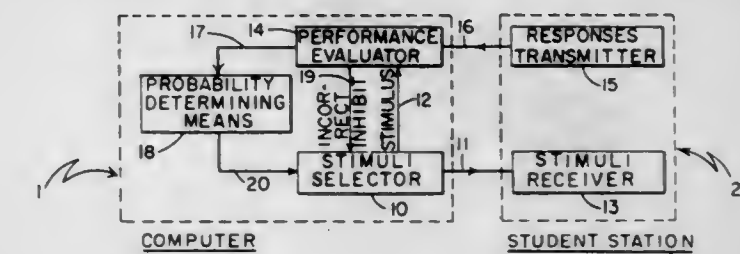
Melvin H. Blitz, Framingham, and Donald W. Brown, Scituate, Mass., and Guy Black, Washington, D.C., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 23, 1966, Ser. No. 604,360

Int. Cl. G09b 13/02

U.S. Cl. 35-6

10 Claims

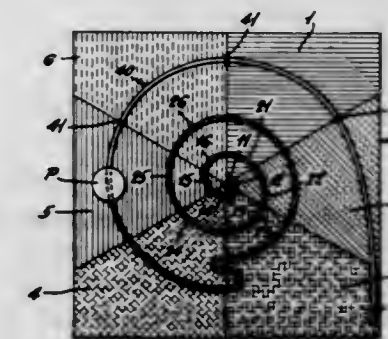


An adaptive educational typing training system for training one or more subjects. A plurality of typing characters, each having a predetermined statistical probability of occurrence, are successively presented in accordance with the predetermined statistical probabilities of occurrence to a subject at a training station. Typing responses to the characters are entered by the subject and evaluated as to the correctness or incorrectness and as to response times. Based on the overall performance of the subject to each character, the statistical probability of occurrence of the character is modified. More particularly, if the subject enters an incorrect response to a character or an untimely response, whether correct or not, the statistical probability of occurrence of the character is increased. If the subject enters a correct and timely response to the character, the statistical probability of occurrence of the character is decreased. The characters are repetitively presented to the subject and the statistical probabilities of occurrence are continually updated in accordance with the various responses to the characters. Multiple characters, words, and text material may also be presented to the subject once he has mastered single characters.

**3,460,271**  
**TEACHING AID DEVICE**  
Earl C. Saxon, Pikesville, Md.  
(2504 Rellim Road, Baltimore, Md. 21209)  
Filed Nov. 6, 1967, Ser. No. 680,888  
Int. Cl. G09b 19/00

U.S. Cl. 35-21

6 Claims

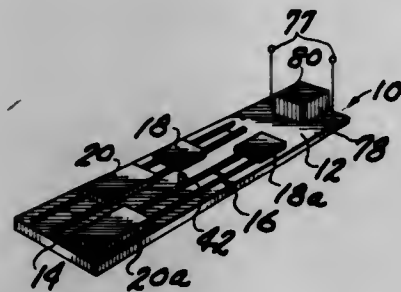


The device comprises a model having a base subdivided into distinctively colored sectors indicating stages of de-



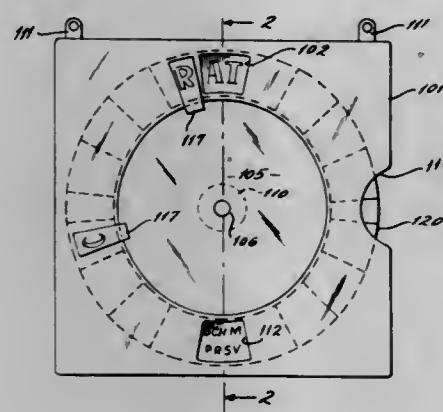
velopment, and a conical helix of wire or other flexible material which rises or falls with ever widening spirals from the center of the base to indicate growth or decline. The portions of the spirals are colored to coincide with the color of the sector below it. An extension of the helix and movable markers may be provided for prognostication and discussion purposes.

**3,460,272**  
**TEACHING AID**  
Albert P. Pellicore, 5106 W. Gladys,  
Chicago, Ill. 60644  
Filed Oct. 24, 1965, Ser. No. 504,528  
Int. Cl. A63b 21/00, 23/00; A61h 1/02  
U.S. Cl. 35—29 5 Claims



A device comprising four, substantially coplanar platforms are provided. Said platforms are adapted to supportingly receive a person in a crawling position. The platforms are divided into spaced pairs in axial alignment with diagonally disposed platforms interconnected whereby they may reciprocally move, simultaneously, along axial paths. The device is provided with a cover having slots therein with means projecting through slots to move overlying platforms. A slotted shield partially movable with the platforms is provided between the cover and the platforms to cover the underlying slots.

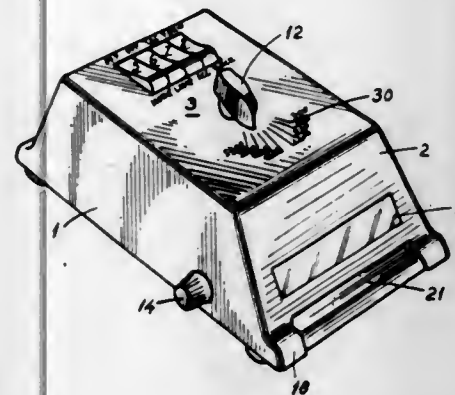
**3,460,273**  
**EDUCATIONAL DEVICE**  
Johnye G. Boyd, 3335 N. Euclid,  
St. Louis, Mo. 63115  
Filed May 8, 1967, Ser. No. 636,943  
Int. Cl. G09b 21/00, 19/00  
U.S. Cl. 35—35 6 Claims



A fixed board has a phonic word family station at which a phonic word family or word segment is displayed. A movable consonant carrier is arranged to move individual consonants, consonant digraphs or consonant blends through a path over which the consonant or consonant blend is exposed for a substantial distance, to a position at which it forms with the phonic word family a complete word. In a simple illustrative example, the phonic

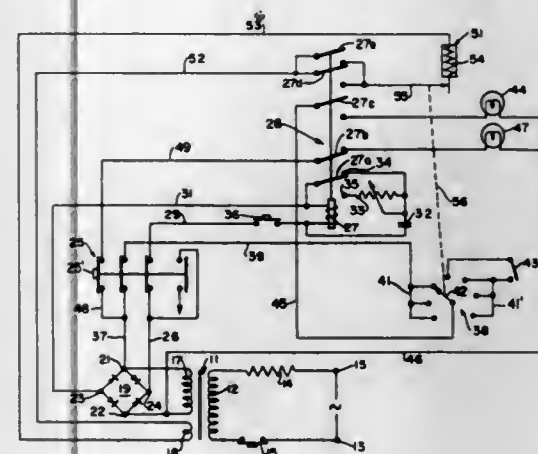
word family is demountably and remountably attached to a board, and consonants are mounted to project radially outwardly of a revolvably mounted wheel, preferably at quadrants.

**3,460,274**  
**TACHISTOSCOPE**  
Flnd Poulsen, 29 Stadlonvej, Glostrup, Denmark  
Filed Sept. 22, 1967, Ser. No. 669,917  
Claims priority, application Denmark, Sept. 23, 1966,  
4,952/66  
Int. Cl. G09b 17/04 7 Claims



A tachistoscope which contains a transparent mirror, arranged to prevent the trainee from seeing a text used for improving his reading ability in periods when a source of light inside the tachistoscope is not lighted. In the present tachistoscope, the transparent mirror is so placed that it reflects the mirror image of the viewer into the interior of the tachistoscope, whereby his eyes do not accommodate to that image while said source of light is switched off.

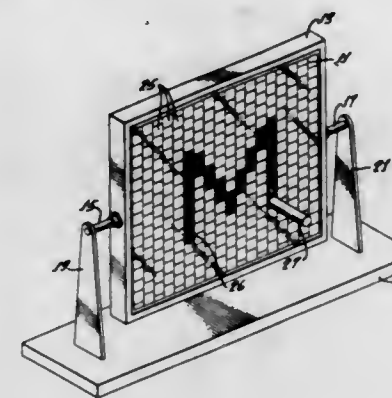
**3,460,275**  
**PROGRAMMED INSTRUCTION RESPONSE CIRCUIT**  
Rudolf Burger, Roblingen (See), and Horst Scholz, Elsleben, Germany, assignors, by mesne assignments, to VEB Mansfeld-Kombinat W. Pieck, Elsleben, Germany  
Filed Sept. 26, 1966, Ser. No. 581,794  
Int. Cl. C09b 7/06, 1/00 5 Claims



In a programmed response checking device, contacts of a question selecting switch close a "correct response" indicating circuit through a predetermined contact of a response selecting rotary switch and an armature of a relay. The relay is actuated both by said question selecting switch and by a release switch. The rotary arm of the rotary switch is mechanically coupled with a movable re-

sistor which is heated upon actuation of said relay to make a position mark on a heat sensitive carrier irrespective of the condition of the "correct indicator."

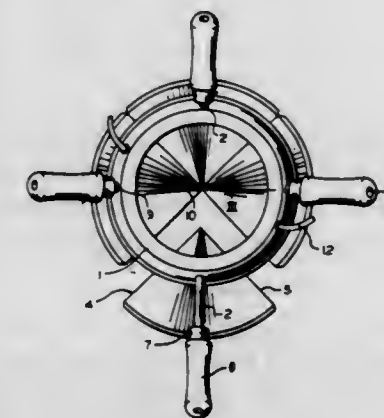
**3,460,276**  
**BISTABLE VISUAL DISPLAY DEVICE**  
Errol G. Payne, Newport Beach, Calif., assignor to Peripheral Data Machines, Inc., a corporation of California  
Filed Sept. 16, 1968, Ser. No. 762,202  
Int. Cl. B43l 1/00; C09f 11/00 9 Claims



A display board having a transparent front panel and a core honeycombed by an array of transversely extending non-intercommunicating duct-like cells partially filled with magnetic powder. The cells are so configured that the board can be erased simply by holding it horizontally, with the transparent front panel up. To write on the board it is tilted into an upright position and a magnetic stylus is drawn across its transparent front panel, whereupon powder is shifted to the visible front portion of the cells along the path of stylus.

The disclosure includes a preferred embodiment in which the honeycombed core is formed from a laminated stack of specially corrugated sheets. The disclosure also includes a method for manufacturing such a core, and a display panel incorporating it, and a particularly effective tool for forming the corrugated sheets from which the laminated stack for the core is assembled.

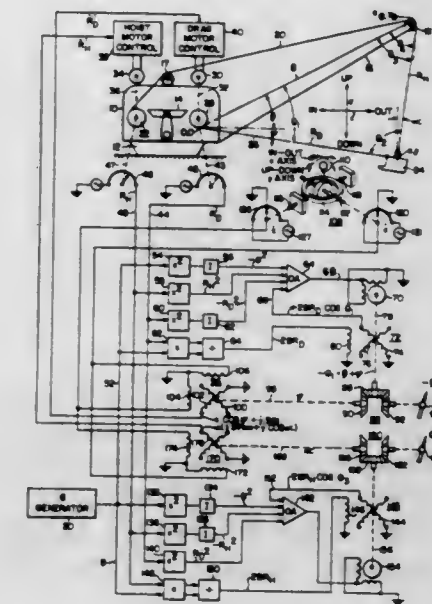
**3,460,277**  
**TRANSPLANTER**  
Russell C. Grover and Phillip C. Grover, both of R.R. 1,  
Box 101, Henry, Ill. 61537  
Filed Dec. 27, 1965, Ser. No. 516,578  
Int. Cl. A01g 23/06, 23/00, 1/00 9 Claims



A transplanter for transferring a growing plant, shrub, bush, tree or the like from one location to another, embodying apparatus including cutting blades which converge as they are forced into the ground around the plant

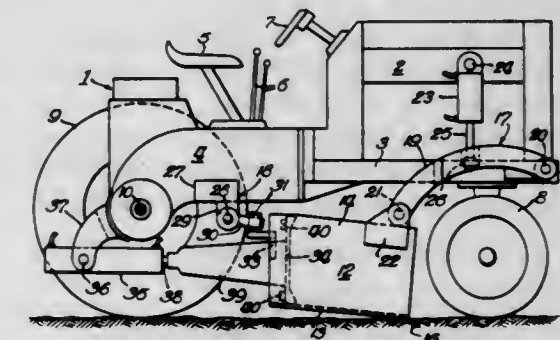
to prune the roots of the plant and sever a mass of earth around the remaining roots and retain the plant and earth mass until the same is placed in the new location.

**3,460,278**  
**CONTROL FOR A DRAGLINE**  
Joseph A. Pesavento, Wilkensburg, and Darl C. Washburn, Jr., Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Oct. 21, 1965, Ser. No. 499,348  
Int. Cl. E02f 3/46; B66f 9/18 14 Claims



There is shown a dragline wherein two-axis control of the bucket is provided by a master controller with a single handle operating along intersecting courses one for each axis of control. The controller produces signals which are functions of the positions of the controller along each course. The signals, which represent the vertical and horizontal components of a desired resultant velocity for the bucket, are translated or converted to signals proportional to the velocities required for the hoist and drag cables to effect the desired resultant velocity of the bucket. The latter signals are employed to control the hoist and drag cables.

**3,460,279**  
**EARTH WORKING SCRAPER ATTACHMENT FOR FARM TRACTORS**  
William E. Martin, % The Martin Company,  
P.O. Box 187, Kewanee, Ill. 61443  
Filed Mar. 7, 1966, Ser. No. 532,255  
Int. Cl. E02f 3/62 10 Claims



An earth working scraper attachment for farm tractors or the like comprising a scraper bowl for placement between the front and rear tractor wheels, first and second suspension means, power means to position said bowl,

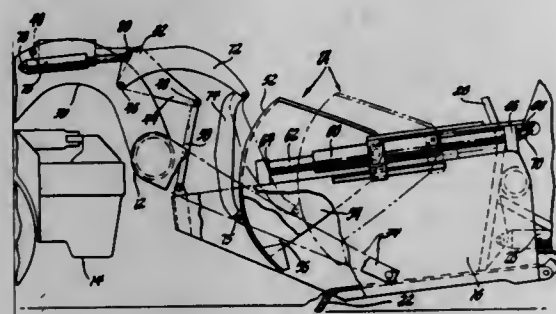


ejector. The ejector manipulating means comprises structure extending beneath and past the rear axle of the tractor. The ejector panels having integrally formed flanges along their side edges for retaining photographs and for slidably engaging the tractor.

3,460,280

**PULL-IN APRON FOR A SCRAPER**  
Robert R. Batson, Pepper Pike, and Russell C. Williams, Rocky River, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed June 7, 1967, Ser. No. 644,130  
Int. Cl. E02f; B60p 1/00, 1/04  
U.S. Cl. 37—4

4 Claims



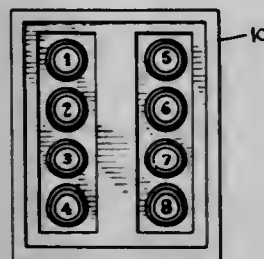
A scraper apron that serves to retain material within the bowl and also functions to facilitate loading thereof. The apron is connected to the side walls of the bowl by transversely aligned pivotal connections which are adapted to be moved rearwardly so that the apron will scoop material into the bowl during a loading operation.

3,460,281  
**ELECTRICAL DISTRIBUTION CIRCUIT DIRECTORY**

Marvin J. Levy, 2133 Kenwood Place, Bellmore, N.Y. 11710  
Filed Apr. 19, 1966, Ser. No. 543,677  
Int. Cl. G09f 7/00

U.S. Cl. 40—63

3 Claims



An electrical circuit directory which is to be located at a main fuse or circuit-breaker box, the directory being in the form of a chart divided into a group of individually numbered major blocks, one for each fuse or circuit breaker, each block on the chart being subdivided into minor sites for accommodating pre-printed, pressure-sensitive labels for identifying the lights or other devices on the circuit branch related to the major block in question, the number of the block corresponding to a number applied in sticker form on the fuse or circuit breaker.

3,460,282

**PHOTOGRAPH DEVICE**  
Gordon L. Swirsky, 81 East St., Pittsfield, Mass. 01201

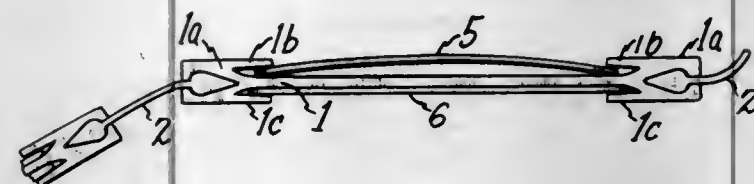
Filed Mar. 30, 1967, Ser. No. 627,111

Int. Cl. G09f 11/06, 1/12

U.S. Cl. 40—102

8 Claims

A photograph album is formed of a number of plastic



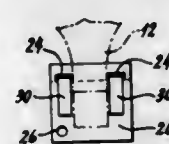
ing flexible hinge strips which hold adjacent panels in foldable assembly.

3,460,283

**INFLATABLE WATER-FOWL DECOY**  
Robert A. Stephens, % Javelin Oil Co., Suite 602, Petroleum Tower, P.O. Box 302, Shreveport, La. 71102  
Filed Nov. 2, 1967, Ser. No. 680,168  
Int. Cl. A01m 31/06

U.S. Cl. 43—3

6 Claims



An inflatable water-fowl decoy formed from a plastic material. The decoy has a stem, by means of which it may be inflated, extending from the bottom thereof at a point forward of the center of gravity. Sealing of the inflated decoy is accomplished by crimping a metallic combination keel, seal and anchor attachment means about the stem.

3,460,284

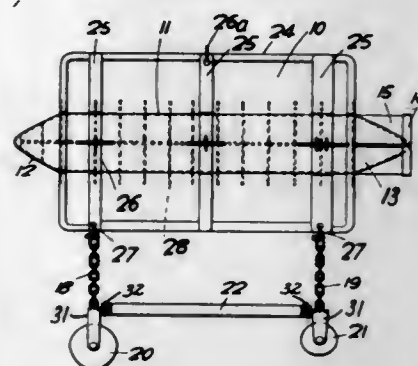
**DEVICE FOR OPENING TRAWL NETS**  
Kenneth Stather, Kowloon, Hong Kong, assignor to The Colonial Treasurer Incorporated, in the colony of Hong Kong, Hong Kong, a body corporate of Hong Kong

Filed July 3, 1967, Ser. No. 650,959  
Claims priority, application Great Britain, July 12, 1966, 31,301/66

Int. Cl. A01k 73/02

U.S. Cl. 43—9

8 Claims



A trawl net opening device comprises a buoyant fin positioned upright in use, and two rollers hanging below the fin on chains or other flexible members to roll on the sea bed, the device as a whole having negative buoyancy.

3,460,285

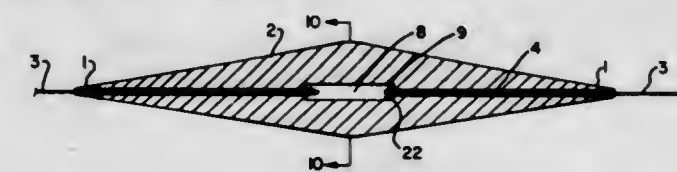
**FISHING LINE ACCESSORY**  
Joe Perkins, 1614 Jaeger Ave., Louisville, Ky. 40205  
Filed Dec. 19, 1966, Ser. No. 602,856  
Int. Cl. A01k 93/00, 95/00

U.S. Cl. 43—44.9

4 Claims

Weedless fishing line accessories in the form of elongated bodies which taper to a rigid, sharp, annular edge and which contain at least one line receiving bore opening at one end of the body and running axially through

the body. Each body has a narrow line threading slot intermediate its ends, extending from the surface of the body medially to form a smooth bearing surface into



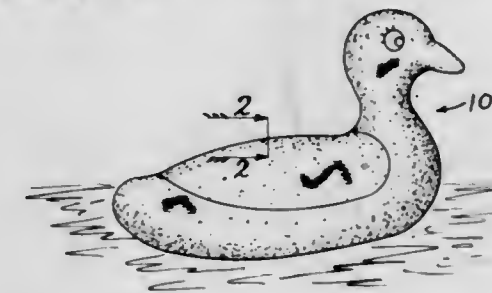
which the other end of the bore opens. A line extends through the bore and contains a knot in operative relation to the bearing surface, acting as a swivel.

3,460,286

**STUFFED TOY**  
Victor Danberg, 6 Mary Ann Lane, Wallingford, Conn. 06492  
Filed Sept. 17, 1965, Ser. No. 487,973  
Int. Cl. A63h 23/10, 23/00

U.S. Cl. 46—92

3 Claims



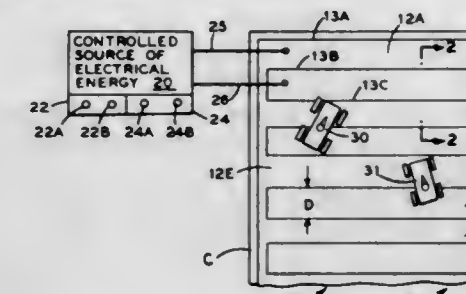
A soft, durable, and readily washable stuffed toy covered by a cloth material and stuffed with polyethylene or polypropylene fiber.

3,460,287

**MULTIELEMENT ELECTRIC TOY**  
Lewis Arnow, 33 Bull St., Newport, R.I. 02840  
Filed Oct. 21, 1965, Ser. No. 499,673  
Int. Cl. A63h 33/26

U.S. Cl. 46—244

7 Claims



An electric toy movable over an electrified model track; the toy including at least two electric motor driven model vehicles and the track being electrified by power sources having controllable variable current and voltage characteristics. The model vehicles have contacts for slidably contacting the track for passing power to the electric motors, with one of the motors being responsive only to the magnitude of the current and the other motor being responsive only to the amplitude of the voltage.

3,460,288

**TREE HARVESTING METHOD**  
Harvey Don Burkhalter and Ernest J. Russell, Ruston, La., assignors to T. L. James & Company, Inc., Ruston, La., a corporation of Louisiana

Filed Apr. 25, 1967, Ser. No. 633,536

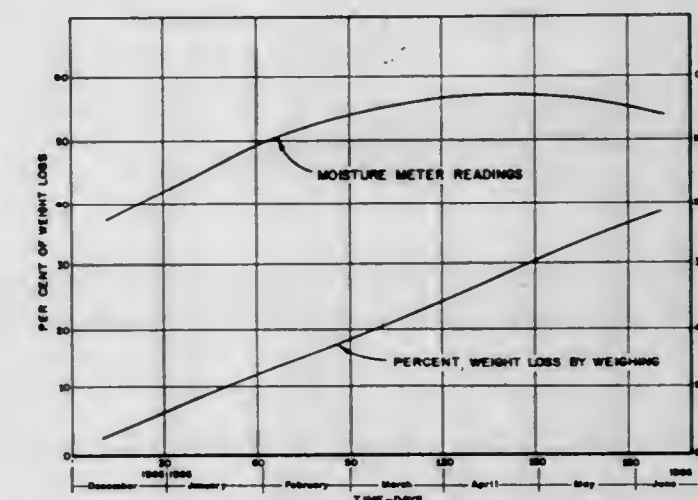
Int. Cl. A01g 23/00; G01n 25/56, 5/02

U.S. Cl. 47—58

7 Claims

A method of harvesting standing trees wherein the tree is felled and is dried for an interval of time while the crown is maintained intact on the stem. The optimum

interval of drying time is established by utilization of an electric moisture meter to periodically indicate moisture content of the felled tree. When the moisture content of the felled tree ceases to be reduced, or starts to increase, as



indicated by the meter, and in spite of continued weight reduction of the tree, the need for completion of harvesting is indicated if tree deterioration is to be circumvented.

3,460,289

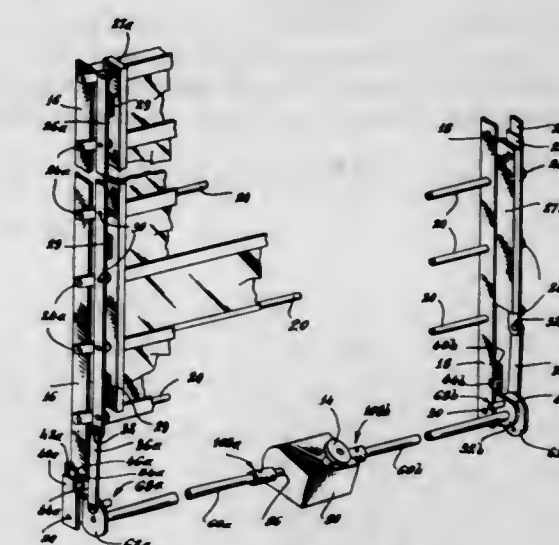
**AWNING TYPE SECURITY WINDOW**  
Louis Toth, Easton, Conn., assignor to Anchor Enterprises Corporation, Bridgeport, Conn., a corporation of Connecticut

Filed Sept. 1, 1966, Ser. No. 576,735

Int. Cl. E06b 5/10

U.S. Cl. 49—50

12 Claims



A security window of the awning type in which the sash members are formed integrally with the security bars. The bars, in turn, are rotatably driven from both ends to open and close the window. Operation of the window is by means of a handwheel through a pair of fully rotatable cranks which prevent jamming of the window mechanism. The cranks are provided with a loading mechanism to create the impression of a mechanical stop at the window open and closed positions. The sash glass is mounted with its edges in narrow putty-filled channels to prevent removal of the putty.

3,460,290

**SECTIONAL DOOR**  
Albert J. Wutzke, 2655 Compton St., Corona, Calif. 91720  
Filed July 3, 1967, Ser. No. 650,748  
Int. Cl. E05d 13/02

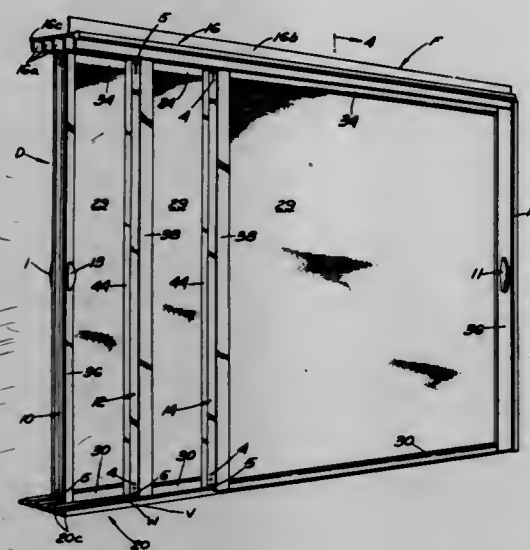
U.S. Cl. 49—411

11 Claims

A garage door with three sliding sections which roll on



parallel tracks running between the door jambs along the bottom of the doorway opening. The sections are movable between positions of extension, in which they block the doorway opening, and of retraction, in which part of the opening is uncovered to permit entry and exit to and



from the garage. All but the outer two edges of the door sections overlap when the latter are extended and have interlocking means which engage to prevent separation of the sections when the door is fastened at its ends in the doorway opening.

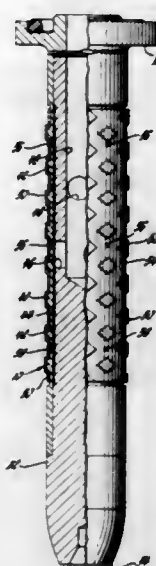
**3,460,291**  
**ABRASIVE BLASTING APPARATUS**  
James H. Carpenter, Hagerstown, Md., and Joseph E. Bowling, Jr., Waynesboro, Pa., assignors to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware

Filed Apr. 3, 1967, Ser. No. 627,843  
Int. Cl. B24c 3/32, 5/04  
U.S. Cl. 51—9 12 Claims



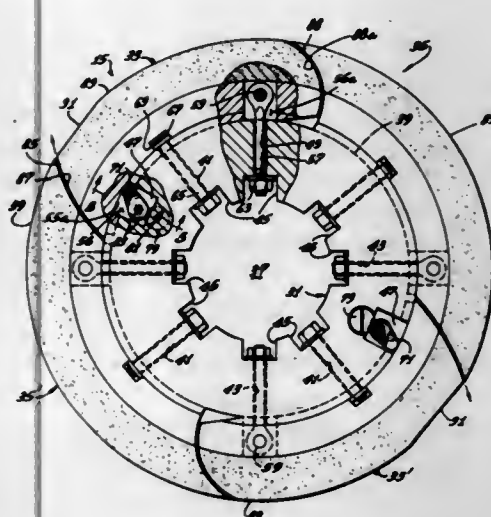
A boom-mounted blast wheel is rotated by a motor having a relatively short shaft with substantially vertical feed tubes disposed around the motor feeding abrasive particles to the wheel. The unit includes means for moving the wheel from side to side, back and forth and up and down. The blast pattern is controlled by apertured plates disposed above the blast wheel.

**3,460,292**  
**FINISHING TOOL**  
Harold W. Ferchland, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Oct. 19, 1965, Ser. No. 497,864  
Int. Cl. B24b 7/00, 9/00, 55/02  
U.S. Cl. 51—34 6 Claims



A tool in the nature of a hone or burr for extremely accurate finishing of cylindrical holes. The tool comprises a thin outer sleeve and an inner core with a small radial clearance between them. The sleeve has a surface defining axially and circumferentially spaced lands coated with an abrasive plating. The diameter of the tool is variable over a small range by adjustment of the pressure of fluid supplied through the core to the clearance between sleeve and core. In use, the tool is rotated and reciprocated within the hole to be finished to size.

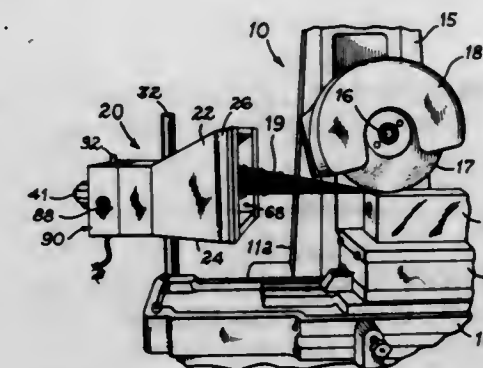
**3,460,293**  
**REGULATING WHEEL FOR CENTERLESS GRINDER**  
Glen W. Sweet, 5524 W. 123rd St., Hawthorne, Calif. 90250; Virginia L. Sweet, administratrix of said Glen W. Sweet, deceased  
Filed Dec. 9, 1966, Ser. No. 600,433  
Int. Cl. B24b 5/30; B24d 5/06  
U.S. Cl. 51—103 13 Claims



This disclosure describes a regulating wheel for a centerless grinder. The regulating wheel, as disclosed, includes a hub portion and a plurality of peripheral segments af-

fixed to the hub portion and having abrasive peripheral surfaces which define the peripheral surface of the regulating wheel. At least one of the peripheral segments is affixed to the hub portion for movement generally radially thereof to thereby alter the contour of the regulating wheel to facilitate setting up of the centerless grinder.

**3,460,294**  
**MAGNETIC DIRT COLLECTOR**  
Charles A. Stumpf, Dayton, Ohio, assignor to Leis Manufacturing Co., Inc., Dayton, Ohio, a corporation of Ohio  
Filed Sept. 28, 1967, Ser. No. 671,469  
Int. Cl. B24b 55/06  
U.S. Cl. 51—270 12 Claims



A tubular housing having the inner surfaces thereof magnetized for depositing the magnetizable dirt particles which are produced when a grinding wheel machines a piece of metal. The housing can be easily adjusted to position its opening to receive the stream or dirt, and baffles or projections can be used to increase the area on which the particles can be deposited, to vary the pattern of the magnetic lines of force, and to create turbulence to insure that the particles are deposited in one of the surfaces in the housing. When an electromagnet is utilized, a phase reversing switch is provided to facilitate removal of the metal particles from the housing.

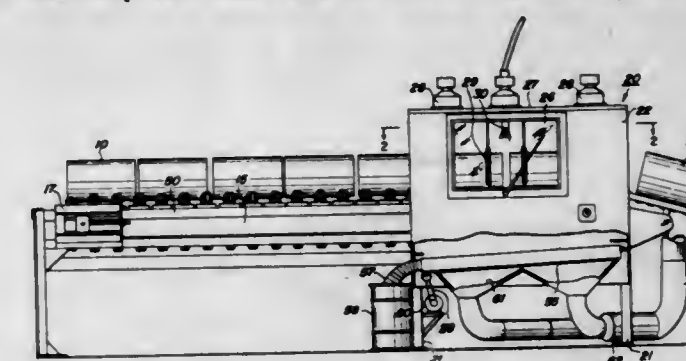
**3,460,295**  
**PROCESS FOR GRINDING GLASS WITH DIAMOND GRINDING SURFACE AND ALKALI METAL SOAP EMULSIFIABLE COMPOSITION**  
Ford C. Teeter, Palos Heights, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Filed Mar. 21, 1966, Ser. No. 538,467  
Int. Cl. B24b 1/00, 9/08  
U.S. Cl. 51—283 12 Claims

Glass is ground using a diamond grinding surface in the presence of a lubricant composed of an emulsifier dispersed in water. The emulsifiers of this invention are the alkali metal soaps of organic monocarboxylic acids of 12 to 30 carbon atoms. By employing these emulsifiers in the lubricant, good lubricant stability is realized during the grinding of glass along with increased diamond life. The lubricant employed in the process of this invention can also contain about 50 to 97 weight percent of a normally liquid hydrocarbon oil of lubricating viscosity.

**3,460,296**  
**METALWORKING**  
Charles A. Dittmar, Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York  
Filed Oct. 24, 1966, Ser. No. 589,099  
Int. Cl. B24b 1/00; B24c 1/00, 3/00  
U.S. Cl. 51—320 7 Claims

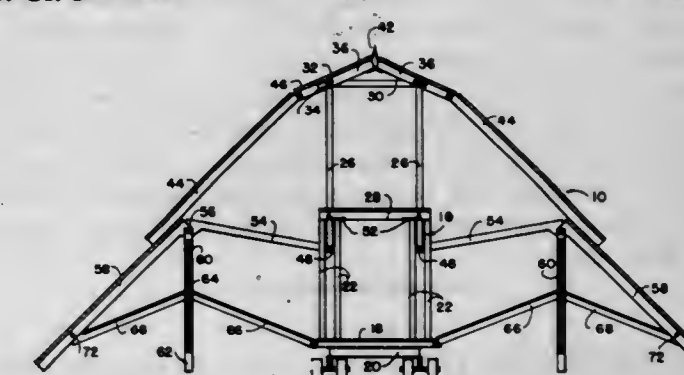
The method of removing a hard coating material from

a relatively soft substrate by impacting the hard coating



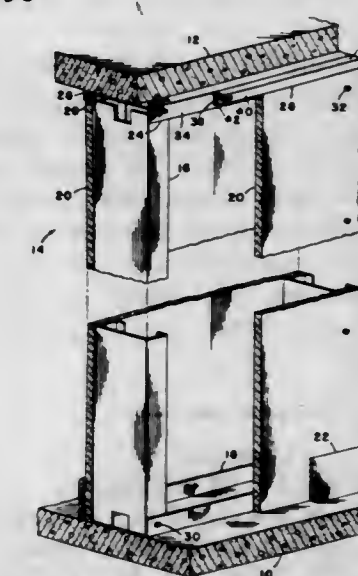
with plastic beads having a modulus of elasticity less than the modulus of elasticity of the relatively soft substrate.

**3,460,297**  
**RE-LOCATABLE A-FRAME TYPE BUILDING STRUCTURE**  
William R. Fritz, Dexter, Mich.  
(201 E. Liberty St., Ann Arbor, Mich. 48108)  
Filed Sept. 18, 1967, Ser. No. 668,429  
Int. Cl. E04b 1/346, 7/16, 1/34  
U.S. Cl. 52—66 11 Claims



A re-locatable building structure which is foldable to a compact generally rectangular box shape for transport purposes and which is unfoldable at a desired location site to form an A-frame type building structure.

**3,460,298**  
**DRYWALL TOP-EDGE CASING**  
Gerard T. Sowinski, Lancaster, N.Y., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware  
Filed Oct. 3, 1967, Ser. No. 672,656  
Int. Cl. E04c 2/46  
U.S. Cl. 52—98 1 Claim



An elongate metal channel having an opening equal to the thickness of gypsum wallboard, enclosing the top edge of gypsum wallboard and abutting the ceiling, having an elongate flange within the channel which is affixed to the remainder of the channel by a relatively weak connection,



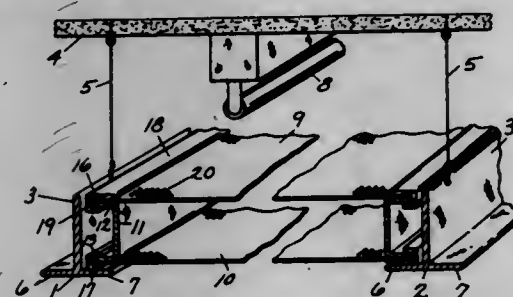
whereby insertion of wall board into the channel by normal manual insertion forces is limited partway therein by the flange, but subsequent shifting or expansion forces will force the wall board further into the channel with failure of the weak connection.

**3,460,299**  
**LUMINOUS SOUND ABSORBING CEILING**  
Bertram A. Wilson, 2001 Peninsula Drive,  
Erie, Pa. 16506

Filed Sept. 27, 1967, Ser. No. 670,924  
Int. Cl. E04b 1/82, 1/00, 5/52

U.S. Cl. 52—144

2 Claims



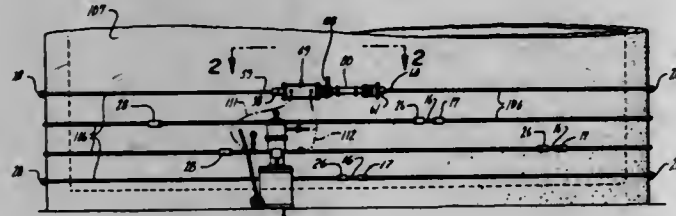
Finely perforated, limp, light transmitting and sound absorbant plastic film material, preferably fire resistant, is stretched over the upper and lower sides of rigid window frames to make panels adapted for support below ceiling lights and thereby provide glare reducing lighting, thermal insulation and sound absorption. Panels may be of any convenient size such as two feet by two feet, two feet by four feet, three feet by three feet, four feet by four feet, etc.

**3,460,300**  
**CONCRETE PRESTRESSING APPARATUS (TANK)**  
James W. Howlett, Richmond Annex, Calif., assignor to  
Howlett Machine Works, a corporation of California  
Original application Aug. 16, 1963, Ser. No. 302,628, now  
Patent No. 3,343,808, dated Sept. 26, 1967. Divided and  
this application Sept. 20, 1967, Ser. No. 669,002

Int. Cl. E04c 3/26, 5/08

U.S. Cl. 52—224

3 Claims



A cylindrical concrete tank is prestressed by a plurality of encircling reinforcing tendons wherein the tendons having opposed spaced ends are drawn together under high tension and firmly secured. To permit relative ease in drawing the tendon ends toward one another, yet maintain a tensioned condition after removal of the drawing force, wedge gripping couplers are employed which characteristically translate tendon tension or axial pull into one-way gripping forces, firmly engaging the tendon ends against axial pull out.

**3,460,301**  
**LOG WALL FLEX JOINT**  
Allan Everett Davis, P.O. Box 427,  
Creston, British Columbia, Canada  
Filed Nov. 29, 1966, Ser. No. 597,793  
Claims priority, application Canada, Mar. 24, 1966,  
955,813

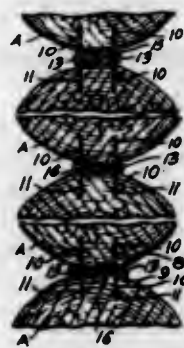
Int. Cl. E04b 1/10, 1/68; E04c 1/34

U.S. Cl. 52—233

1 Claim

A joint member adapted to be mounted in adjacent logs in the fabrication of a cabin or similar building

structure. The joint member is designed to be secured to adjacent logs and said member is provided with a deformable central section that is designed to bulge out-

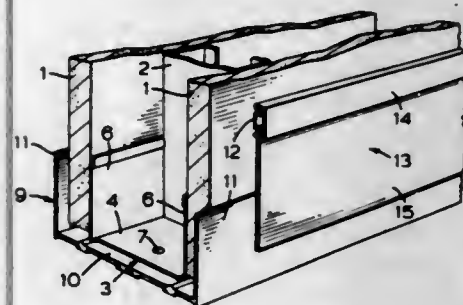


wardly when adjacent logs are forced toward one another so as to engage said adjacent logs and act as a stabilizer of the joint.

**3,460,302**  
**PARTITION WALL CONSTRUCTION**  
Richard A. Cooper, 2676 Midland Ave.,  
Aglincourt, Ontario, Canada  
Filed Mar. 13, 1967, Ser. No. 622,707  
Int. Cl. E04b 2/76, 1/66

U.S. Cl. 52—242

3 Claims



The disclosure relates to a partition wall construction, and more particularly to a removable partition wall comprising spaced wall panels mounted on opposite sides of a stud frame. The bottom edge of a wall panel is located in a channel defined by a pair of parallel upstanding flanges, one flange forming part of a frame member secured to the floor and the other flange forming part of a sealing member of elastomeric material such as vinyl plastic; the sealing member has a base portion clamped between the frame member and the floor, and so prevents the penetration of moisture to the frame member or to the bottom edge of the wall panel. Preferably the upstanding flange of the sealing member cooperates with a flange trim element, the two flanges having a matching appearance and overlapping to give the base of the wall a neat appearance.

**3,460,303**  
**MULTIPANE GLAZING UNIT**  
André Algrain, Uccle, and Gérard Fabry, Jumelet, Belgium,  
assignors to Glaverbel S.A., Brussels, Belgium  
Filed June 17, 1966, Ser. No. 558,449  
Claims priority, application Luxembourg, June 29, 1965,  
48,939

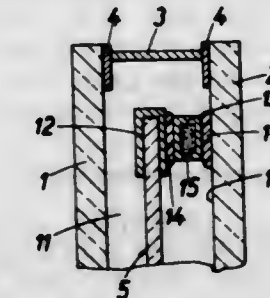
Int. Cl. B44f 1/08; E06b 3/30, 3/66

U.S. Cl. 52—314

12 Claims

A glazing unit composed of a multiple pane window, a leaded colored window and resilient connecting means connecting the colored window to one of the panes of

the multiple pane window, the resilient means being deformable for compensating for differences in thermal

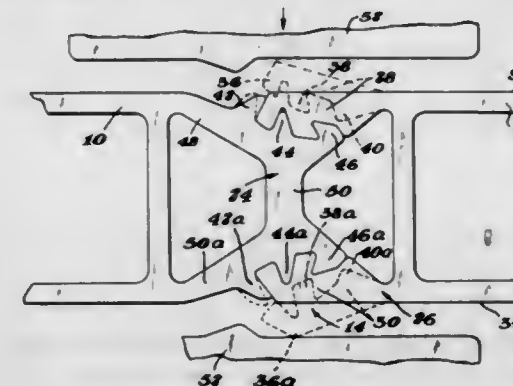


expansion between the colored window and the pane to which it is connected.

**3,460,304**  
**STRUCTURAL PANEL WITH INTERLOCKING EDGES**  
Karl F. Braeuninger, Ferguson, Mo., and Gordon K. Glaza, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Filed May 20, 1966, Ser. No. 551,718  
Int. Cl. E04c 1/30; E04b 2/28

U.S. Cl. 52—588

3 Claims



This invention relates to composite structural member composed of at least two elongated structural sections which are placed together along abutting lengthwise edges and then locked together by bending adjacent upper and lower edge parts of the sections to engage the adjacent edges of the abutting sections.

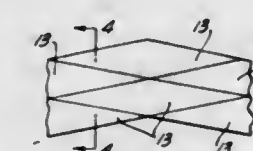
The locked together top and bottom edges have interlocking upper and lower tooth-like elements which engage each other and become fixed in position as the upper and lower edges are bent. The configuration of the locking joint is arranged in a way which minimizes functional forces which would tend to unlock the joint.

**3,460,305**  
**CERAMIC STRUCTURAL COMPOSITE**  
Roger A. Long, Escondido, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California  
Continuation-in-part of application Ser. No. 61,353, Oct. 10, 1960. This application July 29, 1963, Ser. No. 298,388

Int. Cl. E04c 2/04; B28b 7/00

U.S. Cl. 52—604

15 Claims



2. A mosaic structure comprising a plurality of tiles, said tiles being bonded together by a binder comprising a eutectic consisting essentially of a pyrophosphate of a metal selected from the group consisting of manganese,

titanium, iron, zirconium, and nickel and a refractory oxide selected from the group consisting of alumina, zirconia, beryllia, titania, magnesia, chromia, thoria, and hafnia, said binder having a melting temperature lower than that of said tiles, said tiles having a composition selected from the group consisting of a fused refractory oxide, and a fused mixture of refractory oxide and a eutectic consisting essentially of a metal pyrophosphate and a refractory oxide material having a higher melting point than said metal pyrophosphate.

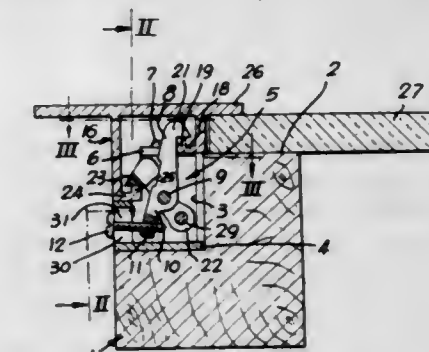
5. The structure of claim 2 wherein said tiles are rhombus-shaped.

**3,460,306**  
**FRAME COUPLING**  
Hans Schmidlin, Aesch, Switzerland, assignor to Firma Eltreva AG, Aesch, Switzerland, a corporation of Switzerland  
Filed Dec. 14, 1967, Ser. No. 690,446  
Claims priority, application Germany, Mar. 22, 1967,  
E 33,653

Int. Cl. E05c 9/00; E06b 3/00, 3/54

U.S. Cl. 52—732

7 Claims



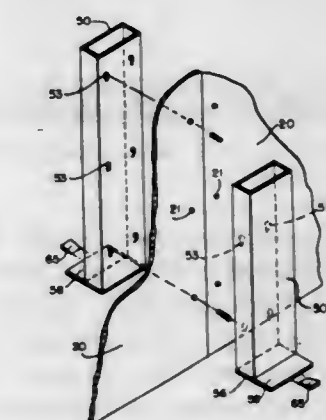
In a frame construction, in which a profiled metal frame is to be releasably secured to a wooden frame, the wooden frame carries a coupling device in the form of two levers having oppositely facing hooks engageable with respective ribs of the metal-frame profile, one of the levers being journaled directly on the wooden frame, the other lever being pivoted to the first lever and being engageable by a tensioning screw serving to bring the two hooks into simultaneous engagement with their respective ribs.

**3,460,307**  
**BUILDING CONSTRUCTION**  
Nelson A. Faerber, 1531 Ixora Drive,  
Naples, Fla. 33940  
Original application Nov. 14, 1963, Ser. No. 323,698, now  
Patent No. 3,312,019. Divided and this application Dec. 6, 1966, Ser. No. 615,281

Int. Cl. E04b 1/38

U.S. Cl. 52—741

2 Claims

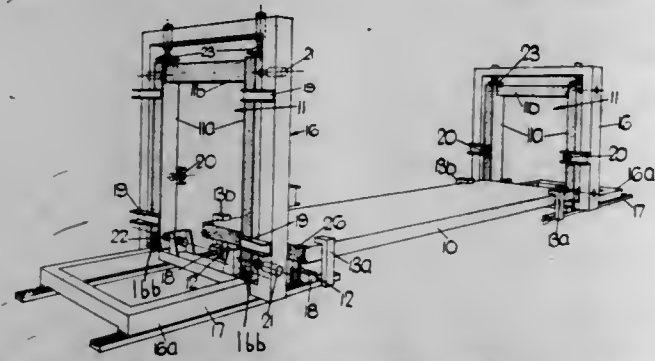


A method of constructing buildings such as prisons or the like from a multiplicity of individual modules having identically spaced keyhole openings about their perim-



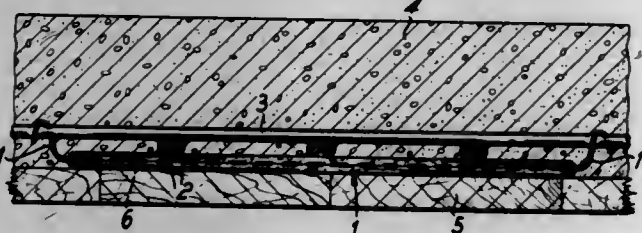
eter, placing headed connector elements in the keyhole openings, placing hollow tubes having keyhole slots therein over opposed heads on the connectors, lifting the connecting tubes to secure the heads, and locking the connecting tubes against vertical movement.

**3,460,308**  
**MANUFACTURE OF STRUCTURAL UNITS**  
Fritz C. Stucky and Kenneth W. Nelson, Zug, Switzerland, assignors to Elcon A.G.  
Filed Aug. 9, 1965, Ser. No. 478,372  
Claims priority, application Great Britain, Aug. 21, 1964, 34,367/64  
Int. Cl. E04b 1/00; E04g 21/00  
U.S. Cl. 52—745 3 Claims



Prefabricated structural building units composed of a horizontal floor panel member and vertical end members which are assembled to precise dimensional and angular tolerances by first rigidly positioning the members with their major surfaces parallel to precisely established reference planes. The reference planes are preferably defined by spaced-apart points or relatively small areas in space, such as stop elements forming a part of a jig. The floor-panel member is formed to a dimension between the ends thereof where it is joined to the end members which with the maximum plus tolerance included is not in excess of a predetermined dimension. With the members rigidly positioned in precise locations, the end members are then joined to the floor panel member.

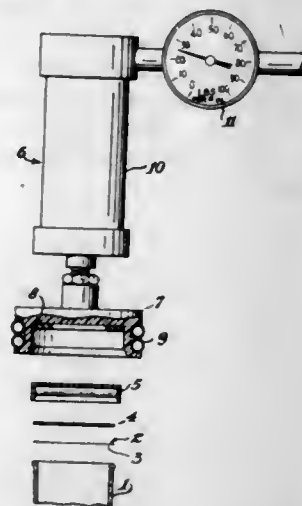
**3,460,309**  
**SUPPORTING MEANS FOR CONCRETE REINFORCEMENTS**  
Walter Ernst, Strump, Post Osterath, Germany, assignor to Bau-Stahlgewebe GmbH, Dusseldorf-Ober-Kassel, Burggrafenstrasse, Germany, a corporation of Germany  
Filed Nov. 16, 1965, Ser. No. 508,056  
Claims priority, application Germany, Nov. 21, 1964, B 79,427  
Int. Cl. E04c 5/20  
U.S. Cl. 52—677 1 Claim



In reinforced concrete floor or the like constructions embodying a reinforcing steel mat consisting of two sets of intersecting reinforcing rods connected at the intersection points, the latter are supported in spaced relation to a concrete forming surface prior to and during pouring of the concrete by means of a plurality of flat oblong concrete spacing elements distributed over said surface, said elements having a length in excess of a multiple of the rod spacing distance of said mat and being firmly locked in the floor or the like structure upon pouring and curing of the concrete by at least the longitudinal edges

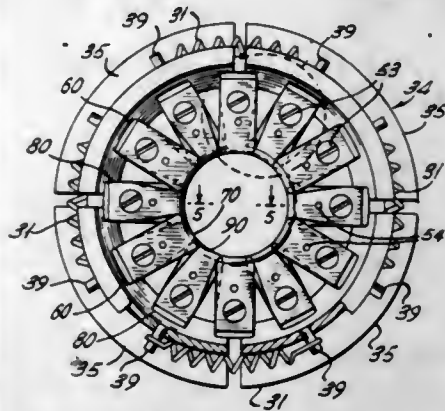
of the elements including two inclined surfaces intersecting one another along a line parallel to said edges. Mounting of the elements is advantageously effected by simply tossing the same upon said surface, the design being such as to cause the elements to automatically assume a position with one of their flat faces overlying said surface, substantially without the use of special implements or laying operations.

**3,460,310**  
**CONTAINER CLOSURES**  
Edmund Philip Adcock, Felcourt, and Joan Ann Stanley, Dunstable, England, assignors to United Glass Limited, Staines, Middlesex, England, a corporation of Great Britain  
Filed Dec. 6, 1965, Ser. No. 511,897  
Claims priority, application Great Britain, Dec. 9, 1964, 50,087/64; Feb. 12, 1965, 6,292/65  
Int. Cl. B67b 3/22, 5/00; B29c 27/12  
U.S. Cl. 53—39 13 Claims



Method of sealing a container mouth with a metal foil membrane bonded to the container finish. The membrane is readily stripped away by the user to leave the finish unimpaired and ready for re-sealing. The method is to use such a membrane which is coated with a thermoplastic and press the membrane over the container mouth, while simultaneously subjecting the membrane to high frequency induction heating. The temperature and pressure conditions are such as to ensure that the membrane is readily strippable and that the finish is not impaired.

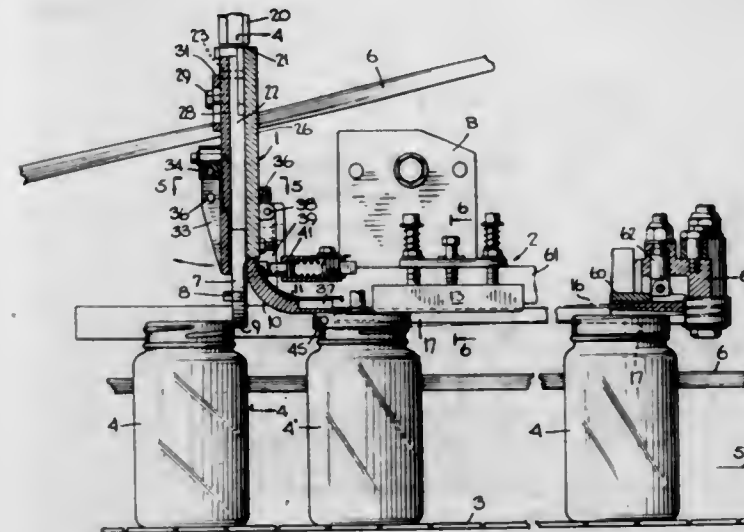
**3,460,311**  
**METHOD OF SECURING CAPS TO CONTAINERS**  
Stanley J. Koll, Keansburg, N.J., and John M. Rocus, Elk Grove Village, Ill., assignors to American Flange & Manufacturing Co. Inc., New York, N.Y., a corporation of Delaware  
Continuation-in-part of application Ser. No. 420,918, Dec. 24, 1964. This application July 22, 1965, Ser. No. 473,987  
Int. Cl. B67b 3/14, 3/062  
U.S. Cl. 53—42 2 Claims



A crimping mechanism and method for securing lightweight metal hand removable closure caps on the bottles.

The mechanism includes a crimping annulus made up of a plurality of circumferentially arranged jaws. Radial contraction of the jaws forms the cap skirt in tight sealing engagement with the underlying bottle.

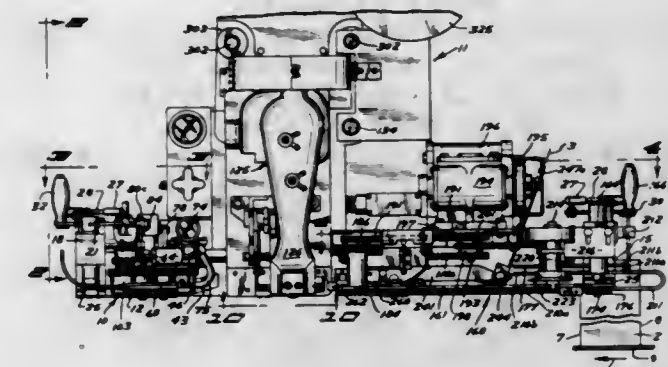
**3,460,312**  
**CLOSURE CAP FEEDING MEANS**  
Harry E. Stover, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware  
Filed Oct. 6, 1966, Ser. No. 584,910  
Int. Cl. B65b 57/02  
U.S. Cl. 53—64 15 Claims



1. A sealing machine cap feed for feeding closure caps to the tops of moving containers comprising the combination of a cap chute having a generally vertical cap feeding channel therethrough, stop members mounted in spaced cap engaging positions on opposite sides of the lower end of said channel for engaging the lowermost cap in said chute and for presenting the lower portion of said cap to the top of a moving container, a cap guiding plate yieldably mounted on the cap exit side of said cap chute having a curved cap guiding surface for directing said cap from a generally vertical position on said stop members to a generally horizontal position on said moving container, means for holding said cap against said plate, and a cap exit plate yieldably mounted on the container entrance side of said chute for permitting the upper portion of the lowermost cap in said chute to swing backwardly over the moving container as the cap is drawn from the chute and along said cap guiding plate by moving containers.

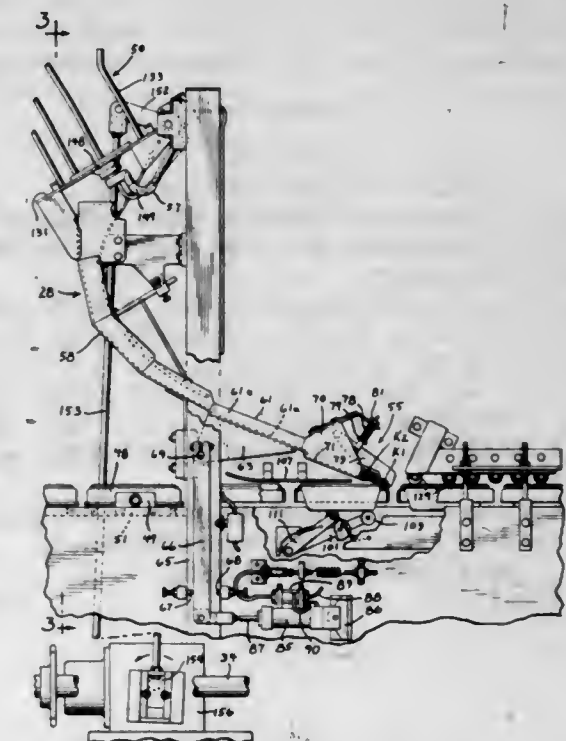
**3,460,313**  
**BAG CLOSURE APPARATUS**  
Joseph R. Conner, Minneapolis, Jack D. Helm, Maple Plain, and Harold N. Anderson, Golden Valley, Minn., assignors to Bemis Company, Inc., Minneapolis, Minn., a corporation of Missouri  
Filed Aug. 4, 1967, Ser. No. 658,428  
Int. Cl. B65b 51/20, 61/18, 49/02  
U.S. Cl. 53—64 13 Claims

A tape applicator and trimmer assembly for conveyingly holding the bag top closure upright as the bag top is moved through bag top trimmer mechanism, then beneath a folder blade support to have wide tape folded over the bag top end, and next adjacent a tear tape guide that directs tape into contact with the folded tape; a sewing machine automatically applying a single thread unravelable stitch through the bag top, tear tape and folded tape; and a tab applicator assembly for applying a tab to the terminal edge portion of the tear tape and folded tape that includes tab strip, tape guide and feed rollers, a hot air



assembly include a pair of mounting plates extending along either side of the bag top and hand operated mechanism for pivoting one of the plates relative the other plate to facilitate inserting the respective tape in position to be applied and other cleaning and maintaining of the mechanism mounted on the plates.

**3,460,314**  
**LID DISPENSING APPARATUS**  
Carl F. Keas, Rockford, Ill., assignor to Anderson Bros. Mfg. Co., Rockford, Ill., a corporation of Illinois  
Filed Oct. 17, 1966, Ser. No. 587,049  
Int. Cl. B65b 57/02, 7/28  
U.S. Cl. 53—72 17 Claims



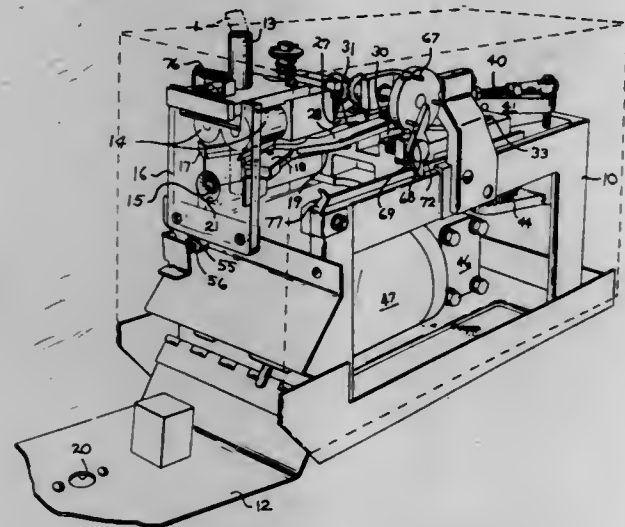
An apparatus for applying skirted covers to containers as they are advanced by a conveyor in which the cover applying head normally supports a cover in downwardly converging relation to the containers on the conveyor in a position such that the container engages the cover in the head and strips the cover off the head, and in which the cover applying head is automatically moved to an inoperative position out of the path of movement of the containers on the conveyor in the absence of a container on the conveyor adjacent the capping station. The capping apparatus also includes an improved head construction in which the lowermost cover is supported by the head in the cover applying position to be engaged by a container on the conveyor, and a second cover is supported



in the head in stepped overlapping relation to the lower-most cover to minimize the time required for the second cover to move into cover applying position.

### 3,460,315 PIPET PLUGGER

Erich F. Roeck, Perrysburg, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio  
Filed Oct. 22, 1965, Ser. No. 501,261  
Int. Cl. B65b 55/20, 61/20  
U.S. Cl. 53—115 16 Claims

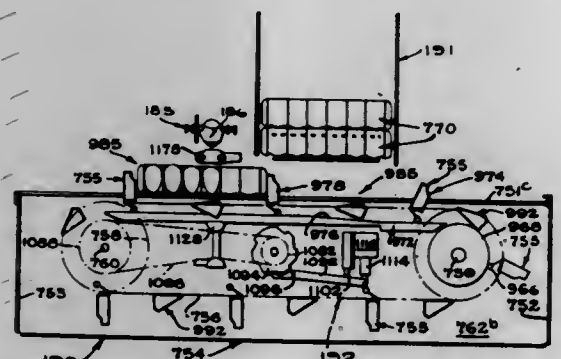


A pipet plugger comprising a pair of feed rolls that are operated intermittently to feed a length of roving into position adjacent an opening in an actuating plate. A pair of shear blades are adapted to sever a length of the roving and grip it adjacent the opening. An insertion needle is reciprocated periodically to fold and insert the severed length of roving into the pipet through the opening.

### 3,460,316 EGG CARTON CONVEYOR

Harold J. Mumma, Riverside, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware  
Continuation of application Ser. No. 478,783, July 1, 1965, which is a division of application Ser. No. 216,937, Aug. 14, 1962, which in turn is a division of application Ser. No. 827,599, July 16, 1959, which in turn is a division of application Ser. No. 400,466, Dec. 28, 1953. This application Oct. 26, 1966, Ser. No. 589,765

The portion of the term of the patent subsequent to July 21, 1976, has been disclaimed  
Int. Cl. B64b 35/44; B65g 17/46  
U.S. Cl. 53—160 3 Claims

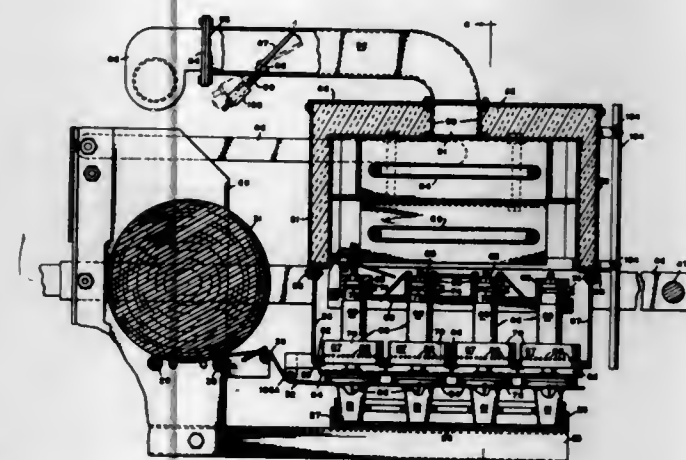


A conveyor advances a series of egg cartons along a path with each carton having a plurality of rows of egg receiving pockets to receive eggs from an egg conveyor extending above and running transversely to the carton conveyor. The cartons are driven through a

clutch mechanism which is caused to be engaged by the release of a solenoid-actuated ratchet with the spacing between the teeth on the ratchet corresponding to the spacing between the rows in the carton and between successive cartons on the conveyor.

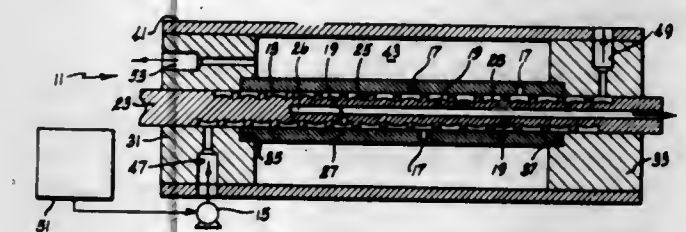
### 3,460,317 MACHINE FOR APPLYING FILM COVERS TO CONTAINERS

Paul H. Carter, Thomas E. Marion, Raymond L. Morse, and William T. Doty, Baltimore, Md., assignors to Universal Machine Co., Inc., Baltimore, Md., a corporation of Maryland  
Filed Sept. 3, 1965, Ser. No. 484,965  
Int. Cl. B65b 7/16, 53/06; B67b 5/00  
U.S. Cl. 53—329 1 Claim



A capping machine of the type which results in a shrink film being applied to the open top of a container is provided having means for puncturing a hole in the film during its placement to vent gases from the container and thereby prevent internal pressure which tends to displace the film. The film is shrunk by a flow of air from an air blower through a conduit overheating elements to the film. The conduit has a damper between the blower and the heating means which is biased to a closed position. The blower is strong enough to generate air pressure sufficient to overcome the damper bias. Thus, when the blower ceases to function, the damper closes under the damper bias and blocks the flow of hot air from the heating means to the blower thus preventing damage to the blower.

3,460,318  
CENTRIFUGAL MOLECULE SEPARATOR  
Edward C. Creutz, Rancho Santa Fe, Calif., assignor by mesne assignments, to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware  
Filed Dec. 14, 1966, Ser. No. 601,702  
Int. Cl. B01d 57/00 6 Claims

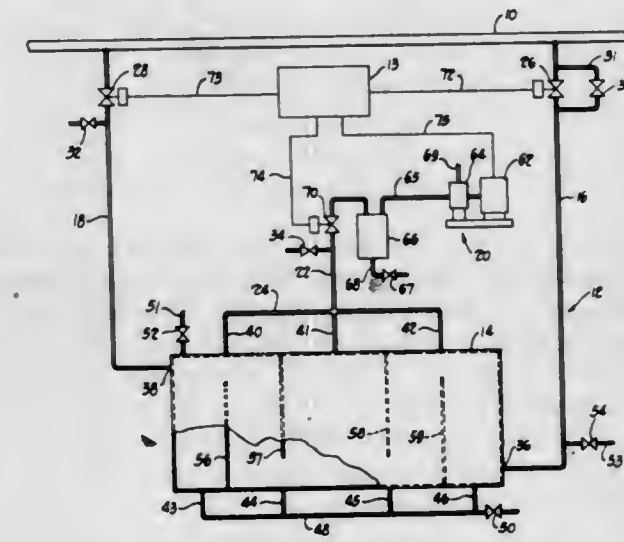


A method and apparatus for separating gases of different molecular masses including a helical or spiral capillary passageway, means for flowing a mixture of gases through the passageway, and means for removing gas fractions from the outer and/or inner surface of the pas-

sageway. The velocity of the gas mixture is sufficient to provide a centrifugal force field of at least about  $10^2$  g., but is less than the critical velocity above which flow within the passageway becomes substantially turbulent.

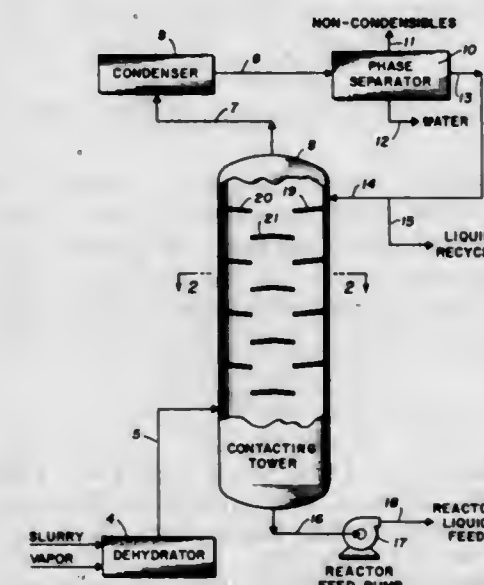
### 3,460,319 CONTROLLED VOLUME DEGASIFICATION OF LIQUID

Joseph Tkach, 6481 Glenwillow Drive, North Royalton, Ohio 44133  
Filed Apr. 11, 1967, Ser. No. 630,003  
Int. Cl. B01d 19/04 8 Claims



Controlled volumes of liquid are automatically introduced and removed from a chamber and degasified in the chamber by establishing saturation of liquid and vapor for a predetermined time, all under automatic control. Degasification time is initially determined by changing the pH of the liquid with a substance that is removed by degasification and determining the degasification time needed to stabilize the pH value.

3,460,320  
COUNTERCURRENT CONTACTING PROCESS  
William L. Bolles, Baldwin, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
Filed Aug. 25, 1967, Ser. No. 663,395  
Int. Cl. B01d 5/00 6 Claims

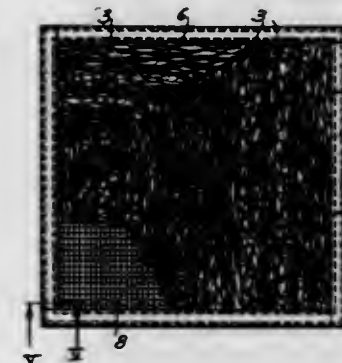


In processes wherein a gaseous mixture containing a sublimed solid is cooled by countercurrent contact with a descending relatively cool liquid in a contacting tower equipped with conventional gas-liquid contacting trays,

condensation of the sublimed solid on the trays normally results in serious fouling and plugging problems and eventual flooding of the tower. Those problems can be substantially eliminated by carrying out the countercurrent contact in a series of vertically spaced baffle trays so arranged and adapted that substantially all condensed solids on the trays are washed downwardly therefrom by the descending stream of liquid.

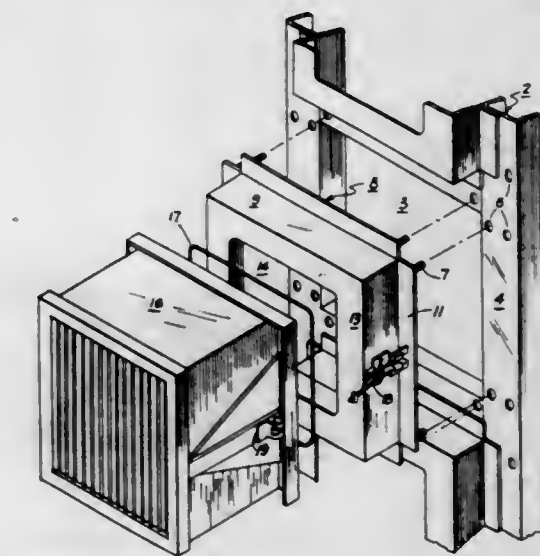
### 3,460,321 METHOD OF MAKING AN AIR FILTER

Nicholas Canzoneri, 1148 N. Lawndale Ave., Chicago, Ill. 60651  
Continuation-in-part of application Ser. No. 420,520, Dec. 23, 1964. This application Sept. 27, 1967, Ser. No. 675,743  
Int. Cl. B01d 39/00 4 Claims



A method of making an air filter which comprises assembling a dry compressed flattened loofah skeleton layer filter medium and a retaining structure together, and thereafter moistening and swelling the layer toward its original uncompressed condition and drying the same.

3,460,322  
GAS FILTER MOUNTING STRUCTURE  
Richard D. Rivers and Jimmie D. York, Jr., Louisville, Ky., assignors to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware  
Filed Oct. 5, 1967, Ser. No. 673,092  
Int. Cl. B01d 25/00 2 Claims

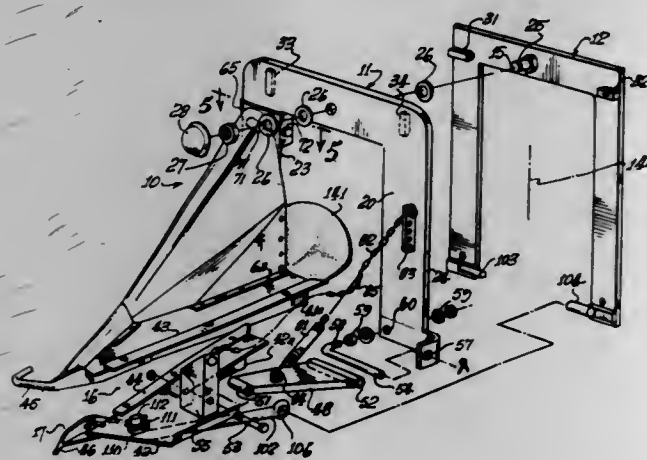


A gas filter mounting structure for mounting a filter cell so that an edge rim thereof is in sealed relation to a flowthrough support frame including a mounting housing adapted to be attached to the support frame with



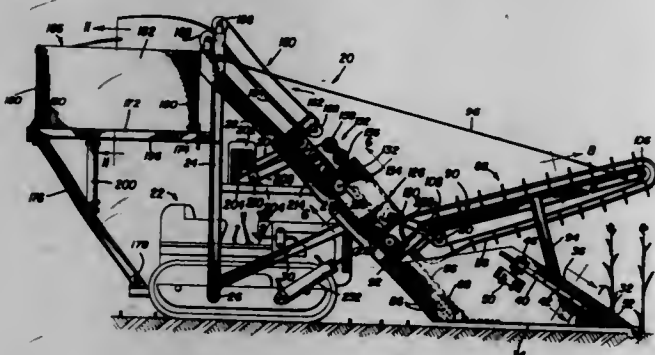
minimum leakage, the mounting housing having a peripheral border frame face wall which is smooth and uninterrupted by any breaks or welds to receive the filter cell edge in fast sealed relation thereagainst.

**3,460,323**  
**ROW-FOLLOWER**  
Harold L. Schnaidt, % Agricultural Equipment & Sprayer Co., 410 21st St., Bakersfield, Calif. 93301  
Filed Jan. 23, 1967, Ser. No. 611,044  
Int. Cl. A01d 45/18  
U.S. Cl. 56—11 7 Claims



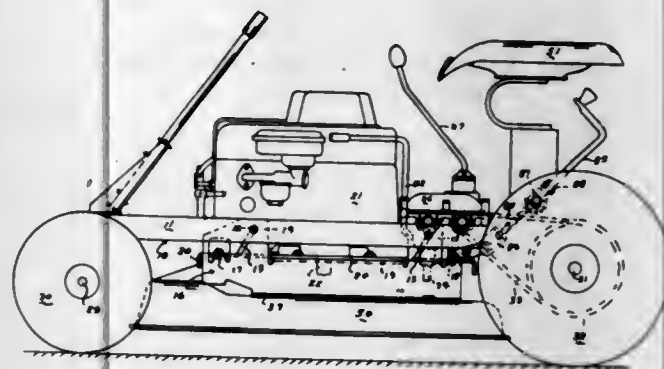
An attachment for mounting on the front of a cotton picker (or similar machine) for guiding cotton stalks (or the like) into the machine's picking opening, as it progresses down the row of plants being picked. The attachment comprises a pair of forwardly projecting arms, each of which includes its own linkage and spring means to permit resilient deflection inwardly, independently of the other, both arms being carried on an inverted yoke structure, which is suspended at an overhead point so as to swing freely in a vertical plane transverse to the direction of machine travel.

**3,460,324**  
**CANE HARVESTING MACHINE**  
Homer Tolar, Hilo, Hawaii, assignor of twenty-five percent to Charles A. Tolar, Shreveport, La.  
Filed Feb. 10, 1966, Ser. No. 526,565  
Int. Cl. A01d 45/10  
U.S. Cl. 56—15 11 Claims



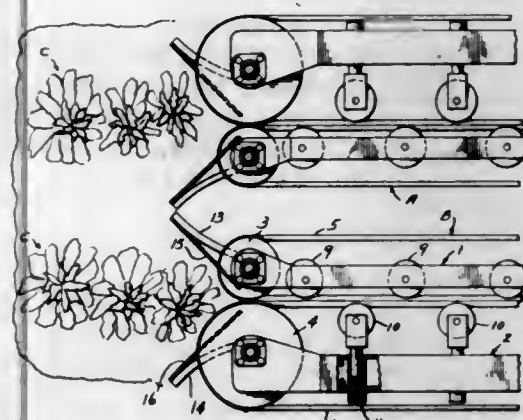
A machine for harvesting sugar cane including in combination means for inwardly gathering and rearwardly collecting stalks in conjunction with overlying stalk separating combing elements which engage and separate the stalks for movement by appropriate stalk feeding and carrying means though cleaning means for cleaning the individual stalks subsequent to which the stalks are discharged into an appropriate storage and dumping hopper.

**3,460,325**  
**LAWNMOWERS AND LIKE EQUIPMENT**  
Orly Musgrave, Springfield, Ohio, assignor to Mast-Foos Manufacturing Company, Springfield, Ohio, a corporation of Ohio  
Filed May 20, 1966, Ser. No. 551,746  
Int. Cl. A01d 35/12, 35/26  
U.S. Cl. 56—25.4 14 Claims



A rotary lawnmower or the like having a plurality of spindle mounted cutters, the spindles being commonly mounted to a vertically adjustable suspended platform supporting also a motor and transmission for drive of the cutters. Controls to clutch the power drive to the rotary spindles feature a common operating lever pivotally adjustable from a single control means. The spindles are so energized in sequence to obviate starting under high load conditions.

**3,460,326**  
**HARVESTING DEVICE FOR CELERY AND LIKE PLANTS**  
Carl E. Holm, P.O. Box 2351, Castro Valley, Calif. 94546  
Filed May 27, 1966, Ser. No. 553,339  
Int. Cl. A01d 89/00  
U.S. Cl. 56—119 2 Claims

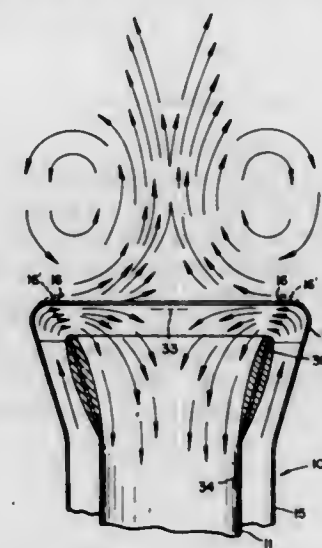


Flexible guides for use with a harvesting vehicle for harvesting celery and like plants. The guides are elongated flexible elements secured at points forwardly of the crop gathering point of the harvesting conveyor on the vehicle and slanting inwardly toward the gathering point to permit guiding both mature and tender stalks.

**3,460,327**  
**APPARATUS FOR HARVESTING FRUIT**  
Wallace J. S. Johnson and Robert E. Fisher, Berkeley, Calif., assignors to Up-Right, Inc., Berkeley, Calif., a Corporation of California  
Filed July 11, 1966, Ser. No. 564,084  
Int. Cl. A01g 19/00  
U.S. Cl. 56—328 8 Claims

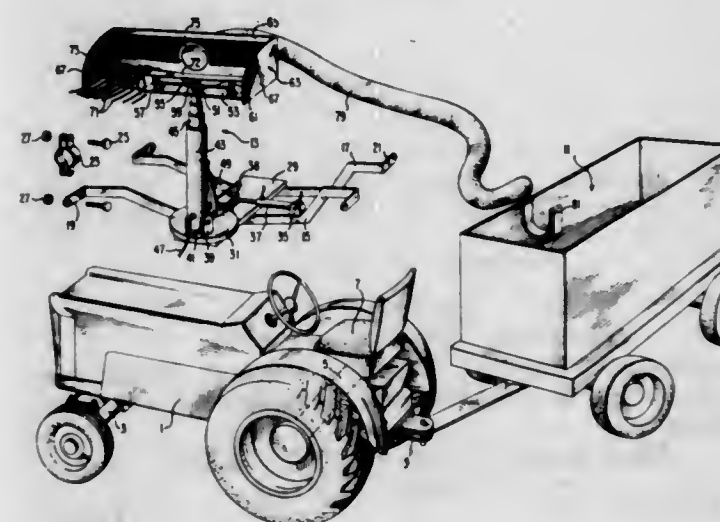
Apparatus for pneumatically harvesting fruit, in which there is a picking nozzle with an open-ended suction tube and an air-directing shroud surrounding the suction tube.

Air under pressure is supplied to the shroud at a volume rate of flow greater than the volume rate of flow of air sucked through the suction tube and in such manner



that no external air from around the nozzle will enter the suction tube. Accordingly, the nozzle will exert a suction only on object physically inserted into the open end of the suction tube.

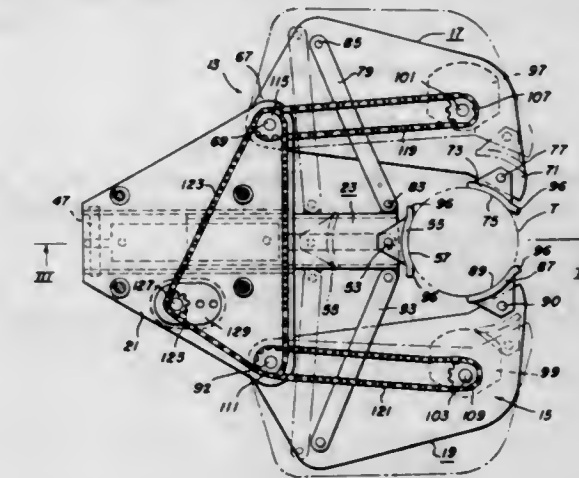
**3,460,328**  
**FRUIT PICKER**  
William S. Lee, Orlando, Fla., assignor of fifteen percent to Daniel M. Hunter and John T. Pattillo  
Filed Oct. 6, 1965, Ser. No. 493,323  
Int. Cl. A01g 19/06  
U.S. Cl. 56—328 6 Claims



A fruit picker has a telescopic standard on which a vertically swinging picker head is mounted. The picker head has a bottom wall comprised of a plurality of resilient fingers that are specially mounted and oriented. A special support adapts the picker for mounting on a tractor.

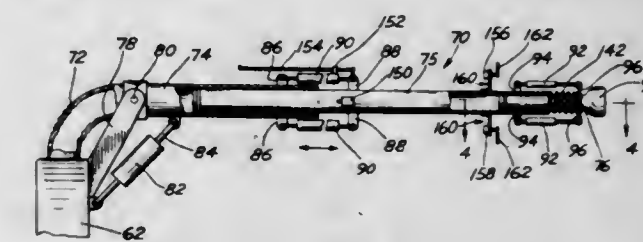
**3,460,329**  
**TREE SHAKER**  
Le Roy B. Overstreet, Jr., Louisville, Miss., assignor, by mesne assignments, to Thomson Machinery Co., Inc., Thibodaux, La.  
Filed Aug. 29, 1966, Ser. No. 575,851  
Int. Cl. A01g 19/00; B66c 1/42  
U.S. Cl. 56—328 2 Claims

The tree shaker disclosed includes three arms arranged to engage the tree at places about 120° apart. Two arms pivot into and out of engagement. The third arm reciprocates into and out of engagement with the tree and in so doing pulls the other two pivoted arms into and out of engagement. Weights are eccentrically mounted for rotation on each of the pivoting arms. The weights are rotated through an endless chain to insure that they rotate in phase so that the forces imparted to the arms by the



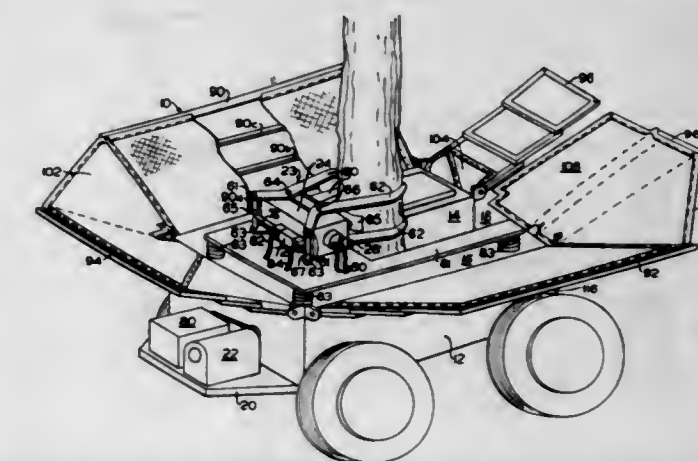
weights are parallel and applied in the same constantly changing direction. This imposes a circular vibration on the arms which, in turn, is imparted to the tree.

**3,460,330**  
**APPARATUS FOR HARVESTING AGRICULTURAL CROPS**  
George L. Black, Jr., 405 Dunedin Ave., Temple Terrace, Fla. 33617  
Filed Oct. 31, 1966, Ser. No. 590,730  
Int. Cl. A01g 19/08  
U.S. Cl. 56—328 17 Claims



A mechanical harvester consisting of a plurality of vacuum picker arms which engage the fruit to suck the fruit, after cutting or disconnecting the stem of the fruit, to a collection box.

**3,460,331**  
**TREE SHAKER APPARATUS**  
Alex J. Galis, Box 480, Rte. 3, Albany, Ga. 31701  
Continuation-in-part of application Ser. No. 523,231, Jan. 26, 1966. This application June 12, 1967, Ser. No. 645,321  
Int. Cl. A01g 19/06  
U.S. Cl. 56—329 16 Claims



Apparatus for imparting motion at the trunk of a fruit bearing tree to dislodge the fruit from the tree limbs. One or more oscillating devices are clamped to the trunk

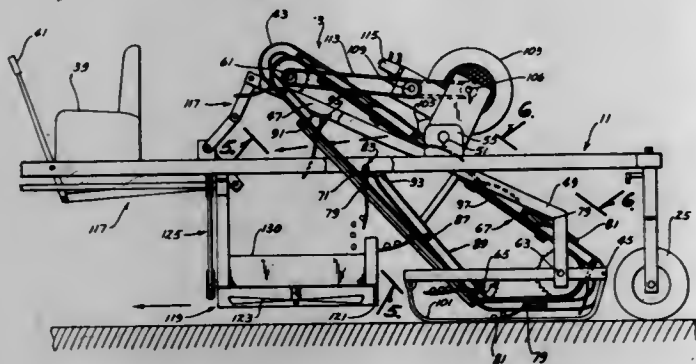


of the tree and together impart a reciprocating or nutating motion to the entire tree at variable preselected amplitudes and in variable preselected directions causing the crop of the tree to be dislodged from the tree during the reciprocating or nutating motion or upon its termination.

3,460,332

**STRAWBERRY PICKER**

Wesley F. Buchele and Ervin L. Denisen, Ames, Iowa, assignors to Iowa State University Research Foundation, Ames, Iowa, a corporation of Iowa  
Filed July 15, 1966, Ser. No. 565,514  
Int. Cl. A01g 19/00; A01d 35/26  
U.S. Cl. 56—330 9 Claims

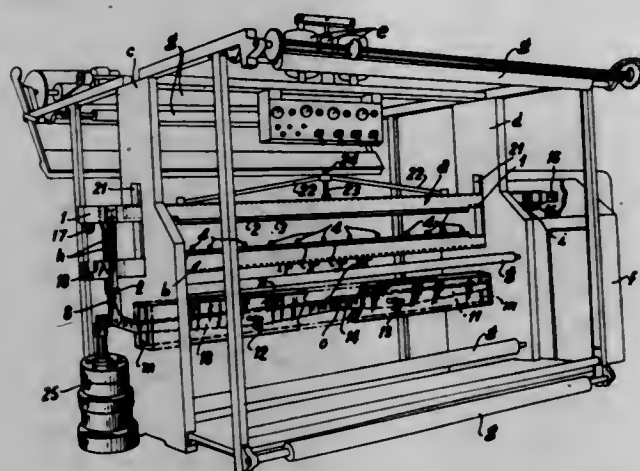


A berry picker comprising a wheel-supported frame having a continuous chain mechanism movably mounted thereon. A plurality of grappling elements are pivotally secured in a spaced apart condition on the chain mechanism and extend laterally across the frame. The grappling elements include a plurality of spaced apart fingers. A tripping means is provided on said frame which operatively engages the grappling elements to change the attitude of the fingers of the grappling elements so that berries picked by the fingers from under the frame can be dumped from the grappling elements when the attitude of the fingers is changed from a substantially horizontal position to a substantially vertical position.

3,460,333

**SYSTEM FOR MAKING UNIFORM THE PRESSURE EXERTED ON THE BEAM RUBBERS OF A FRINGING MACHINE**

Giovanni Battista Pozzolo, Via Nazionale, Lovere 2, Italy  
Filed May 22, 1967, Ser. No. 640,052  
Claims priority, application Italy, July 1, 1966, 12,557/66  
Int. Cl. D01h 7/92, 7/46  
U.S. Cl. 57—1 4 Claims



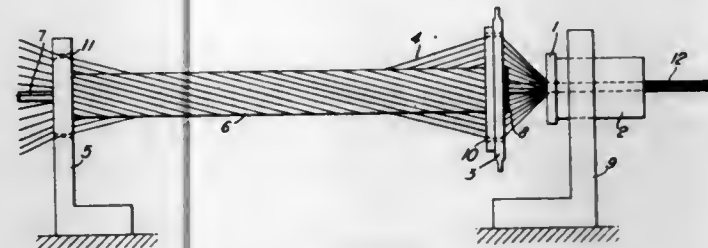
A beam loading and moment compensating construction for a fringe twisting machine in which the upper and lower traverse members, which carry the horizontally slidable upper and lower beams having opposed rubber

surfaces, are locked together prior to the horizontal movement of the beams and wherein the upper traverse member is raised and lowered by a pair of piston-cylinder units located at the ends thereof, the piston rods being interconnected by a pair of pivotally mounted levers hinged together at their inner ends.

3,460,334

**METHOD AND APPARATUS FOR THE MANUFACTURE OF ELECTRIC CONDUCTORS**

Thomas Lawrenson and Alfred Richard Brinsley, Helsby, via Warrington, England, assignors to British Insulated Callender's Cables Limited, London, England  
Filed Dec. 22, 1966, Ser. No. 604,001  
Claims priority, application Great Britain, Dec. 30, 1965, 55,227/65; Oct. 18, 1966, 46,537/66  
Int. Cl. D02g 3/36; D01h 13/26; D07b 1/06  
U.S. Cl. 57—10 14 Claims

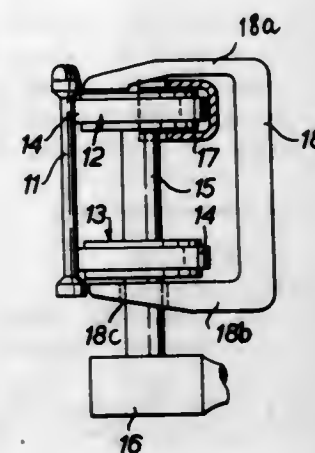


In the method of forming an outer conductor or screen on a flexible core which comprises drawing a number of fine wires required to form the outer conductor or screen through an angularly reciprocating lay plate surrounding the core and, together with the core, through a forming die, the outer conductor or screen can be made self-retaining by the use of a forming die of certain forms and dimensions. Either the die is of uniform diameter equal to the core diameter plus twice the wire diameter and has a length exceeding the length between successive points of lay reversal, or a short bell-mouthed die having a bore of about 1.015 times the nominal core diameter plus twice the wire diameter is closely followed by a long bell-mouthed die having a bore of about 1.04 times that sum.

3,460,335

**DRIVING ARRANGEMENT**

Walter Parker, Wilmslow, Cheshire, England, assignor to Ernest Scragg & Sons Limited, Macclesfield, Cheshire, England  
Filed Aug. 27, 1968, Ser. No. 755,582  
Int. Cl. D01h 7/92, 7/46  
U.S. Cl. 57—77.45 17 Claims



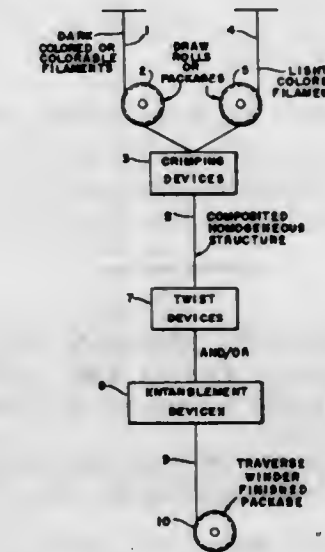
Two disc-shaped rollers are arranged coaxially and connected for joint rotation by a shaft. One of the rollers constitutes the rotor of an electric motor and is partially surrounded by the stator of such electric motor. An elongated

gated false-twist spindle is positioned so as to be in torque-transmitting engagement with the edge faces of the respective rollers. A permanent magnet biases the spindle into such torque-transmitting engagement.

3,460,336

**COMPOSITE YARN STRUCTURES AND METHOD OF PREPARING SAME**

George H. Collingwood, Hopewell, Harry J. Demas, Richmond, and George F. Bryant, Colonial Heights, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York  
Filed Apr. 4, 1967, Ser. No. 628,371  
Int. Cl. D02g 3/02  
U.S. Cl. 57—140 22 Claims

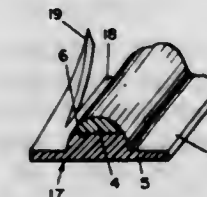


This invention is directed to a process for preparing novel, texturized composite-yarn structures and the colored fabrics attained therefrom which comprises forming homogeneous structures by simultaneously crimping at least two filaments of light and dark contrasting colors or colorability and subjecting the composited structures to mechanical operations including twisting, entangling or twisting and entangling, in any order. The contrasting colored or colorable filaments include the synthetic filaments having a color contrast of at least six Gardner units. The colored fabrics prepared from the textured composite-yarn structures may be characterized as having the dark contrasting filaments composited in the yarn to impart to the total fabric a random, three-dimensional effect. The dark contrasting filaments are composited in the yarn in a manner such that the fabric has a visual color effect substantially greater than the color that would normally be seen by the actual amount of the dark filaments present in the fabric.

3,460,337

**SYNTHETIC YARN AND METHOD OF MAKING THE SAME**

George B. Feld, New Castle, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware  
Filed Dec. 18, 1967, Ser. No. 691,410  
Int. Cl. D02g 3/02  
U.S. Cl. 57—140 9 Claims



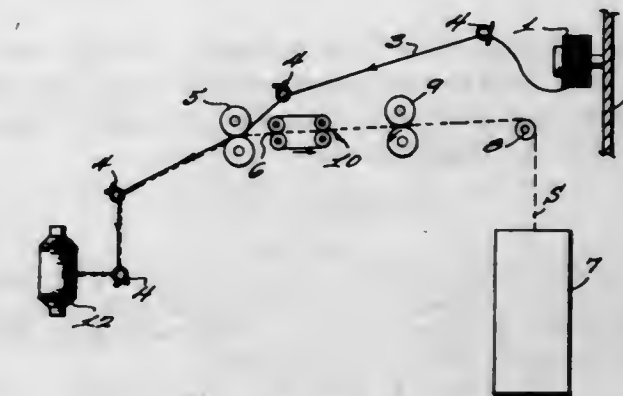
The present invention relates to a synthetic yarn produced by the fibrillation of a conjugate striated plastic film, whereby the proportions of the two different ma-

terials in the film can be readily controlled to provide control of the bulk level obtained in the filaments and wherein the one material can be confined to strips disposed in spaced parallel relation along the striations and thus need not be split to effect fibrillation of the film. This material can therefore be one that is normally not fibrillatable but has other desired properties such as tensile strength, bulk, abrasion resistance, low melting point, etc.

3,460,338

**STRETCH YARN**

Elbert F. Morrison, Clarksville, Va., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware  
Filed Mar. 13, 1964, Ser. No. 351,645  
Int. Cl. D02g 3/32  
U.S. Cl. 57—163 15 Claims

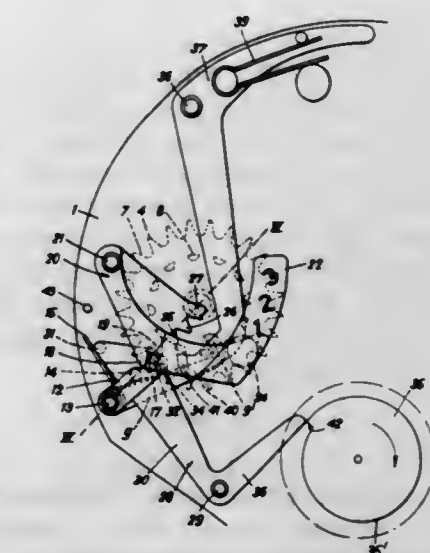


A stretch yarn prepared by drafting fibers on a roving frame and feeding on elastic yarn into the resulting fibers. The combined roving and elastic yarn are then drafted on a spinning frame.

3,460,339

**AUTOMATIC ALARM MECHANISM FOR TIMEPIECE**

Jean-Claude Schnelder, Chaux-de-Fonds, Switzerland, assignor to Fabrique d'Horlogerie Chs. Tissot et Fils S.A., Le Locle, Neuchatel, Switzerland, a Swiss company limited by shares  
Filed Nov. 28, 1966, Ser. No. 597,389  
Claims priority, application Switzerland, Dec. 14, 1965, 17,199/65, 17,200/65  
Int. Cl. G04b 23/08  
U.S. Cl. 58—17 12 Claims



An alarm mechanism for a timepiece adapted to be automatically sounded every twenty-four hours and having delay means selectively rendering said alarm mechanism inactive for multiples of twenty-four hours.



### 3,460,340 TUNING FORK OR SIMILAR DRIVEN OSCILLATOR

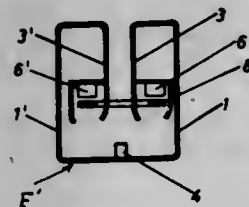
Roland Siefert, Bad Durrheim, Germany, assignor to Kienzle Uhrenfabriken G.m.b.H., Schwenningen am Neckar, Germany, a limited-liability company of Germany

Filed Jan. 30, 1967, Ser. No. 612,426  
Claims priority, application Germany, Feb. 10, 1966,  
K 58,382

Int. Cl. G04c 3/00

U.S. Cl. 58—23

3 Claims



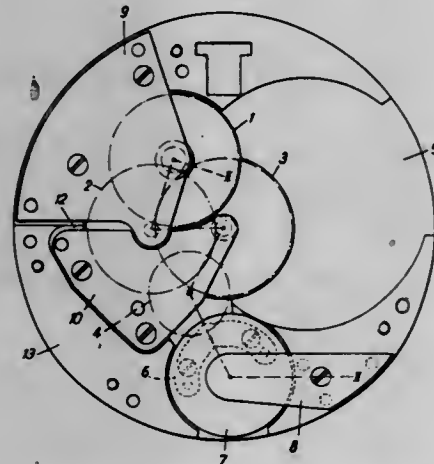
The invention is a low frequency tuning fork provided with backwardly turned extensions of the tines of the fork, the extensions carrying magnetic means for cooperation with a drive coil.

3,460,341  
**WATCH MOVEMENT FOR WRISTWATCHES**  
Hans Kocher, Buren-sur-Aar, Switzerland, assignor to Buren Watch Company, S.A., Buren-sur-Aar, Switzerland, a corporation of Switzerland  
Filed Aug. 1, 1967, Ser. No. 657,657  
Claims priority, application Germany, Dec. 17, 1966,  
B 90,370

Int. Cl. G04b 5/02

U.S. Cl. 58—82

9 Claims



A mechanical watch movement with a spring motor, a gear train, an escapement mechanism and a regulating balance wheel making at least 30,000 half oscillations per hour. For storing up the required amount of reserve energy with a self-winding wristwatch wound up by a rotary weight, the barrel housing the spring motor extends beyond the center of the movement. In view of the accommodation of a directly driven sweep second, the upper pivot bearings of the wheels of the gear train are carried by two separate bridges, one of which only extending under the barrel.

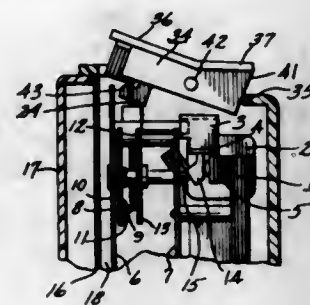
3,460,342  
**ALARM CONTROL MECHANISM**  
William C. Wingle, Stow, Mass., assignor to General Electric Company, a corporation of New York  
Filed Mar. 20, 1967, Ser. No. 624,328  
Int. Cl. G04c 21/16

U.S. Cl. 58—22.7

6 Claims

This disclosure is directed to an arrangement for setting an alarm clock. An enlarged opening 35 is formed

in the top wall of an alarm clock for receiving a unique pivotally-mounted actuator 34. The actuator 34 is connected to a lever arrangement for selectively engaging an audible alarm vibrator 3 to thereby set the alarm or shut



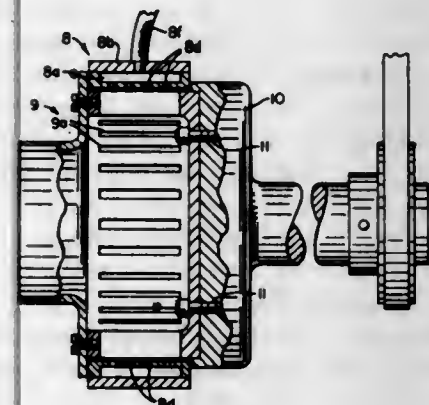
off the alarm. When the front portion 36 of the actuator is moved upwardly, the alarm is set and light is permitted to flow through an aperture 45 in the actuator 34 to indicate to an observer that the alarm has been set.

3,460,343  
**INTERMITTENT MOTION APPARATUS**  
William S. Touchman, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland  
Continuation-in-part of application Ser. No. 609,378, Jan. 16, 1967. This application Aug. 11, 1967, Ser. No. 660,032

Int. Cl. F03b 1/00; F16f 15/16

U.S. Cl. 60—6

14 Claims



An intermittent motion apparatus for use in ultra high speed indexing. The input member of the apparatus is rotated at a constant velocity while the output member thereof is oscillated at a resonant frequency relative to the input member. Magnetically operated and fluid operated oscillators act upon a resilient means so as to cause said output member to effectively dwell a desired number of times for each revolution of said input member. Said resilient means includes a solid shaft which is placed in torsion, magnetic springs, and solid elastomeric elements, like rubber, which are operated in compressions and shear modes.

3,460,344  
**STIRLING CYCLE MACHINE AND SYSTEM**  
Kenneth P. Johnson, 124 Castle Crest Road, Walnut Creek, Calif. 94529  
Filed Dec. 15, 1967, Ser. No. 691,054  
Int. Cl. F02g 1/04; 3/00; F01c 9/00

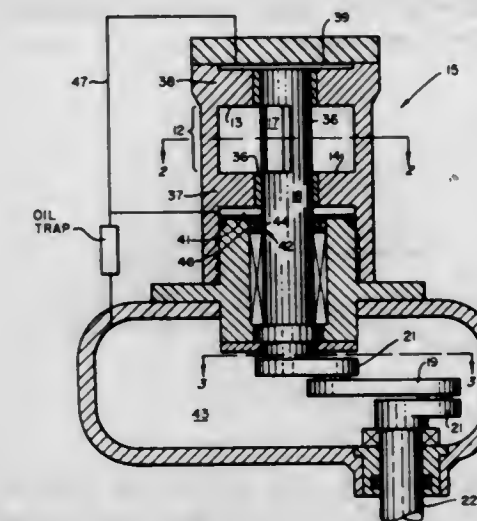
U.S. Cl. 60—24

21 Claims

Mechanism for displacing, compressing or expanding a gas working fluid characterized by provision of arcuate gas receiving chambers within which reciprocating vanes

are alternately driven upon a common shaft. Multiple unit combinations provide a Stirling cycle engine of either the

cylinder through a check valve to a hydraulically actuated element to cause a series of step by step movements thereof. A reservoir supplies hydraulic fluid to the cyl-

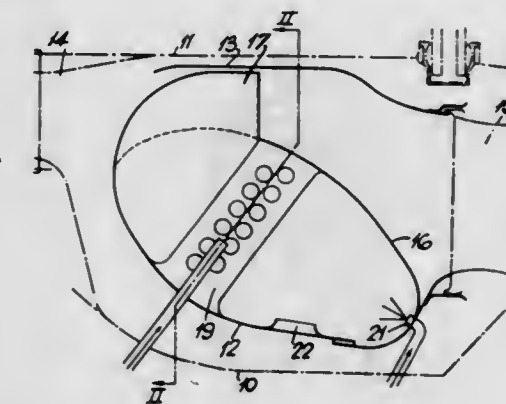


displacer or the opposed chamber type. Double acting Stirling engine is constructed employing a single cylinder.

3,460,345  
**COMBUSTION APPARATUS FOR  
GAS TURBINE ENGINES**  
Kenneth Greenwood, Cliviger, near Burnley, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England  
Filed Dec. 28, 1967, Ser. No. 694,234  
Int. Cl. F02c 3/24; 3/14

U.S. Cl. 60—39.65

1 Claim



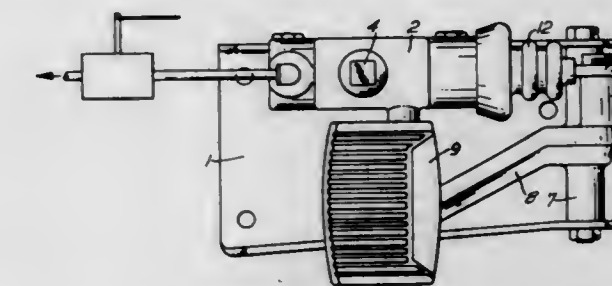
Combustion apparatus for a gas turbine engine comprising an annular air jacket, an annular flame tube in spaced relation within the air jacket, a shield within the flame tube extending obliquely across the flame tube from near the downstream end to the upstream end, the inner wall of the flame tube defining, with the shield a combustion zone, a plurality of spaced ducts extending from the combustion zone to the downstream end of the flame tube, a plurality of passages defined between the ducts, whereby dilution air can enter the flame tube to mix with air combustion products leaving the combustion zone from the ducts, and a plurality of vanes extending across the combustion zone through openings in which fuel and air can enter that zone.

3,460,346  
**MULTI-STEP HYDRAULIC POWER MECHANISM**  
Henry E. Branson, deceased, late of Lincolnwood, Ill., by Esther E. Branson, executrix, Lincolnwood, Ill., assignor to Stromberg Hydraulic Brake and Coupling Company, Chicago, Ill., a corporation of Illinois  
Filed Oct. 5, 1967, Ser. No. 674,699  
Int. Cl. F15b 7/00; 7/08

U.S. Cl. 60—54.5

1 Claim

A hydraulic cylinder contains a reciprocating piston which as it reciprocates forces hydraulic fluid from the

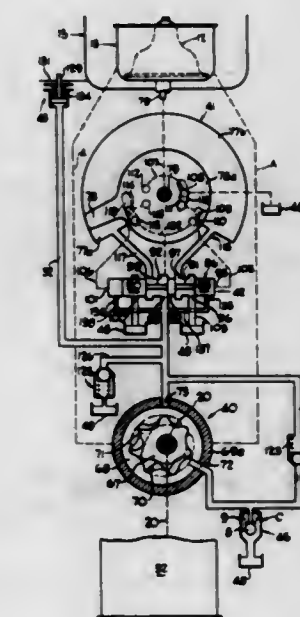


inder after each piston movement. The system includes means for forcing a return of the hydraulic fluid back through the cylinder to the reservoir when the check valve is opened.

3,460,347  
**CONTROL VALVE ARRANGEMENT FOR  
HYDRAULIC MOTORS**  
Curtis E. Kurtz, Arlington Heights, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois  
Filed Sept. 28, 1967, Ser. No. 671,320  
Int. Cl. F16h 39/44; F01c 9/00

U.S. Cl. 60—52

6 Claims



A control valve arrangement for hydraulic motors of the oscillating vane type and having a valve movable to two positions respectively controlling flow of fluid under pressure alternately to opposite sides of the vane to oscillate the vane, valve movement being controlled by fluid under pressure directed by the vane to the valve and also by fluid under pressure directed to the valve, independently of the vane, to insure movement to each of its vane-controlling positions and providing an hydraulic toggle action to the valve.

3,460,348  
**PROCESS FOR CATALYTICALLY CONTROLLED  
DECOMPOSITION OF A SOLID GAS FORMING  
BODY**  
Wayne A. Proell, Seymour, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana  
Filed Apr. 7, 1967, Ser. No. 629,294  
Int. Cl. F23v 1/00; C06d 5/00; C06b 13/00

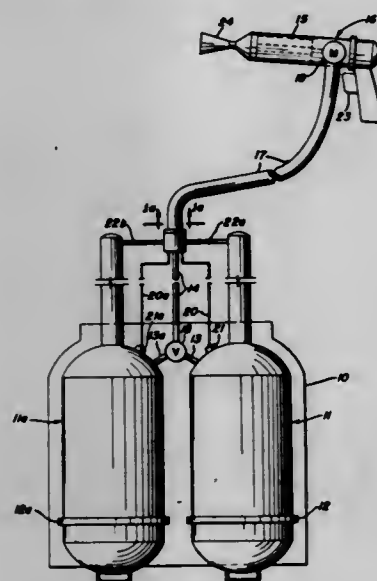
U.S. Cl. 60—218

6 Claims

Apparatus and process for controlled decomposition



of gas forming body by contacting the body, which is incapable of controlled, sustained decomposition, with mov-



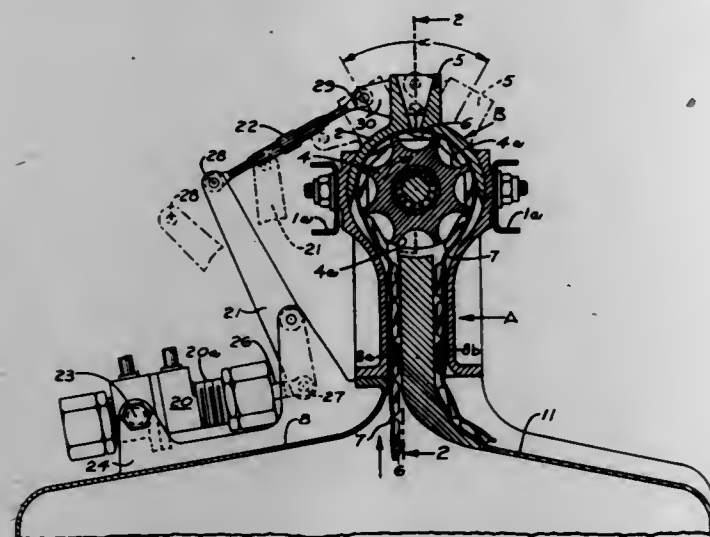
able catalyst effective to cause decomposition, and heating the catalyst.

### 3,460,349 REACTION ENGINE WITH INTERMITTENT THRUST AND DIRECTION CONTROL

Richard E. Biehl, Pearl River, N.Y., assignor to Curtis-Wright Corporation, a corporation of Delaware  
Filed Apr. 7, 1967, Ser. No. 629,298  
Int. Cl. F02k 1/24, 9/04

U.S. Cl. 60—228

7 Claims



An intermittent thrust-pulse type of reaction engine comprising an integrated assembly for producing and controlling the direction of thrust pulses. The assembly includes a sprocket mechanism for advancing a belt of individual rocket motors and serially positioning the motors with regard to a discharge nozzle, drive means for the sprocket mechanism, circuit means for firing the rocket motors individually or serially in bursts, and means for angularly orienting the assembly to provide a selected direction of thrust.

### 3,460,350 IRRIGATION APPARATUS

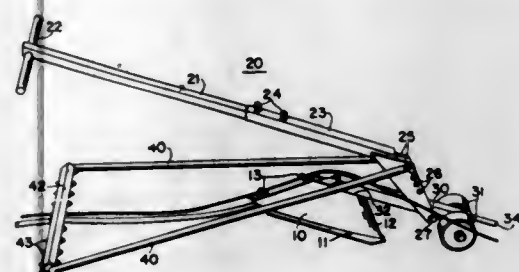
Ralph W. Speiser and William C. Lindquist, Minneapolis, Minn., assignors to Toro Manufacturing Corporation, Minneapolis, Minn., a corporation of Minnesota  
Filed May 24, 1965, Ser. No. 457,942  
Int. Cl. E02f 5/02; A01b 3/02

U.S. Cl. 61—72.6

5 Claims

A machine for laying flexible pipe underground comprising a trenching blade through which the pipe is fed

to the trench formed by the blade, a ground traversing frame supporting the blade, a handle having a hand grip on one end and pivotally mounted on the frame at its other end and a ground engaging lever pivotally connected to the handle intermediate its ends. To move the blade



through the ground, the free end of the lever is anchored in the ground, the other end of the lever then providing a fixed pivot point or fulcrum about which the handle pivots. The grip end of the handle is then pulled down, the other end of the handle pivoting about the lever and propelling the frame and blade forwardly.

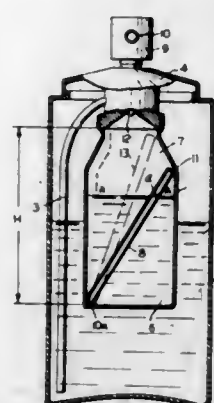
### 3,460,351 DEVICE TO ACCELERATE THE BOILING OF A LIQUEFIED GAS

Gerard Dalle, Poltiers, France, assignor to Gelgy Chemical Corporation, Ardsley, N.Y.  
Filed Jan. 5, 1968, Ser. No. 696,063  
Claims priority, application France, Jan. 5, 1967, 90,024,

Int. Cl. F17c 7/02; B67h 7/24

U.S. Cl. 62—50

15 Claims



A device for accelerating the boiling of a liquefied gas, comprising an enclosure adapted to contain liquefied gas under pressure in which a state of liquid-vapor equilibrium has been established, and a body which is insoluble in the liquefied gas positioned in said enclosure, said body having therein at least one cavity having an opening open to the enclosure, said opening being positioned in the enclosure at a level below the level at which the liquefied gas will normally occupy in the enclosure.

### 3,460,352 DEFROST CONTROL

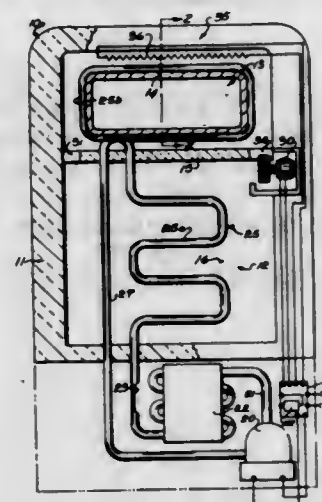
Jerome L. Lorenz, Columbus, Ohio, assignor to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio  
Filed July 31, 1967, Ser. No. 657,252  
Int. Cl. F25d 21/06, 17/04

U.S. Cl. 62—153

23 Claims

A refrigerator including an air cooling unit, a defrosting heater for removing frost from heat exchange surfaces of the cooling unit, and control apparatus for the defrosting heater including an electric motor operated switch for initiating and terminating operation of the defrosting

heater, the switch being actuated to energize the heater after a predetermined cumulative amount of operation of the electric motor and in which the motor is operated at



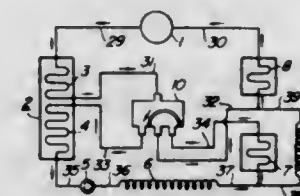
intervals depending upon the humidity of air ambient the refrigerator and for the duration of openings of a door of the refrigerator.

### 3,460,353 AIR CONDITIONER

Kyoichi Ogata, Hiroyuki Ogawa, and Akio Sakazume, Ohiramachi, Tochigi-ken, and Fukuichi Odagaki, Tsugamachi, Tochigi-ken, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan  
Filed Nov. 7, 1967, Ser. No. 681,251  
Int. Cl. F25b 29/00, 13/00

U.S. Cl. 62—176

2 Claims



The specification describes an air-conditioning apparatus whose provided outdoor side and indoor side heat exchangers are dismembered respectively into a first and a second heat exchangers, and wherein are provided a check valve and two capillary tubes consisting of a first and a second tubes with a fourway reversing valve applied in addition thereto, whereby during the cooling cycle of operation said outdoor side first and second heat exchangers are made available as condensers, and said indoor side first and second heat exchangers are evaporators, while in the dehumidification operation, the outdoor side and indoor side first heat exchangers are adapted to function as condensers, whereas the other heat exchangers as evaporators and thus both operations of cooling and dehumidification are made feasible automatically by one single unit of room air conditioner incorporating therein a temperature controlling equipment and a humidity controller.

### 3,460,354 REFRIGERATION SYSTEM AND METHOD

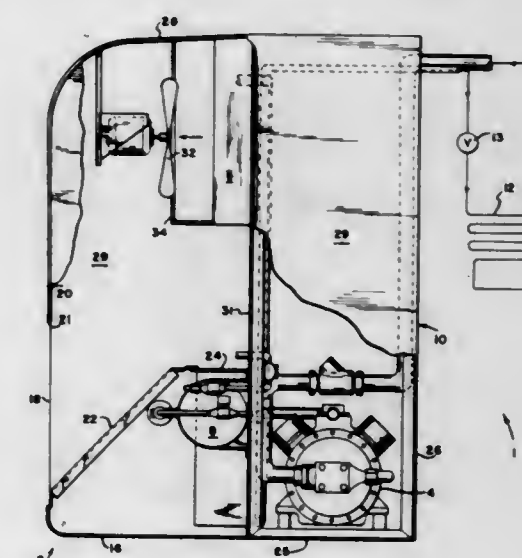
Hans P. Peterson, Simsbury, Conn., assignor to Dunham-Bush, Inc., West Hartford, Conn., a corporation of Delaware  
Filed Mar. 7, 1968, Ser. No. 711,243  
Int. Cl. F25b 39/04

U.S. Cl. 62—184

8 Claims

There are many refrigeration systems of the type which have the evaporator positioned within a building

and an air-cooled condensing unit positioned upon the roof of the building or adjacent the building. An arrangement is disclosed for controlling the cooling effect of the air on the condenser of such a refrigeration system. The condensing unit is enclosed within a housing which has an air inlet at the bottom and an air outlet near the top, and the condenser is positioned near the top of the casing. Fans are provided which are operative to circulate air through the housing and thereby cool the condenser in a very efficient manner. When the

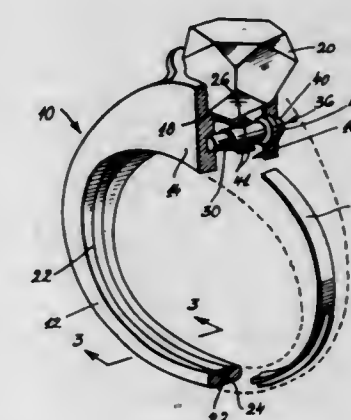


ambient air temperature drops sufficiently to cause the condenser to be cooled excessively, the fans are stopped so that there is no longer a positive circulation of the air into and out of the housing. The air within the housing continues to be heated by the condenser and the housing provides an inverted pocket in which the heated air tends to accumulate. The fans also may be operated to circulate the air through the condenser but without causing fresh air to be circulated through the housing.

### 3,460,355 RING CLAMP

U.S. Cl. 63—15.6

5 Claims



A finger ring having a device for readily narrowing the diameter of the band of the ring. The device includes a split auxiliary band embedded in a groove in the inner periphery of the main band of the ring. The split ends of the auxiliary band are anchored to a turntable and slidable clutch member, or spool, slidable clutch member or spool being supported in a chamber in the head



portion of the band of the ring. The clutch member or forward point of the sinkers is such that the forward edge of the trick plate is in the same plane or backwardly of the plane of the sinker points.

**3,460,356**  
**DEVICE FOR NARROWING DIAMETER OF FINGER RING**

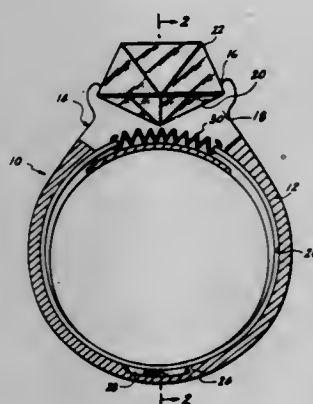
Albert C. Lodrini, 697 Hillcrest Road, Westwood, N.J. 07675

Continuation-in-part of application Ser. No. 673,323, Oct. 6, 1967. This application Jan. 2, 1968, Ser. No. 695,120

Int. Cl. A44c 9/02, 9/00

U.S. Cl. 63—15.6

4 Claims



A finger ring having a device for readily narrowing the diameter of the band of the ring. The device includes a split auxiliary band embedded in a groove in the inner periphery of the main band of the ring. The split ends of the auxiliary band are connected by a flexible member which automatically draws the auxiliary band around the finger of the wearer of the band. The auxiliary band may take the form of a saddle member with a spring plate for urging the saddle member against the finger of the wearer of the ring.

**3,460,357**  
**RASCHEL MACHINE WITH SINKERS**

Karl Kohl, Offenbacher Landstr. 20, Hainstadt am Main, Germany

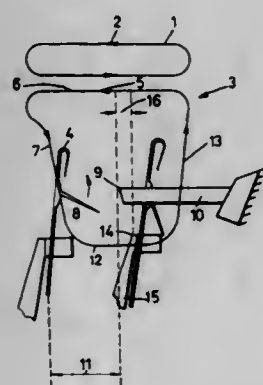
Filed June 9, 1967, Ser. No. 644,932

Claims priority, application Germany, June 14, 1966, M 69,840

Int. Cl. D04b 27/04, 27/00

U.S. Cl. 66—86

2 Claims



A Raschel warp knitting machine with knitting needles movable in a closed path, cooperating yarn guides moving in an opposite path, and fixed sinkers associated with the knitting needles. The distance between the downward leg of the path and the forward point of the sinkers is at least equal to the length of the needle latches. The distance between the upward leg of the path and the

**3,460,358**  
**METHOD OF OPERATING A DOUBLE BED WARP KNITTING MACHINE**

Karl Kohl, Offenbacher Landstr. 20, Hainstadt am Main, Germany

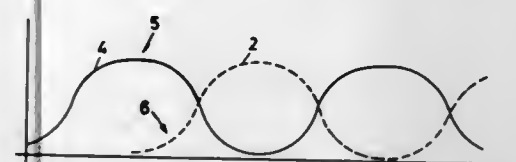
Filed Mar. 9, 1967, Ser. No. 621,873

Claims priority, application Germany, Mar. 10, 1966, M 68,708

Int. Cl. D04b 23/02

U.S. Cl. 66—87

1 Claim



A needle bar mechanism for a double needle bar Raschel knitting machine having two circular eccentric cams and linkages connecting cam followers in engagement with the cams to the needle bars for continuously oscillating the needles in sinusoidal cycles, the cycles being offset in time so that one needle bar moves upwardly toward a position approximately equidistant from its high and low positions while the other needle bar is nearer the high than the low position thereof.

**3,460,359**  
**HIGH PRESSURE-TIGHT PASSAGE MEANS FOR MATERIALS, TEXTILES, AND THE LIKE IN THE FORM OF WIDE WEBS OR IN THE FORM OF STRANDS**

Gunter Schiffer, Krefeld, Germany, assignor to Joh. Kleinewefers Sohne Maschinenfabrik, Krefeld, Germany

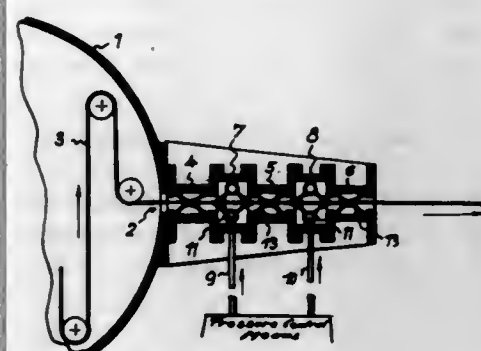
Filed July 31, 1967, Ser. No. 657,208

Claims priority, application Germany, Aug. 6, 1966, K 59,973

Int. Cl. D06f 37/00; B65d 53/00; F26b 25/00

U.S. Cl. 68—5

2 Claims



The present invention relates to a pressure-tight passage arrangement for use in connection with a high pressure treatment vessel having an inlet for connection with said vessel and having an outlet for passing relatively wide goods, especially textiles, from said inlet to and through said outlet. The pressure-tight passage arrangement according to the present invention is characterized primarily by a plurality of passage means which are serially arranged with regard to each other and are so connected that pressure-tight intermediate chambers are formed while means are provided for adjusting the pressure in said intermediate chambers so that the pressure in said pressure-tight passage arrangement will drop stepwise, preferably at uniform steps, from said inlet to said outlet.

**3,460,360**  
**SPIRAL GUIDE REEL ASSEMBLY FOR AN APPARATUS FOR THE FLUID TREATMENT OF FABRICS IN ROPE FORM**

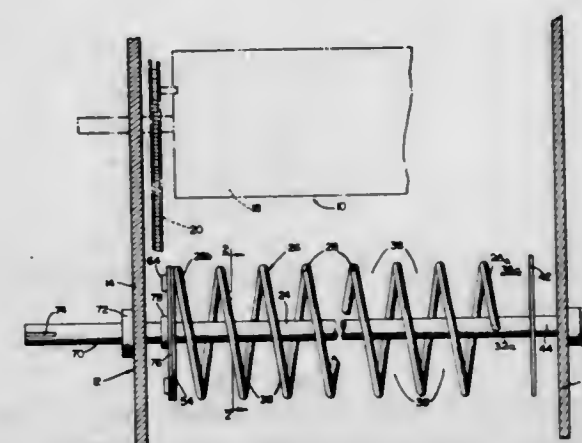
Ambrose L. Hashe, Jr., Old Fort, N.C., assignor to United Merchants and Manufacturers, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 19, 1968, Ser. No. 722,665

Int. Cl. D06f 37/26; B65h 75/26

U.S. Cl. 68—176

9 Claims



An interchangeable spiral guide member or reel for a "Spiral Apparatus" of the Ziegler et al. (Pat. No. 3,308,639) type, which forms textile fabric in rope form into a helix and revolves the loops of the helix within a fluid treating tank; said spiral reel being mounted for rotation in the tank in association with a loop forming carrier chain and a feed roller and including an elongated helical rod-like or wire member having a series of convolutions defining movable pockets for receiving and guiding spacing successive loops of the helix in association with the feed roller; the wire member having one of its ends secured to an end plate having an outer face provided with keys that releasably interlock with keyways formed in a complementary end plate on a drive shaft for the spiral guide member or reel.

**3,460,361**  
**DRIVE ARRANGEMENT FOR AN APPARATUS FOR THE FLUID TREATMENT OF FABRIC IN ROPE FORM**

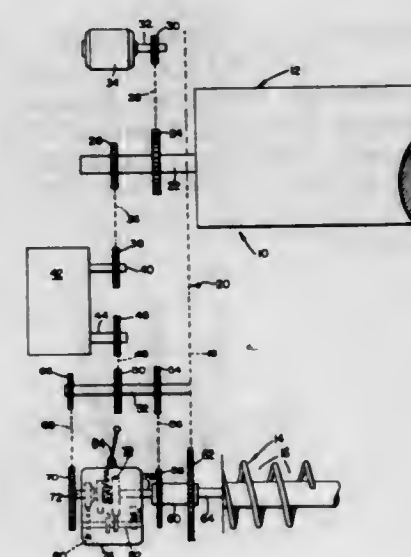
Ambrose L. Hashe, Jr., Old Fort, N.C., assignor to United Merchants and Manufacturers, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 19, 1968, Ser. No. 722,666

Int. Cl. D06f 43/08; G11b 15/28

U.S. Cl. 68—176

7 Claims



A drive arrangement for the Ziegler et al. "Spiral Apparatus" (Pat. No. 3,308,639), which forms textile fabric in rope form into a helix and revolves the loops of the

helix within a beck or tank for the wet processing of the roped fabric whether scouring, bleaching or dyeing; such drive arrangement rotating the spiral guide member at selectively varying speeds in relation with the rotation of a feed roller means, such as a main reel, and in timed relation with the revolving movement of an endless chain carrier attachable to and for revolving the leading end of the roped fabric, whereby the space loading of the roped fabric in the beck is selectively controlled so that successive loops are laid up around the parallel main reel and the spiral guide member at selectively, regularly spaced apart distances in a regular pattern along the longitudinal extent of the main reel.

**3,460,362**  
**SPIRAL APPARATUS FOR THE FLUID TREATMENT OF FABRICS IN ROPE FORM**

Gilbert Innes Kilgour, Gartocharn, and George Edward Ziegler, Balloch, Alexandria, Scotland, assignors to United Merchants and Manufacturers, Inc., New York, N.Y., a corporation of Delaware

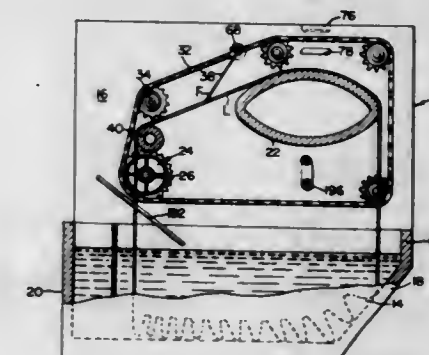
Continuation-in-part of application Ser. No. 405,888, Oct. 20, 1964, and application Ser. No. 630,154, Jan. 11, 1967, which is a division of application Ser. No. 405,888, and application Ser. No. 713,119, Mar. 14, 1968. This application Apr. 19, 1968, Ser. No. 722,667

Claims priority, application Great Britain, Jan. 29, 1964, 3,086/64

Int. Cl. D06f 35/00; B65h 75/02

U.S. Cl. 68—176

31 Claims



A "Spiral Apparatus" of the Ziegler et al. type described in United States Patent No. 3,308,639, granted Mar. 14, 1967 and United States Patent No. 3,379,494, granted Apr. 23, 1968 wherein a roller arrangement is provided in association with the spiral guide member and feed reel to eliminate frictional drag on the roped fabric and means is associated with the carrier chain to impart a positive detwisting action to the fabric through the point of attachment of the fabric to the carrier chain and guide and control and stop means are provided for the loading and operation to be carried out without tangling or fouling of the roped fabric on the feed reel or overloading of the apparatus and a variable geometry spiral guide member is provided wherein the number of turns of the helix of the spiral guide member in the apparatus may be varied for a particular cloth density and load of fabric.

**3,460,363**  
**LAUNDRY EXTRACTOR**  
Frederick W. Grantham, Hollywood, Calif.  
(152 W. Pico Blvd., Los Angeles, Calif. 90015)  
Filed Mar. 4, 1966, Ser. No. 531,712  
Int. Cl. D06f 3/00; B30b 9/06, 5/04

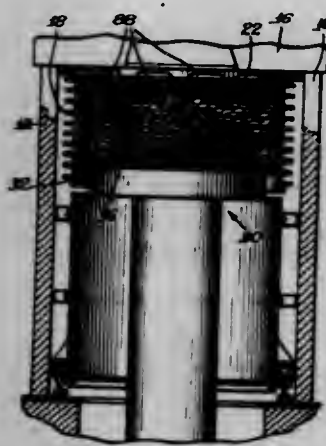
U.S. Cl. 68—241

7 Claims

Laundry extractor of plunger-compression type having casing with surrounding inner wall and outer flanges or

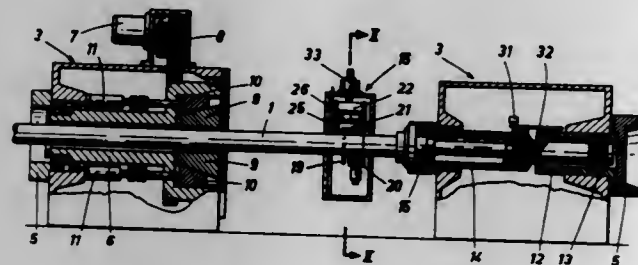


ribs, also having side opening door panels of similar construction, and resilient cushioning means in the space tricity of a roll of the mill, and means for automatically controlling the roll setting in dependence upon that repre-



to compensate for unevenness in density of laundry pieces being worked upon.

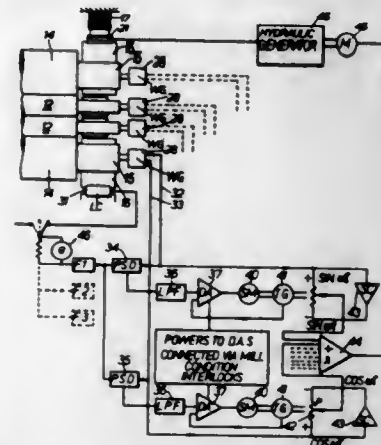
**3,460,364**  
**PROCESS AND APPARATUS FOR FORMING PERIPHERALLY CONTINUOUS ENLARGED PORTIONS ON A SHELL OF A CYLINDRICAL HOLLOW BODY**  
Bruno Kralowetz, Weinleiten 142, Steyr-St. Ulrich, Austria  
Filed Dec. 5, 1967, Ser. No. 688,253  
Claims priority, application Austria, Jan. 26, 1967, A 745/67  
Int. Cl. B30b 15/26; B21d 37/16; B21b 37/14  
U.S. Cl. 72-7 6 Claims



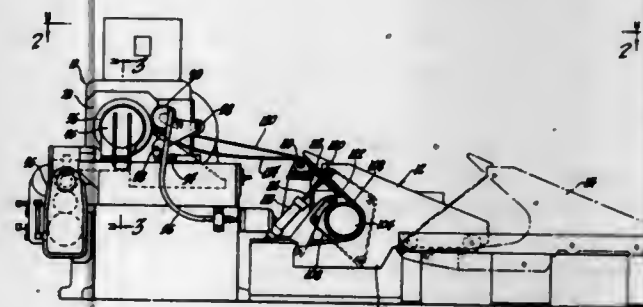
A hollow body is gripped in its axial direction between a stationary gripping station and an upsetting punch and is partly surrounded with an annular heating inductor. Simultaneously, the gripped hollow body is rotated about its axis, a constant upsetting pressure is applied through said punch to said rotating, gripped, hollow body, constant electric power is supplied to said heating inductor and the same is moved at constant speed in said axial direction. The hollow body is thus subjected to a local temperature rise in an axially advancing zone. The displacement of said upsetting punch is controlled in dependence on the position of said inductor so as to obtain the desired shell profile.

**3,460,365**  
**ROLLING MILLS**  
David Robert Howard, Sheffield, England, assignor to Davy and United Engineering Company Limited, Sheffield, Yorkshire, England  
Filed Feb. 20, 1967, Ser. No. 617,306  
Claims priority, application Great Britain, Feb. 21, 1966, 7,483/66  
Int. Cl. B21b 37/08, 1/22; B21c 51/00  
U.S. Cl. 72-21 3 Claims  
An automatic control system for a rolling mill comprising means for storing a representation of the eccen-

tricity of a roll of the mill, and means for automatically controlling the roll setting in dependence upon that repre-

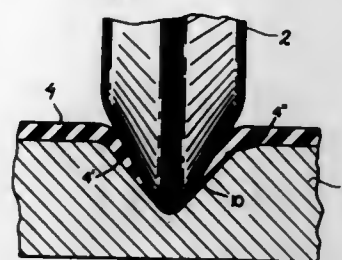


**3,460,366**  
**APPARATUS FOR PRODUCING METAL STRIPS**  
Joseph A. Musial, Dearborn, and Charles W. Vigor, Rochester, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Sept. 3, 1965, Ser. No. 485,001  
Int. Cl. B21d 43/28, 33/00; B21k 27/06  
U.S. Cl. 72-324 4 Claims



An apparatus for manufacturing a thin strip of metal from a cylindrical metal billet, the apparatus including a rotating spindle on which the billet is mounted, a cutting tool for peeling the metal strip from the billet and means for pulling the strip under controlled tension as it is being peeled to help regulate the thickness of the metal strip. The apparatus preferably also is provided with a rotating wire brush for straightening the metal strip prior to its being coiled on a windup mechanism.

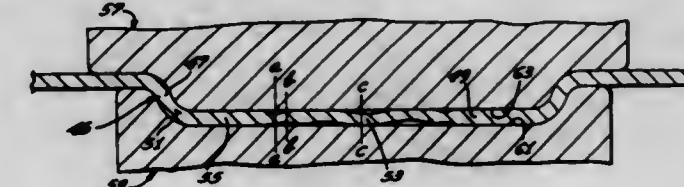
**3,460,367**  
**LAMINATED MAGNETIC CORE AND PROCESS FOR MAKING SAME**  
Vadim Subovici, Bucharest, Rumania, assignor to Ministerul Industriei Constructoare De Masini, Bucharest, Rumania, a corporation of Rumania  
Filed Sept. 7, 1965, Ser. No. 485,481  
Int. Cl. B21d 43/28; B21k 27/06; B21b 1/00  
U.S. Cl. 72-324 2 Claims



Laminated magnetic core made from sheet steel, each lamina having a surface covered with an insulating layer and formed with cuts in the shape of V-grooves with plastic deformation of the steel and inward bending of

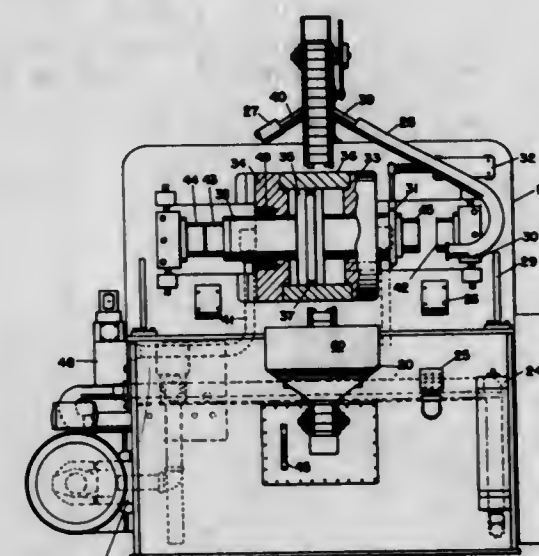
portions of the insulating layer along the sides of the grooves, the inwardly bent portions decreasing progressively in thickness toward the bottom of each groove, effective insulation being thus maintained between adjacent laminae despite the existence of discontinuities in the insulating layer.

**3,460,368**  
**METHOD OF MAKING AN APERTURED DISHED ARTICLE**  
Omar L. Brown, Dayton, Ohio, assignor, by mesne assignments, to Erma C. Frazee, Dayton, Ohio  
Filed Mar. 27, 1967, Ser. No. 626,035  
Int. Cl. B21d 28/02, 22/20  
U.S. Cl. 72-334 14 Claims



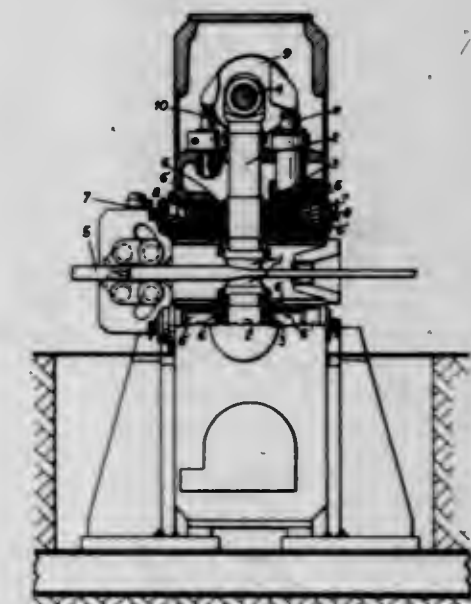
This disclosure describes a method of drawing sheet metal which is particularly adapted for forming an apertured dish section in a section of sheet material. The disclosed method includes the steps of forming a hollow dimple in the sheet material, deforming the dimple and the sheet metal immediately surrounding the dimple to at least partially collapse the dimple and form a dish section having a peripheral wall and a transverse end wall, and, if desired, removing the flattened dimple to form an aperture in the transverse end wall. The article so formed is integrally secured to the sheet metal therearound by a plurality of generally radially extending integral sheet metal webs. This disclosure also describes a method of forming a peripheral reinforcing rib on the dish section by bending the edges thereof and substantially simultaneously forming a groove in the surrounding area of sheet metal to prevent undue buckling and distortion of the surrounding section of sheet metal.

**3,460,369**  
**MACHINE FOR PRESSING SLUGS INTO SHAPES**  
Lafayette B. Smith, Wattsburg, Pa., assignor to The Electric Materials Company, Erie, Pa., a corporation of Pennsylvania  
Filed Apr. 3, 1967, Ser. No. 627,976  
Int. Cl. B21j 11/00, 5/12; B21d 53/20  
U.S. Cl. 72-404 7 Claims



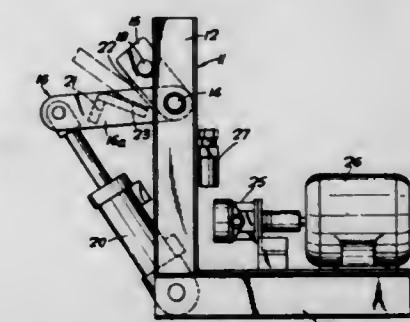
A machine for pressing metal articles made up of a single cylinder having a piston rod extending from each side, the cylinder being supported between two fixed die

**3,460,370**  
**APPARATUS FOR SWAGING CONTINUOUS STOCK**  
Bruno Kralowetz, Weinleiten 142, Steyr-St. Ulrich, Austria  
Filed May 9, 1967, Ser. No. 637,285  
Claims priority, application Austria, May 23, 1966, A 4,834/66  
Int. Cl. B21j 9/12 8 Claims



At least two swaging units are arranged one behind the other in the longitudinal direction of the stock. Each swaging unit comprises only a single pair of diametrically opposite dies operable to reciprocate in and transversely to the longitudinal direction of the stock. Means are provided for operating said pairs of dies to blow in close succession but only one pair at a time.

**3,460,371**  
**FORMING TOOLS**  
Raymond Edwin Grant, % Grant Plant Hire, Pioneer Works, Malvern Road, Maldenhead, Berkshire, England  
Filed Feb. 6, 1968, Ser. No. 703,324  
Claims priority, application Great Britain, Feb. 14, 1967, 6,945/67  
Int. Cl. B21j 9/18, 13/06  
U.S. Cl. 72-450 10 Claims



A machine for hot forming taper points on chisels, moils, and the like, having two jaws arranged for movement into a position in which the jaws define tapered faces for a tapered point, and a power source arranged to move one of the jaws towards such a position.



3,460,372

## RECEPTACLE FORMER

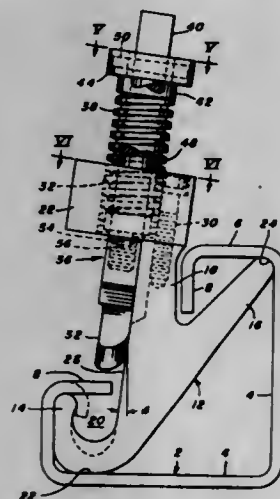
James E. Ashworth, Moraga, and August L. Bartz, Alamo, Calif., assignors to United States Steel Corporation, a corporation of Delaware

Filed Mar. 10, 1967, Ser. No. 622,337

Int. Cl. B21j 9/18; B21c 37/02

U.S. Cl. 72—454

10 Claims



A tool for forming a receptacle to hold a horizontal rail in an open corner sheet metal terminal fence post. The tool is closely fitted inside an installed fence post with a stationary die placed against an inwardly extending flange in which the receptacle is to be formed. A pressure screw forces a guided former down on the flange, bending the metal over the die to form the receptacle.

3,460,373

## SELF-COOLING MOISTURE INDICATOR FOR GASES

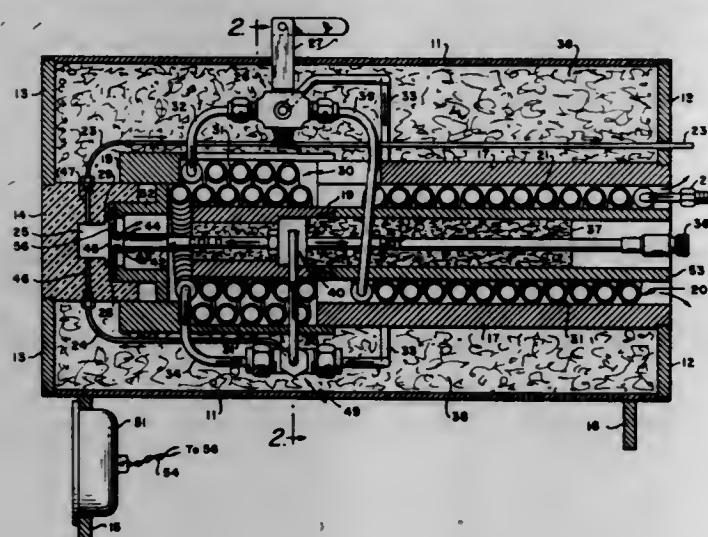
Stephen H. Ford, Annapolis, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Mar. 17, 1967, Ser. No. 624,101

Int. Cl. G01n 25/02

U.S. Cl. 73—17

7 Claims



Sample gas to be tested for moisture is pressurized and passed through a steady flow regenerative heat exchanger coil to the inlet of a vortex tube which lowers the temperature of the gas which is used to cool down a visible polished metal mirror mounted within the sampling chamber. Moisture contained in the sample gas introduced into the chamber precipitates on the mirror provided the dew point has been reached. The temperature at which condensation occurs is determined by means of a millivolt meter and thermocouple combination attached to the mirror. Further cooling of the mirror is effected by passing the gas through a storage regenerative heat exchanger coil in proximity to the cold outlet of the vortex tube.

3,460,374

## MACHINE FOR TEST SMOKING CIGARETTES

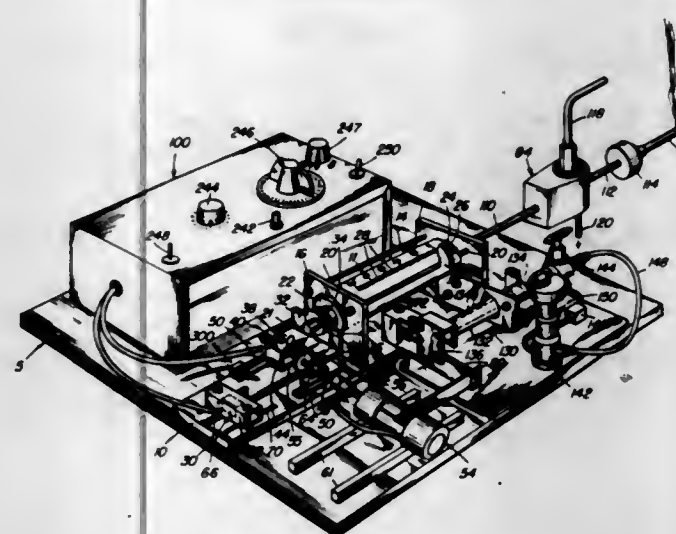
Philip S. Parks, Richmond, Va., assignor to Philip Morris, Incorporated, New York, N.Y., a corporation of Virginia

Filed Jan. 4, 1967, Ser. No. 607,234

Int. Cl. G01n 31/00

U.S. Cl. 73—23

11 Claims



A machine for puffing cigarettes at regular intervals with a piston pump unit, the stroke of which is adjustable to allow for puffing varying volumes of smoke. The pump piston is stroked with a reversible electric motor coupled thereto through a rack and pinion unit, the arrangement being such that the rack is fixed and the pinion, which is mounted in a coupling bracket, bodily reciprocates along with the bracket, piston and motor. An electric control circuit controls pump operation utilizing limit switches actuated at the ends of stroke travel of the pump piston to reverse motor rotation in corresponding directions, a circuit resistance being used to slow motor speed during the pump discharge stroke to a lesser value than the speed during the intake stroke. A multi-ported solenoid valve controls smoke flow from the cigarette to the pump and from the pump to a smoke analyzer unit, opening and closing of the respective ports recurring automatically in correspondence to the direction in which the drive motor is rotating. A hydraulic damping unit is coupled with the pump piston and operates in tandem therewith to absorb piston inertia during pump discharge of the smoke, a smoke analyzer unit used in conjunction with the machine and maintained under vacuum.

3,460,375

## PROXIMITY DETECTION DEVICE USING CONIC/TOROIDAL FLOW

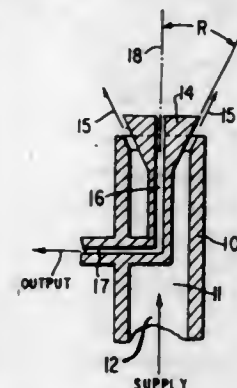
Raymond N. Auger, New York, N.Y., assignor, by mesne assignments, to Cutler Controls, Inc., Berwyn, Pa., a corporation of Pennsylvania

Filed May 11, 1967, Ser. No. 637,782

Int. Cl. G01m 3/02

U.S. Cl. 73—37

16 Claims



A device for detecting proximity to a surface by use of a fluidic conical annular flow producing orifice means

which is directed toward the surface to be detected, the flow affecting an output sensing means and giving a signal.

outputs of the output channels and the inputs from the input channels to the shaker table by a magnitude which is a function of the integrated output signal.

3,460,376

## PRESSURE TESTING DEVICE FOR PIPE AND GAUGES

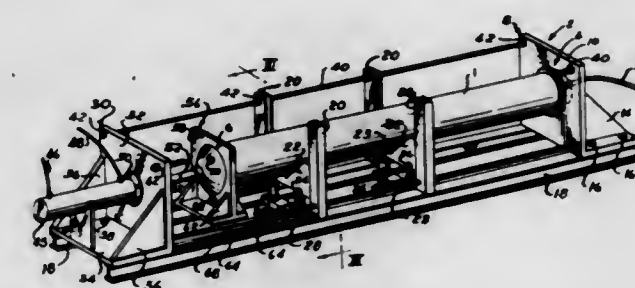
Norman H. Kemp, 726 Regal Row, Dallas, Tex. 75247

Continuation-in-part of application Ser. No. 494,061, Oct. 8, 1965. This application May 17, 1968, Ser. No. 729,967

Int. Cl. G01m 3/08

U.S. Cl. 73—49.5

20 Claims



A device for testing pipes hydrostatically comprises supports for the pipe being tested, a stationary sealing head and a movable sealing head. The sealing heads include sealing assemblies which act to seal against the pipe being tested by means of the pressure of the hydrostatic test fluid. The supports are provided with jacks to adjust their height. The sealing heads may be provided with a plurality of sealing assemblies so that pipes of different diameters may be tested.

3,460,377

## APPARATUS FOR CONTROLLING THE EXCITATION OF A UTILIZATION DEVICE

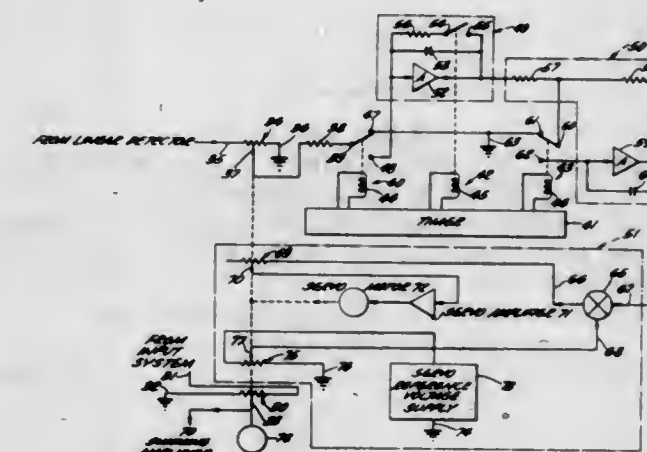
Sarkis V. Kalustian, Los Angeles County, Calif., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Jan. 14, 1966, Ser. No. 520,746

Int. Cl. G01n 29/00

U.S. Cl. 73—71.6

9 Claims



Actuating electrical power for a shaker table is provided in a plurality of channels, each of which includes electrical power in a prescribed band pass, such that the collective effect of all the channels is to provide a broad frequency spectrum of power. A transducer carried by the shaker table provides a signal output representative of the table motion which is processed through an output system providing a plurality of signals representative of the magnitude for each channel input to the shaker table. The signals corresponding to each channel from the output system are integrated during a first time period, and then used during a second time period to level shift the

3,460,378

## STRAIN GAUGE MEASURING TECHNIQUES

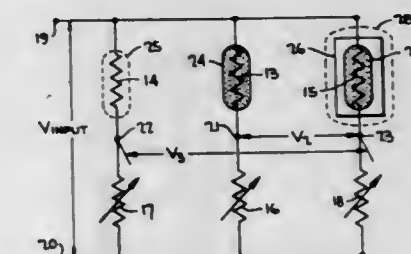
Frank J. Cepollina, Annandale, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed July 20, 1966, Ser. No. 566,717

Int. Cl. G01b 7/16

U.S. Cl. 73—88.5

2 Claims



A method for measuring strain, which method provides a simultaneous separate and independent measurement of the following parameters: elongations of specimens due solely to thermal stress; elongations of specimens due solely to mechanically induced stress; and elongations of specimens due to the combined effect of thermal and mechanically induced stress. The method calls for combining in a double bridge circuit, the outputs of an active strain gauge sensor, which sensor is both thermally and mechanically coupled to a test specimen, the outputs of a dummy sensor which is thermally and mechanically coupled to a supporting plate which plate is only thermally coupled to the specimen, and the outputs of a second dummy sensor which is directly thermally connected to the specimen.

3,460,379

## TENSILE STRENGTH TESTING DEVICE

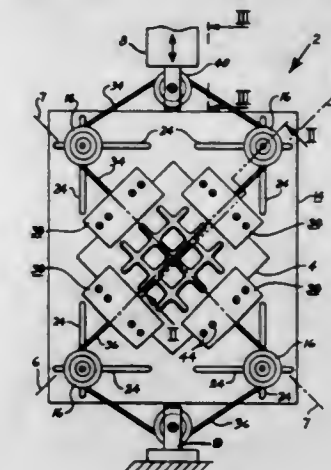
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Robert N. Hanson, Covina, Calif.

Filed Dec. 27, 1966, Ser. No. 605,096

Int. Cl. G01n 3/28, 3/08

U.S. Cl. 73—95

7 Claims



This is a testing device that is usable with a conventional uniaxial force tensile testing machine. It converts the tensile testing machine from one that produces a uniaxial force to one that exerts many forces on a test specimen from various selected directions. The testing device includes flexible members that interconnect the rams of the tensile testing machine and the test specimen, and a fixture carrying a number of guides. The guides position



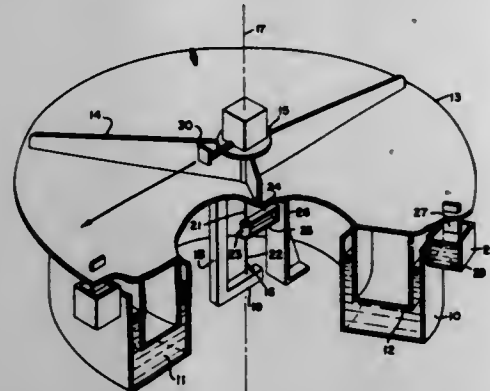
the flexible members in the direction it is desired to apply the forces on the test specimen. Moving the rams of the tensile testing machine apart causes the flexible members to exert forces in the desired directions on the test specimen.

**3,460,380**  
**SIMPLIFIED TORSION STRESS RELAXATION TESTING JIG**  
Samuel T. Furr, Allentown, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware  
Filed Jan. 12, 1968, Ser. No. 697,358  
Int. Cl. G01n 3/22  
U.S. Cl. 73—99 1 Claim



A jig for testing a laboratory size torsion relaxation stress specimen consisting of a holder having an axial bore, two end faces, a diametrically disposed slot in each end face and two retaining bars formed to fit into the slots in the holder. Each transverse retaining bar has a non-circular bore contoured to fit and hold the end portions of a torsion relaxation test specimen. When initially assembled on the test specimen the angular relationship of the retaining bars is different from that of the slots in the holder. On application of torque to the test specimen the retaining bars can be inserted into the slots in the holder and will maintain the test specimen under torque.

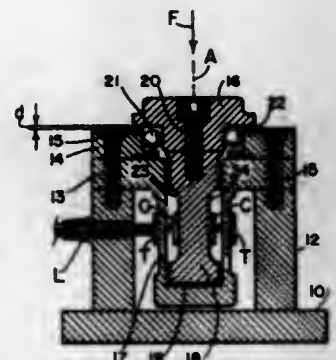
**3,460,381**  
**BALANCE TORQUEMETER**  
Joseph C. Boyle, Rockville, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautic and Space Administration  
Filed Aug. 30, 1967, Ser. No. 665,209  
Int. Cl. G01l 3/10  
U.S. Cl. 73—133 6 Claims



A balance torquemeter for measurement of small torques, particularly those caused by a magnetic dipole moment acting upon a massive body, where the body is uncoupled from the torsional stiffness of conventional solid support systems by a hydrostatic support technique

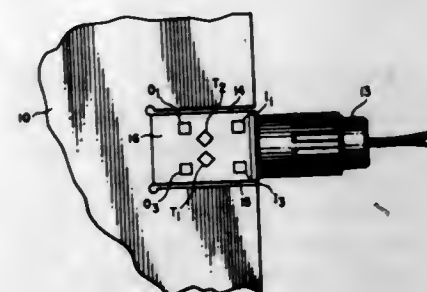
enabling measurements under frictionless conditions and where the opposing angular torque is provided by a fine torsion wire.

**3,460,382**  
**COAXIAL LOAD CELL**  
Harry B. Schultheis, Jr., Woodland Hills, Calif., assignor to W. C. Dillon & Company, Inc., a corporation of California  
Filed Dec. 23, 1966, Ser. No. 604,458  
Int. Cl. G01l 5/12  
U.S. Cl. 73—141 1 Claim



An improved load cell for measuring forces such as in weighing operations up to the order of thousands of pounds, and is characterized by being extremely compact and yet providing a very accurate indication of the force being measured. Essentially, the structure includes a cup-shaped member and a column member coaxially received within the cup. The cup is supported at its upper periphery so that its closed bottom end hangs freely. The column is arranged to receive an applied force to be measured at its upper end and transmit this force to the bottom closed end of the cup. The column is thus placed in compression and the wall of the cup placed in tension. Strain gauges are attached to the cup wall and column, the strain gauges on the wall being placed in tension and the strain gauges on the column being placed in compression. These gauges are connected into an electrical bridge to provide an output signal representing a function of the force applied to the center column. The coaxial arrangement and the fact that the strain gauges are disposed in opposite arms of an electrical bridge and function in opposite senses result in a compact cell having a relatively high output signal for small changes in the applied force.

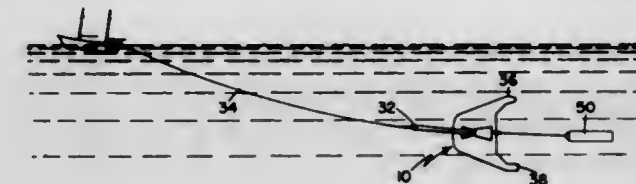
**3,460,383**  
**CONTROL SURFACE HAVING FLEXURE AREAS FOR FORCE MEASUREMENTS**  
Charles J. Fadera, Winter Park, Fla., assignor to Martin Marietta Corporation, New York, N.Y., a corporation of Maryland  
Filed May 22, 1967, Ser. No. 640,234  
Int. Cl. G01m 9/00  
U.S. Cl. 73—147 9 Claims



This invention relates to the measuring of forces on control surfaces or fins of missiles, models of missiles, or any of a variety of models used in wind tunnels or hydro-

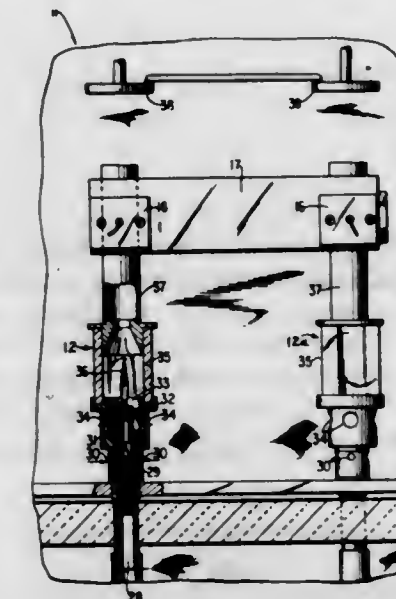
dynamic tanks, wherein flow over the control surface creates forces and moments that must be accurately ascertained in order that the proper size shaft for supporting the control surface will be used, and the proper size actuator employed. To that end I provide novel flexure areas on each side of the control surface closely adjacent the shaft, upon which I dispose a plurality of strain measuring devices so that the distortions of the flexure areas can be accurately translated into indications of forces and moments, this being accomplished without utilizing any instrumentation inside the model upon which the control surface is mounted.

**3,460,384**  
**DEPTH CONTROLLING DEVICE**  
Timothy Fohl, East Acton, Mass., assignor to Harry Eugene Stubbs, Lexington, Mass.  
Filed June 6, 1967, Ser. No. 643,907  
Int. Cl. G01w 1/00  
U.S. Cl. 73—170 13 Claims



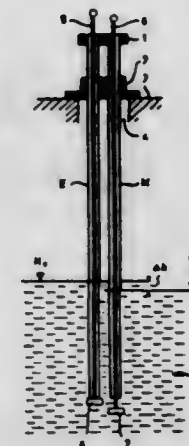
A depth control device for a submerged object which includes an adjustable boundary layer control coating with a liquid contacting surface of the structure.

**3,460,385**  
**COMPARISON CALORIMETER**  
Wilhelm K. Kolster, Michigan City, Ind., assignor, by mesne assignments, to George F. Johnson, Terre Haute, Ind., and Raymond R. Kubly, Jr., Monroe, Wis., as tenants-in-common  
Filed Apr. 12, 1966, Ser. No. 541,997  
Int. Cl. G01k 17/00  
U.S. Cl. 73—190 9 Claims



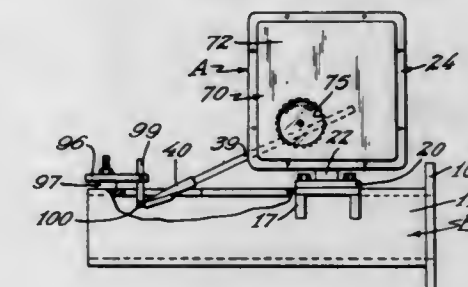
A calorimeter of the comparison type for determining the heating value of a tested gas including a pair of burners for burning a reference gas, a heat sink, a pair of temperature sensing means, and means connected with the temperature sensing means for indicating differences in heating between the reference gas and the tested gas.

**3,460,386**  
**PROCESS AND A DEVICE FOR CHECKING A TANK FOR LEAKAGE**  
Edwin Guignard, Zurich, Switzerland, assignor to Igewa-A.G., Zurich, Switzerland  
Filed Mar. 23, 1967, Ser. No. 625,552  
Claims priority, application Switzerland, Mar. 29, 1966, 4,739/66  
Int. Cl. G01f 23/06  
U.S. Cl. 73—290 11 Claims



A process and device for checking fluid-storage tanks for leaks, employing two individually-closable tubes, fixed in parallel, side by side, in such a way that one tube holds the original level in the tank and the other shows, after the lapse of any desired time-interval, a drop in level due to a leak.

**3,460,387**  
**IN-FLUME TRANSMITTER**  
William R. Brown, St. Paul, Minn., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota  
Filed May 22, 1967, Ser. No. 640,104  
Int. Cl. G01f 23/06  
U.S. Cl. 73—313 10 Claims



This invention resides in an apparatus for measuring flow of sewage or the like through an open flume. The apparatus includes a sealed housing having a horizontal shaft projecting therefrom on which is supported a ski supporting arm. The ski rides on the surface of the flowable material and changes in flow act through the arm to pivot the shaft. The shaft preferably drives a parallel shaft on which is supported a cam. The cam actuates the core of a linear variable differential transformer which varies the voltage supply input to a transmitter. The transmitter is a solid state impulse transmitter which produces equally spaced pulses of a duration which varies with the voltage supplied. The signal is transmitted to a receiver to convert the pulses to voltage. The device may also include solid state switches for alarm circuits and the like. A temperature controlled heater may be provided in the housing to prevent condensation.



### 3,460,388 HYGROMETER

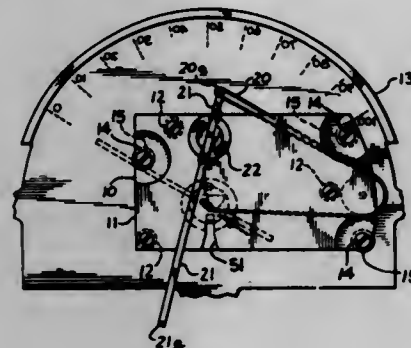
Ralph H. Preiser and Clarence J. Goodwin, Peru, Ill., and Frank W. Emerson and Stanley C. Metcalf, Peterborough, Ontario, Canada, assignors to General Time Corporation, Stamford, Conn., a corporation of Delaware

Filed Apr. 3, 1967, Ser. No. 628,166

Int. Cl. G01n 25/56

U.S. Cl. 73—337.5

8 Claims



A hygrometer or humidity sensing device which provides a continuous indication of relative humidity over a specified range. The humidity sensing element is a closed loop of moisture responsive film, such as nylon-6, having one end fixed and the other end attached to a movable output assembly. The humidity sensing element varies in length as a nonlinear function of relative humidity, and a compensating cam is included in the output assembly and acts directly on the sensing film to convert the nonlinear elongation characteristic of the moisture sensing element to a linear output characteristic in the form of mechanical displacement of the output assembly. A regulating device is provided for varying the fixed end of the sensing element for zeroing the humidity indicating pointer on a calibrated scale.

### 3,460,389 THERMOMETER FOR MEASURING SKIN TEMPERATURE

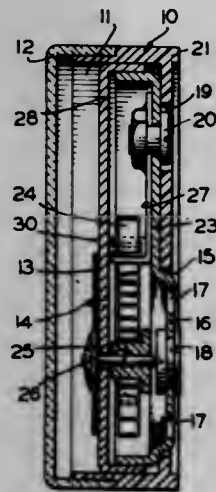
Anthony H. Lamb, 66 King St., Hillside, N.J. 07205

Filed Sept. 25, 1967, Ser. No. 670,163

Int. Cl. G01k 5/64

U.S. Cl. 73—363.7

3 Claims



A thermometer for measuring skin temperature over selected areas of the body. A spiral, bi-metallic coil is secured to a staff carrying a pointer rotatable over a calibrated scale. The staff is pivotally supported by a heat transfer disc arranged for direct contact with the skin.

### 3,460,390 MERCURY GLASS CLINICAL THERMOMETER WITH MAXIMUM TEMPERATURE RECORDING TRAP AND METHOD OF MAKING THE TRAP

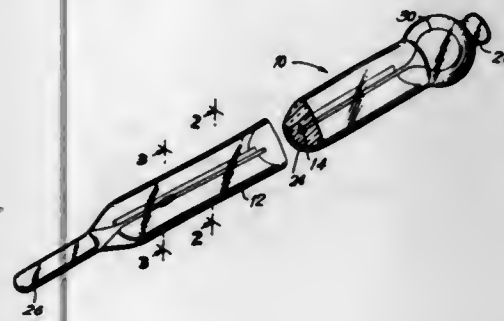
Seymour N. Blackman, Englewood Cliffs, N.J. (% Precision Medical Instrument Co. Inc., 41 Brook Ave., Passaic, N.J. 07055)

Filed Sept. 28, 1967, Ser. No. 671,435

Int. Cl. G01k 1/04

U.S. Cl. 73—371

18 Claims



A mercury glass clinical thermometer in which the maximum temperature recording trap in the stem constitutes a resolved radial circumferential fracture pattern deep within the stem. The pattern is composed of radial fractures circumferentially intersecting the capillary bore the diameter of which is substantially the same as and aligned with the unfractured portion of the bore. The trap is formed by focussing a pulse of laser energy onto the portion of the column of mercury in the capillary bore at the desired position of the trap.

### 3,460,391 GOLF PRACTICE MACHINE

William Guildford Lomas, 20 Brynmawr Road, Camberwell, Victoria, Australia

Filed June 27, 1966, Ser. No. 560,586

Claims priority application Australia, July 1, 1965,

60,910/65

Int. Cl. G01l 5/02

U.S. Cl. 73—379

13 Claims



A golf practice apparatus comprising a support having a plurality of removable inter-fitting tubes and a pair of diverging, tensioned runners or wire guides mounted on the support. The runner wires carry a sliding carriage to which a practice ball is connected by a cord. The support includes a pair of hinged legs which permits variation of inclination with respect to the surface on which the apparatus rests.

### 3,460,392 PHYSICAL EXERCISER

Gert Friedrich Kolbel, Kornstrasse 19-21, Hannover, Germany

Filed Nov. 15, 1966, Ser. No. 594,499

Claims priority, application Germany, Feb. 12, 1966,

K 58,415

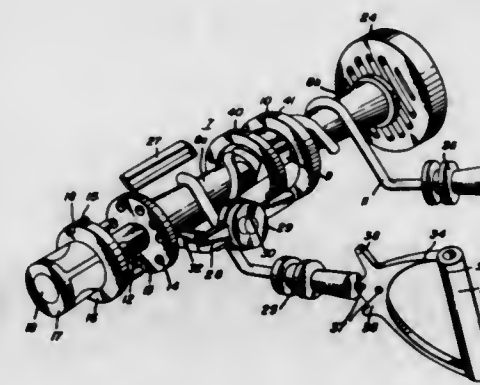
Int. Cl. G01l 5/06

U.S. Cl. 73—379

3 Claims

A physical exerciser has a handle spaced from and connected to the top of a casing which carries an axle. A rope is wound around a central portion of the axle and

has ends extending through openings provided in the density of the liquid. A gas pressure control apparatus casing opposite to the handle. These ends carry separate is connected to the shorter tube so that the effective pres-



handles. Means are provided to adjust the number of windings of the rope around the axle.

### 3,460,393 LIQUID METAL SAMPLE RETRIEVAL DEVICE

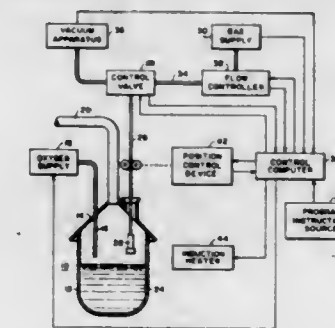
Richard E. Putnam, Penn Hills, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 24, 1967, Ser. No. 625,664

Int. Cl. G01n 1/14

U.S. Cl. 73—425.6

3 Claims



A high temperature liquid metal sample retrieval device includes a ceramic sleeve supplied with a pressurized inert gas while the device is physically immersed to a desired depth within the liquid metal pool in a furnace and to prevent the entry of slag and undesired impurities into the sleeve. The ceramic sleeve is then subjected to a negative pressure to draw a sample of the liquid metal within the sleeve, until a self-contained valve member prevents further entry of the liquid metal. The device is now transportable to a provided container away from the furnace where an induction heater can be energized to remove the metal sample and deposit same inside the container. The positional movement of the sample device is coordinated with the various desired operations in relation thereto.

### 3,460,394 LIQUID DENSITY MEASURING METHOD AND APPARATUS

Del Cryer, 253 Wedgewood Drive, Shreveport, La. 71105

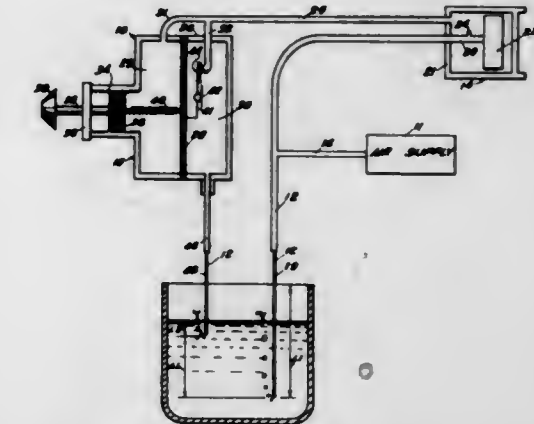
Filed June 5, 1967, Ser. No. 643,647

Int. Cl. G01n 9/28

U.S. Cl. 73—439

3 Claims

Liquid density measuring method and apparatus wherein a pair of downwardly directed tubes of different lengths is inserted in a liquid and a gas is forced through the tubes and allowed to bubble up in the liquid. The difference in pressure of the gas of one tube in comparison to the gas of the other tube is measured to determine the



sure of the gas flowing through the shorter tube can be varied.

### 3,460,395 FLUID MEASURING DEVICE

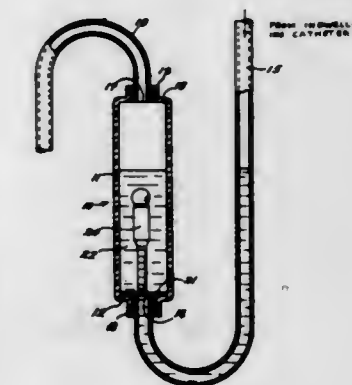
Joseph D. Shaw, 508 Church St., Brownsville, Pa. 15417

Filed Apr. 28, 1967, Ser. No. 634,608

Int. Cl. G01n 9/00

U.S. Cl. 73—440

9 Claims



An apparatus for continuously indicating the specific weights of urine specimens discharged from human patients through conventional indwelling catheters. The apparatus includes a sealed, fluid collecting vessel that has a restricted fluid inlet opening in the upper end and an air-tight connection between said opening and a flexible catheter tube. A restricted discharge opening is formed in the bottom of the vessel whereby a predetermined volume of fluid, less than the full capacity of the vessel, can be collected and retained in said vessel. A hydrometer means is freely contained in the vessel for immersion in the collected fluid and a sighting means is provided for the vessel to take direct readings on the hydrometer exteriorly of the vessel.

### 3,460,396 TUNING GYROMETER

René Fillod, Gérard Lallement, and Claude Oudet, Besancon, France, assignors to Société dite Jaz S.A., Paris, France

Filed Mar. 8, 1966, Ser. No. 532,646

Claims priority, application France, Mar. 10, 1965,

8,577

Int. Cl. G01p 15/02

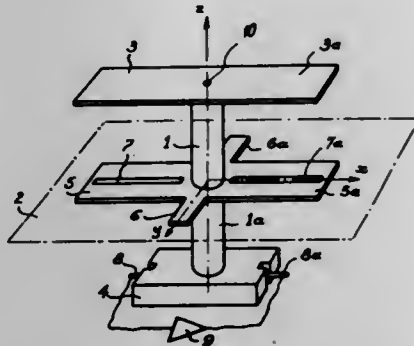
U.S. Cl. 73—505

11 Claims

A tuning gyrometer comprising a torsional tuning fork or oscillator and an H-shaped tuning fork. The H-shaped tuning fork has two sets of vibratory strips constituting



the arms of the H. One of the sets of strips being attached to the torsional tuning fork at an end of the torsional tuning fork and the second of the sets of strips being con-



nected at the nodal plane of the torsional tuning fork. At the other end of the torsional tuning fork there is an accelerometer.

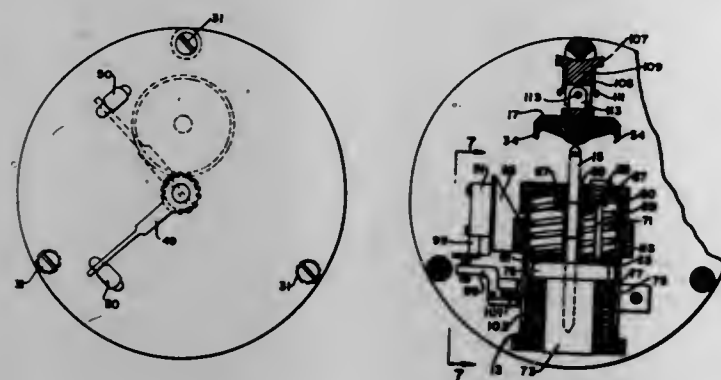
3,460,397

**MECHANICAL ACTUATOR**

John C. Johnson, Jr., Rockville, Jesse M. Madey, Hyattsville, Xopher W. Moyer, Lanham, and Dennis K. McCarthy, Laurel, Md., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration  
Filed Oct. 2, 1967, Ser. No. 672,383  
Int. Cl. F16h 21/54, 25/18

U.S. Cl. 74—100

12 Claims



This invention is a mechanical actuator wherein linear motion is changed to rotational motion. A plunger is rectilinearly moved by a suitable expansion and contraction means. Operably connected to one end of the plunger is a rocking beam attached to a shaft. The shaft rotates in one direction or the other depending upon the position of the rocking beam and the position of the plunger. In addition, an over center spring system is connected to the rocking beam so that a housing can be rapidly moved from one extreme position to an opposite extreme position.

3,460,398

**PNEUMATIC CLAMPING DEVICE**

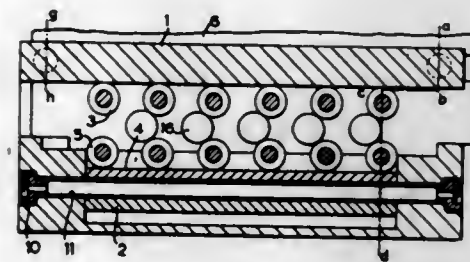
Karl Greve Jensen and John E. Larsson, both of 71 Lundtofteparken, Kongens Lyngby, Denmark  
Filed May 8, 1967, Ser. No. 636,969  
Int. Cl. F16h 21/44, 25/18

U.S. Cl. 74—110

6 Claims

A pneumatic clamping device consists of a housing and a slide movable lengthwise of the housing, the slide being disposed between the shallower sides of an inner U-section member, which in turn is disposed between the deeper sides of an outer U-section member fitted in the housing, an expandable bag between the bases of the U-section

members, upper and lower projections directed inwardly from the sides of the respective inner and outer U-section members, and intermediate projections directed outwardly from the sides of the slider, each to be nipped at one side by an upper projection and a lower projection when expansion of the bag moves the bases of the inner and outer



U-section members apart, the nipping resulting in propulsion of the slide lengthwise of the housing. Spring-urged pads projecting from the slider may be provided, to engage one side or other of projections in tracks in the housing, and accordingly to determine the direction of propulsion of the slide.

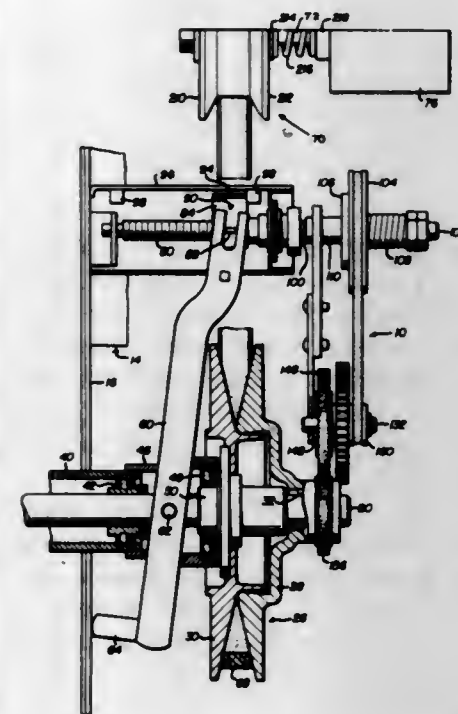
3,460,399

**CONTROL MECHANISM FOR VARIABLE RATIO DRIVE**

Amos O. Payne, Eldridge, Iowa, assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin  
Filed Oct. 25, 1967, Ser. No. 678,008  
Int. Cl. F16h 55/56

U.S. Cl. 74—230.17

13 Claims



A control mechanism for a variable ratio drive is provided for a work device, such as a farm implement having a rotatable cylinder, with the mechanism arranged for varying the speed of the cylinder. The mechanism includes an expansible pulley having a disk movable in opposite directions to control the effectiveness of a belt between the pulley and a second pulley. A movable arm cooperates with the expansible pulley and the movement of the arm is controlled by a pair of gears in permanent engagement with each other and tiltable to control the direction of movement of the arm. The gears may be controlled from a point remote therefrom and remote from the other parts of the operating mechanism.

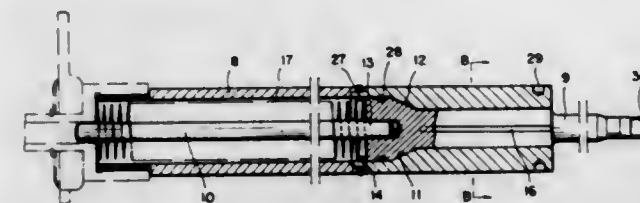
3,460,400  
**SHOCK ABSORBING STEERING WHEEL ASSEMBLY FOR A MOTOR VEHICLE**  
Masaharu Kubokawa, 3-11-8 Minaminagasaki, Toshima-ku, Tokyo, Japan

Filed Oct. 18, 1967, Ser. No. 676,326  
Claims priority, application Japan, June 19, 1967, 42/39,204

Int. Cl. B62d 1/18

U.S. Cl. 74—492

4 Claims



A steering column mainly consisting of two terminal shafts and a sleeve coaxially receiving a portion of one shaft in keyed connection permitting relative axial movement, but not relative rotation, the sleeve being fixedly fastened to the other shaft. A coil spring coaxially received between the sleeve and the portion of the first-mentioned shaft biases the shaft outward of the shaft into conforming engagement of axially tapering abutment faces on the shaft and on the sleeve during normal operation. Elevations and depressions give the inner peripheral portion of the spring a wavy configuration.

3,460,401

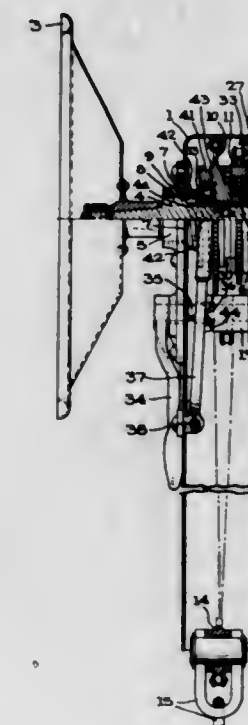
**HANDBRAKE MECHANISM**

Preston O. Robards, Roselle, Ill., assignor to Portec, Inc., a corporation of Delaware  
Filed Nov. 22, 1967, Ser. No. 685,115

Int. Cl. G05g 1/08; B66d 3/14

U.S. Cl. 74—508

11 Claims



A handbrake mechanism for railway rolling stock including a plurality of roller chain pulleys about which the operator chain is sheaved. Means are provided with one pulley to immobilize the pulley during the slack take-up phase of operation, which means are automatically actuated upon completion of the slack take-up to

permit rotation of the heretofore immobile pulley and provide a differential drive upon the operator chain.

3,460,402

**COUPLING MECHANISM**

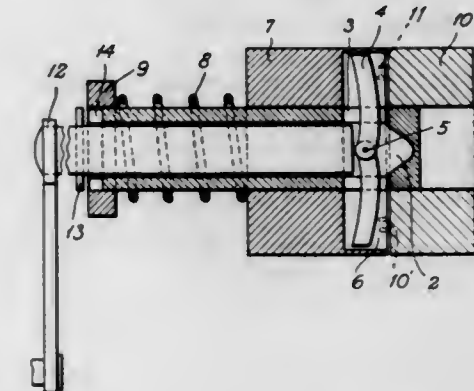
Georg Peter Christian Nielsen, Copenhagen, Denmark, assignor to Litollo A/S, Copenhagen, Denmark  
Filed Aug. 21, 1967, Ser. No. 662,063

Claims priority, application Denmark, Sept. 14, 1966, 4,748/66

Int. Cl. G05g 1/02; F02n 1/02

U.S. Cl. 74—548

8 Claims



A hollow shaft carries a non-rotatable, but axially displaceable driven coupling half part which normally is spring actuated in engagement with a driving coupling half part on the same shaft. The hollow shaft can receive a crank handle having carrier members adapted to cooperate with carrier members on the shaft, when the inner end of the handle has displaced the driven coupling into its disengaged position overcoming the action of the spring.

3,460,403

**GRATE GROOVE-FIELD**

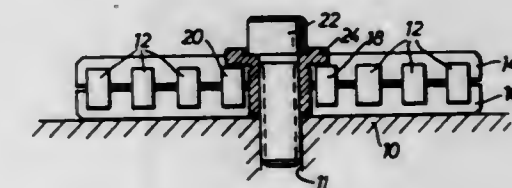
Jakob Wollenhaupt, Cologne-Bruck, Germany, assignor to Kurt Maecker, Dusseldorf, Germany  
Filed July 24, 1967, Ser. No. 655,399

Claims priority, application Germany, July 29, 1966, M 70,396

Int. Cl. F16h 53/00; B23b 39/00

U.S. Cl. 74—568

5 Claims



Structure forming a groove field for adjustable control cams and comprising bars in spaced parallel relation defining the grooves and notched support members engaging the bars and holding them fixedly in position.

3,460,404

**BRAKING DEVICES FOR DIFFERENTIAL GEARS OF MOTOR VEHICLES**

Leopold F. Schmid, 49 Pischekstr., 7 Stuttgart, Germany

Filed Sept. 20, 1966, Ser. No. 580,748

Claims priority, application Germany, Sept. 29, 1965, Sch 37,792

Int. Cl. F16h 1/44

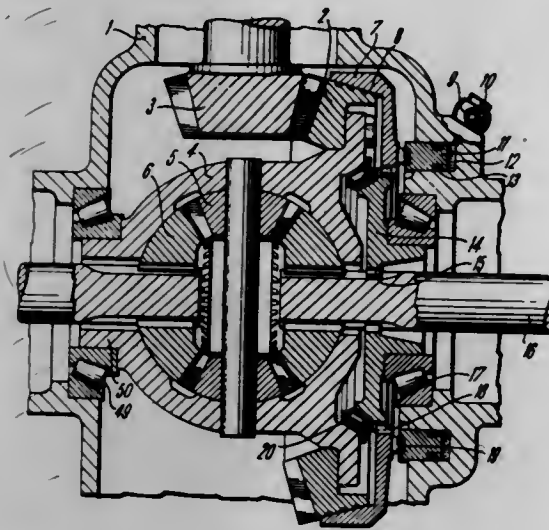
U.S. Cl. 74—710.5

6 Claims

A hydraulically actuated clutch is provided drivingly



between one wheel shaft and the differential gear housing, for blocking the differential gear arrangement. An anti-friction bearing is mounted between the movable



element of the clutch and an annular piston mounted within the axle casing. The hydraulic system is closed and includes an operated lever for selectively actuating the clutch.

3,460,405

## EPICYCLIC TRAINS

Norman C. Simmons, Lockwood, England, assignor to David Brown Gear Industries Limited

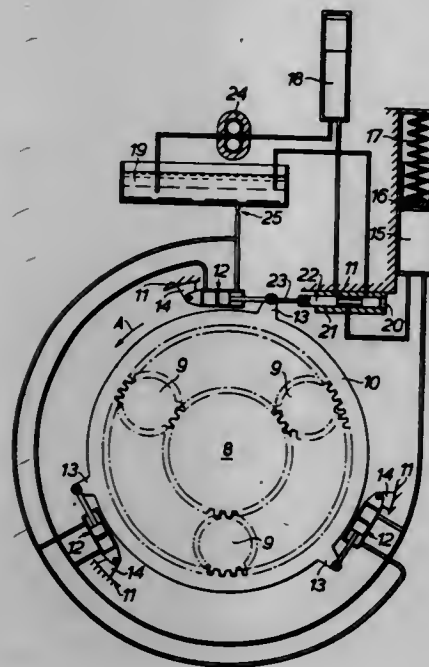
Filed July 17, 1967, Ser. No. 653,814

Claims priority, application Great Britain, Aug. 12, 1966, 36,165/66

Int. Cl. F16h 1/28, 57/00

U.S. Cl. 74—801

6 Claims



An epicyclic gear train has an annulus torsionally supported by three piston-and-cylinder assemblies. The supply of fluid to said assemblies is controlled by a valve which is operated by angular displacement of the annulus to allow fluid to flow to a master-cylinder and then to the assemblies to control the movement of the annulus. The master-cylinder incorporates a spring-loaded piston which allows limited angular displacement of the annulus with low torsional resistance thus reducing vibration.

### 3,460,406 AUTOMATIC CHANGE SPEED GEAR ARRANGEMENT FOR MOTOR VEHICLES

Siegfried Strohm and Erwin Pfisterer, Stuttgart-Stammheim, Germany, assignors to Firma Porsche KG, Stuttgart-Zuffenhausen, Germany

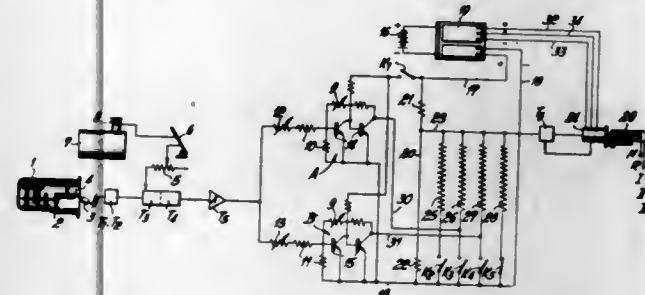
Filed July 25, 1967, Ser. No. 655,891

Claims priority, application Germany, Aug. 2, 1966, P 40,113

Int. Cl. B60k 19/16, 33/00

U.S. Cl. 74—866

8 Claims



A change speed gear arrangement for vehicles, particularly passenger motor vehicles, having an automatic electrical circuit for providing electrical shifting signals in dependence upon the vehicle speed and the engine load, wherein the electrical signal actuates a reversible motor for moving the mechanical gear changer. The automatic operation is manually overridable. The integrated speed and load signal is fed by a plurality of trigger devices, designed to fire at different ratio changes, respectively, to a bank of parallel resistances for providing control voltages to the reversible motor; the reversible motor having a feedback circuit for neutralizing the control voltage in dependence upon the rotational distance.

3,460,407

## BAND SAW SHARPENING DEVICE

Udo Vollmer, Biberach an der Riss, Germany, assignor to Vollmer Werke Maschinenfabrik G.m.b.H., Biberach an der Riss, Germany

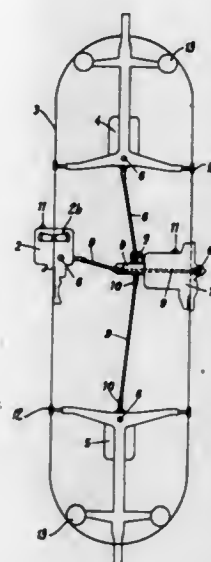
Filed Apr. 19, 1966, Ser. No. 543,714

Claims priority, application Germany, Apr. 22, 1965, V 17,513

Int. Cl. B23d 63/08

U.S. Cl. 76—37

5 Claims



Several separate band saw processing and guide units are arranged on a common base plane. Each unit comprises band-saw guide elements and a lifting spindle for adjusting the height of these guide elements above the base plate according to different widths of the saw. The position of the spindles is controlled simultaneously by a common reversible electromotor which is operatively

connected to the spindles by means of a number of radially arranged universal-joint shafts driven by the motor.

3,460,408

## DEPTH GAUGE

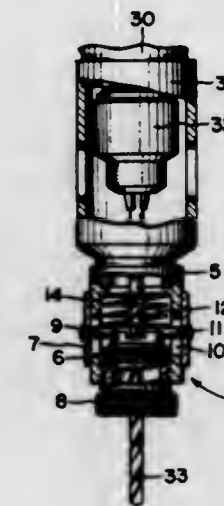
John G. Raymond, Bernardston, Mass., assignor to Millers Falls Company, Greenfield, Mass., a corporation of Massachusetts

Filed Mar. 14, 1967, Ser. No. 628,213

Int. Cl. B23b 47/60

U.S. Cl. 77—55

1 Claim



A depth gauge adaptor or stop for attachment to a power tool such as a screwdriver or drill to limit and prevent the tool from further approaching the work surface after the tool bit reaches a selected depth. The adaptor includes three pieces, a body, a stop tube adjustably threaded in the body to adjust to the selected depth and a lock ring slidably mounted on the body to lock the stop tube in an adjusted position.

3,460,409

## CHIP BREAKER FOR SPADE DRILL

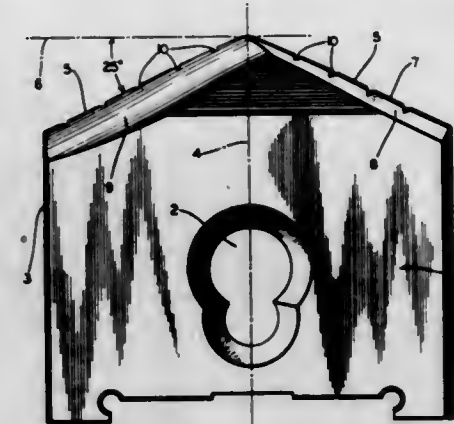
William H. Stokey, Cleveland, Ohio, assignor to Allied Machine & Engineering Corporation, Cleveland, Ohio, a corporation of Ohio

Filed May 10, 1967, Ser. No. 637,438

Int. Cl. B23b 51/02; B26d 1/12

U.S. Cl. 77—67

7 Claims



A chip breaker for a spade drill having V-shaped grooves in the cutting edge of the blade, the sides of each groove being located at a 90° angle to each other, one side of each groove being parallel to the axis and the outer edges of the drill blade and the other side being perpendicular to the axis. The grooves are so spaced in staggered relation to each other that those on each side of the center will be midway between those on the other side when cutting.

3,460,410  
REAMER

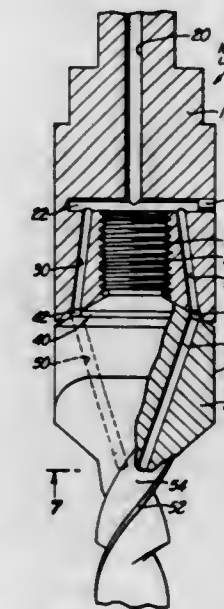
Franklin S. Briles, 6 Middlebridge Lane N., Rolling Hills, Calif. 90274

Continuation of application Ser. No. 392,808, Aug. 28, 1964. This application Aug. 7, 1967, Ser. No. 660,564

Int. Cl. B23b 51/06

U.S. Cl. 77—72

8 Claims



System for delivering coolant or lubricant along the cutting edges of a tapered reamer. The reamer and a threadedly connected spindle define an annular canal therebetween to which fluid is supplied through the spindle. Bores in the reamer body connect with and receive fluid from this canal regardless of the orientation between reamer and spindle, discharging the fluid into the upper ends of the reamer flutes generally lengthwise and with a radially inwardly directed component serving to hold fluid in the flutes along their lengths despite the covering reamer taper and centrifugal force.

3,460,411

## TAB TOP CAN OPENER

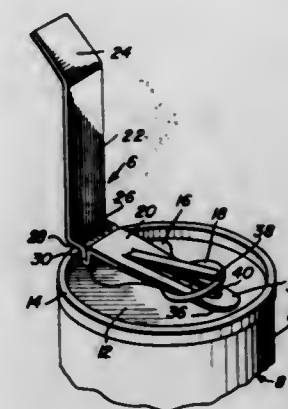
Virgil R. Dyer, R.F.D. 2, Arkansas City, Kans. 67005

Filed Sept. 28, 1967, Ser. No. 671,250

Int. Cl. B67b 7/00

U.S. Cl. 81—3,34

5 Claims



A simple one-piece L-shaped hand tool for repeated use and having integral self-contained means for releasably engaging the lifting ring of a can top opening tab. One limb provides a lever, has a piloting tip and a finger to catch hold of the ring and lift it simultaneously with the tab. The other limb provides a handle. The lever adjacent the junctional heel-like portion has a fulcruming, position setting bead abutting rib. In use, engage the lever and finger, set the rib against the bead, and pull down on the handle.



### 3,460,412 TOOL-CHANGING DEVICES FOR MACHINE TOOLS

Rolf Clausen and Günter Kleimhagen, Hamburg, and Ernst Salje, Bendestorf, Germany, assignors to Heldenreich & Harbeck, Hamburg, Germany, a corporation of Germany

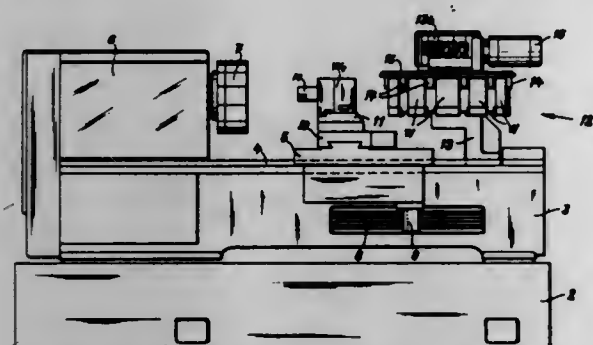
Filed Sept. 19, 1966, Ser. No. 580,256

Claims priority, application Germany, Sept. 22, 1965, H 57,229

Int. Cl. B23b 3/00, 7/00, 9/00

U.S. Cl. 82—2

6 Claims



A tool-changing apparatus for machine tools and more particularly lathes in which a part carrying a tool post for a tool holder is displaceable on a guide, with a separately arranged magazine having a movable storage part adjustable according to a predetermined program with a plurality of detachably mounted tool holders for the storage part and with each of the tool holders being removable from or replaceable in the appropriate position in the magazine by a displacement in the direction in which the part is guided and the tool holder in the course of relative movement between the part and the storage part of the magazine capable of being lifted from the tool post are placed thereon and the tool holder and tool post including complementary interengaging teeth for locating the tool holder on the tool post.

### 3,460,413 CRANKSHAFT LATHE

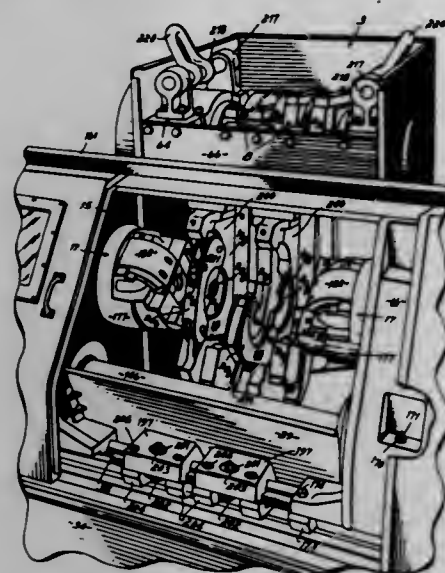
Otto Hermann, Cincinnati, Ohio, assignor to The R. K. Le Blond Machine Tool Co., Cincinnati, Ohio, a corporation of Delaware

Filed Aug. 27, 1965, Ser. No. 483,242

Int. Cl. B23b 5/18, 3/36

U.S. Cl. 82—9

18 Claims



The disclosure resides in a crankshaft lathe for turning the crankpins of a crankshaft by moving the cutting tools in orbits corresponding to the orbital motion of the crankpins as the crankshaft is rotated. The machine is intended for machining different types and sizes of crankshafts by the use of interchangeable tool packages, each package including master crankshafts, tool carriers and cutting tools for machining a particular type of crankshaft.

### 3,460,414 CONTROL LINKAGE FOR A FEED DRIVE OF A LATHE

Max Anderes, Baar, Switzerland, assignor to Oerlikon-Bührle Holding Ltd., Zurich, Switzerland

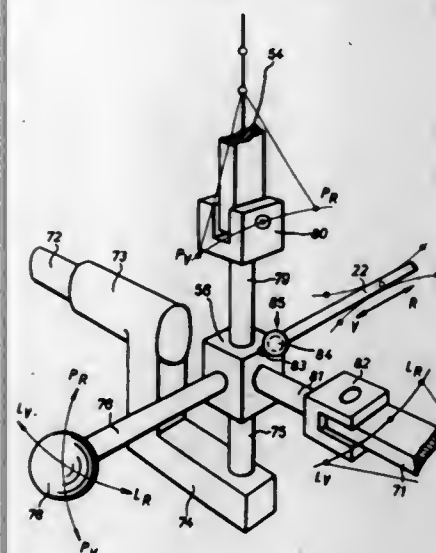
Filed Apr. 3, 1967, Ser. No. 627,775

Claims priority, application Switzerland, Apr. 15, 1966, 5,508/66

Int. Cl. B23b 21/00

U.S. Cl. 82—22

5 Claims



A control arrangement is provided for the feed drive of a lathe equipped with longitudinal and cross slides which comprises a first clutch for the longitudinal slide and a second clutch for the cross slide, as well as a reversing gear for reversing the direction of rotation of a common drive shaft for the feed of the longitudinal slide and cross slide. Each clutch and the reversing gear can be actuated selectively by means of a single hand lever so that the longitudinal slide or the cross slide travels forwardly or backwardly.

### 3,460,415 PROCESS AND DEVICE FOR MAKING STATOR AND ROTOR PLATES FOR ELECTROMOTORS OF LIMITED SIZE

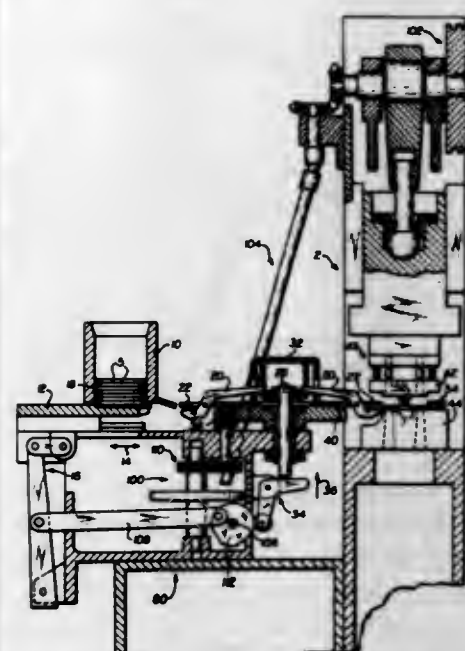
Christian Philipp, Dresden, Germany, assignor to VEB Elektromaschinenbau Sachsenwerk, Dresden-Niedersedlitz, Germany

Filed Nov. 12, 1965, Ser. No. 507,438

Int. Cl. B26d 5/20, 7/06

U.S. Cl. 83—27

14 Claims



Process and device for making stator and rotor plates for small electric motors, wherein the starting workpieces are punched out, preferably in a staggered cutting system,

to final outer dimensions of the stator plates, the workpieces being fed along a circular path to simultaneously operated punching units disposed about a transporting turret having a number of individually pivotable grippers for the starting and the intermediate plates. Simultaneously but at different punching stations, notches and apertures are cut out for both kinds of plates, preferably together with a central aperture serving for the centering of the intermediate plates.

cutting blade holder. Adjustment of the position of the cam element controls the distance between the shaft and the bearing point and thus the distance between the specimen and the cutting blade.

### 3,460,418 CLEANER DEVICE FOR CLEANING RESIDUE FROM THE CUTTING EDGE OF A ROTARY DISC TYPE CUTTER

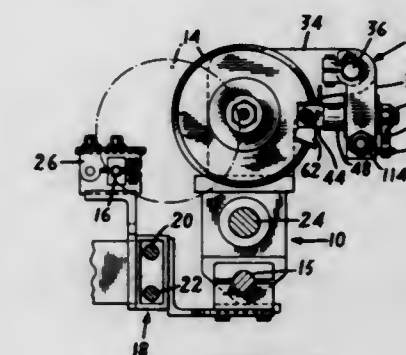
George L. Mathe and Floyd G. Boothe, Jr., Richmond, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia

Filed Sept. 5, 1967, Ser. No. 665,584

Int. Cl. B26d 7/08

U.S. Cl. 83—168

13 Claims



A cleaner device for cleaning residue from surfaces adjacent the cutting edge of a rotary disc cutter wherein a pair of cleaner blades are carried on a mounting block supported adjacent the cutting edge of the disc cutter, the cleaner blades being carried in a blade holder which is rotatably mounted in the mounting block with the cleaner blades extending alongside opposite faces of the disc cutter. Each of the cleaner blades has a dressing edge thereon with the dressing edges normally being held out of contact with corresponding faces of the disc cutter. When the blade holder is rotated in either of two opposite directions, the dressing edges of the cleaner blades are moved into contact with the corresponding faces of the disc cutter along the surfaces thereof adjacent the cutting edge and remove any buildup of residue adhering thereto consequent from the cutting operation. The device includes a biasing member which normally maintains the dressing edges out of contact with the disc cutter faces, and which functions to return same to a non-cleaning position after release of the rotative force applied to the blade holder for effecting cleaning.

### 3,460,416

#### FIBRILLATION METHOD

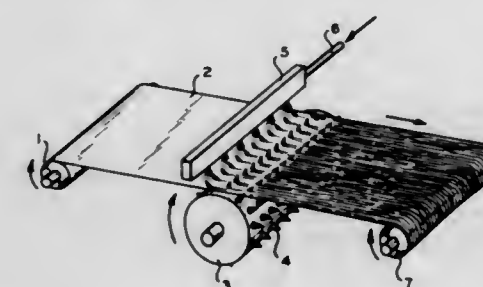
Dixie E. Gilbert, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 11, 1967, Ser. No. 666,693

Int. Cl. B26f 1/24, 3/00; B26d 7/08

U.S. Cl. 83—30

7 Claims



A fibrillatable film is fibrillated by passing the film past a plurality of piercing means and impinging a fluid against said film to cause said piercing means to at least partially penetrate said film.

### 3,460,417

#### MICROTOME

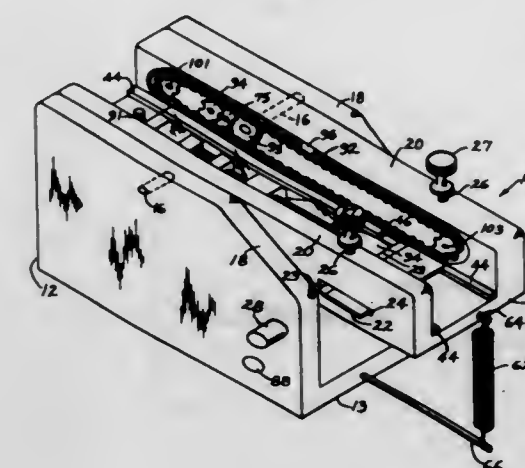
Leighton Clifford Johnson, Westmont, Ill., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

Filed July 17, 1967, Ser. No. 654,675

Int. Cl. B26d 7/06

U.S. Cl. 83—111

13 Claims



A microtome apparatus is described wherein a relatively stationary cutting blade cuts portions from a rotating specimen. Spacial rigidity between the specimen and the blade and accuracy of cutting thickness are obtained by holding a cam element between the shaft of the rotating specimen holder and a bearing point held by the

### 3,460,419

#### TIRE CUTTING APPARATUS

Charles Earl Branick, Fargo, N. Dak., assignor to Applied Power Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Aug. 30, 1967, Ser. No. 664,521

Int. Cl. B23d 21/04

U.S. Cl. 83—185

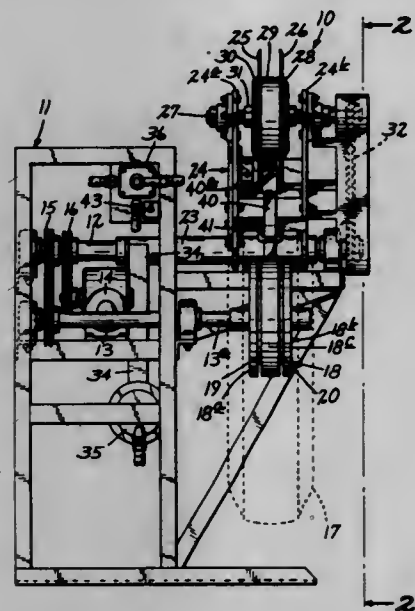
13 Claims

Apparatus for cutting the side walls away from the crown portion of a scrap tire. The scrap tire is supported by a rotating wheel that is small enough to fit into the central openings of the tire and between the inner side walls of the tire. The tire thus hangs on the wheel with the upwardly facing surface of the wheel lying adjacent the downwardly facing inner crown surface of the tire. A pair of spaced circumferential grooves are formed in the surface of the wheel. A pair of rotating circular knives are mounted for movement toward and away from the surface of the wheel. In the operative tire cutting position, the wheel and knives are rotated in the same direction and the knives are forced through the tire into the



correspondingly positioned grooves. The inner crown surface of the tire frictionally engages the surface of the

one an air cylinder connected to the carriage by a flat bar and the other a pair of cylindrical rolls engaging opposite sides of the bar and timed to rotate synchronously with the flying work to control the speed of the carriage.



wheel and is rotated therewith while the knives cut the crown away from the side walls of the tire.

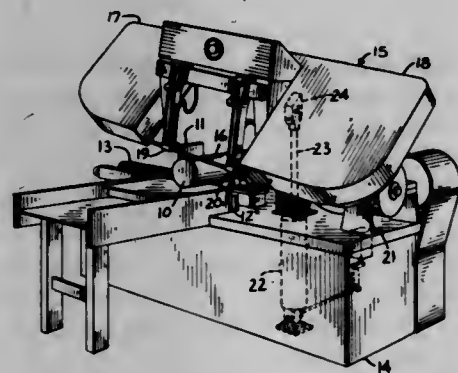
3,460,420

#### FEED PRESSURE CONTROL SYSTEM FOR HINGE TYPE HORIZONTAL BANDSAW

Henry Komendowski and Frederick J. Blum, Jr., Chicago, Ill., assignors to Armstrong-Blum Manufacturing Company, Chicago, Ill., a corporation of Illinois  
Filed Sept. 19, 1966, Ser. No. 580,262  
Int. Cl. B26d 1/54

U.S. Cl. 83-201.07

5 Claims



A hinge-type horizontal bandsaw having a control system for automatically compensating for the variations in gravitational forces acting on the saw head as it is tilted about its hinge point, so as to maintain a substantially constant feed pressure during the feeding movement of the saw head. The tilting movement of the saw head is controlled by a hydraulic cylinder which is pivotally mounted, and a compensating valve in the hydraulic system responds to the pivotal movement of the head cylinder so as to vary the hydraulic pressure within the head cylinder in accordance with variations in the gravitational forces.

3,460,421

#### POWER DRIVE FOR MACHINE ELEMENTS

Alexander Borzym, 6841 Oakman Blvd., Dearborn, Mich. 48126

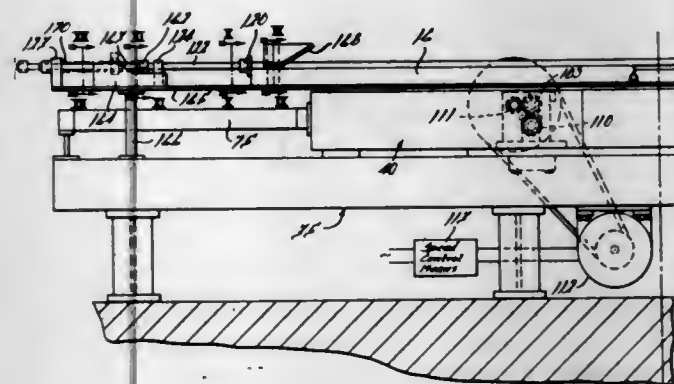
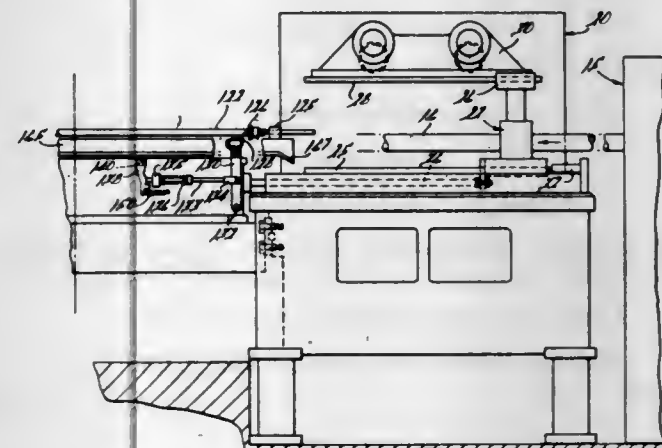
Filed Sept. 1, 1966, Ser. No. 576,733

Int. Cl. B23d 59/00, 45/20

U.S. Cl. 83-311

11 Claims

An accelerator for the carriage of a machine for cutting work on the fly is powered by two driving means,



At a start position the bar is slightly displaced longitudinally from driving engagement with the rolls and latched against movement toward the rolls but the air cylinder is charged and urging the bar toward the rolls.

3,460,422

#### BOTTLE PUNCTURING APPARATUS

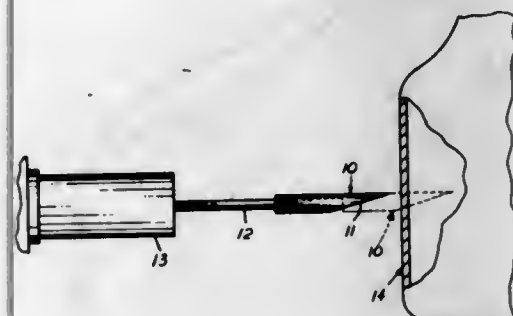
Robert L. Bailey, Spokane, Wash., assignor to National Distillers and Chemical Corporation, New York, N.Y.

Filed June 6, 1966, Ser. No. 555,373

Int. Cl. B26d 5/20

U.S. Cl. 83-370

4 Claims



A tubular knife with oblique cutting edge is projected by a power cylinder into the wall of a plastic container such as a plastic milk bottle in order to render the bottle, which has been detected to have contaminating gas therein, unsuitable for refilling by vacuum operated filling machine.

3,460,423

#### SHEARING MACHINE

Masahiro Hayashi, Hitachi-shi, and Shinkichi Goto, Kitakyushu-shi, Japan, assignors to Yawata Iron & Steel Co., Ltd., and Hitachi Limited, both of Tokyo, Japan

Filed Dec. 22, 1966, Ser. No. 603,867

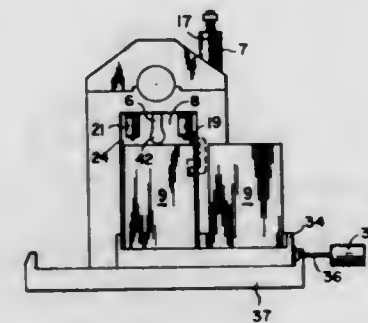
Claims priority, application Japan, Dec. 22, 1965,

40/78,560

Int. Cl. B26d 5/42, 5/08

U.S. Cl. 83-390

12 Claims



The present disclosure relates to a shearing apparatus having a main housing unit and a cutter unit mounted for easy removal within the main housing unit. The main housing unit contains power means for driving the cutter and releasable means for locking the cutter unit with respect to the main housing. When it is desirable to change cutters, for example, the cutter unit is released and removed from the main housing unit and replaced with another cutter unit. The power units and the like for the cutter unit are engaged and disengaged when the cutter unit is assembled and disassembled, respectively, with respect to the main housing unit. Preferably, the movable cutter reciprocates and carries a work clamp, and the main housing unit carries the releasable means.

3,460,424

#### CHORD-STRIKING Mallet

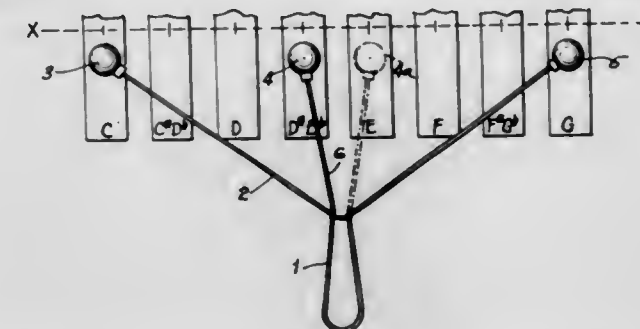
Richard I. Tepper, Niles, Ill., assignor to Scientific Music Industries, Inc., a corporation of Illinois

Filed Aug. 11, 1967, Ser. No. 659,932

Int. Cl. G10d 13/08

U.S. Cl. 84-404

1 Claim



A mallet for striking a plurality of bells, or other tone-making devices, with one stroke of the mallet to create a chord. The mallet comprises at least three striking heads affixed to a handle, which striking heads are in spaced relationship and coplanar with each other in an asymmetrical arrangement. The mallet can be used with bells which are arranged in such a way as to permit the mallet to strike different chords by rotating it about the handle axis. Typically, the arrangement of the striking heads of the mallet is linear and asymmetrical, so that a rotation of the mallet by 180 degrees about its handle

axis will cause the striking heads to assume a different configuration with respect to a linear arrangement of bells, and different chords can be struck.

3,460,425

#### ELECTRICALLY OPERATED MUSICAL DEVICE

Paul Edwin Kiepe, Riggins, Idaho

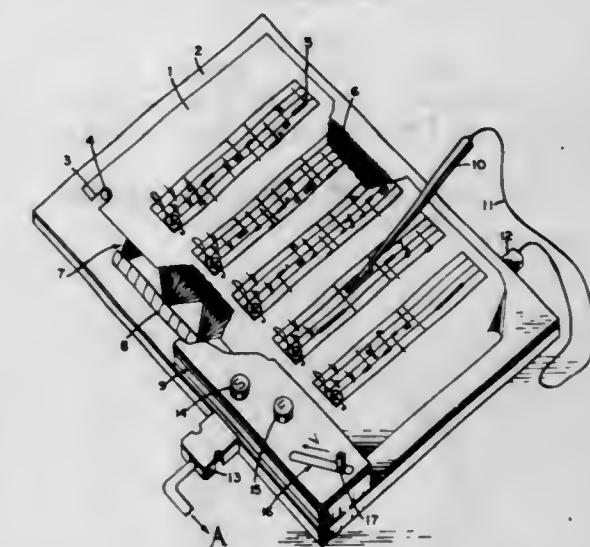
(113 Village Lane, Boise, Idaho 83702)

Filed Apr. 4, 1966, Ser. No. 539,815

Int. Cl. G09b 15/00

U.S. Cl. 84-470

4 Claims



This invention relates to electrically operated musical devices of the class that provides the performer a musical score sheet with note heads perforated in such manner that the performer, by inserting a metallic wand serially through each perforation to metallic connecting bars beneath, brings about the utterance of prescribed musical compositions in tones supplied by an interconnected electrical oscillator-loudspeaker arrangement.

3,460,426

#### MUSIC TEACHING APPARATUS

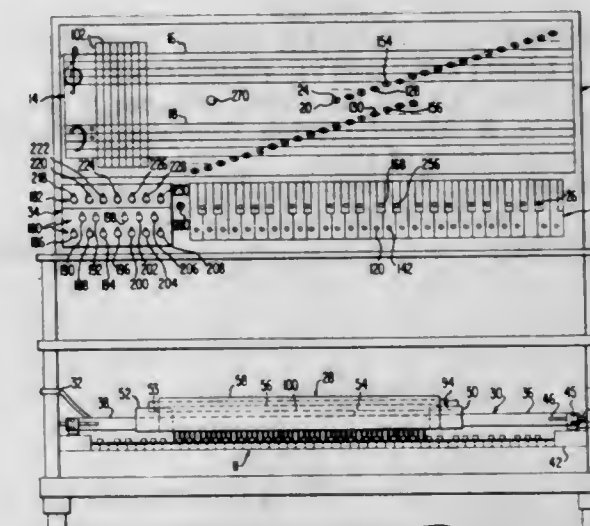
Harald K. Jensen, Rowan, Iowa (348th Comb., Sup. Gp., Box 136, APO San Francisco, Calif. 96529)

Filed May 19, 1967, Ser. No. 643,796

Int. Cl. G09b 15/08

U.S. Cl. 84-478

17 Claims



Apparatus for teaching music includes an improved control switch arrangement adapted to be operatively associated with the keyboard of a musical instrument, a display panel depicting a series of distinctive musical tone positions, electric lamps for illuminating the tone positions, and circuitry electrically connecting the control switch and the lamps. By manipulating the keys on the



keyboard of the musical instrument, the lamps corresponding to the individual keys are energized to illustrate various musical concepts. The control switch arrangement can be selectively operated to maintain the corresponding lamps in the energized condition upon release of the depressed key, or to deenergize the corresponding lamps upon release of the key. Selector switch means and circuitry are disclosed whereby, in any musical key signature, the corresponding lamps can be energized upon depression of a given key. A plurality of triangular boxes may be provided on the display panel for illustrating changes in musical key signature.

3,460,427

## RETAINING RING

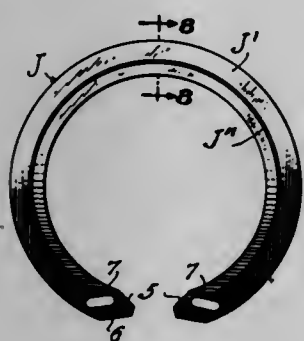
Morton Z. Baumgarten, Elizabeth, N.J., assignor, by mesne assignments, to Charter Wire, Inc., a corporation of Wisconsin

Filed Aug. 3, 1967, Ser. No. 658,228

Int. Cl. F16b 21/06

U.S. Cl. 85—8.8

3 Claims



A split spring ring formed of drawn flat wire, has its inner and outer peripheries concentric and is of oblong rectangular cross-section throughout its periphery and has beveled ends providing for use of the ring either in an outside groove of a shaft or an inside groove in a housing with a minimum of distortion, for holding machine parts, for example gears, bearing races and pulleys, against axial displacement on the shaft or in the housing, and the ring has slots adjacent its ends oblique to said peripheries to coact with the fingers of tools to spread or contract the ring when it is used in an outside groove or an inside groove, respectively.

3,460,428

## THREADED FASTENER WITH TORQUE LIMITING DRIVE PORTIONS

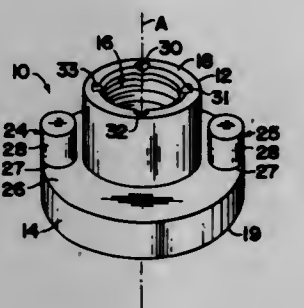
James F. Charles, La Palma, Calif., assignor to The National Screw & Manufacturing Company, Cleveland, Ohio, a corporation of Ohio

Filed Mar. 7, 1968, Ser. No. 711,435

Int. Cl. F16b 31/00, 33/04

U.S. Cl. 85—61

4 Claims



An internally threaded fastener including a cylindrical portion having an integral flange portion at one end thereof with a plurality of tool-engageable projections of predetermined strength extending from the flange por-

tion in spaced relationship with the cylindrical portion, for transmitting limited rotational driving or setting force to the fastener.

3,460,429

## EXPANSIBLE FASTENER WITH EXPANDER THEREFOR

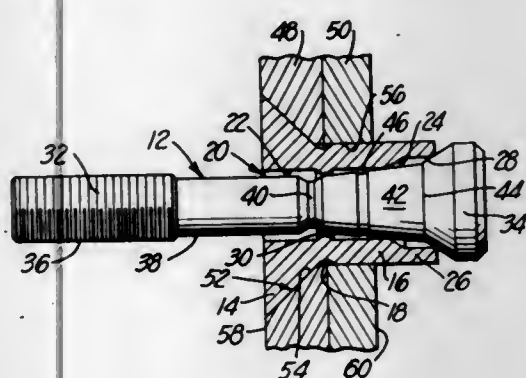
Jack La Torre, 13 Rivo Alto Canal, Naples, Long Beach, Calif. 90803

Filed Apr. 19, 1967, Ser. No. 631,946

Int. Cl. F16b 13/04, 19/08, 33/04

U.S. Cl. 85—78

3 Claims



A malleable titanium alloy fastener, specifically heat treated, has a sleeve extending through a member for upset to clamp the member. A fastener expander is positioned within a sleeve bore and is movable axially relative to the sleeve, wherein an expander end mandrel causes the sleeve upset, while simultaneously, a mandrel tapered stem causes direct radial expansion of the sleeve and member internally of the member over a progressively increasing axial distance, work hardening surfaces of the sleeve and member. During the sleeve and member radial expansion, a radial interengagement is formed between the sleeve and expander for trapping the mandrel supporting the sleeve.

3,460,430

## ROCKET LAUNCHING

William Toby Fisher, Banwell, Weston-super-Mare, Somerset, England, assignor to Bristol Aerojet Limited, Somerset, England, a British company

Continuation-in-part of application Ser. No. 521,095,

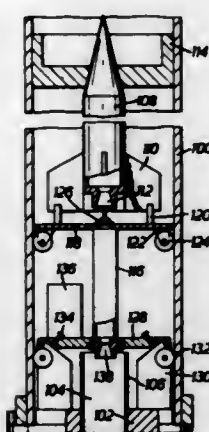
Jan. 17, 1966. This application Apr. 22, 1968, Ser.

No. 730,674

Int. Cl. F41f 3/04

U.S. Cl. 89—1.818

8 Claims



A rocket launcher comprising a tube containing a main rocket and a booster assembly having a booster rocket motor and a piston member secured to the booster rocket motor, the tube having a rear wall with an aperture therethrough.

3,460,431

## TOOL FEEDING AND RELIEVING MEANS FOR GEAR FORMING MACHINE

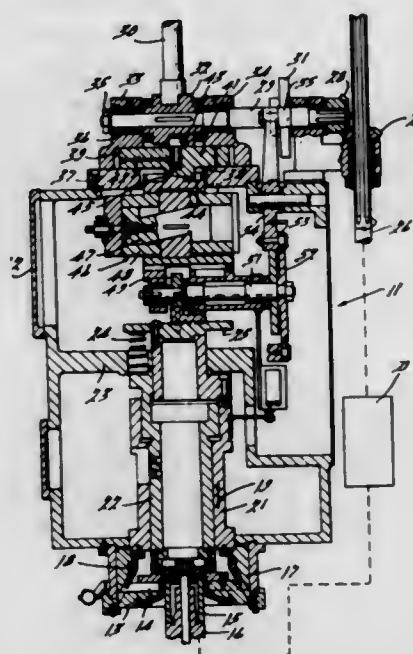
Edward S. Birch, Harper Woods, Mich., assignor to Michigan Tool Company, Detroit, Mich., a corporation of Michigan

Filed Oct. 20, 1967, Ser. No. 676,838

Int. Cl. B23f 9/04, 9/06

U.S. Cl. 90—10

4 Claims



A gear forming machine having a vertically reciprocable workpiece and radially reciprocable cutting tools movable toward and away from the workpiece. A drum-like tool relief cam horizontally reciprocates a wedge which vertically reciprocates a feed cone and retractor ring for the cutting tool. The tool relief cam is so shaped that the cutting tools will be adjusted during the cutting stroke of the workpiece to create crowned, tapered or runout teeth.

3,460,432

## SHEET METAL AND PLATE DEBURRING MACHINE

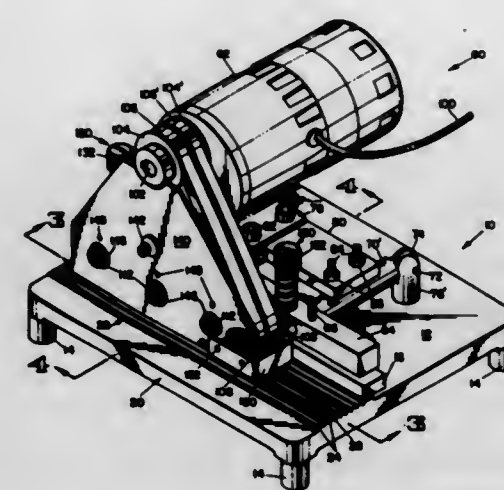
Henry Persson, 224 Glenwood Ave., Bloomfield, N.J. 07003

Filed Jan. 19, 1967, Ser. No. 610,395

Int. Cl. B23d 41/06; B27c 5/00; B27b 5/00

U.S. Cl. 90—86

14 Claims



Apparatus for deburring the edges of a workpiece by means for driving the workpiece into and along a corner defined by a workpiece supporting work surface and an upstanding guide with a tool being disposed angularly relative to the two corner-defining elements and inter-

secting the corner so that a corner of the workpiece is operated upon as the workpiece is driven through the apparatus from a leading side to a trailing side.

3,460,433

## PANTOGRAPH COPY MILLING MACHINE HAS A STRUCTURE COUNTERBALANCED FOR VERTICAL MOVEMENT

Arrigo Pecchioli, Via di Scandicci 223, Florence, Italy

Filed Jan. 31, 1967, Ser. No. 612,978

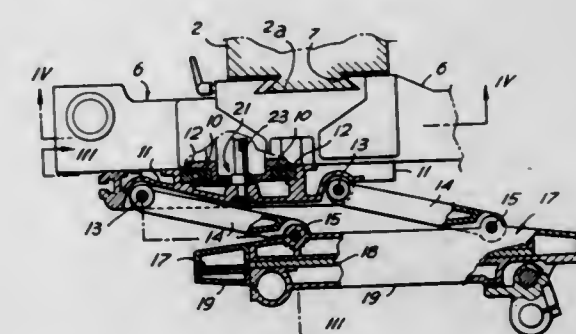
Claims priority, application Italy, Feb. 4, 1966,

2,493/66

Int. Cl. B23c 1/16, 1/18; B23b 47/26

U.S. Cl. 90—13.1

12 Claims



A pantograph copy milling machine has a structure counterbalanced for vertical movement with respect to a column mounted on the machine base. The structure in turn has a pantograph assembly counterbalanced for vertical movement with respect to said structure wherein the means for counter balancing the pantograph assembly includes a spring.

3,460,434

## FULLY AUTOMATIC ELECTRIC CONTROL FOR CHIP-REMOVING MACHINE TOOLS

Kurt Maecker, Kreuzstr. 34, Dusseldorf, Germany

Filed Sept. 15, 1966, Ser. No. 579,593

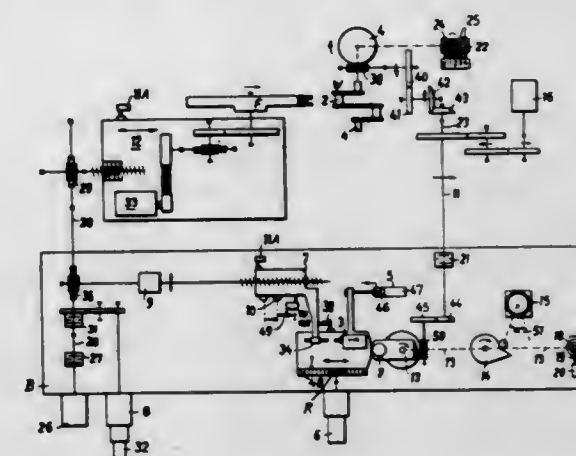
Claims priority, application Germany, Sept. 16, 1965,

M 66,654

Int. Cl. B23c 1/18

U.S. Cl. 90—13.4

27 Claims



An electric control system for a templet controlled machine tool in which a work piece spindle supports and rotates a work piece while a templet on a templet spindle is rotated in unison with the work piece. A single adjustable speed electric motor drives the said spindles.

A tool carriage carrying a tool for operating the work piece is driven together with a templet follower carriage by a fast traverse electric motor and an adjustable speed electric feed motor. The carriages are driven rapidly toward and away from the work by the fast traverse motor and as the tool approaches the work piece, the drive



shifts to the feed motor. While the feed motor drives the carriages, the speed of the templet carriage is detected and the speed of the feed motor is adjusted to hold the detected speed substantially constant.

The speed of the spindle drive motor is adjusted by a cam in conformity with the angular rotation of the spindles.

3,460,435

**HEAVY MACHINE TOOL**

Helmut Hucks, Monchen-Gladbach, and Fritz Noa and Julius Dahl, Rheydt, Germany, assignors to Maschinenfabrik Froriep G.m.b.H., Rheydt, Germany, a corporation of Germany

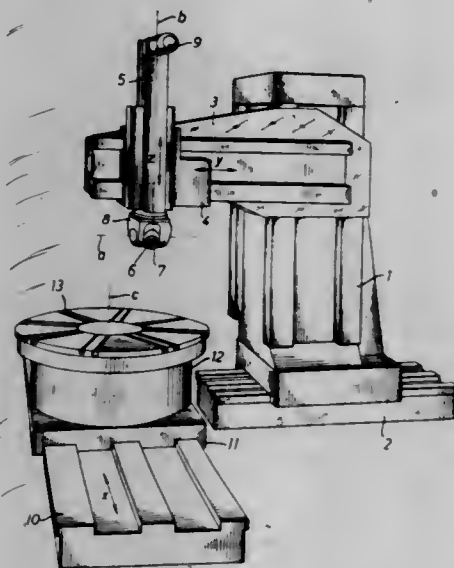
Filed May 8, 1967, Ser. No. 636,792

Claims priority, application Germany, Oct. 31, 1966, M 71,513

Int. Cl. B23c 1/06

U.S. Cl. 90—15

1 Claim



A heavy machine tool is adapted for treating three-dimensionally curved surfaces by the use of numerical steering providing movements between workpiece and tool in relation to at least five different axes; the machine tool having a face plate or fixing table for the workpiece and a tool carrier adapted to hold a fixed tool and a rotary tool, one of said movements being an angular movement of the rotary tool.

3,460,436

**HYDRAULIC REGULATING SYSTEM AND APPARATUS**

Michio Takeda, Toyonaka, Japan, assignor of twenty percent to I. Jordan Kunik, New York, N.Y.

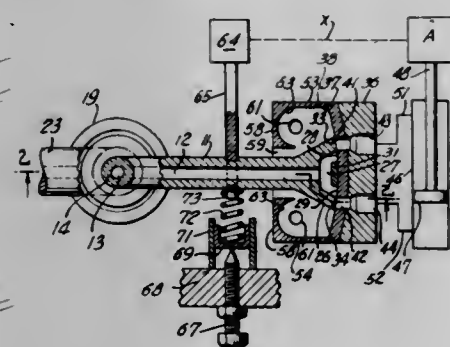
Filed May 24, 1967, Ser. No. 641,021

Claims priority, application Japan, May 26, 1966, 41/33,907

Int. Cl. F15b 13/02, 5/00; G05d 16/00

U.S. Cl. 91—3

12 Claims



Jet pipe hydraulic regulating system and apparatus wherein hydraulic fluid is transmitted to respective sides

of a work piston as result of direct sensitive interaction between fluid jet stream and fluid receiving ports, thereby dispensing with intermediate four-way valve or the like.

3,460,437

**ROTARY FLUID DISPLACEMENT MACHINE WITH UNITARY END PLATE AND BEARING CONSTRUCTION**

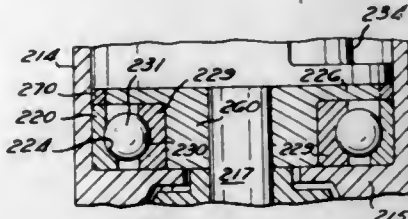
Earl G. Roggenburk, 4120 Behrwald Ave., Cleveland, Ohio 44109

Continuation-in-part of application Ser. No. 419,799, Dec. 21, 1964. This application Jan. 3, 1967, Ser. No. 606,720

Int. Cl. F01c 1/00, 21/12; F16c 19/14

U.S. Cl. 91—58

2 Claims



A rotary fluid displacement machine, such as an air motor or a pump, having a rotatable end plate at each end of the rotor which is attached to the inner race of the anti-friction bearing there. An annular spacer extends around the periphery of the end plate and is engaged axially between the outer race of the anti-friction member and a stationary liner which receives the rotor.

3,460,438

**POWER ASSIST MECHANISM FOR FLUID CONTROL VALVES**

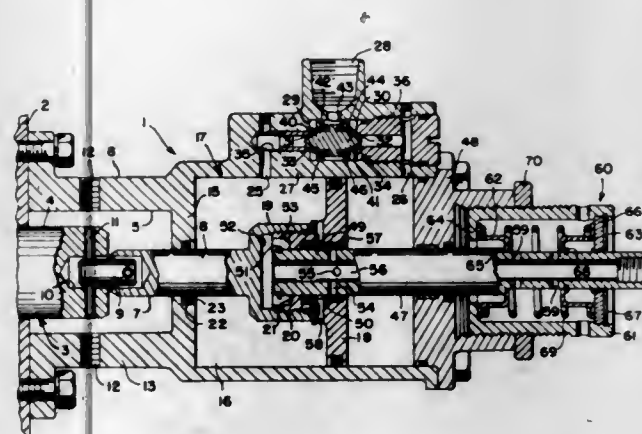
Phillip E. Robinson, Wickliffe, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Aug. 24, 1967, Ser. No. 663,037

Int. Cl. F15b 9/10, 13/042; G05d 11/00

U.S. Cl. 91—376

12 Claims



A power assist mechanism including a piston-cylinder assembly operatively connected to a spool valve and the like for assisting movement of the spool valve in response to fluid being supplied to one or the other end of the piston-cylinder assembly. A flow sensitive shuttle valve automatically blocks the flow of fluid to whichever end of the piston-cylinder assembly is connected to exhaust whereby there is no working fluid loss during stroking.

3,460,439

**DUAL CONTROLLED SERVOMOTOR**

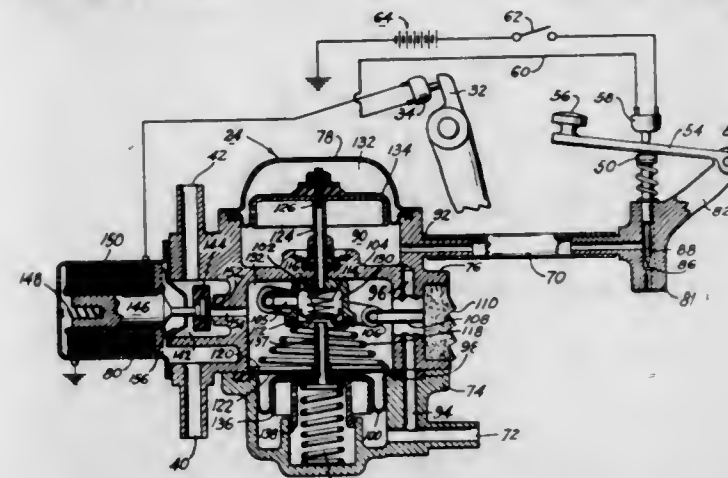
Maxwell L. Cripe, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware

Filed Feb. 24, 1967, Ser. No. 618,537

Int. Cl. F15b 11/14, 13/044

U.S. Cl. 91—427

4 Claims



A fluid pressure servomotor having a movable wall controlled by valve means including an internal valve and an external valve controlled remotely by a member connected thereto by a force multiplying means.

3,460,440

**HYDRAULIC BY-PASS VALVE ASSEMBLY**

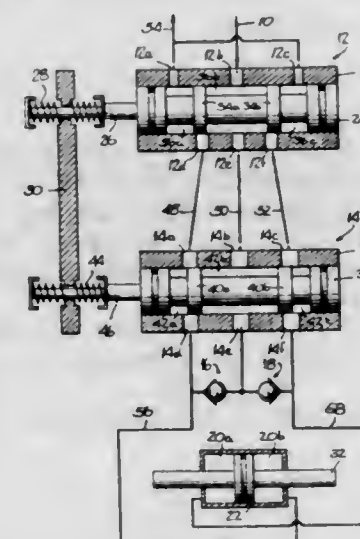
Robert G. Brent, Arlington, Tex., assignor to Bell Aerospace Corporation, Wheatfield, N.Y., a corporation of Delaware

Filed Oct. 30 1967, Ser. No. 678,985

Int. Cl. F16b 13/04, 13/10

U.S. Cl. 91—447

7 Claims



The embodiment disclosed in the following specification illustrates a by-pass valve connected between a servo-valve and a hydraulic actuator. Even though the spool of the by-pass valve is coupled to a pilot's control stick in the same fashion as is the spool of the servo-valve, the porting arrangement on the by-pass valve is such that during normal operation the by-pass valve does not change the relationship between the servo-valve and the hydraulic actuator. However, if the spool of the servo-valve is jammed in any position, the porting conditions of the by-pass valve may be changed by virtue of pilot manipulations of the control stick so as to prevent hydraulic lock when the pilot mechanically engages and actuates the piston rod of the hydraulic actuator. Two check valves are connected across the ports of the by-pass valve to cooperate with the action of the by-pass valve in permitting fluid by-pass from one side of the hydraulic actuator to the other side of the hydraulic actuator through one or the other of the check valves and through the by-pass valve thereby avoiding the hydraulic lock condition. There

is also disclosed a technique to provide irreversibility in connection with the by-pass arrangement so as to isolate the pilot's control stick from external forces which may be applied to the actuator and thus transmitted through the hydraulic system.

3,460,441

**THERMOPLASTIC BAG MANUFACTURING APPARATUS**

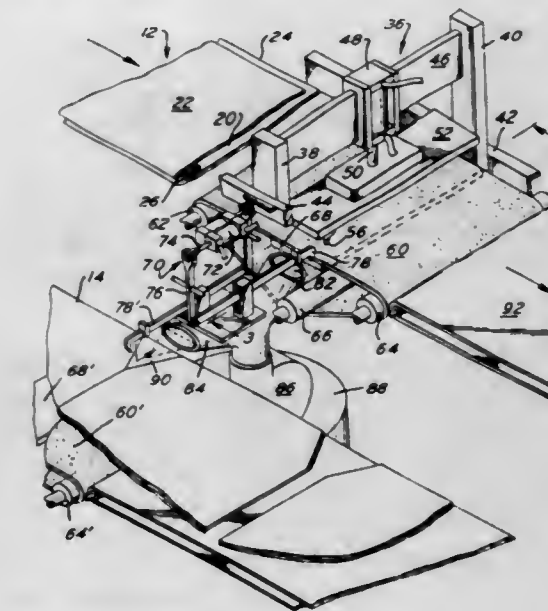
Francis A. Davis, Jr., Lansdale, Pa., assignor to Paramount Packaging Corp., Chalfont, Pa., a corporation of Delaware

Filed Nov. 28, 1967, Ser. No. 686,202

Int. Cl. B31b 49/04, 1/14, 1/64

U.S. Cl. 93—8

5 Claims



Thermoplastic bag manufacturing apparatus wherein bags are formed by cutting an overlapping web having a gusset along the fold line at spaced points along the web. The cutting of the web into bags is accomplished by a heated knife which has a generally Y-shape. Everytime a bag is cut, a cut-out tab is formed and means are provided for removing the tabs.

3,460,442

**BOX WRAPPING MACHINES**

Albert Henry Williams, Stanton-on-the-Wolds, and Reinhard Vitols, New Basford, England, assignors to Caledex Machine Company Limited

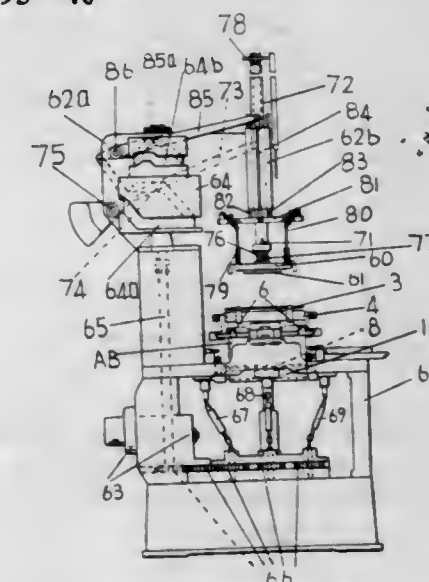
Filed Oct. 28, 1965, Ser. No. 513,141

Claims priority, application Great Britain, Oct. 29, 1964, 44,078/64

Int. Cl. B31b 15/26, 11/00

U.S. Cl. 93—40

5 Claims



A box wrapping machine for applying an outside wrapping to flanged boxes, casket boxes and to extension

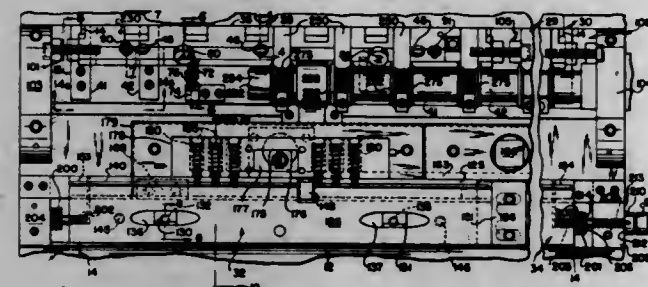


edges, the machine having a horizontally reciprocable slidable carrier with a brush and roller mounted thereon which apply adhesively coated wrapping to the box, the carrier having a cam and stop mechanism for controlling movement of the slidable carrier.

### 3,460,443 APPARATUS FOR OPERATING ON SHEET MATERIAL

Albert J. Sarka, Fairview Park, and Louis P. Toth, Broadview Heights, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware  
Filed Sept. 20, 1965, Ser. No. 488,349  
Int. Cl. B31b 1/14; B31d 1/00

U.S. Cl. 93—58.2 26 Claims

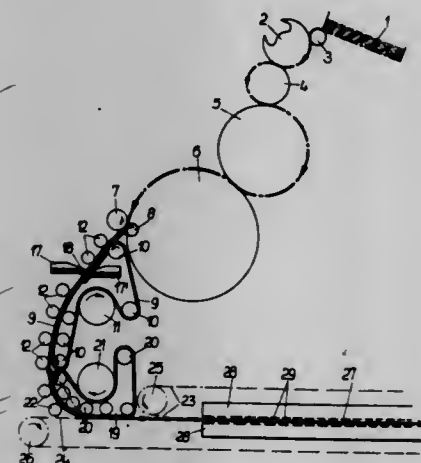


Disclosed herein is an apparatus including a plate cylinder having leading and trailing end clamp assemblies for securely holding on the cylinder a plate for working sheet material. A gripper assembly is provided for releasably engaging the sheet material. The plate clamp assemblies are adjustable axially and circumferentially of the cylinder to enable the plate to be aligned with the cylinder and held under tension in engagement with an outer surface above the cylinder. A triangulated pin registration system is provided to enable the plate to be readily aligned by movement of one of the clamp assemblies.

### 3,460,444 MACHINE FOR MANUFACTURING ENVELOPES, FLAT BAGS AND THE LIKE

Richard Winkler, Rengsdorf, and Kurt Dunnebler, Gladbach, Germany, assignors to Winkler & Dunnebler, Neuwied (Rhine), Germany, a corporation of Germany  
Filed Aug. 4, 1967, Ser. No. 658,508  
Claims priority, application Germany, Feb. 25, 1967, W 43,443

Int. Cl. B31b 21/02; B05c 3/20, 1/08  
U.S. Cl. 93—62 3 Claims

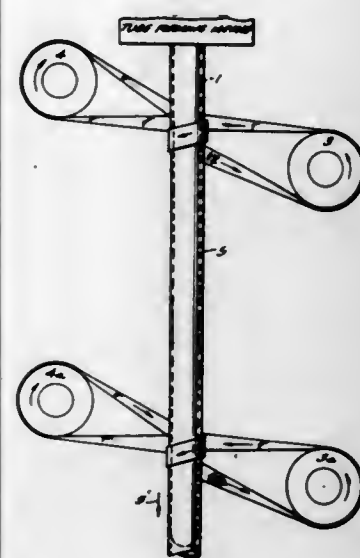


A machine for manufacturing envelopes, flat bags and the like with strips of adhesive applied both to the sealing flap and to the corresponding area on the back of the envelope, so that the flaps are self-adhesive, includes adhesive applicators located opposite each other on opposite sides of the path of the envelope blanks. The applicators may consist of rollers or wipers, or a combination of the two.

### 3,460,445 TUBEMAKING APPARATUS

Karl Ried, Sanatoriumstrasse, Unterageri, Switzerland  
Filed Feb. 4, 1966, Ser. No. 525,156  
Claims priority, application Switzerland, Feb. 4, 1965, 1,536/65

Int. Cl. B31c 1/02; B65d 3/04  
U.S. Cl. 93—80 15 Claims

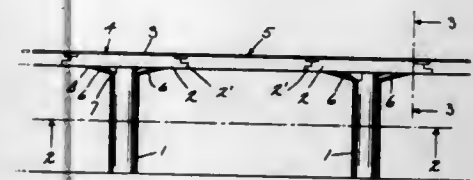


A tubemaking apparatus comprises an elongated mandrel for supporting a tube from the inside thereof. Tube-forming means forms on the mandrel an axially moving tube consisting of helically convoluted adhesive-coated tape material. At least two endless driven belts are spaced in axial direction of the mandrel and have respective stringers forming convolutions about the moving tube so as to compress successive axially spaced increments of the moving tube.

### 3,460,446 BRIDGE TYPE HIGHWAY OF REINFORCED OR PRESTRESSED CONCRETE

Ulrich Finsterwalder, Munich-Obermenzing, and Klemens Finsterwalder, Socking, near Starnberg, Germany, assignors to Dyckerhoff & Widmann Kommanditgesellschaft, Munich, Germany, a firm  
Filed Oct. 18, 1967, Ser. No. 676,204  
Claims priority, application Germany, Mar. 25, 1967, D 52,628

Int. Cl. E01c 1/00; E04b 1/00  
U.S. Cl. 94—1 4 Claims



Elevated highway structure or bridge where columns support diagonally extending beams which decrease in thickness outwardly from the columns and that support parallel girders carrying the runway.

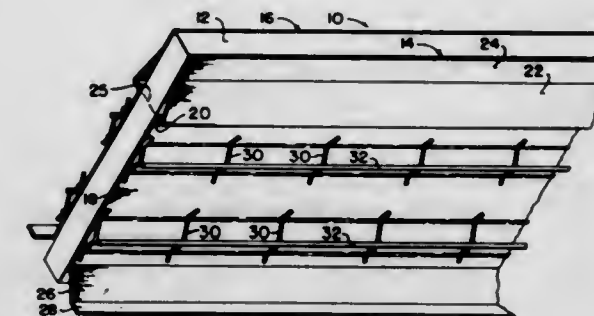
### 3,460,447 UNITARY JOINT-FORMING STRUCTURE

Robert J. Grenzeback, 16 Mason St., Winchester, Mass. 01890  
Filed June 20, 1967, Ser. No. 647,358  
Int. Cl. E01c 11/10, 11/12

U.S. Cl. 94—18 5 Claims

A unitary joint-forming structure for positioning be-

tween adjacent sections of a viscous hardenable material such as concrete while the sections are being poured is described. The structure is formed from a core member and a pair of wall members attached to the core member on opposite faces, the structure spacing the concrete

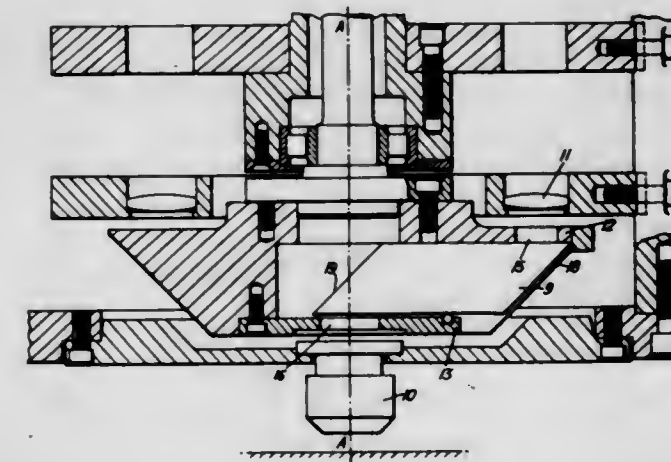


sections a predetermined distance apart while the sections are hardening. The core member is formed from cork or polystyrene material, while the walls are formed from fiberglass and are reinforced by stress-carrying members extending parallel to the wall.

### 3,460,448 PREPARATION OF PRINTED CIRCUITS

Cyril Victor Oliver, Stevenage, England, assignor to British Aircraft Corporation Limited, London, England, a British company  
Filed Sept. 7, 1966, Ser. No. 577,691  
Claims priority, application Great Britain, Sept. 13, 1965, 38,950/65

Int. Cl. H05k 3/00; G03b 27/32  
U.S. Cl. 95—1 4 Claims

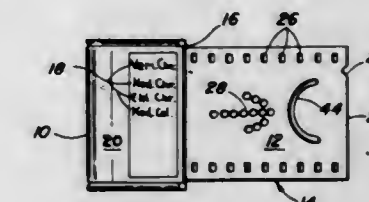


A method and apparatus is disclosed for preparing master prints from circuit diagrams in which data corresponding to the position and character of each element of the tracks is first recorded on a record strip. Silhouettes of the track elements are then arranged in a carrier in an optical system so that a light source passing therethrough impinges on a light sensitive film or plate. The record strip is then advanced step by step and the data for each track element is sensed to generate corresponding electrical signals. Silhouettes are then successively selected in accordance with such signals and exposed onto the light sensitive film or plate. Between exposures, the optical system and light sensitive film or plate are moved relatively in one or both of two mutually perpendicular directions in accordance with the electrical signals to position the film or plate for the next exposure. The master print is then obtained by developing the light sensitive film or plate.

### 3,460,449 APPARATUS FOR FILM TYPE IDENTIFICATION FOR FILM THAT IS TRANSFERRED FROM ONE MAGAZINE INTO ANOTHER DURING THE EXPOSURE PROCESS

John H. Eagle, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Filed Oct. 5, 1966, Ser. No. 584,571  
Int. Cl. G03b 17/00, 17/26

U.S. Cl. 95—1 5 Claims

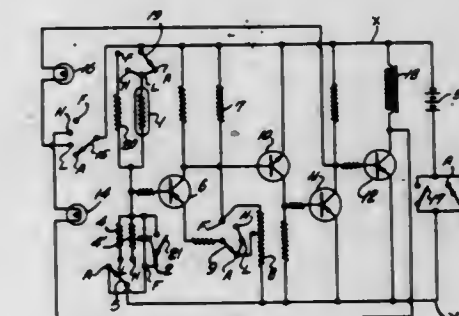


Apparatus for identifying film contained within a film cartridge including a notch or other easily sensed mark in a predetermined location on the free end of the film, the notch cofunctioning with indicia arranged on the cartridge to indicate the type of film contained therein.

### 3,460,450 AUTOMATIC EXPOSURE CONTROL CAMERA

Mamoru Ogihara, Shimosuwa-machi, Suwa-gun, Japan, assignor to Kabushiki Kaisha Yashica, Shibuya-ku, Tokyo-to, Japan, a corporation of Japan  
Filed Oct. 26, 1965, Ser. No. 505,287  
Claims priority, application Japan, Oct. 27, 1964, 39/83,553

Int. Cl. G01j 1/00, 1/46  
U.S. Cl. 95—10 11 Claims



1. In an automatic exposure camera including a solenoid controlled shutter, a timing network including a photoconductor and a capacitor, first means for connecting said timing network to a voltage source, second means responsive to a predetermined voltage across said capacitor for controlling said solenoid, an electrically energized first indicating device, a plurality of resistors, third means for connecting selected one of said plurality of resistors in series with said photoconductor across a voltage source, and fourth means responsive to a predetermined voltage across said selected resistor for controlling the energization of said indicating device.

### 3,460,451 PHOTOGRAPHIC SHUTTER WITH AN ELECTRONIC TIMING DEVICE

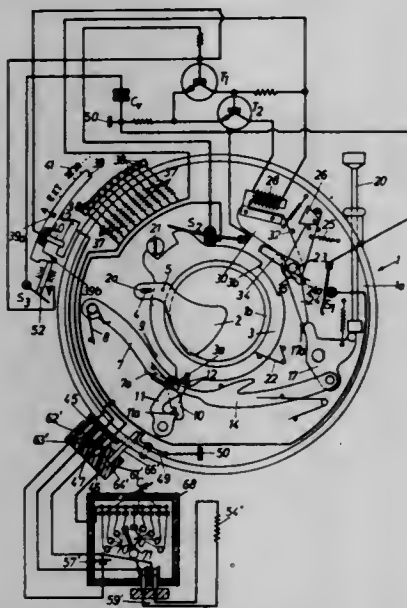
Franz W. R. Stapp and Dieter Rittmann, Calmbach, Black Forest, Germany, assignors to Prontor-Werk Alfred Gauthier, G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany  
Filed Mar. 6, 1967, Ser. No. 620,860  
Claims priority, application Germany, Mar. 5, 1966, P 38,908

Int. Cl. G01j 1/52  
U.S. Cl. 95—10 14 Claims

This invention relates to a photographic shutter with an electronic timing device having time-determining resistance and capacitance disposed therein. A switch is dis-



posed in the circuit of the electronic timing device between the capacitance and a transistor for the electrical timing device, and a selector having a contact member electrically connected to the resistance is provided for setting various resistance values. The selector is movable to an automatic position disconnecting the contact mem-



ber from the resistance and engaging the switch to disconnect the capacitance. Additionally, a photoresistor and a capacitor tuned to the photoresistor is mounted on a housing connectable to the shutter for inclusion in the circuit of the electronic timing device. The contact member of the selector is adapted to electrically engage the photoresistor when the selector is in the automatic position.

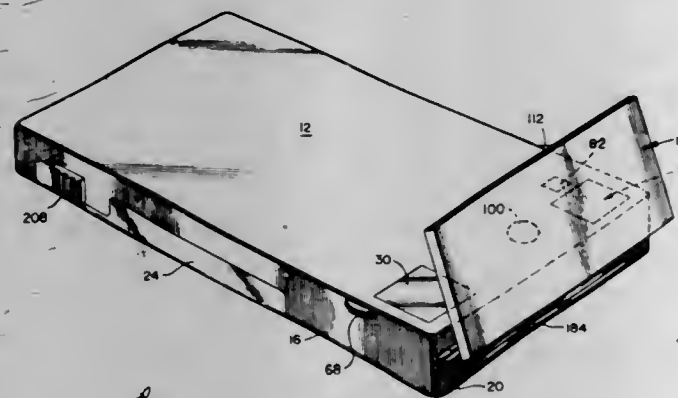
#### 3,460,452 SELF-DEVELOPING CAMERA AND PROCESS PERFORMED THEREIN

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Sept. 18, 1967, Ser. No. 668,521  
Int. Cl. G03b 17/52

U.S. Cl. 95—13

13 Claims



A self-developing camera for exposing and processing a film unit including a pressure rupturable container of processing liquid. The camera includes a pair of pressure applying rollers for moving the film unit including the container between the rollers in a first direction during exposure without rupturing the container and then moving the film unit in the opposite direction to rupture the container and distribute its liquid contents within the film unit; and means for preventing exposure of the film unit during processing. One of the rolls is driven to move the film unit during exposure and processing, and the exposure system is coupled with the other roller to be driven thereby. A process is disclosed in which compressive pressure is applied to the rupturable liquid-filled container to

distribute its liquid contents immediately prior to rupture of the container and dispensing of its liquid contents.

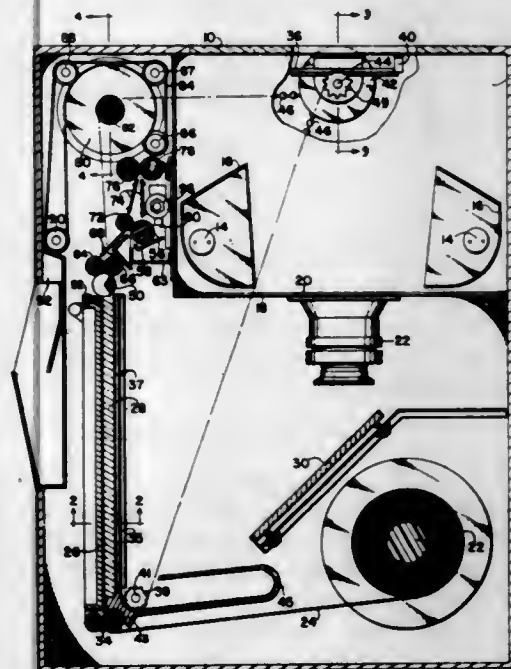
#### 3,460,453 VARIABLE LENGTH CONTROL FOR PHOTOGRAPHIC APPARATUS

Nicholas Gold, Arlington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Aug. 23, 1967, Ser. No. 662,632  
Int. Cl. G03b 17/52

U.S. Cl. 95—14

12 Claims



A photographic apparatus for exposing and processing sections of a photosensitive sheet in accordance with the area exposed. The apparatus includes a blade for severing successive areas of the sheet subsequent to exposure, a switch for actuating the blade and, switch actuating members. The switch and actuating members are mounted for movement relative to each other and a control is provided for adjusting the position of the switch relative to one of the actuating members in accordance with the length of the area of the photosensitive sheet to be exposed. Upon exposing the section one of the actuating members is moved to a position wherein it actuates the switch as it is moved past the switch.

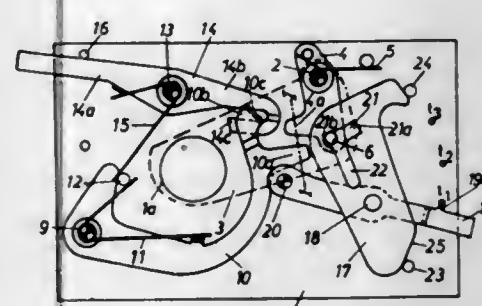
#### 3,460,454 PHOTOGRAPHIC SELF-WINDING SHUTTER

Franz W. R. Stapp, Carl Fritz Richter, and Eugen Adolf Erhard, Calmbach, Germany, assignors to Prontor-Werk Alfred Gauthier G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany

Filed Dec. 19, 1966, Ser. No. 602,972  
P 38,382  
Int. Cl. G03b 9/14

U.S. Cl. 95—62

11 Claims



A photographic self-winding shutter that has a braking weight connected to the shutter actuator. This braking weight is mounted on a movable carrier so that it can be

adjusted. This adjustment shifts the center of gravity of the braking weight so as to allow the braking weight to swing out different distances. By varying the swing out distance the shutter speed is thereby controlled.

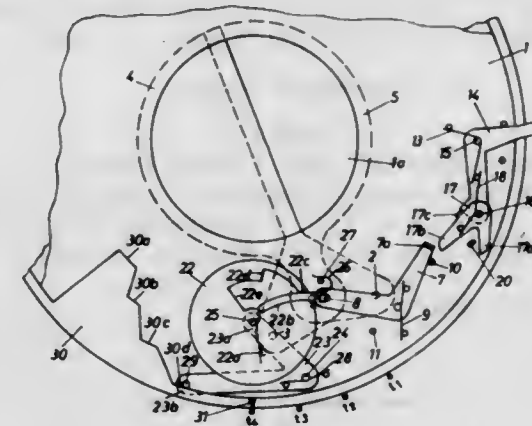
#### 3,460,455 PHOTOGRAPHIC SHUTTER WITH A BRAKE WHEEL FOR EXPOSURE TIME REGULATION

Heinz Karl Mutterer, Sprollenhaus, Germany, assignor to Prontor-Werk Alfred Gauthier, G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany

Filed Apr. 19, 1967, Ser. No. 631,940  
Claims priority, application Germany, Apr. 20, 1966,  
P 39,231  
Int. Cl. G03b 9/14

U.S. Cl. 95—62

9 Claims



A photographic shutter having one or more shutter blades and an actuating lever operably connected to the shutter blades for back and forth movement. The shutter has a braking member engageable with the actuating lever to influence its opening and closing motion for regulating the exposure time. The braking member is a pivotally mounted wheel rotatable against the force of a spring and has stop edges staggered like steps to limit its amplitude of deflection. A movable carrier is provided to mount the braking member, the carrier being movable to change its position relative to the actuating lever.

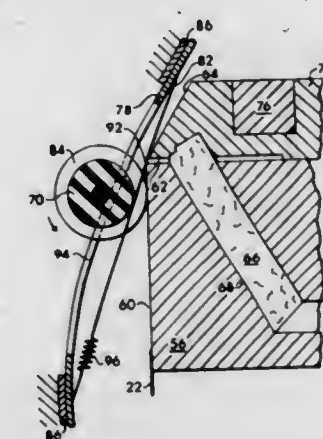
#### 3,460,456 PHOTOGRAPHIC PROCESSING APPARATUS

Richard J. Chen, Winchester, and Nicholas Gold, Arlington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Nov. 2, 1966, Ser. No. 591,455  
Int. Cl. G03d 3/10

U.S. Cl. 95—89

7 Claims



Apparatus for applying a liquid to an exposed photosensitive element. The apparatus includes a liquid applicator and support means for supporting the photosensitive element against the applicator with a minimum of contact between the support means and the photosensitive

element. The liquid applicator includes a capillary slot having an opening on the front surface thereof, while the support means consists of a plurality of thin, filamentous elements each contacting the photosensitive element along a line as the element moves across the opening of the slot.

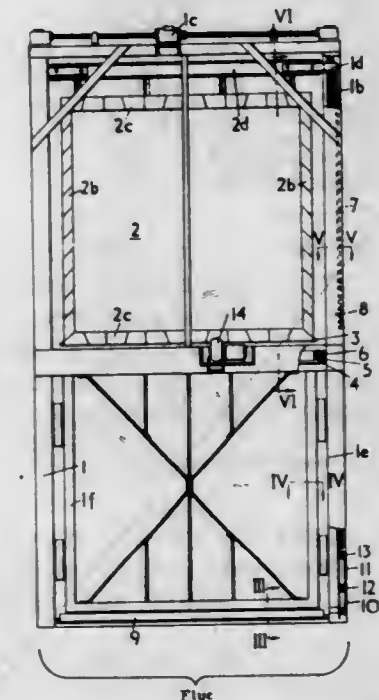
#### 3,460,457 ISOLATORS FOR THE GAS-TIGHT SECTIONALIZATION OF FLUES AND DUCTS

Walter Max Lowe and Frederick Squirrell, London, England, assignors to Thermo-Technical Development Limited, London, England, a British company

Filed Aug. 18, 1967, Ser. No. 661,681  
Int. Cl. F16k 3/02, 43/00

U.S. Cl. 98—1

11 Claims



An isolator of the sliding type for the gas-tight sectionalization of flues and ducts comprises a frame set across the flue and a sliding member moving into and out of the flue by way of an aperture in the frame structure. The sliding member in the closed position generally covers the flue cross section and in the open position the sliding member is fully extracted from the flue. Means are provided for cooperating with the frame for closing said aperture in the frame structure when the sliding member is in the extracted position.

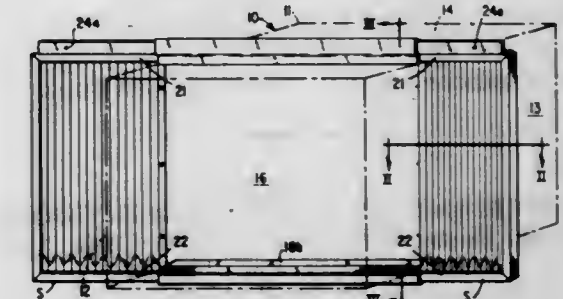
#### 3,460,458 ROOM AIR-CONDITIONING UNIT WITH EXTENSIBLE FILLER PANELS

David E. Mac Leod, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Apr. 30, 1968, Ser. No. 725,463  
Int. Cl. F24f 1/02

U.S. Cl. 98—94

1 Claim



A room air conditioner provided at opposite sides thereof with pleated filler panels captivated in a frame structure slidably mounted in supporting means affixed to the

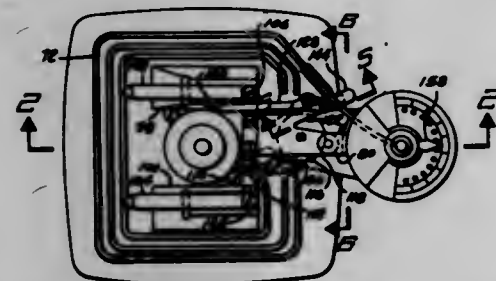


conditioner casing, the frame structure having attached thereto rod means received in apertures in the panels, whereby disengagement of the panels from the frame structure is prevented.

**3,460,459**  
**CONTROL FOR AN INSTANTANEOUS FLUID HEATING DEVICE**  
Leonard Edmond Austin, 646 Delano Ave., Prescott, Ariz. 86301  
Filed Aug. 28, 1967, Ser. No. 663,747  
Int. Cl. A23f 1/08

U.S. Cl. 99—282

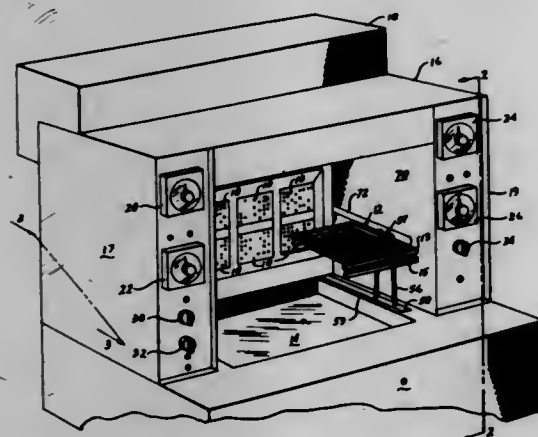
12 Claims



Fluid metering controls including a multifunctional pressure switch particularly adapted to control the operation of a pump and heating element; and apparatus for heating a predetermined quantity of fluid to a predetermined temperature regardless of inlet temperature during one pass through a heating element.

**3,460,460**  
**INFRARED HEATING DEVICE**  
Leon C. Bixby, Fairgrounds Road, and Eugene S. Halliwell, Wellington, Ohio 44090; said Halliwell assignor to said Bixby  
Filed Feb. 1, 1966, Ser. No. 524,121  
Int. Cl. A47l 27/62, 37/88, 43/18  
U.S. Cl. 99—327

11 Claims



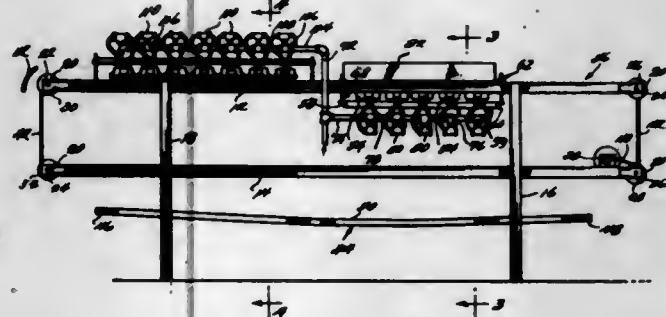
An apparatus to controllably expose a subject, such as meat, to infrared radiation emanating from a source of infrared radiation comprises a rotatable grill to support the subject, means to position the grill at differing distances from the source, and programmed control means to rotate the grill and thereby expose various sides of the subject to the infrared radiation for varying times and at varying distances so as to both sear and cook the subject.

**3,460,461**  
**MECHANICAL HAMBURGER COOKER**  
Daniel Foster Langsam, Country Club, Apt. 5C, Augusta, Ga. 30904  
Filed Sept. 22, 1965, Ser. No. 489,139  
Int. Cl. A47j 37/08, 37/10  
U.S. Cl. 99—386

1 Claim

Apparatus for cooking hamburgers including a conveyor means for moving the hamburgers, heating means

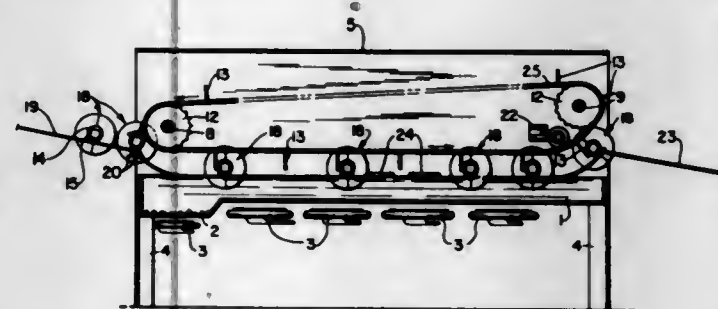
comprising first heating assembly disposed below the conveyor means and second heating assembly disposed above the conveyor means, the first and second heating assem-



blies being horizontally offset from each other with the second heating assembly comprising a greater number of heating elements than the first heating assembly.

**3,460,462**  
**AUTOMATIC POULTRY COOKER**  
John Chapman Gager, Montgomery County, Md. (5215 Massachusetts Ave. NW., Washington, D.C. 20016)  
Filed Mar. 21, 1968, Ser. No. 714,942  
Int. Cl. A47j 37/12  
U.S. Cl. 99—404

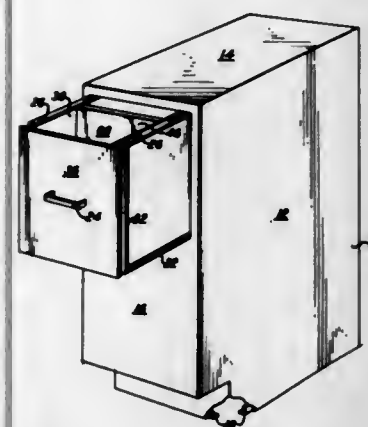
2 Claims



A device of the endless conveyor type for frying poultry or the like partially immersed in heated cooking oil.

**3,460,463**  
**COMPACTOR**  
Karl W. Jernstrom, 348 E. 58th St., New York, N.Y. 10022  
Filed June 14, 1967, Ser. No. 646,117  
Int. Cl. B30b 1/18, 9/00; B65b 63/02  
U.S. Cl. 100—52

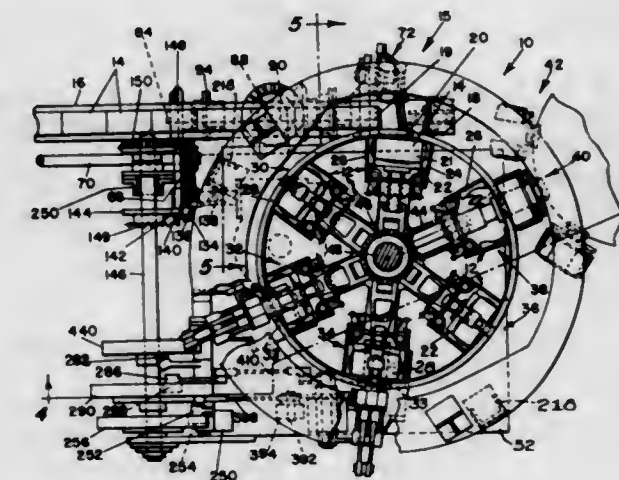
11 Claims



Trash compactor structure in which a reciprocating piston is mounted in a drawer and the compacting force is between the piston and the front end of the drawer and the trash is filled by simple opening of the drawer to place the trash to be compacted between the piston and the front end, and serviceable by removal of the entire drawer from a framework support.

**3,460,464**  
**PACKAGING MACHINE**  
Edward J. McCarthy, Braintree, Mass., assignor to Pneumatic Scale Corporation, Quincy, Mass., a corporation of Massachusetts  
Filed Jan. 20, 1967, Ser. No. 610,548  
Int. Cl. B30b 9/28, 11/00  
U.S. Cl. 100—90

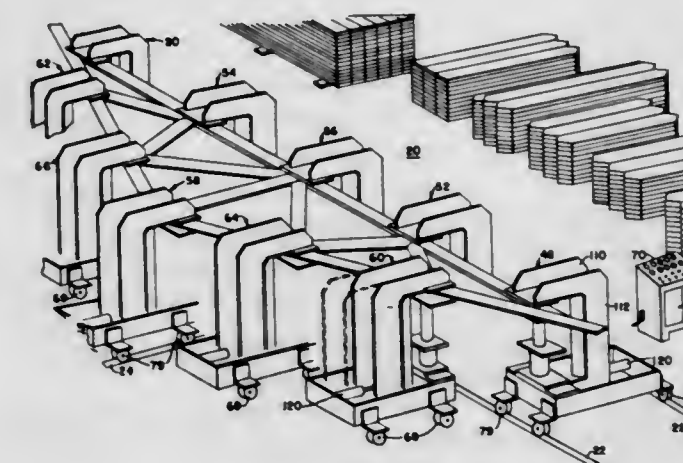
21 Claims



A packaging machine having provision for compressing loosely packed comminuted material within a flexible bag while supporting the bottom and sides of the bag whereby to effect shaping of the filled bag and compacting of the material in a manner such that the bag will retain the shape of the compacted material.

**3,460,465**  
**TRUSS ASSEMBLING MACHINE**  
Arthur E. McGlinchey, Columbus, Ohio, assignor to Idaco Company, a Division of Idaco Engineering and Equipment Co., Oakland, Calif., a corporation of California  
Original application June 14, 1965, Ser. No. 463,566, now Patent No. 3,358,348, dated Dec. 19, 1967. Divided and this application July 12, 1967, Ser. No. 678,121  
Int. Cl. B30b 15/16, 15/06; B25c 7/00  
U.S. Cl. 100—100

9 Claims

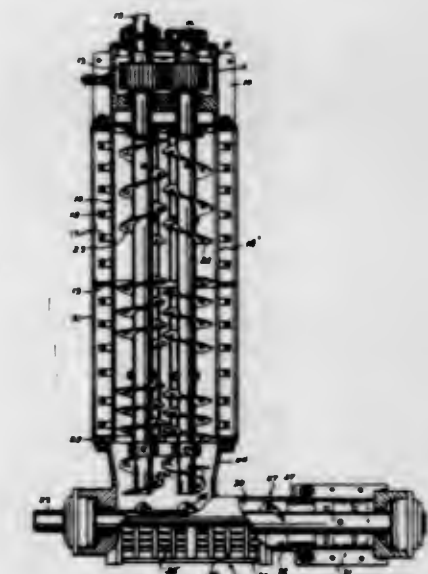


A truss assembling machine includes a plurality of independently movable heads, each head being positionable so that its vertical operating axis coincides with the intersection at a joint, of the axes of two or more truss members. Each of the truss members at the joint is supported separately and is urged toward the intersection along its longitudinal axis. Nail plates are applied to the joint by compressing it vertically along the operating axis of the head between a vertically movable die and a top

plate which is vertically fixed but horizontally movable out of the way for insertion and removal of the truss.

**3,460,466**  
**PRESS STRUCTURE**  
Marvin E. Ginaven and Albert H. Adams, Springfield, Ohio, assignors to The Bauer Bros. Co., Springfield, Ohio, a corporation of Ohio  
Filed Dec. 14, 1965, Ser. No. 513,718  
Int. Cl. B30b 9/12, 9/14, 9/18  
U.S. Cl. 100—117

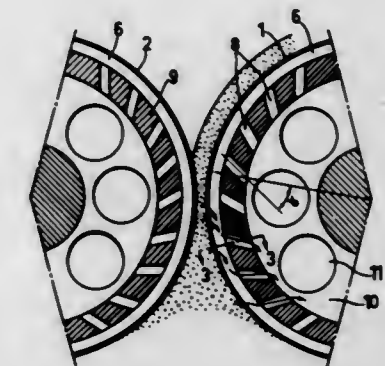
9 Claims



Apparatus for dewatering pulp characterized by a staged continuous press structure through which a pulp slurry may be pressure fed, successive stages of which are angularly disposed and provide for controlled drainage in a manner to control and reduce operating pressures and minimize power requirements in obtaining a given pulp dryness.

**3,460,467**  
**WET PRESSES**  
Olof Birger Nystrom, Sundsbruk, Sweden, assignor to Sunds Aktiebolag, Sundsbruk, Sundsvall, Sweden  
Filed Dec. 27, 1966, Ser. No. 604,857  
Claims priority, application Sweden, Jan. 25, 1966, 921/66  
Int. Cl. B30b 9/20, 3/04; B01d 33/06  
U.S. Cl. 100—121

12 Claims

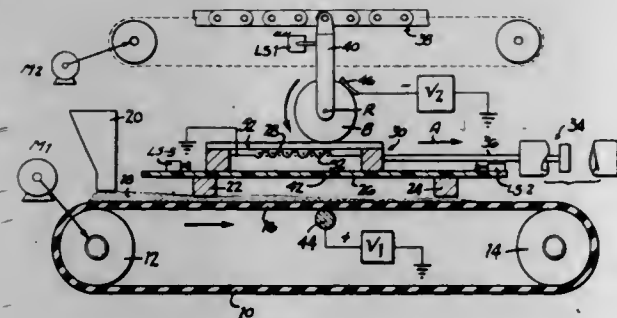


In a wet press for dewatering fibrous pulp having a pair of opposed perforated press rolls, at least one of the rolls has at least one group of channels arranged one after the other with respect to the axial direction of the roll. Each channel extends all around the roll, and is separated from any adjacent channel by a radially extending imperforate partition wall. The outer peripheries of each group of these partition walls support a pervious shell plate.



### 3,460,468 ELECTRICAL PRINTING METHODS AND APPARATUS FOR DECORATING CYLINDRICAL ARTICLES

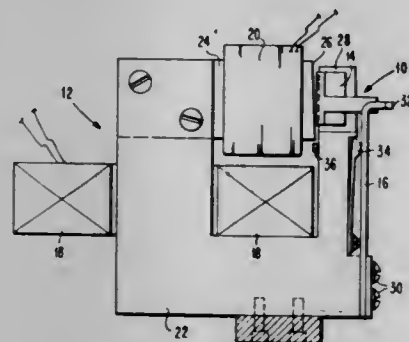
William E. Johnson, Temperance, Mich., assignor to Owens-Illinois, Inc., a corporation of Ohio  
Filed Feb. 24, 1965, Ser. No. 434,819  
Int. Cl. B41f 17/22; B41l 13/02; G03g 15/00  
U.S. Cl. 101—40 11 Claims



Electrical printing methods and apparatus for decorating cylindrical articles such as bottles, tumblers and the like. Printing powder particles are electrically transferred directly from a flat surfaced source such as a powder bed through a flat stencil screen to the curved article surface. Relative motion between the article, bed and stencil is established so that the article is rolled laterally across the image area of the stencil at a uniform distance from the stencil to scan the image. Powder particles being transferred from the bed to the article surface are confined by a slotted plate to a relatively narrow band encompassing a plane normal to the bed surface and passing through the axis of relative rotation of the article.

### 3,460,469 PRINT HAMMER ACTUATOR

Edgar Alan Brown, Saratoga, Albert S. Chou, Campbell, and Richard H. Darling, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Dec. 30, 1966, Ser. No. 606,308  
Int. Cl. B41j 1/38; H01f 7/00  
U.S. Cl. 101—93 13 Claims

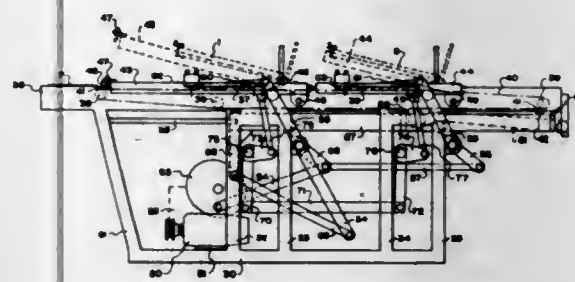


A print hammer actuator which provides a cycle of operation under control of an electrical signal for a rapid movement to the operative position and a rapid reversal and restore of a hammer to its ready position. The actuator comprises a magnetic core structure forming a substantially closed path shaped to form two offset pole pieces. A resilient actuator member is mounted with one point fixed relative to the magnetic core structure and having a movable magnetic member attached to another point in a position so that the generation of a magnetic flux within the magnetic core structure attracts the movable member to position the actuator member in

a ready position. A winding is provided on the magnetic core structure, and to select an operation of the print hammer the coil is energized to reduce the net flux in the magnetic path to essentially zero during the forward flight time of the hammer. The magnetic flux within the magnetic core structure then reattracts the movable member to reposition the actuator member in a position ready for a subsequent cycle of operation.

### 3,460,470 PROCESS AND APPARATUS FOR MULTICOLOR SCREEN PRINTING

Melvin E. Green, Skokie, and Charles H. Derrickson, Chicago, Ill., assignors to Advance Process Supply Co., Chicago, Ill., a corporation of Illinois  
Continuation-in-part of application Ser. No. 475,502, July 28, 1965. This application Oct. 21, 1965, Ser. No. 499,549  
Int. Cl. B41f 15/04; B41m 1/12  
U.S. Cl. 101—115 12 Claims



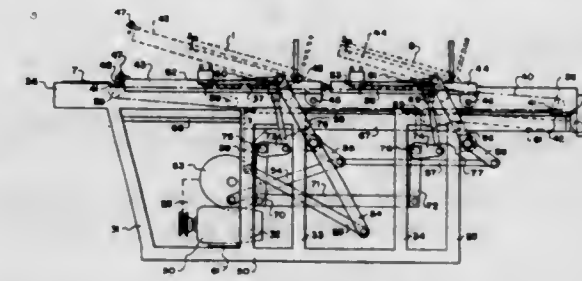
A method and apparatus for multicolor screen process printing includes feed means for moving a flat printing stock successively through a plurality of printing stations. A plurality of printing stations are arranged for screen process printing of different colors in preselected designs. The second printing station and any stations subsequent thereto each include a screen printing stencil provided with a second spacing screen arranged to prevent contact of the printing stencil with wet ink on the printed stock applied at the previous printing station. The feed means for moving the flat printing stock is operable with registration means such as registration pins engageable with a gripper bar on the feed means, to register the stock accurately in relation to each printing station, thus providing for multicolor printing without offset printing from the second and subsequent spacing screens. The spacing screen is in the form of an elongated belt of coarse mesh screen material which is periodically indexed to expose clean screen mesh for spacing. The spacing screen is continuously moved and washed and then returned to the spacing position.

### 3,460,471 APPARATUS FOR MULTICOLOR SCREEN PROCESS PRINTING

Melvin E. Green, Skokie, and Charles H. Derrickson, Chicago, Ill., assignors to Advance Process Supply Co., Chicago, Ill., a corporation of Illinois  
Filed July 28, 1965, Ser. No. 475,502  
Int. Cl. B41f 15/04; B41l 13/00; B41m 1/12  
U.S. Cl. 101—115 7 Claims

Apparatus for multicolor screen process printing includes feed means for moving a flat printing stock successively through a plurality of printing stations. The plurality of printing stations are arranged for screen process printing of different colors in preselected designs. The second printing station and any stations subsequent thereto each include a screen printing stencil provided with a second printing station and any stations subsequent thereto printing stencil with wet ink on the printing stock applied

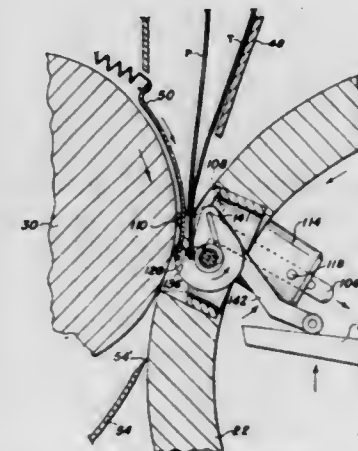
at the previous printing station. The feed means for moving the flat printing stock is cooperable with registration means such as registration pins engageable with a gripper



bar on the feed means, to register the stock accurately in relation to each printing station, thus providing for multicolor printing without offset printing from the second and subsequent screen stencils.

### 3,460,472 TRANSFER SHEET CLAMPING MECHANISM FOR A REPRODUCTION MACHINE

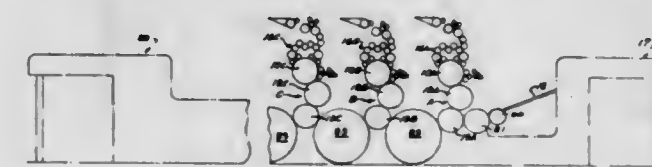
Harold E. Trumbull and James J. Grimm, Columbus, Ohio, assignors, by mesne assignments, to Xerox Corporation, Rochester, N.Y., a corporation of New York  
Filed Sept. 30, 1965, Ser. No. 491,561  
Int. Cl. B41l 9/10, 11/08  
U.S. Cl. 101—132 1 Claim



A pressure-transfer reproduction machine for transferring ink from one sheet to another having rotatable drum and a pressure roller for exerting pressure between the drum and the roller. The machine has paper gripping devices for holding a transfer sheet upon the drum and includes an ejecting portion thereon for assisting in the removal of the transfer sheet from the machine.

### 3,460,473 ROTARY SHEET FED MACHINE

Robert K. Norton, Twinsburg, Ohio, assignor to Harris Intertype Corporation, Cleveland, Ohio, a corporation of Delaware  
Filed Dec. 28, 1966, Ser. No. 605,339  
Int. Cl. B41f 5/16, 5/18, 13/24  
U.S. Cl. 101—183 39 Claims

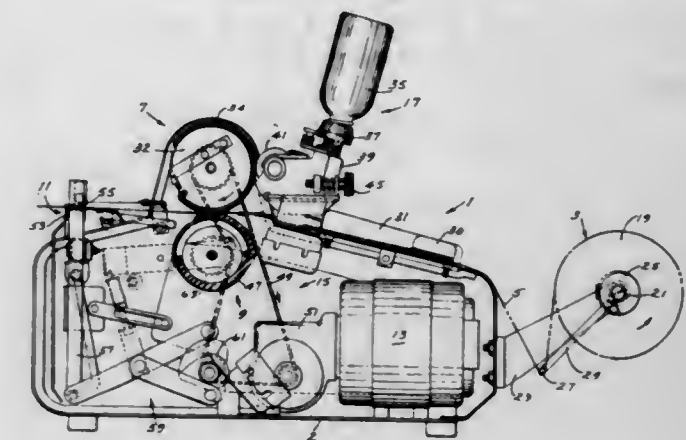


1. A sheet processing machine including a sheet processing unit, feeder means for automatically feeding sheets to be processed in succession to a registering position to be fed therefrom to said unit, a delivery for receiving sheets from said unit including a hoist onto which the

sheets are stacked and auxiliary pile support means and means supporting said auxiliary pile support means for movement from a position clear of the sheets being delivered to an active position over said hoist to intercept and support the sheets being delivered to said hoist, drive means for operating at least part of said feeder means and said sheet processing unit and said delivery in timed relationship to each other, and first control means for selectively rendering said feeder means ineffective to feed sheets to said sheet processing unit to interrupt the stream of sheets while maintaining said drive means effective to drive at least part of said feeder means, delivery, and sheet processing unit.

### 3,460,474 WEB FEED ROLL FOR LABEL PRINTER

Dale C. Follis and Duncan L. Lampman, Carterville, Ill., assignors to Diagraph-Bradley Industries, Inc., Herrin, Ill., a corporation of Missouri  
Filed July 7, 1967, Ser. No. 651,722  
Int. Cl. B41f 13/56, 21/00  
U.S. Cl. 101—227 13 Claims



A label printer of the type having a printing and a feed roll for printing on and advancing a paper web from a supply roll to a guillotine shear where it is severed between successive label printings. The feed roll includes a raised portion of adjustable arcuate extent for adjusting the length of paper fed forward on each revolution thereof, only the raised portion of the roll having a radius sufficiently large to engage the web and pull it through between the printing and feed rolls. The feed roll is constituted by outer and inner concentric drums, with the inner drum being connected to an axial shaft. The raised portion is a blanket connected at one end to a bridging member over the outer drum, which member is interconnected to the shaft, and the other end passing through a slot in the outer drum and being connected to the inner drum. Thus, relative rotation between the outer and inner drums varies the arcuate extent of the portion of the blanket exposed on the outside surface of the outer drum, and, hence, varies the label length.

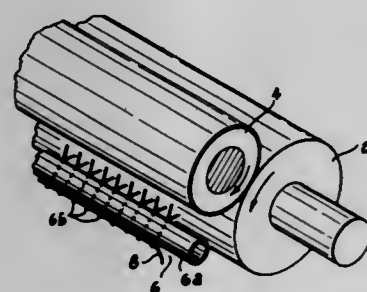
### 3,460,475 APPARATUS FOR RETURNING INK MIST BACK TO ITS SOURCE

William E. Brown, Pewaukee, and John J. Garnier, Hales Corners, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware  
Filed May 25, 1967, Ser. No. 641,278  
Int. Cl. B41f 31/28 12 Claims

Apparatus for returning ink mist particles back to the high speed ink transfer rolls of a printing press from which such mist emanates. A high voltage multiple electrode having a row of cotter pins mounted on an insulating support and connected by a bare conductor to an in-



dividual electrical outlet which leads to a high voltage electrical power supply is mounted opposite the nip of a pair of rolls and the ends of each cotter pin are spread



apart to secure it to the support and to form two emitters aimed at and spaced optimum distances from the rolls and to apply contact pressure to the supply conductor.

### 3,460,476 IMAGING PROCESS

Jay Kirk Swigert and Richard L. Lane, Penfield, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Dec. 27, 1965, Ser. No. 516,243

Int. Cl. B41m 1/06, 5/18; B41n 3/08

U.S. Cl. 101-450 10 Claims

1. A method of making multiple copies from a lithographic master which comprises forming an electrostatic latent image on the surface of a hydrophilic glass photoconductive plate, said plate comprising a conductive receiving substrate having fixed to at least one surface thereof a glass photoconductive insulating layer, developing said image with a hydrophobic developer so as to form image areas that are hydrophobic and non-image areas that are hydrophilic, applying to the imaged surface of said hydrophilic glass photoconductive plate a lithographic ink, said ink being distributed thereon conforming to said hydrophobic image in an imagewise configuration, contacting said inked surface with a transfer sheet to thereby affect the transfer of copies of said image to said sheet and repeating the inking and contacting steps until the desired number of copies are produced.

### 3,460,477 ONE-WAY DETONATION TRANSFER DEVICE AND ASSEMBLY

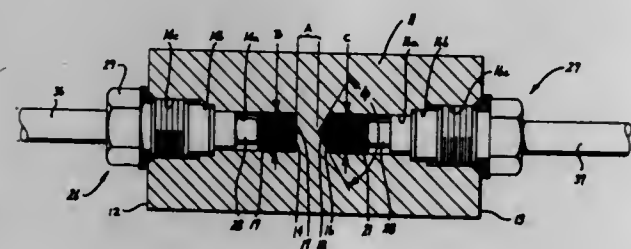
William B. Heldemann, Rio Vista, and George W. Weaver, Fairfield, Calif., assignors to Explosive Technology, Inc., Fairfield, Calif., a corporation of California

Filed Dec. 26, 1967, Ser. No. 693,358

Int. Cl. F42b 3/10

U.S. Cl. 102-27

8 Claims



One-way detonation transfer device and assembly having a flat or planar end wall for the donor charge and an angled end wall for the acceptor charge whereby shock waves from detonation of the donor charge converge along a line within the acceptor charge to initiate the acceptor charge and whereby shock waves from deto-

nation of the acceptor charge are dissipated outwardly so that the donor charge is not detonated.

### 3,460,478 PROJECTILE WITH SINTERED METAL DRIVING BAND

Gottfried Ormanns, Dusseldorf-Oberkassel, Germany, assignor to Rheinmetall G.m.b.H., Dusseldorf, Germany, a company of Germany

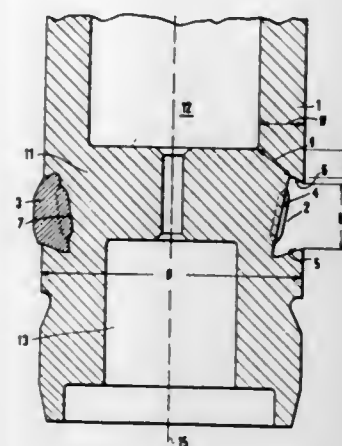
Continuation-in-part of application Ser. No. 503,828, Oct. 23, 1965. This application Feb. 6, 1968, Ser. No. 725,244

Claims priority, application Germany, Oct. 24, 1964, R 39,092

Int. Cl. F42b 31/00

U.S. Cl. 102-93

1 Claim



A projectile having sintered metal driving band disposed in an external annular groove in the jacket wherein the possibility of fracture and crumbling of the driving band is reduced while preferred ballistic characteristics for the projectile are retained by formation of the annular groove and driving band with surfaces such as that forces acting on the driving band upon firing of the projectile are restricted to compressive forces only.

### 3,460,479 LIQUID FUEL PUMPING APPARATUS

Kenneth Albert Walters Kemp, Ealing, London, England, assignor to C.A.V. Limited, London, England, a British company

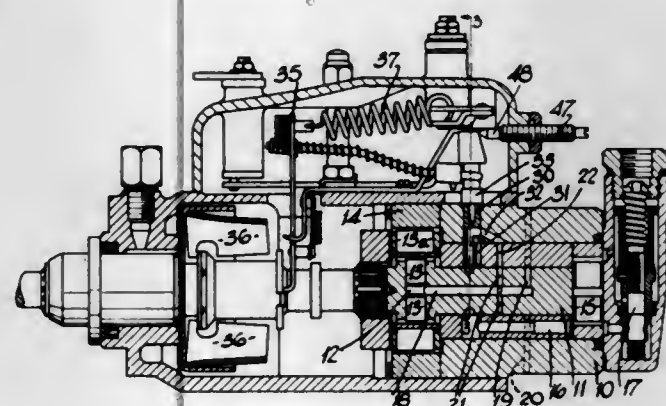
Filed Mar. 6, 1967, Ser. No. 620,944

Claims priority, application Great Britain, Mar. 14, 1966, 11,021/66

Int. Cl. F04b 23/04, 13/02; F04d 1/06

U.S. Cl. 103-5

4 Claims



A pumping apparatus for supplying fuel to an internal combustion engine and including an angularly and axially adjustable throttle member, the angular setting of

which determines the quantity of fuel supplied to the engine. The angular setting of the throttle member being determined by a speed sensitive governor and there being provided on the throttle member a radial arm which carries at its free end a first abutment having a cam surface. Also provided is a fixed second abutment and the throttle member is arranged to move axially in accordance with the speed at which the apparatus is driven the cam surface and the second abutment contacting each other to determine the permissible angular movement of the throttle member under the action of the governor.

### 3,460,480 PUMP ASSEMBLY

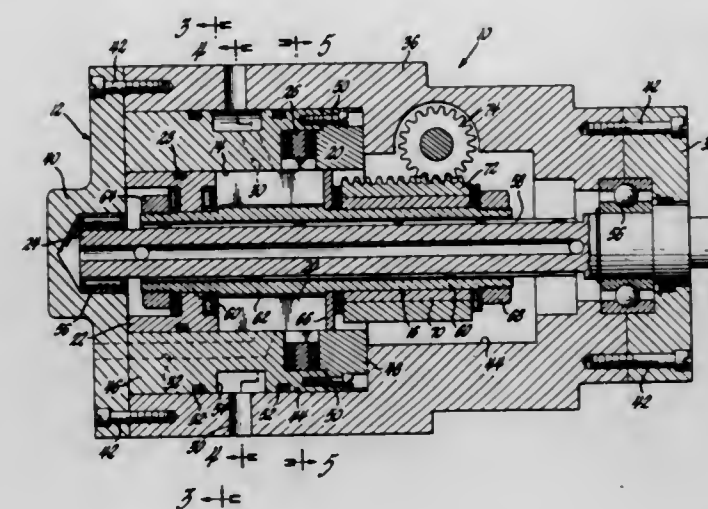
David A. Brownell, 332 E. Maplehurst, Ferndale, Mich. 48220

Filed Sept. 20, 1967, Ser. No. 669,161

Int. Cl. F04c 15/04, 3/00

U.S. Cl. 103-120

12 Claims



A pump assembly including a housing means having an elongated chamber therein with the elongated chamber having a substantially elliptical shape as viewed in cross section. A rotor means with vanes disposed in radial slots therein is disposed in the elongated chamber so that the vanes coact with the walls thereof. The rotor means comprises an elongated tubular portion and a hub portion disposed along the tubular portion with the vanes being disposed in the hub portion. A plug means is slidably disposed in the elliptically shaped chamber and is retained on one end of the tubular portion and in abutting engagement with the hub portion and one end of the vanes. A washer like element is disposed on the tubular member and abuts the other end of the hub portion and the other end of the vanes. A sleeve is rotatably disposed in the housing and is in sealing engagement about the hub portion of the rotor means and the vanes so that a pumping chamber is defined between the plug means and the sleeve. The rotor means is axially movable so as to move the plug means axially between a first maximum pumping position where the plug means is spaced from the sleeve and a minimum pumping position where the plug means abuts the sleeve, i.e., where the pumping chamber is of zero volume. The specific improvements being that the plug means has recesses therein for providing fluid communication between the pumping chamber and inlet and outlet passages in the housing when the plug means is axially positioned in close proximity to or abutting the sleeve and that the hub portion of the rotor means has a polygonal periphery and the sleeve is contiguous therewith so that the force for rotating the sleeve is not transmitted through the vanes.

### 3,460,481 ROTOR-STATOR GEAR SET IN A HYDRAULIC MOTOR-PUMP DEVICE

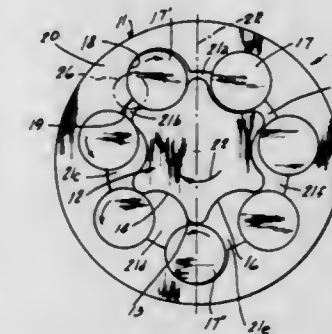
Hollis N. White, Jr., West Lafayette, Ind., assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio

Filed Sept. 27, 1967, Ser. No. 670,915

Int. Cl. F04c 1/06, 1/12

U.S. Cl. 103-126

8 Claims



A rotor-stator gear set for a fluid pressure device of the gerotor type which can be used both as a motor and as a pump. The stator includes a stator ring having a plurality of pockets and a corresponding plurality of cylindrical vanes rotatably carried in the pockets for working in gear relation with the rotor to provide alternately expanding and contracting fluid chambers between the stator and the rotor as the rotor moves hypocycloidally within the stator. The diameters of the vanes to provide hydrodynamic oil film spaces between the vanes and the walls of the pockets. The stator ring is made of sintered or cast iron and the walls of the pockets are lined with a thin layer of impervious or oil impenetrable material to ensure the hydrodynamic oil film. The impervious material has a low coefficient of friction and is less hard than is the material of which the vanes are constructed so that high points on the impervious liner are worn off under load. The liner may be made of a sprayed or baked-on fluorocarbon resin or may comprise a copper plate. If the stator ring is made of sintered iron it may be plastic impregnated to render it fluid impervious.

### 3,460,482 PUMPING MECHANISMS

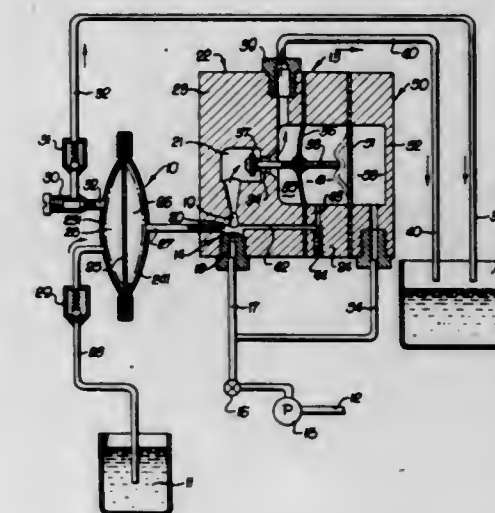
Clark E. Jackson, Rolling Hills, Calif., assignor to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California

Filed Jan. 29, 1968, Ser. No. 701,285

Int. Cl. F04b 43/06; F15b 15/18; F16h 41/00

U.S. Cl. 103-152

10 Claims

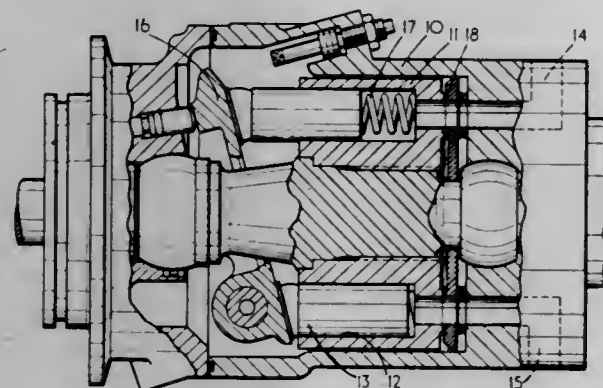


The invention applies to pumping systems wherein a pump operates in response to fluid pressure differentials transmitted from an eductor device through which a motive fluid is discharged and a valved oscillator causes reversal of relatively low and high pressure communi-



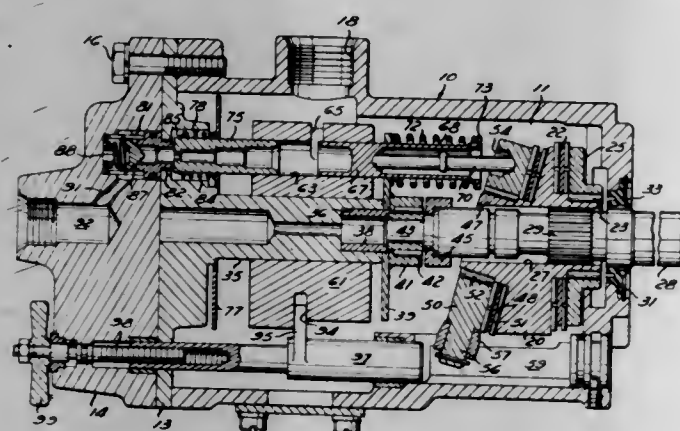
tions to the pump. It is found that increased inlet motive fluid pressures may tend to accelerate the valve oscillation and to undesirably increase the pump action and output. The present invention provides control means in the nature of a governor which responds to inlet motive fluid increases to restrain ungoverned oscillation of the valve and to correspondingly control the pump action.

**3,460,483**  
**PORT PLATES FOR HYDRAULIC RECIPROCATING PUMPS AND MOTORS**  
Harry Simister Bottoms, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company  
Filed Sept. 15, 1967, Ser. No. 667,902  
Int. Cl. F04d 1/00  
U.S. Cl. 103—162 5 Claims



In an hydraulic swash plate type pump or motor there is a port plate having straight inserts disposed in straight grooves in its surface, said inserts defining a closed regular and symmetrically disposed figure about the ports in the port plate.

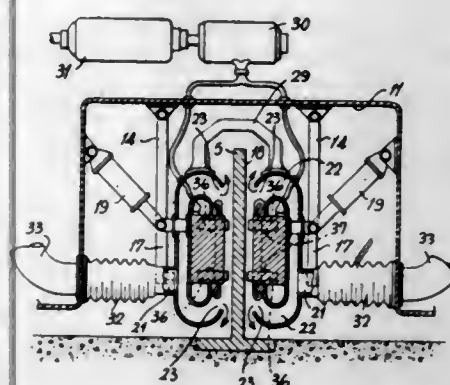
**3,460,484**  
**STEPPED REACTION PISTON FOR HYDRAULIC PUMP**  
Joseph F. Collins, Butler, Ind., assignor to The Weatherhead Company  
Filed July 6, 1967, Ser. No. 651,512  
Int. Cl. F04b 1/16, 11/00  
U.S. Cl. 103—173 9 Claims



A positive displacement pump of the axial piston type in which the output displacement is varied by axial sliding movement of the cylinder block. The fluid is conducted from each of the cylinders by a tubular reaction piston which communicates with a check valve assembly in the housing and the fluid passes through the check valve assembly into a common outlet. The reaction piston is formed with a number of stepped portions, of progressively decreasing diameter away from the cylinder with the smallest diameter being at the end adjacent the check valve assembly.

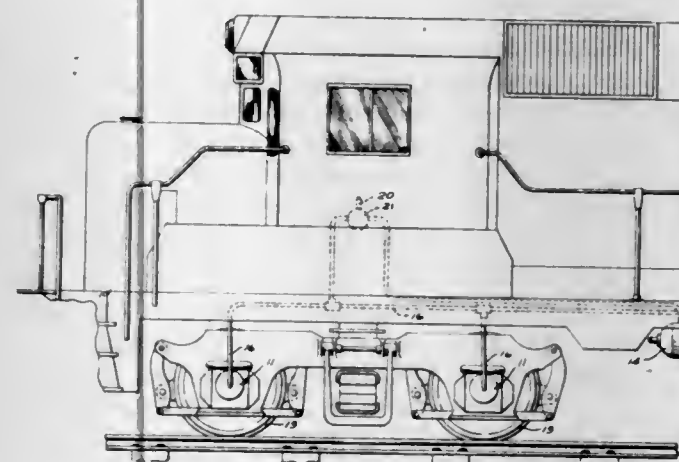
**3,460,485**  
**ELECTROMAGNETICALLY-PROPELLED VEHICLES**

Geoffrey John Easton, Highcliffe, Christchurch, England, assignor to Hovercraft Development Limited, London, England, a British company  
Filed June 12, 1967, Ser. No. 645,132  
Claims priority, application Great Britain, June 15, 1966, 26,744/66  
Int. Cl. B61b 13/08; B60v 3/04; B60l 13/00  
U.S. Cl. 104—148 9 Claims



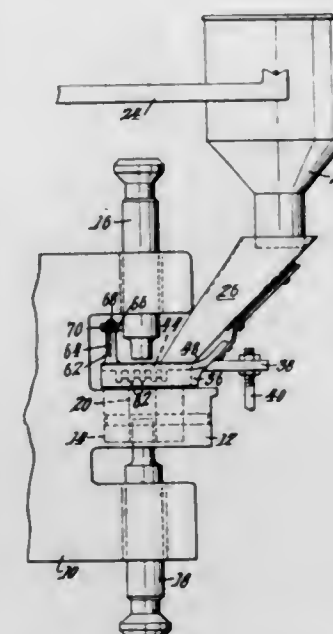
An electromagnetically-propelled vehicle in which motor poles carried by the vehicle co-operate with an electrically conductive portion of the vehicle track from which they are separated by the action of a gas cushion arrangement.

**3,460,486**  
**LOCOMOTIVE TRACTION INCREASED BY SONIC VIBRATIONS**  
Albert G. Bodine, Jr., 7877 Woodley Ave., Van Nuys, Calif. 91406  
Filed Apr. 18, 1966, Ser. No. 543,258  
Int. Cl. B61c 11/00, 15/00; B60b 17/00  
U.S. Cl. 105—73 19 Claims



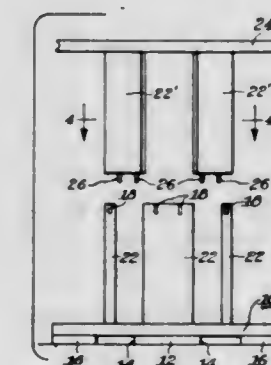
High level sonic energy is generated by means of an orbiting mass oscillator and such energy is coupled to the wheels of a vehicle, such as a railroad locomotive. An orbiting mass oscillator is positioned and operated to provide optimum high sonic action at the interface between the wheels and the rails on which such wheels ride, thus cleaning contaminants from the rails and attaining intimate metal-to-metal contact at such interface. In a preferred embodiment of the device of the invention, the rotation speed of the orbiting mass oscillator is adjusted to produce resonant vibration of a vibration system, including the engine wheels, thereby achieving extremely high level of sonic action.

**3,460,487**  
**TABLET FORMING MACHINES**  
Walter R. Kibbe, Philadelphia, Pa., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware  
Filed Sept. 22, 1967, Ser. No. 670,523  
Int. Cl. B29c 3/04; B30b 11/04, 7/00  
U.S. Cl. 107—17 10 Claims



A tablet forming machine utilizing finely comminuted powder-like material through the use of a new and improved agitating mechanism for the powder as it is fed from a hopper to the dies, thus insuring greater uniformity of the powder entering the dies, and better compacting of finer powder than heretofore possible. The agitating is performed by one or more oscillating elements which are mounted in fixed position with relation to a feeding device leading from the hopper to the dies, and having means struck by the upper punches as they pass the feeding station, the present invention providing for improved agitating and compacting of the powder and also providing for recirculation of excess powder around the entire rotary head back to the original position at the feeding device.

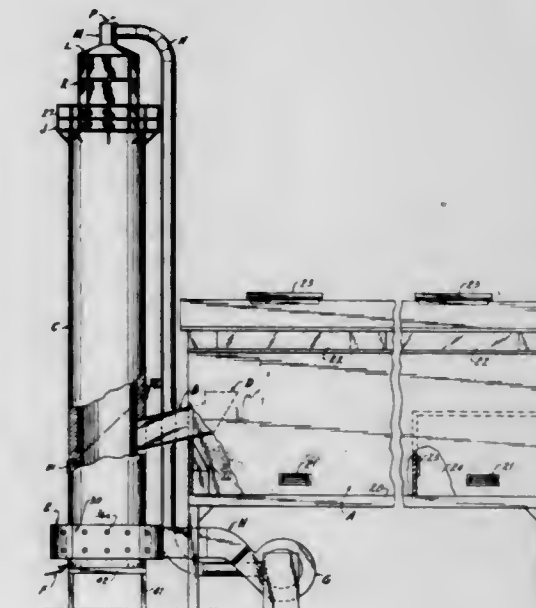
**3,460,488**  
**TABLE WITH VERTICALLY ADJUSTABLE LEVEL**  
Gerald D. Hoerner, Canoga Park, Calif. (% Harold L. Greene, 22915 Hatteras St., Woodland Hills, Calif. 91364)  
Filed Nov. 3, 1966, Ser. No. 591,765  
Int. Cl. B25h 1/16  
U.S. Cl. 108—144 1 Claim



A dual-level table has a first plurality of equally spaced table legs extending from the bottom surface of the table top. A second plurality of equally spaced table legs extend upwardly from a base. The first set of legs are capable of either matching the second set of legs or being interleaved therebetween. The first plurality of legs has a plurality of dowels extending from the bottom ends there-

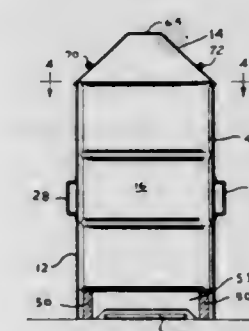
of; the second plurality of legs has a plurality of matching holes to receive the dowels on the first plurality of legs when the table is in an extended position. A second plurality of holes is provided in the base member between the second plurality of legs to receive the dowels on the first plurality of legs when the table is in its retracted or lower position.

**3,460,489**  
**INCINERATOR**  
Wesley S. Ehrenzeller, Hanover, and Donald H. Call, West Roxbury, Mass., assignors to American Design and Development Corporation, Whitman, Mass., a corporation of Massachusetts  
Continuation-in-part of application Ser. No. 447,593, Mar. 25, 1965. This application Apr. 8, 1968, Ser. No. 719,412  
Int. Cl. F23g 5/12; F23k 3/02  
U.S. Cl. 110—8 5 Claims



The invention of this case is directed to the method and apparatus for the complete destruction of municipal-type waste products by incineration at critical high temperatures wherein combustion-supporting gases are controlled to enter a wind-box surrounding the vertical stack of the incinerator in an exclusively tangential direction to said wind-box; and in addition, a novel charging means for delivering said refuse to the combustion area of said stack.

**3,460,490**  
**REFUSE BURNER APPARATUS**  
Wilfred M. Fisher, 745 N. Lawndale, South Bend, Ind. 46628  
Filed Sept. 28, 1967, Ser. No. 671,398  
Int. Cl. F23g 5/00 10 Claims



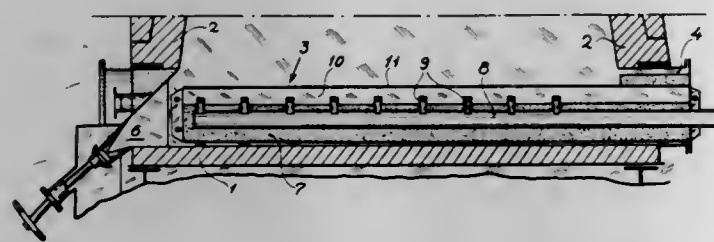
A refuse burning apparatus having a cylindrical shaped burner portion and a removable pyramid shaped cover



mounted above the burner portion and having a hole in the top. The burner portion may be enclosed in a rectangularly shaped body and at least one of the panels of the body is provided with an opening near the bottom for combustion air.

3,460,491

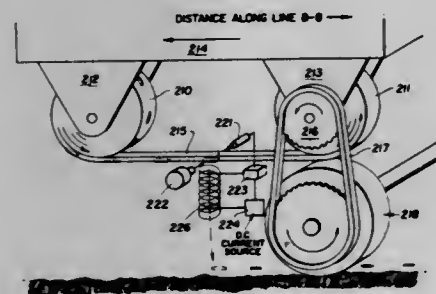
**GRATE IN A FLUIDIZED BED FURNACE**  
Petri Bryk and Jorma B. Honkasalo, Helsinki, Rolf Malmstrom and Olavi Aaltonen, Pori, and Matti Palperi, Kokkola, Finland, assignors to Outokumpu Oy, Helsinki, Finland, a corporation of Finland  
Filed Jan. 3, 1967, Ser. No. 606,692  
Int. Cl. F23i 5/04, 7/00; F26b 17/00  
U.S. Cl. 110—69 3 Claims



A grate made up of units in the form of long boxes with means formed in the furnace wall for the removable reception of the boxes. The top surfaces of the boxes form the grate and those surfaces are perforated to provide for the flow of air upward therethrough. Even distribution of air or gas within the boxes is provided for by means of a tube within each box having distribution holes therethrough spaced along the length thereof. The tube may be insulated to keep the temperature of the air passed through its constant. The upper or grate surface of each box may also be insulated with nozzles extending therethrough for distribution of the air or gas.

3,460,492

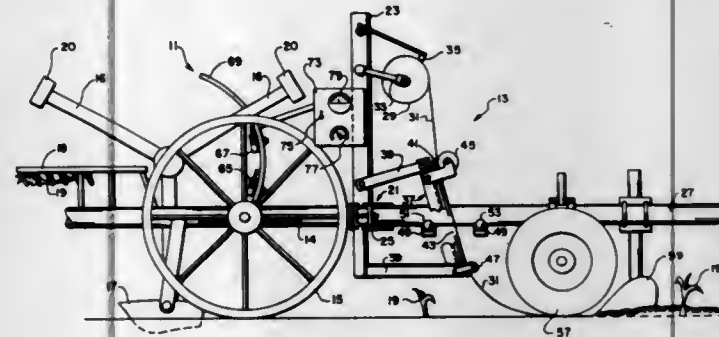
**METHOD AND APPARATUS FOR DISPENSING SEEDS COATED WITH A MAGNETIC MATERIAL**  
Ben Wade Oakes Dickinson III, 2125 Broderick St., San Francisco, Calif. 94115, and Robert Wayne Dickinson, 40 Maplewood Drive, San Rafael, Calif. 94901  
Filed Nov. 7, 1966, Ser. No. 592,654  
Int. Cl. A01c 1/04, 1/06  
U.S. Cl. 111—1 26 Claims



Seeds are coated with a thin magnetic coating in such a way to render them capable of being magnetically suspended, moved and placed in an individualized state by interaction with magnetic fields. Apparatus utilizing such fields is provided for metering the seeds and supplying them to a storage belt having magnetic properties which magnetically attract the seeds and hold them at spaced locations. Suitable apparatus is provided for utilizing such a seed loaded belt on farm equipment for removing the seeds from the belt and for precise planting of the seeds.

3,460,493

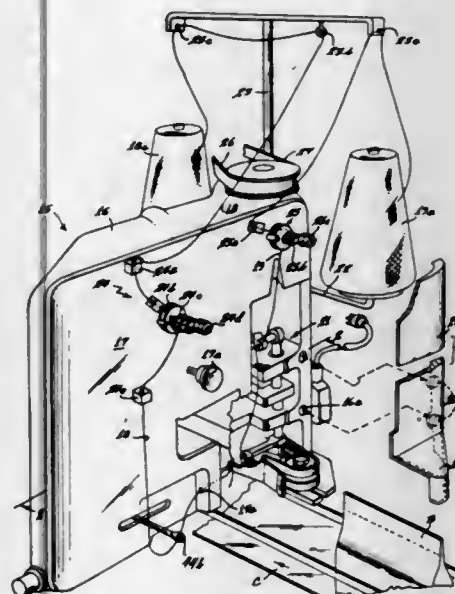
**TRANSPLANTER MULCHER**  
Kermit Q. Stephenson, State College, and Larry S. Click, Boalsburg, Pa., assignors, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware  
Filed Feb. 20, 1967, Ser. No. 617,270  
Int. Cl. A01c 11/00  
U.S. Cl. 111—3 3 Claims



A wheeled apparatus plows a narrow trench, periodically places plants therein, compacts earth around each plant, and then dispenses over the ground a continuous sheet of plastic mulch in which a hole has been burned where each plant protrudes. Attached plows spread earth behind the rear wheels to hold the mulch in place.

3,460,494

**SEWING MACHINE**  
Stanley D. Denker, New Richmond, Wis., assignor to Doughboy Industries, Inc., New Richmond, Wis., a corporation of Wisconsin  
Filed Sept. 26, 1966, Ser. No. 582,114  
Int. Cl. D05b 13/00, 27/20  
U.S. Cl. 112—11 11 Claims



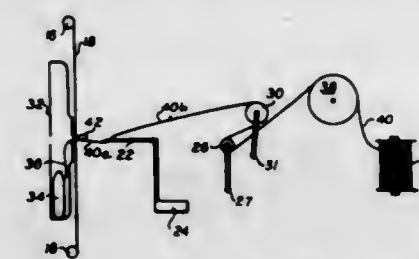
A sewing machine having a belt continuously moving the material being stitched, and having a developed cam moving the needle transversely of its normal reciprocation, and a cooperating looper moving in the direction of movement of the material and cooperating with the transversely moving needle to effect stitching.

3,460,495

**METHOD FOR EMBROIDERING TUFTS**  
Walter L. Cobb, 803 Morningside Lane, Ridgefield, N.J. 07657  
Filed May 29, 1967, Ser. No. 642,068  
Int. Cl. D05c 3/04, 11/18  
U.S. Cl. 112—93 6 Claims

A method for embroidering tufts on a base fabric by the operation of the conventional parts of a conventional

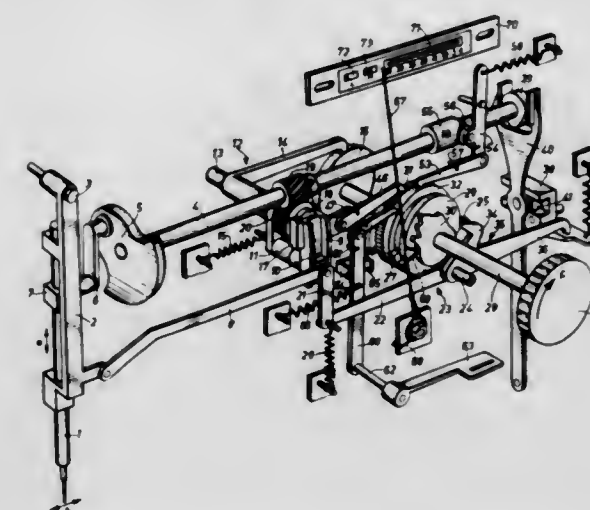
Schiffli embroidery machine in such a manner that the tufts appear on one side of the fabric and the thread forming



said tufts is pulled substantially coplanar with the other side of said base fabric.

3,460,496

**ZIGZAG SEWING MACHINE WITH CONTROL MEANS FOR PRODUCING BUTTONHOLES**  
Willi Meier, Karlsruhe, Germany, assignor to G. M. Pfaff AG, Kaiserslautern, Pfalz, Germany, a corporation of Germany  
Filed Apr. 4, 1967, Ser. No. 628,322  
Claims priority, application Germany, Apr. 6, 1966, P 39,144  
Int. Cl. D05b 3/02, 3/00  
U.S. Cl. 112—158 9 Claims

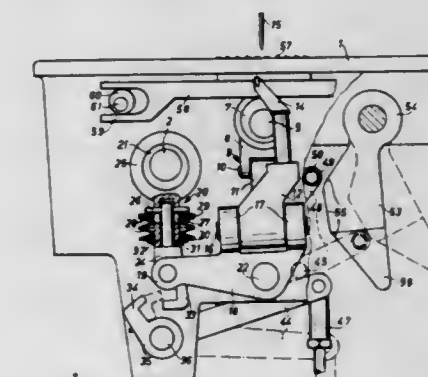


A zigzag sewing machine including control means to vary the stitching position, the over stitch width, and the stitching direction, is adapted for the semi-automatic sewing of buttonholes of varying length by a control device comprising three control cams mounted upon a common shaft and fitted with cooperating cam followers operably connecting the same with the respective control means of the sewing machine, said cams having coordinated control sections, whereby to enable the sewing, in the order named, of first buttonhole side stitches in one direction, first buttonhole barring stitches and second buttonhole side stitches in the opposite direction, and second buttonhole barring stitches in said first direction, by rotation of said shaft through successive angular ranges in respect to an initial or starting position. The length of the buttonhole stitches sewn is controlled by a ratchet counter having successive toothed sections and actuated by a reciprocating control pawl operated in synchronism with the needle zigzagging oscillations of the machine, the design and relative position of said ratchet sections, in respect to the coordinated cam sections, being such as to result in the automatic sewing of a first row of buttonhole stitches, having a length defined by the angular distance of a first ratchet section, followed by the sewing

of first buttonhole barring stitches controlled by a second ratchet section, and initiation of the sewing of the second row of buttonhole side stitches upon said pawl becoming disengaged from said second ratchet section, to interrupt rotation of the ratchet. Upon the row of second side stitches reaching a length equal to the length of first buttonhole stitches, sewing of the second barring stitches is then initiated manually by the operation of a key or the like control member, to rotate the ratchet, by means of an auxiliary pawl, into engagement of said first pawl with a third toothed section thereof spaced from said second toothed section, said third section and the coordinated cam sections causing the sewing of the second barring stitches of the buttonhole. By adjusting the initial position of the first toothed ratchet section in relation to said control pawl by the aid of an adjusting knob carried by said shaft and associated scale and indicating means, the length of the initially automatically sewn buttonhole side stitches may be varied between a maximum, defined by the angular distance of the first ratchet section, and a minimum, it being merely necessary for the operator aside from the initial adjustment of the device for the desired buttonhole length, to ascertain the instant of the second buttonhole side stitches reaching the starting point of the first side stitches and to operate said key for the completion of the buttonhole by the sewing of the final barring stitches thereof.

3,460,497

**STITCHING CONTROL MECHANISM FOR CHAINSTITCH SEWING MACHINES**  
Hans Orth, Alsenborn, Rhineland, Pfalz, Ludwig Franz, Kaiserslautern, Rhineland, Pfalz, and Urban Divlivier, Obermohr, Rhineland, Pfalz, Germany, assignors to G. M. Pfaff AG, Kaiserslautern, Pfalz, Germany, a corporation of Germany  
Filed Sept. 20, 1967, Ser. No. 669,014  
Claims priority, application Germany, Oct. 10, 1966, P 40,533  
Int. Cl. D05b 1/06, 1/10, 27/00  
U.S. Cl. 112—200 11 Claims



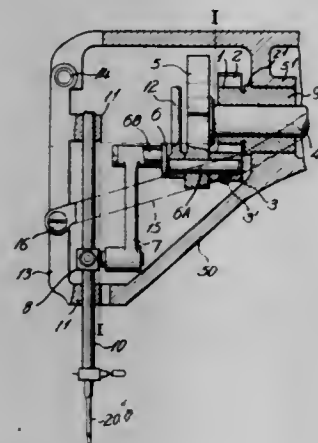
In a chainstitch sewing machine of the type having an oscillating looper, a seam being sewn is temporarily interrupted without stoppage of the machine by disabling the stitch formation in causing the looper to change from its normal elliptical operating path encircling the needle to a linear oscillating path in front of the needle, as viewed in the work feeding direction. For this purpose, the eccentric rod of the eccentric oscillating drive for effecting the needle-avoid movements of the looper in the work feeding direction includes a yielding coupling adjoining the input end of said drive, with special control means, operable by means of a foot pedal, being provided to arrest said drive at a point intermediate the looper and said coupling and at a time position of the stitching cycle corresponding to the instant of the point of the looper seizing or entering the needle-thread loop.



**3,460,498**  
**NEEDLE-BAR-MOVING SPEED CHANGING MECHANISM FOR A SEWING MACHINE**  
 Yasukata Eguchi and Kazuo Uchida, Tokyo, Japan, assignors to Janome Sewing Machine Co., Ltd., Tokyo, Japan

Filed Feb. 2, 1968, Ser. No. 702,660  
 Claims priority, application Japan, Feb. 3, 1967, 42/6,582  
 Int. Cl. D05b 69/00; F16h 21/22  
 U.S. Cl. 112—221

4 Claims

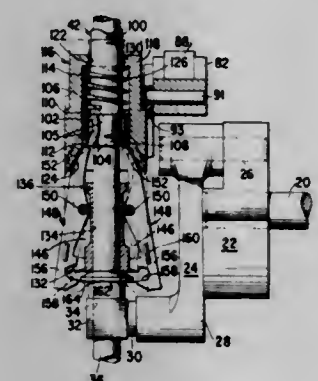


The present needle-bar speed changing mechanism is for use in zigzag sewing machines having a rotary upper shaft and a needle bar actuating mechanism including a balance crank fixed on said rotary upper shaft for turning therewith, a shaft on said balance crank, a needle bar, crank pivotally connected to said shaft, a needle bar, a needle bar clamp connecting said needle bar to said needle bar crank and a reciprocating support carrying said needle bar whereby turning movement to said needle bar crank imparts a reciprocating movement to said needle bar to enable a needle attached to said needle bar to perform a stitching operation and said needle-bar speed changing mechanism is interconnected in said sewing machine needle bar actuating mechanism for delaying the upward movement of said needle-bar crank during the operation of the sewing machine providing for an extended period of coaction between the needle and the sewing machine shuttle hook on either the right or left side of the zigzag stitch.

**3,460,499**  
**NEEDLE-BAR THROWOUT MECHANISM FOR TUFTING MACHINE**  
 William M. Gaines, Lafayette, Ga., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Feb. 19, 1968, Ser. No. 706,248  
 Int. Cl. D05b 69/22  
 U.S. Cl. 112—221

6 Claims

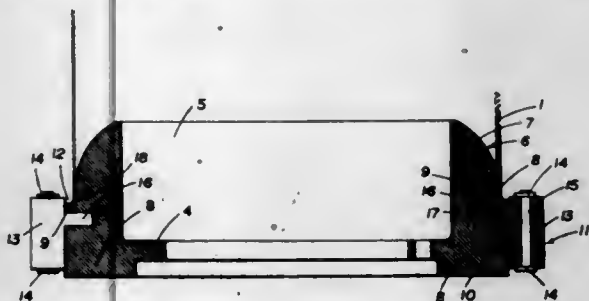


An operator actuated mechanism for a tufting machine for disengaging the needle-bar from the needle-bar driving collar, including latch fingers carried on the needle-bar for providing a driving connection between the needle-

bar driving collar and the needle-bar, and an unlatching member utilized to operate the latch fingers to disengage the needle-bar from the needle-bar driving collar. Mechanism including a spring biased braking member is utilized to hold the needle-bar in a raised position after it has been disengaged from the needle-bar driving collar.

**3,460,500**  
**FLANGING DIE**  
 Thomas A. McCoy, Stockton, Calif., assignor to Carando Machine Works, Stockton, Calif., a partnership  
 Filed Feb. 14, 1967, Ser. No. 616,047  
 Int. Cl. B21d 3/14  
 U.S. Cl. 113—120

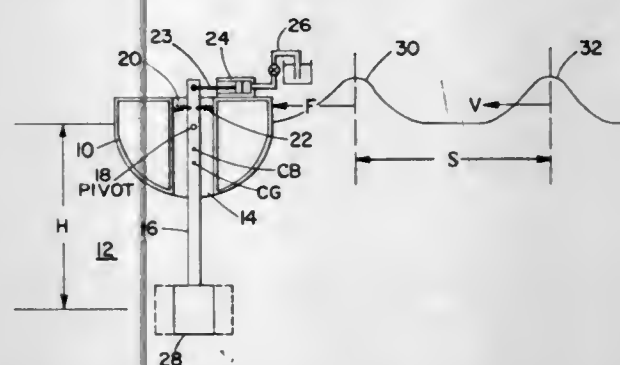
7 Claims



An improved die for use to form a continuous, out-turned flange on an end of an initially open-ended, cylindrical sheet metal body for a lightweight drum or pail; the flange, as usual, being for the ultimate reception of and connection to a circular end closure such as a bottom or top member of the drum or pail.

**3,460,501**  
**STABILIZING A FLOATING VESSEL**  
 Daniel Silverman, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware  
 Filed Jan. 3, 1967, Ser. No. 606,691  
 Int. Cl. B63b 35/44, 39/02  
 U.S. Cl. 114—5

11 Claims



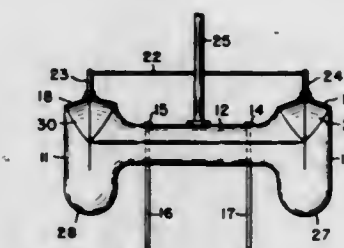
An elongated vertical arm with mass at the lower end is pivoted in an opening in the vertical plane through the longitudinal axis of a drilling vessel. This increases the moment of inertia of the vessel and makes it less responsive to short period forces of the waves. The ship and the upper end of the arm are tied together by an energy storing device or they may be locked together. Various means are shown for raising and lowering the arm and for placing it out of the way of drilling operations.

**3,460,502**  
**CATAMARAN**  
 Dana Carmichael, 2552 Conroy Drive, Lake Park, Fla. 33403  
 Filed Nov. 27, 1967, Ser. No. 685,889  
 Int. Cl. B63h 1/12, 1/18  
 U.S. Cl. 114—61

5 Claims

A water-borne vehicle of the catamaran type wherein the pontoons which comprise the twin hulls are of a new

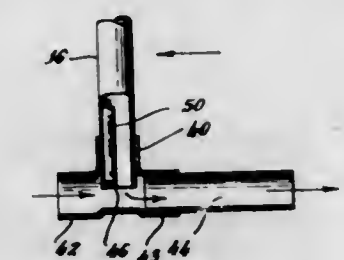
and novel construction in that they are so fabricated that they are contrapositive in cross section and may be reversed or inverted so that two different water engaging surfaces are presented to the surface of the water.



The water engaging surfaces of the improved catamaran are so constructed that each surface presents to the water a hull having a different contour; thus providing a planing configuration in one instance and a displacement hull or configuration in the other.

**3,460,503**  
**SELF-PRIMING BOAT BAILER**  
 Edward J. Chalmers, 243 Glenville Road, Glenville, Conn. 06830  
 Filed Mar. 14, 1968, Ser. No. 713,211  
 Int. Cl. B63b 13/00  
 U.S. Cl. 114—185

8 Claims



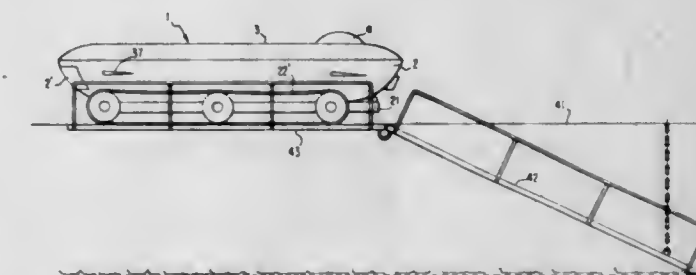
This invention provides a portable, adjustable self-priming boat bailer which is adapted to remove bilge water from a boat in response to movement of the boat through the water. The bailer provided acts by means of a self-priming action to connect and merge the waters together, that is, the water inside the boat is connected and merged to the water flowing outside of the boat. The self-priming action is essentially created by means of a priming tube mounted within a discharge tube of the bailer which is mounted adjustably to the side of a boat. Mounted at one end of the discharge tube is a flexible tubing which is long enough to be extended into the bilge water in the boat. At the opposite end of the discharge tube, a T-tube is mounted with its vertical leg interconnected to the lower end of the discharge tube which is to be submerged into the water. The T-tube is mounted so that the open ends of both the priming and discharge tubes are positioned in the passageway of the horizontal leg of the T-tube. Whereby, during movement of the boat, the water passing through the passageway and past the open ends of the discharge and priming tubes, together with the priming tube creates a suction sufficient in the discharge tube and flexible tubing to remove the bilge water from the boat.

**3,460,504**  
**LANDING SHELLS AND METHOD OF USING**  
 William D. Boyce II, 95 Valmondois, Val d'Oise, France  
 Filed Oct. 19, 1966, Ser. No. 587,731  
 Int. Cl. B60f 3/00  
 U.S. Cl. 115—1

12 Claims

A method for transporting combat personnel from ship to shore or vice versa or from ship or shore to inland waters, an apparatus therefor, including submersible land-

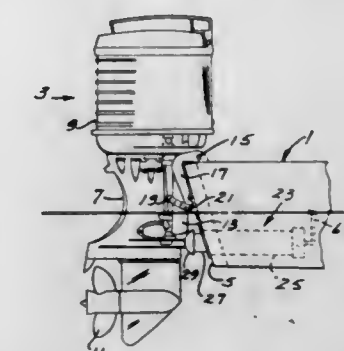
ing shells which may be stored aboard ship in a disassembled condition, each landing shell including a lower part and an upper part and means for selectively connecting said lower and upper parts to provide an air-tight seal therebetween. The parts of the landing shell are so constructed as to be stored with the series of upper parts superposed in nested relationship and the series of lower



parts similarly arranged. According to an alternative embodiment of the present invention, each landing shell further includes a chassis member provided with traction means, wherein the series of chassis members, like the upper and lower parts of the shells, may be arranged in a stack-like fashion and wherein the chassis members are provided with means for selectively connecting a chassis member with a lower part of a shell.

**3,460,505**  
**STERN ANGLE CONTROL FOR OUTBOARD MOTORS**  
 Paul F. Thoenes, 8648 New Hampshire St., Afton, Mo. 63123  
 Filed Jan. 2, 1968, Ser. No. 695,004  
 Int. Cl. B63h 21/26  
 U.S. Cl. 115—41

8 Claims



A control for outboard motors for varying the angle between the drive shaft housing of the motor and the transom of a boat. The control comprises a plunger slidable in a cylinder between a retracted and an extended position. The plunger is spring biased for rearward movement through a hole in the transom into abutting engagement with the drive shaft housing of the motor. A latch is provided for latching the plunger in either its retracted or extended position and a spring-biased shifting mechanism biases the latch in a shifting direction for unlatching of the plunger upon reduction of thrust of the motor.

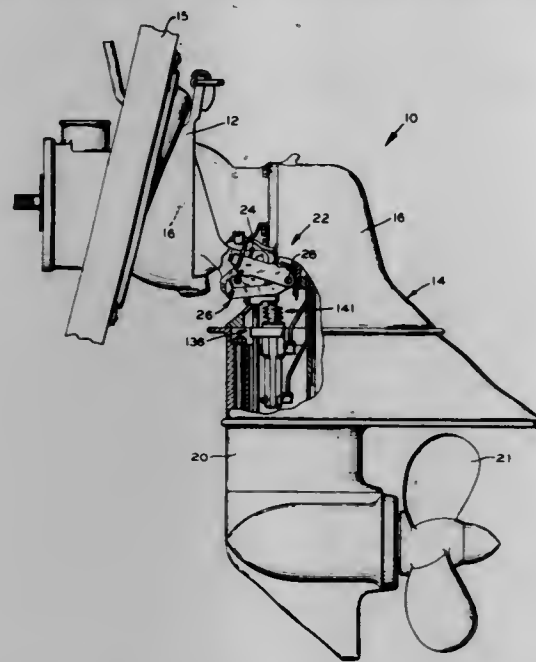
**3,460,506**  
**MARINE OUTDRIVE LATCH**  
 Marvin D. Johns, Fort Wayne, Ind., and Stephen J. Haydock, Chelsea, Mich., assignors to Dana Corporation, Toledo, Ohio, a corporation of Virginia  
 Filed Feb. 27, 1967, Ser. No. 618,706  
 Int. Cl. B63h 5/06, 1/14, 25/42  
 U.S. Cl. 115—41

15 Claims

A latch arrangement for a marine drive unit in which a pair of pivoted latches are oppositely disposed and spring

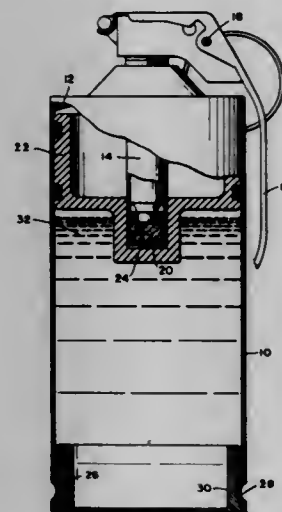


biased so that the lower latch prevents upward pivoting of the drive unit when the marine drive unit is in the reverse gear and the upper latch limits upward pivoting of the drive unit when the marine drive unit is in the forward gear.



of the marine drive unit in neutral and forward gear while still permitting the marine drive unit to kick up when it encounters a water borne obstruction.

**3,460,507**  
**PISTON EXPELLED CHEMILUMINESCENT WATER SIGNAL DISPENSER**  
Steven M. Little, Sydney Sheffer, and Marvin E. McGowan, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy  
Filed July 21, 1967, Ser. No. 655,245  
Int. Cl. G09f 9/00  
U.S. Cl. 116—124 2 Claims

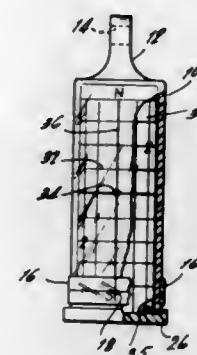


Rescue and navigation aid providing a light source on the surface of water characterized by a canister containing chemiluminescent liquid which is hermetically sealed against entry of air and expelled by a piston actuated by a powder charge.

**3,460,508**  
**PARKED CAR LOCATION REMINDER DEVICE**  
Benjamin D. Baxter, 7815 4th Ave., Brooklyn, N.Y. 11209  
Filed Aug. 11, 1966, Ser. No. 571,821  
Int. Cl. G09f 9/00  
U.S. Cl. 116—133 5 Claims

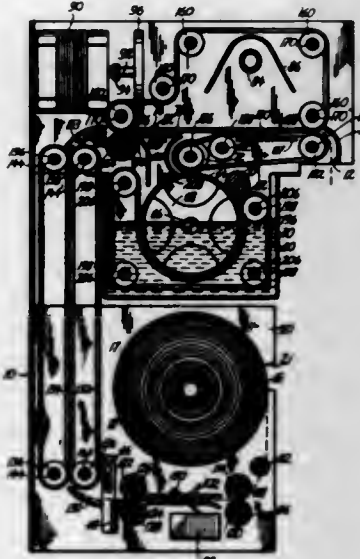
In a parked car locating device, a sheet bearing indicia representing a landmark and coordinate distances from

the landmark is inserted in a transparent cylinder. A ring frictionally slidable and rotatable on the outside of the cylinder has an index cooperating with the indicia on the sheet inside the cylinder to indicate the location of a parked car.



cylinder has an index cooperating with the indicia on the sheet inside the cylinder to indicate the location of a parked car.

**3,460,509**  
**WEB-DISPENSING MACHINE**  
Steven L. Kaczus, Wethersfield, Conn. (333 Vincelette St., Apt. 44, Bridgeport, Conn. 06606)  
Filed July 24, 1967, Ser. No. 655,374  
Int. Cl. B05c 11/00  
U.S. Cl. 118—41 13 Claims

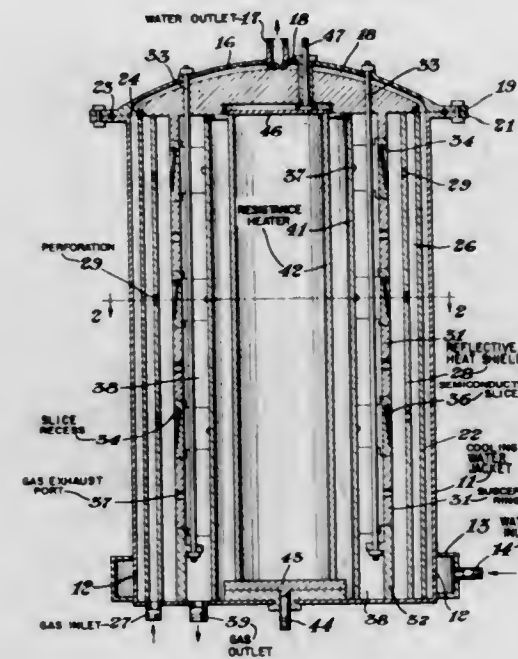


There is provided a machine for dispensing web-like material, such as paper toweling, which can be operated selectively to dispense the web material in either a wet or dry condition by exposing it to a liquid source contained in the chassis. In a preferred embodiment, the machine has the further capability of dispensing a heated web for greater effectiveness and comfort.

**3,460,510**  
**LARGE VOLUME SEMICONDUCTOR COATING REACTOR**  
Cedric G. Currin, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan  
Filed May 12, 1966, Ser. No. 549,501  
Int. Cl. C23c 13/02  
U.S. Cl. 118—48 9 Claims

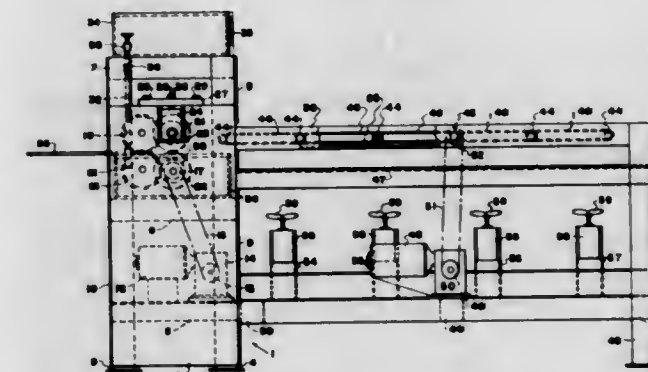
Pyrolytic deposition of crystalline semiconductor material is deposited on a substrate in apparatus comprised

of a cylindrically shaped susceptor having a plurality of vertically extending recesses. An aperture faces each of the recesses. A heating element is positioned coaxially with the susceptor element.



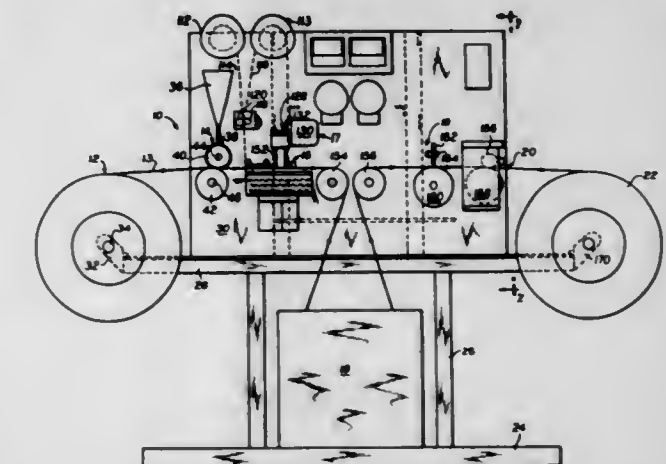
the recesses. A heating element is positioned coaxially with the susceptor element.

**3,460,511**  
**PLASTIC COATING APPLICATOR FOR CORRUGATED CARDBOARD**  
Earl E. Crist, 806 Morris, Washington, Ill. 61571, and Lyman B. Furry, 15 N. Alexander, Danville, Ill. 61832  
Filed Oct. 5, 1967, Ser. No. 673,179  
Int. Cl. B05c 1/08, 11/10  
U.S. Cl. 118—69 11 Claims



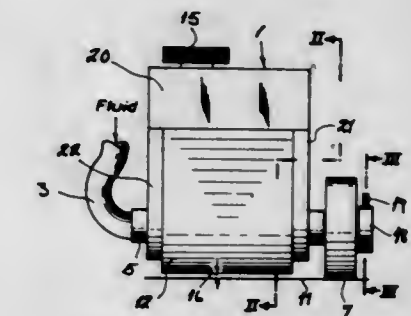
An improved hot melt plastic coating applying apparatus capable of high speed operation without waste comprises an elongated heated reservoir for a hot melt plastic coating for application to corrugated cardboard or the like, and electrically heated knurled plastic applicator wheels rotating within the reservoir. The reservoir and plastic coating applying wheel are both heated to maintain the plastic coating in a fluid condition up to the point of application to the corrugated cardboard sheet material or other sheet material being processed. The reservoir is provided with a suitable arrangement of baffles and ribs to prevent the molten plastic coating material from splashing out during high speed operation. The apparatus preferably includes a doctor blade arrangement for regulating the thickness of coating applied to the corrugated cardboard. The apparatus includes an off-take conveyor mechanism for removing coated corrugated cardboard and suspending the coated cardboard until the coating has solidified or dried. The off-take mechanism includes a system

**3,460,512**  
**APPARATUS FOR DEPOSITING A SOLDER STRIP ON A BASE METAL BAND**  
Edwin J. Keichler, New York, Clifford L. Emmerich, College Point, and Theodore L. Stern, New Rochelle, N.Y., assignors to Stern Metals Corporation, Mount Vernon, N.Y., a corporation of New York  
Filed Nov. 18, 1965, Ser. No. 508,540  
Int. Cl. B05c 11/00, 3/02, 11/02  
U.S. Cl. 118—59 12 Claims



Apparatus for depositing a metal strip on a base metal including a pair of graphite bars biased against the metal base to form a pool of metal therebetween. A solder wire is fed between the bars and melted by heaters in a plate which supports the metal base. Rotating rods have their ends contacting the strip to agitate the metal coating.

**3,460,513**  
**DISPENSER FOR COATING A MOVING SHEET**  
Wilhelm Hesselmann, also known as Willy Hesselmann, deceased, late of Rosenheim, Germany, by Charlotte Hesselmann, Herbststr. 27, Rosenheim, Germany, heir and representative of minor heir, Herbert Hesselmann, Rosenheim, Germany; Harald Hesselmann, Dusseldorf, Oberkassel, Karl-Heinz Hesselmann and Peter Hesselmann, Rosenheim, Theodor Hesselmann, Kaltmühl, Gemeinde Happing, and Hans-Jürgen Hesselmann, Rosenheim, Germany, all heirs; and Josef Wetzler, Chiemseestrasse 23, Rosenheim, Germany  
Filed Aug. 23, 1966, Ser. No. 579,474  
Claims priority, application Germany, Aug. 24, 1965, P 37,529  
Int. Cl. B05b 3/00, 9/06; B05c 5/00  
U.S. Cl. 118—323 6 Claims



Liquid dispenser of the general type disclosed in U.S. Patent No. 3,319,603 but with a movably supported applicator body whose horizontal feed tube, apertured for the discharge of the liquid, is connected at one end to

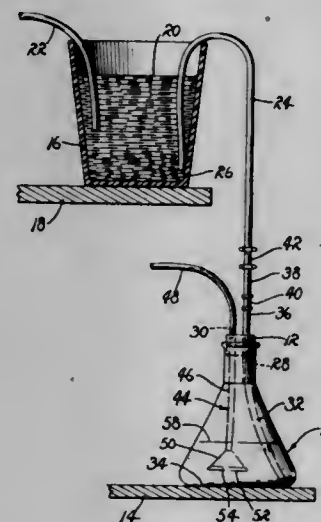


a liquid supply and at its other end to a roller mounted thereon with adjustable eccentricity to establish a selectively variable distance between the applicator outlet and a sheet to which the liquid is to be applied.

**3,460,514**  
**APPARATUS FOR PROVIDING A CONTROLLED ENVIRONMENTAL HABITAT FOR AQUATIC ORGANISMS**

Lewis A. Follansbee, 122 E. Bay Ave.,  
Balboa, Calif. 92661  
Filed Feb. 21, 1967, Ser. No. 617,653  
Int. Cl. A01k 64/00, 67/00  
U.S. Cl. 119—5

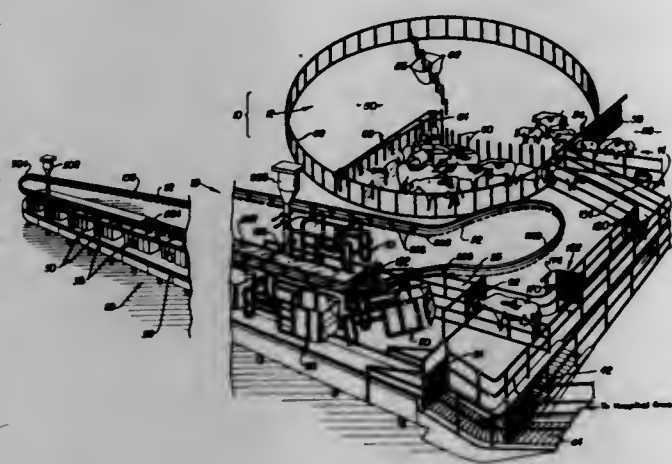
6 Claims



Apparatus for promoting life and growth of aquatic organisms by placing the organisms in a body of water of controlled environment, with growth food therein, and maintaining a growth environment substantially free from substances deleterious to aquatic organism life.

**3,460,515**  
**MILKING SYSTEM**  
Ralph E. Page, Van Nuys, and Henry van der Helde, Gardena, Calif., assignors, by mesne assignments, to Hahn Enterprises, Inc., Inglewood, Calif., a corporation of California  
Filed June 25, 1965, Ser. No. 466,986  
Int. Cl. A01j 5/00, 7/00; A01k 1/00  
U.S. Cl. 119—14.04

29 Claims

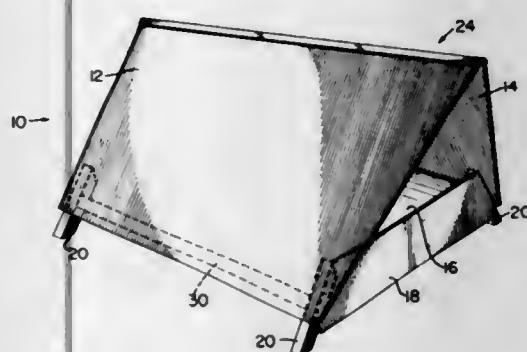


A radial gate sweeps a circular corral like the hand of a clock to herd successive groups of cattle into a lane leading into a first zone for washing and feeding the cows. Successive cages on an overhead conveyor drop down to captivate the cows and force them to walk through water and a series of sprays while the cows feed from troughs in the cages. The moving cages then enter a milking zone

where the cows stand on a conveyor platform synchronized with the cages with individual traveling milking units coupled to the cows.

**3,460,516**  
**FRAME DOGHOUSE CONSTRUCTION**  
Edwin C. Leonard, Richmond, Va. (c/o Richard P. Matthews, Rm. 1111, Warner Bldg., 13th and E Sts. NW., Washington, D.C. 20004)  
Filed Feb. 14, 1967, Ser. No. 616,018  
Int. Cl. A01k 1/02  
U.S. Cl. 119—19

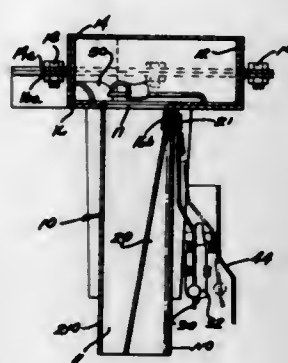
6 Claims



An A-frame construction for a doghouse having inwardly sloping legs and sidewalls with the latter meeting at a peak or apex. Stringer members run longitudinally along each side of the doghouse between front and rear legs thereof. The stringer members present a surface normal to the sloping sidewalls whereby a curving floor member may be attached between the stringer members to present a concave upward floor surface. A ridge cap member is secured to the exterior sidewalls of the apex of the doghouse and a pair of triangular nailing members beneath the ridge cap member permit fastening of the sidewall members at the apex and for its rigidity to the structure.

**3,460,517**  
**ANIMAL FEED DROP LINE CONTROL APPARATUS**  
Dee D. Allen, Zeeland, Mich., assignor, by mesne assignments, to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware  
Filed Dec. 12, 1966, Ser. No. 600,936  
Int. Cl. A01k 5/02  
U.S. Cl. 119—56

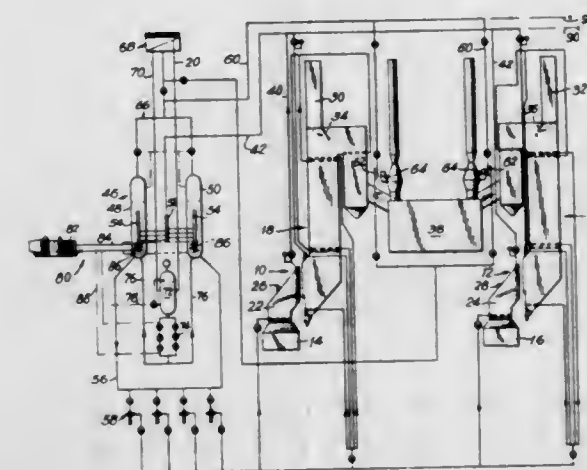
7 Claims



A generally tubular throat structure having a pivotally mounted feed-sensing finger therein and a rigid switch-operating element connected to the sensing finger and extending laterally outwardly of the longitudinal silhouette of the throat, with the operating element carrying a magnetic switch actuator and a magnetically-responsive switch mounted to an outside wall of the throat structure, for actuation by the magnet upon predetermined movement of the sensing finger.

**3,460,518**  
**STEAM GENERATING SYSTEM AND METHOD**  
Roland Kemmetmueller, Pittsburgh, Pa., assignor to Waagner-Biro A.G., Vienna, Austria  
Filed Jan. 4, 1968, Ser. No. 695,649  
Int. Cl. F22d 1/00; F22b 37/22  
U.S. Cl. 122—7

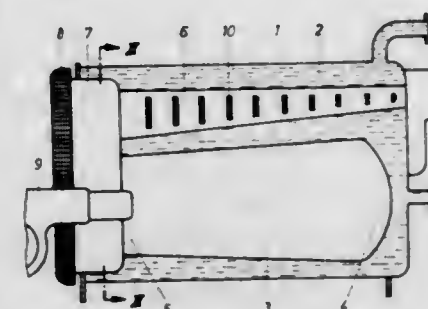
12 Claims



A steam generating system and method which extracts heat from gases issuing from a converter. A watertubular duct means communicates with the converter to direct gases therefrom and to extract the heat from the gases, and an accumulator means communicates with the duct means to receive heated fluid therefrom. A conduit means leads directly from the accumulator means back to the duct means so that the circulation of fluid through the watertubular duct means takes place without the requirement of steam drums. The fluid in the watertubular duct means is maintained during off-blow periods of each operating cycle at substantially the same temperature as during the blow period of each cycle, so that in this way cold starts are avoided.

**3,460,519**  
**BOILER FOR FIRING LIQUID OR GASEOUS FUEL**  
Gustav Ospelt, Vaduz, Alfred Vogt, Schaan, and Hellmut Gutmann, Balzers, Liechtenstein, assignors to Gustav Ospelt Hovalwerk AG, Vaduz, Liechtenstein  
Filed Jan. 4, 1968, Ser. No. 695,683  
Claims priority, application Luxembourg, Jan. 12, 1967, 52,798; Sept. 8, 1967, 54,442  
Int. Cl. F22b 7/12  
U.S. Cl. 122—149

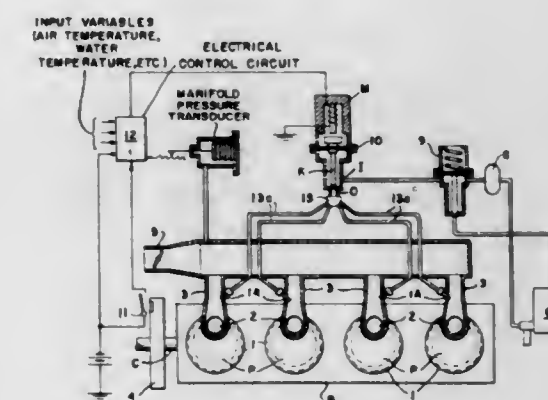
12 Claims



A heating boiler having a firebox extending in the longitudinal direction of the boiler and having a closed end and an open end with a substantially oval opening, said firebox being eccentrically located in said boiler and with the outer boiler wall defining a water jacket through which extend mutually spaced flue gas passages having their longitudinal extension in the direction of the extension of the longitudinal axis of the firebox.

**3,460,520**  
**FUEL INJECTION SYSTEM FOR INTERNAL-COMBUSTION ENGINES**  
Robert Huber, Zumikon, Switzerland, assignor to Societe des Procédes Modernes d'Injection Sopromi, Les Mureaux, Yvelines, France, a corporation of France  
Filed Apr. 7, 1967, Ser. No. 629,190  
Claims priority, application Switzerland, Apr. 14, 1966, 5,374/66  
Int. Cl. F02m 51/00, 63/02  
U.S. Cl. 123—32

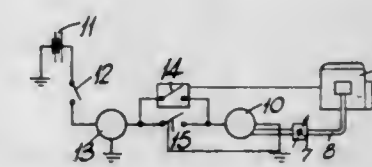
5 Claims



A single fuel metering valve is provided to control the injection of fuel into a plurality of cylinders in an internal-combustion engine. A plurality of fuel injection nozzles are each coupled between the outlet of the fuel metering valve and the air intake conduit of a corresponding cylinder. An electrical control circuit is coupled between the crankshaft of the motor and the fuel metering valve to control the timing and the quantity of fuel injected into the air intake conduits through the fuel injection nozzles. The fuel injection nozzles can be electromagnetically actuated valves which are opened in sequence during the intake stroke of the corresponding cylinders. A fuel distributor can also be connected between the fuel metering valve and the injection nozzles to couple the fuel injection nozzles to the outlet of the fuel metering valve in time sequence.

**3,460,521**  
**ELECTRICAL SPEED CONTROL FOR AN INTERNAL COMBUSTION ENGINE**  
Eric William Downing and Brian Walter Goddard, Solihull, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England  
Filed Mar. 29, 1967, Ser. No. 626,871  
Claims priority, application Great Britain, Mar. 29, 1966, 13,811/66  
Int. Cl. F02d 5/00, 9/08  
U.S. Cl. 123—102

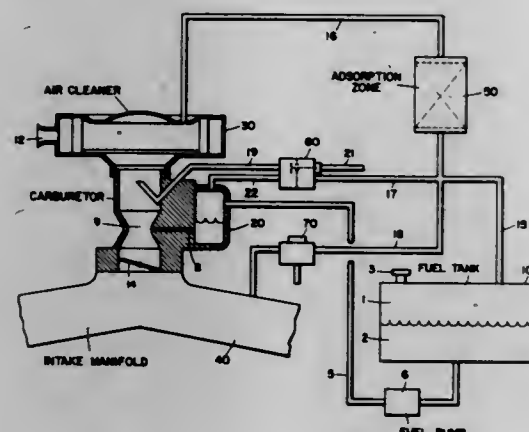
2 Claims



An electrical control circuit for use with a fuel injection system for an internal combustion engine comprises a pump or a relay for operation of a pump, and a pair of switches one responsive to engine speed and the other operable with throttle closure, the switches being so connected that the pump or relay is de-energized to interrupt fuel supply to the engine when the speed of the engine is above a predetermined value but the throttle is shut.



**3,460,522**  
**EVAPORATION CONTROL DEVICE-PRESSURE**  
**BALANCE VALVE**  
 Milton J. Kittler, Bloomfield Hills, Mich., and P. John  
 Clarke, Florham Park, N.J., assignors to Esso Research  
 and Engineering Company, a corporation of Delaware  
 Filed May 16, 1966, Ser. No. 550,456  
 Int. Cl. F02m 19/00, 27/00  
 U.S. Cl. 123-136 3 Claims



Apparatus for preventing loss of fuel constituents into the atmosphere from an internal combustion engine which comprises in combination an adsorption zone adapted to adsorb vaporous fuel constituents during engine nonoperation and wherein said constituents are desorbed during engine operation by back flowing atmospheric air there-through and wherein a valve assembly is provided so as to provide free communication between the carburetor and the vaporous area of the carburetor bowl during engine operation and wherein during engine nonoperation to provide free communication between said vaporous area and said adsorption zone.

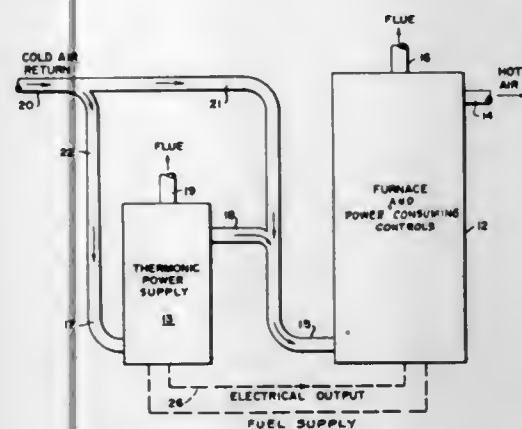
**3,460,523**  
**CATALYTIC OVEN COATING COMPOSITIONS**  
 Alvin B. Stiles and Paul Clifford Yates, Wilmington, Del.,  
 assignors to E. I. du Pont de Nemours and Company,  
 Wilmington, Del., a corporation of Delaware  
 No Drawing. Filed Aug. 28, 1967, Ser. No. 663,522  
 Int. Cl. A21b 1/00 9 Claims

A composition is provided which is useful for coating the walls of an oven, or the like, to provide a porous film containing catalytic materials. The composition contains finely divided thermally stable oxidation catalyst particles bonded together and to the oven walls by a water soluble alkaline silicate. The composition can optionally contain a filler material.

**3,460,524**  
**THERMIONIC POWER AND HEAT SOURCE**  
 Lazaros J. Lazaridis, Canton, Mass., assignor to Thermo  
 Electron Corporation, Waltham, Mass., a corporation of  
 Delaware  
 Filed Aug. 2, 1967, Ser. No. 657,876  
 Int. Cl. F24h 3/04; F28d 15/00; H02n 3/00  
 U.S. Cl. 126-110 10 Claims

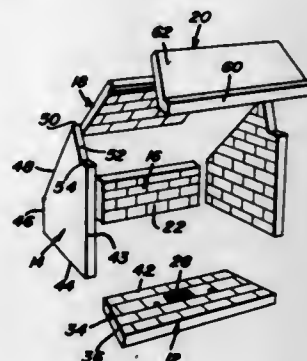
A power supply system which includes a thermionic device for converting heat into electricity combined with energy storage units and switching circuitry to make available electrical power instantly, continuously and at a voltage level suitable for use with conventional electrical apparatus. One application of the system is related to domestic heating installations. Either integrated or used in conjunction with a conventional heating system is a power supply which includes a group of series-connected thermionic diodes. The emitters of the diodes are heated by the combustion of the same fuel used in the heating

system. The thermionic diodes provide an electrical output which is applied to a given storage battery or batteries of a set, as determined by the charge level of the battery or batteries while another battery or batteries is available to provide power as required. Apparatus in-



cluding voltage sensors and relays permits application of the output of the thermionic diodes to charge in parallel the cells of those batteries requiring charge. Simultaneously, the cells of a fully charged battery are connected in series to make available an output at a conventionally useful voltage level.

**3,460,525**  
**PREFABRICATED MASONRY FIREBOX**  
 Charles R. Bryant, 202 Main St.,  
 Beech Grove, Ind. 46107  
 Filed Sept. 11, 1967, Ser. No. 666,865  
 Int. Cl. F24b 1/18; E04h 12/28; F23j 15/00  
 U.S. Cl. 126-120 10 Claims



A prefabricated firebox assembled from reinforced masonry panels having inside brick facings. The floor panel mounts an ash dump assembly while a draft control assembly is mounted by the back panel with an outlet opening formed below a smoke deflecting roof panel extending at an upward incline from the top edges of the side panels.

**3,460,526**  
**APPARATUS FOR FLOW-CONTROL AND**  
**PRESSURE MEASUREMENT**  
 Robert W. McKirdy, Scarsdale, and Harvey J. Engelsber,  
 Yonkers, N.Y., assignors, by mesne assignments, to  
 Horizon Industries, Ltd., a corporation of New York  
 Filed Aug. 23, 1965, Ser. No. 481,469  
 Int. Cl. A61b 5/02 4 Claims

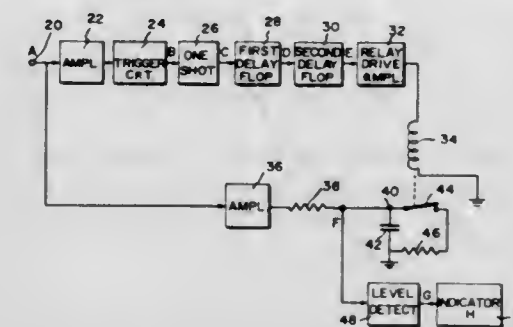
A combined fluid infuser and monometer for controlling the flow of fluids and monitoring the pressure variations therein. The system includes a pair of tubes interconnected to form a monometer and having infuser conduit means connected to and in communication with the monometer. The system further includes reservoir means connected to and in communication with the monometer, and fluid control means for selectively controlling the flow

of fluid through the system. Calibrated scale means are further provided, in association with the monometer, for the detector in order to approximately locate the foreign matter within the body tissue. The foreign matter may then



measuring the pressure of the fluid in the infuser conduit means.

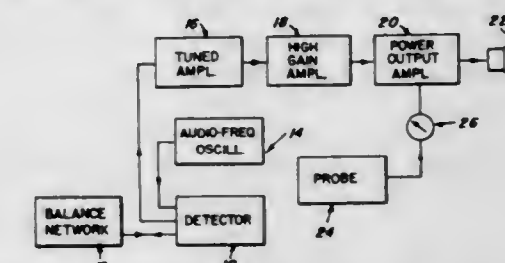
**3,460,527**  
**ELECTROCARDIOGRAPHIC DEVICE FOR**  
**DETECTING QRS WIDENING**  
 Herbert Karsh, Lexington, Mass., assignor to Lexington  
 Instrument Corporation, Waltham, Mass., a corporation  
 of Massachusetts  
 Filed Oct. 12, 1966, Ser. No. 586,149  
 Int. Cl. A61b 5/04 5 Claims



A device for detecting QRS widening in heart-beat waveforms, in which device a first signal is produced upon detection of a Q wave, the signal having a fixed interval approximately equal to the normal wave duration between the Q and S wave maxima. The first signal then is used to trigger a second signal having a fixed interval approximately equal to the duration of expected widening of the QRS complex. The heartbeat waveform is sampled on an absolute basis during the second signal. Only samples above a threshold amplitude indicate QRS widening inasmuch as a widened waveform will have portions of its R wave occurring within the sampling period.

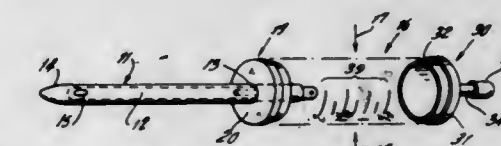
**3,460,528**  
**APPARATUS FOR LOCATING AND REMOVING**  
**FOREIGN MATTER FROM ANIMAL TISSUE**  
 Henry J. Carney, Wellesley Hills, Mass.  
 (Box 294, West Harwich, Mass. 02671)  
 Filed Apr. 20, 1965, Ser. No. 449,558  
 Int. Cl. A61b 5/04, 6/02; G01v 33/12  
 U.S. Cl. 128-2.1 10 Claims

Electromagnetic search coils in a detector are balanced to establish a neutralized magnetic zone disturbed by the presence of foreign matter embedded in animal body tissue. The disturbance is monitored through a pick-up coil in



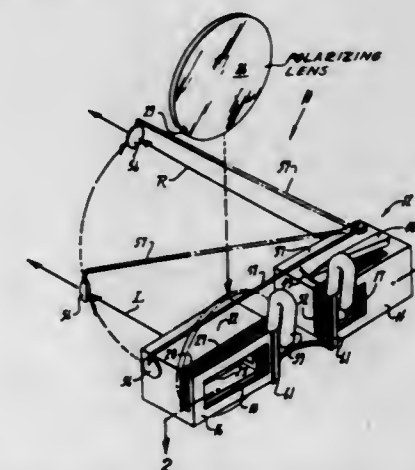
be precisely located or removed by tissue penetrating instruments when registering location of the foreign matter.

**3,460,529**  
**STERILE DEVICE FOR EXTRACTING URINE**  
**SAMPLES AND THE LIKE AND PACKAGE**  
**FOR SAME**  
 Gino Leucci, Philadelphia, Pa., assignor of thirty percent  
 to Richard Mallman  
 Filed June 30, 1965, Ser. No. 468,417  
 Int. Cl. A61m 25/00, 1/00; G01n 1/14  
 U.S. Cl. 128-2 5 Claims



An assembly including a flexible container and an integrally mounted catheter for extracting urine samples. After the sample is extracted, an adjustable valve means may be closed and the catheter may be removed to facilitate handling of the container. A dispensing nozzle is provided for dispensing single drops and for coupling to a hypodermic needle for injection of the specimen, when desired. One cap structure may be provided with a tapered interior to collect sediment when the container is vigorously shaken by a centrifuge to permit dispensing of one drop of sediment which will not be diluted during the dispensing operation due to the fact that the sediment is collected at the tapered end of the cap. The entire assembly is kept sterile and housed within a package which may easily be torn open. Handles may be provided on the exterior of the package to permit insertion of the catheter without handling the assembly. The package may include a lubricating jelly to facilitate insertion of the catheter.

**3,460,530**  
**ORTHOPTIC EXERCISING DEVICE**  
 Ralf W. Lorenz, 1396 Summit Road,  
 Berkeley, Calif. 94708  
 Filed Feb. 18, 1965, Ser. No. 433,666  
 Int. Cl. A61b 5/00 11 Claims

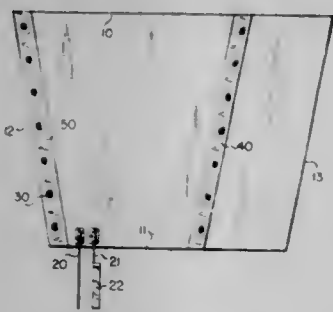


A device adapted to be worn by attachment to spectacles includes a viewing passage for each eye. One eye



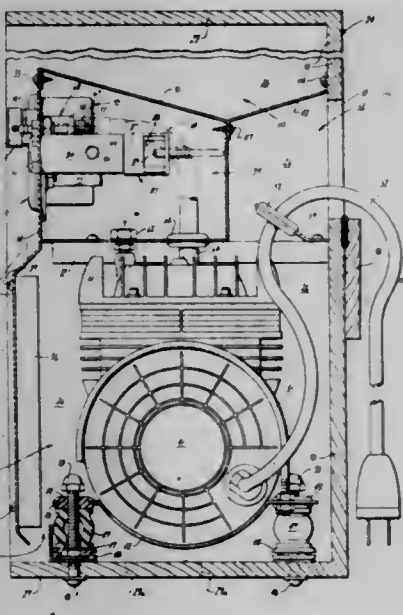
looks directly through a viewing passage while the line of sight for the other eye can be suitably varied so as to effect fusion. A check mark can be swingably positioned in front of one or the other of the two viewing passages. Each visual path is arranged whereby a polarized lens can be interposed and variously obscure the images transmitted along such paths. Embodiments for correcting various conditions of strabismus entailing horizontal deviation of the two respective visual lines, vertical deviation, and cyclo or rotated deviation of the visual lines or combinations thereof are provided.

**3,460,531**  
**INFLATABLE SPLINT WITH LACING MEANS**  
William James Gardner, 13700 Shaker Blvd.,  
Cleveland, Ohio 44120  
Filed June 20, 1966, Ser. No. 558,874  
Int. Cl. A61f 5/04  
U.S. Cl. 128—87 9 Claims



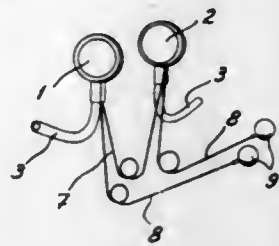
An inflatable splint having a pair of flexible sheets of air tight material sealed together along their edge portions to form an inflatable body. An inflating tube communicates with the inflatable body and at least two rows of lacing clips are provided which extend from one marginal edge to the opposite marginal edge. The splint is wrapped about a body member, laced up, and then inflated to provide support for the body member.

**3,460,532**  
**PULMONARY THERAPY RESPIRATOR**  
Forrest M. Bird, 212 NW. Cerritos Drive, Palm Springs,  
Calif. 92262, and Henry L. Pohndorf, 1227 Brewster  
Drive, El Cerrito, Calif. 94530  
Filed Aug. 6, 1965, Ser. No. 477,814  
Int. Cl. A61m 11/00; A61h 31/00  
U.S. Cl. 128—145.6 12 Claims



Respirator for pulmonary therapy having a compressor delivering air to a jet venturi to supply air to a patient through a manually controlled exhalation valve assembly.

**3,460,533**  
**NASAL EXPANDER-INHALER**  
Claudio Riú Plá, Madrazo 83, Barcelona, Spain  
Filed Dec. 23, 1965, Ser. No. 515,835  
Claims priority, application Spain, Dec. 31, 1964,  
110,712  
Int. Cl. A61m 15/08, 29/00  
U.S. Cl. 128—206 2 Claims



A nasal expander-inhaler is arranged for insertion into a patient's nostrils for affording maximum expansion of the nasal cavities while supplying medical gases through the inhaler. An expander head forming a small hollow chamber is arranged to be disposed in each nostril and a resilient wire bridge interconnects the expander heads for expanding the nostrils in a direction across the patient's face. Each expander head has a hair pin spring attached to it with a sphere at the opposite end of the spring from the head expander, the sphere is arranged to be disposed in the forward part of the nose whereby the nasal passage is expanded by the spring in a forward direction. The combination of the head expander and the sphere in each nostril affords a two-way expansion providing a maximum opening of the nasal passage while limiting the amount of obstruction in the nasal passages.

**3,460,534**  
**ASPIRATING CARTRIDGE SYRINGE WITH GAS ACTUATION**  
Robert B. Black, 2925 Denver St.,  
Corpus Christi, Tex. 78404  
Continuation-in-part of application Ser. No. 559,703,  
Apr. 28, 1966. This application Nov. 25, 1966, Ser.  
No. 597,077  
The portion of the term of the patent subsequent  
to Mar. 18, 1986, has been disclaimed  
Int. Cl. A61m 5/18, 5/22  
U.S. Cl. 128—218 1 Claim

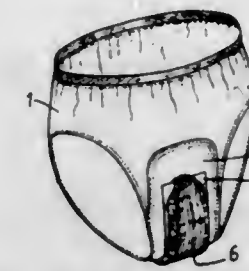


Hypodermic syringe adapted for use with a cartridge containing the fluid to be injected and being of the type having a free piston engageable by an actuating plunger in the syringe, the plunger having at least one and preferably two straight pins projecting therefrom axially to penetrate the free piston and provide a frictional grip with the piston providing for retraction of the piston in order to effect aspiration into the cartridge before making an injection, the pin or pins being substantially free of lateral projections or barbs to provide for withdrawal thereof from the piston.

**3,460,535**  
**SANITARY SLIP**  
Antoine Behna, Domaine de Profonds par,  
Presly, Cher, France  
Filed July 1, 1966, Ser. No. 562,314  
Claims priority, application France, July 6, 1965,  
23,616, Patent 1,451,375  
Int. Cl. A61f 13/20, 13/16  
U.S. Cl. 128—288 6 Claims

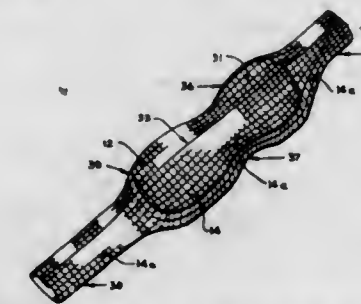
A sanitary slip assembly is formed of a slip made of an elastic material having a gusset portion containing an

impermeable lining and having fiber interengaging means located at the ends of the gusset. A flexible support including an impermeable liner has fiber interengaging



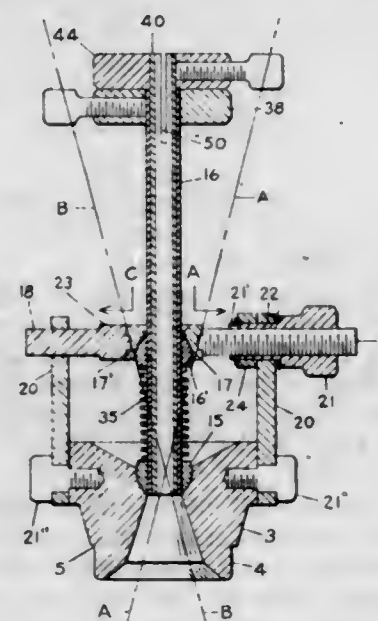
means arranged for attachment to the similar means on the gusset portion. A member formed of absorbent material, such as a sanitary napkin is secured to the flexible support and is positively held in position within the slip.

**3,460,536**  
**SANITARY NAPKIN WITH CONFORMABLE WRAPPER**  
John F. Champaigne, Jr., Neenah, Wis., assignor to  
Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware  
Filed Oct. 21, 1966, Ser. No. 588,583  
Int. Cl. A61f 13/16  
U.S. Cl. 128—290 6 Claims



A sanitary napkin with a conformable wrapper which is retractable in its transverse dimension and substantially non-extensible in its longitudinal direction. The wrapper conforms readily to irregular shaped pads to provide a smooth outer surface while permitting the pad to be held in close association with the body when suspended by conventional suspension means.

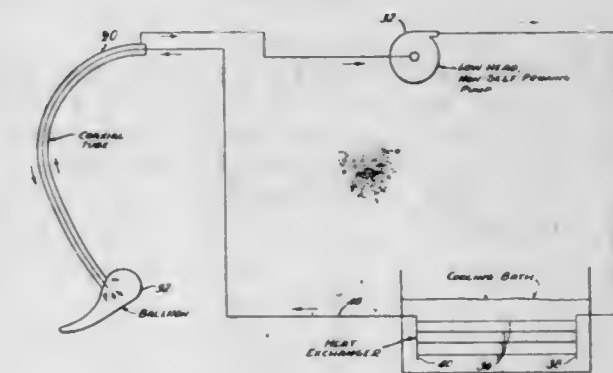
**3,460,537**  
**STEREOTACTIC GUIDE FOR USE IN THE CREATION OF DESTRUCTIVE BRAIN LESIONS**  
Donald C. Zeis, 2122 Roselawn St.,  
Sarasota, Fla. 33581  
Filed Sept. 26, 1966, Ser. No. 581,793  
Int. Cl. A61b 17/32; A61n 3/00  
U.S. Cl. 128—303 3 Claims



The present invention comprises attaching means for

firmly and rigidly attaching a cannula guide used in the cryosurgical treatment of various diseases centered in the brain of a patient which includes means for insertion into the trephine or hole cut in the cranium or skull and anchoring means for securely locking the attaching means to the skull in such a manner as to prevent possible independent movement of the skull and attaching elements, together with means to limit the insertion of the attaching element into the trephine.

**3,460,538**  
**HYPOTHERMIA APPARATUS AND METHOD FOR TREATING THE HUMAN BODY AND THE LIKE**  
Edward T. Armstrong, 490 Pepperidge Tree Terrace,  
Smoke Rise, Butler, N.J. 07405  
Continuation-in-part of application Ser. No. 313,202,  
Oct. 2, 1963. This application Oct. 20, 1967, Ser.  
No. 680,608  
Int. Cl. A61b 17/36  
U.S. Cl. 128—303.1 10 Claims



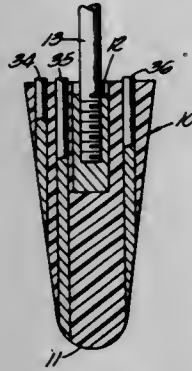
That method of hypothermically treating locally a condition of the human body which includes the steps of introducing a flexible bag through a body opening into an area to be treated, passing a non-toxic liquid to the bag through a small diameter lumen, said liquid comprising more than about 25% and less than about 50% of propylene glycol suitably and non-toxically corrosion inhibited, possibly including a surface tension depressant and possibly containing colorimetric or PH responsive indicators and the balance substantially water, withdrawing the liquid from the bag by a lumen surrounding the first-named lumen, the pressure drops in said lumens being substantially equal, circulating the liquid from the bag at a pressure of several inches of water through a heat exchanger positioned in a liquid bath, cooling the bath with ice, returning the cooled liquid to the first lumen, providing a warning if the temperature of the heat exchanger is above or below selected limits, and automatically stopping the circulation of the liquid in the event of air entrainment. Stated in terms of apparatus, the hypothermia apparatus includes an endless circulating system, a non-toxic liquid filling the system, a low pressure pump for circulating the liquid in the system, a flexible inflatable bag in the system, a lumen having a minimum outside diameter in the system for supplying liquid to and from the bag, a heat exchanger in the system, liquid means for cooling the heat exchanger, and means for driving the pump.

**3,460,539**  
**CAUTERY TIP**  
James E. Anhalt, Sr., 407 De la Fuente,  
Monterey Park, Calif. 91754  
Filed Mar. 10, 1967, Ser. No. 622,264  
Int. Cl. A61b 17/36  
U.S. Cl. 128—303.17 9 Claims

A generally cone-shaped apparatus of electrical non-conductive material into which extends a plurality of



metal rods, the inner ends of which are exposed where they form the surfaces of the cone member and the outer ends of which may be connected to or contacted by an apparatus for supplying a sprak gap current for cauter-



izing the tissue adjacent the exposed inner end of the selected metallic member. The invention also constitutes a plug for insertion into the excised cone to control bleeding by pressure during its use.

**3,460,540**  
**PLASTIC CATHETER WITH RUBBER BALLOON**  
Joseph L. Gagne, Warwick, R.I., assignor to Davol Inc., Providence, R.I., a corporation of Rhode Island  
Filed Apr. 18, 1966, Ser. No. 543,403  
Int. Cl. A61m 25/00  
U.S. Cl. 128—349 3 Claims



A plastic catheter having a rubber tip secured to its distal end, a thin layer of rubber latex fused to and covering the portion of the plastic catheter adjacent its distal end, including the aforesaid tip, and an inflatable rubber sac fused to said rubber latex layer, said plastic catheter further comprising a plastic funnel portion secured to the proximal end of the catheter, said funnel portion having a drainage passage in alignment with the catheter drainage lumen and an inflating passage in communication with the inflating lumen of the catheter.

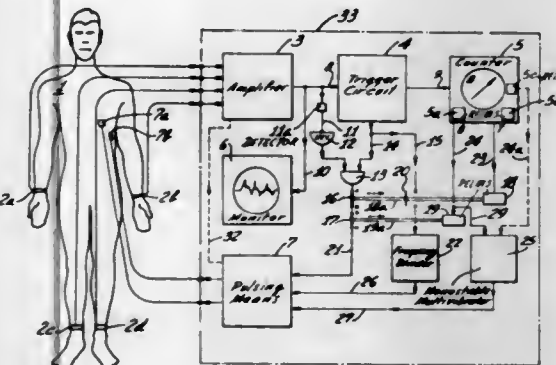
**3,460,541**  
**ENDOTRACHEAL INTUBATION TUBES**  
George O. Doherty, 2301 River Road, Missoula, Mont. 59801  
Continuation-in-part of application Ser. No. 437,365, Mar. 5, 1965. This application Oct. 6, 1966, Ser. No. 584,795  
Int. Cl. A61m 16/00, 25/00; F16k 15/14  
U.S. Cl. 128—351 9 Claims  
An intubation tube including an open-ended flexible tubular conduit having an inflatable cuff on its distal end

for engaging a patient's tracheal lining. The cuff is inflated through an aperture in the tubular conduit and the aperture is normally covered by a check valve which can be a flap-like element, a collar embracing the flexible conduit,



a saddle-like element, or an invaginated sleeve-like extension of one end of the cuff. Other embodiments have distal ends provided with accordion-like pleats or outwardly extending flares in lieu of inflatable cuffs.

**3,460,542**  
**INSTRUMENT FOR ELECTRICALLY STIMULATING THE ACTIVITY OF THE HEART**  
Alfred Gemmer, Berlin-Frohnau, Germany, assignor to Fritz Hellge & Co. G.m.b.H., Freiburg im Breisgau, Germany  
Filed Feb. 2, 1967, Ser. No. 613,472  
Claims priority, application Germany, Feb. 9, 1966, H 58,492  
Int. Cl. A61b 5/04  
U.S. Cl. 128—421 3 Claims



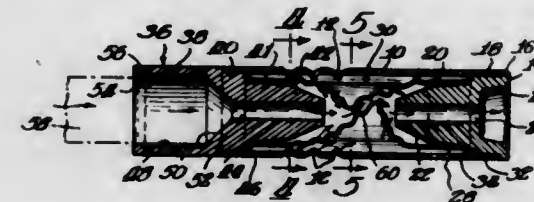
An instrument for electrically stimulating the activity of the heart. The instrument is useful for the following abnormalities: tachycardia, a condition where the heart beats too fast; bradycardia, a condition where the heart beats too slow; arrhythmia, a disturbance in the rhythm of the heart; and, a feeble heart beat.

The principal components used in an illustrative embodiment of the instrument are: probes connected to the body of the patient for receiving heart signals; a source of signals which stimulate the heart which differ from but vary with the input heart signals; a second source of signals which stimulate the heart which have a preset fixed frequency; and a pulsing means for selectively stimulating the heart with signals from said first source and with signals from said second source, in a manner which depends on the type of pulsations sensed by the probes.

**3,460,543**  
**CIGARETTE FILTER**  
Charles H. Keith II, Charlotte, Vello Norman, Chapel Hill, and William W. Bates, Jr., Durham, N.C., assignors, by mesne assignments, to Liggett & Myers Incorporated, New York, N.Y., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 262,653, Mar. 4, 1963, now Patent No. 3,251,365. This application Mar. 21, 1966, Ser. No. 535,739  
Int. Cl. A24d 1/06; A24c 5/50  
U.S. Cl. 131—10.7 8 Claims  
Compositions useful in cigarette filters are composed of a high surface area granular support, such as charcoal having a particle size of less than about 8 mesh and a specific surface area of one million square centimeters per gram, impregnated with 1 to 13% of an oxide of cobalt, copper or zinc and 1 to 13% of an oxide of

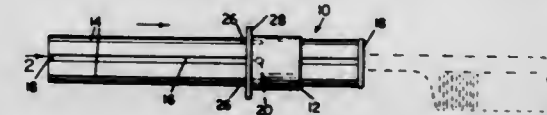
cobalt, copper, zinc, silver or molybdenum, there being no more than 14 percent total oxides. Other useful compositions are composed of granules having particle sizes of not greater than 50 mesh and 1 to 14% of at least one oxide of cobalt, copper or zinc.

**3,460,544**  
**CIGARETTE HOLDER**  
Max J. Doppelt, 1920 W. Sunnyside Ave., Chicago, Ill. 60640  
Filed Sept. 5, 1967, Ser. No. 665,541  
Int. Cl. A24f 7/04, 13/06  
U.S. Cl. 131—198 5 Claims



A cigarette holder which will reduce the quantity of particulate tar and nicotine, provide a cooler smoke, and considerably reduce toxic gases. The holder includes a fibrous member which in the holder is distorted or crushed to provide a tortuous passageway and baffle for the smoke which is mixed with the air drawn into the holder. The fibrous member is readily replaceable.

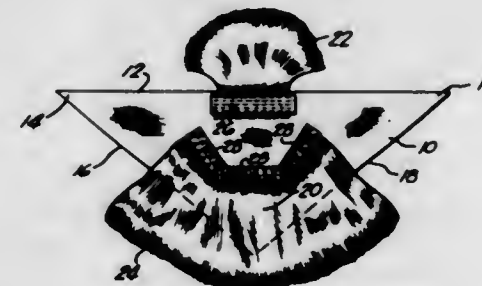
**3,460,545**  
**HAIRDRESSER'S CURLING TOOL**  
Michael J. Ciccone, Stoneham, Mass.  
(10 Melbourne Ave., Reading, Mass. 01867)  
Filed Nov. 29, 1966, Ser. No. 597,696  
Int. Cl. A45d 2/16, 2/24, 2/30  
U.S. Cl. 132—33 2 Claims



This invention relates to a tool for use by hairdressers by which curls can be formed on the head, and held in position on the head as by pins or the like, when the tool has been removed, so that the curl when formed and is empty, i.e., no roller is needed. Therefore the curl is open to air circulation and drying time of the hair is greatly reduced.

The device dispenses with the usual rollers, makes perfect roll-type curls (as well as flat curls) and makes the curls tighter than is otherwise possible.

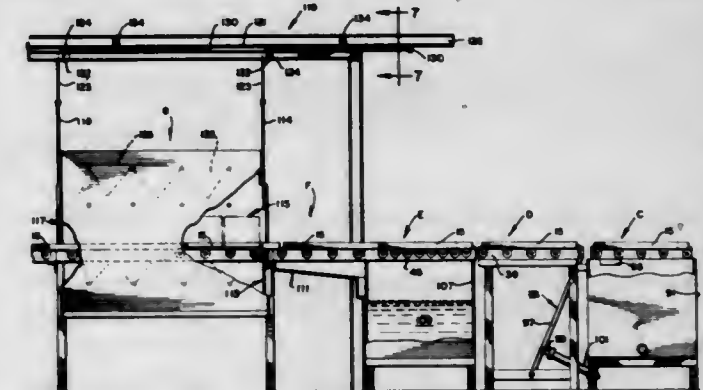
**3,460,546**  
**SCARF HAIRPIECE**  
Willa D. Abbott, 318 Mulholland St., Ann Arbor, Mich. 48103  
Filed Oct. 5, 1966, Ser. No. 584,565  
Int. Cl. A41g 3/00  
U.S. Cl. 132—53 1 Claim



A triangular-shaped scarf having hairpieces attached thereto which extend beyond the scarf's edges which when

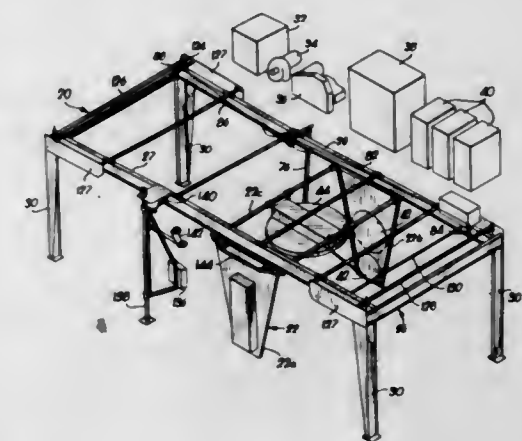
worn cover the wearer's hair to provide a natural appearance.

**3,460,547**  
**APPARATUS FOR TREATING AND INSPECTING CASTINGS AND LIKE OBJECTS**  
George J. Gribas, Lake Forest, Lake Hopatcong, George C. Kinney, Landing, and Edwin Cummings, Jr., Bloomfield, N.J., assignors to Howmet Corporation, New York, N.Y., a corporation of Delaware  
Filed Oct. 5, 1967, Ser. No. 673,185  
Int. Cl. B08b 3/04  
U.S. Cl. 134—46 9 Claims



An apparatus for systematically transporting, treating and inspecting castings and like objects. A plurality of object-carrying transport modules are used to transport the objects along trackways which pass through a selected arrangement of treatment and inspection stations. The stations and the modules are adapted to permit accommodation by the stations of an integral number of modules so that the modules may be advanced along sections of trackways in a step-by-step manner to systematically treat and inspect the objects carried thereon.

**3,460,548**  
**AUTOMATIC CAR WASHING APPARATUS**  
Paul S. Giovagnoli, 4200 Birmingham Road, Kansas City, Mo. 64117  
Filed Feb. 16, 1967, Ser. No. 616,677  
Int. Cl. B60s 3/04; B08b 3/12  
U.S. Cl. 134—58 7 Claims



A car washer having an elongated overhead frame mounted on corner standards. A U-shaped assembly is reciprocable along the frame in partial surrounding relationship to a vehicle being washed beneath the frame. The assembly is provided with a plurality of rotary washer units disposed for completely scanning the top and sides of the vehicle with high velocity, undispersed streams of fluid. A nozzle unit having a high velocity nozzle is disposed at each corner of the washer. Each corner nozzle unit is provided with mechanism for oscillating the same simultaneously about a vertical axis and a horizontal axis to scan proximal areas of the ends of the vehicle



with high velocity, undispersed streams of fluid. The corner nozzle units are coupled with the U-shaped assembly and oscillated thereby during reciprocation of the assembly so that all portions of the vehicle are washed at the same time.

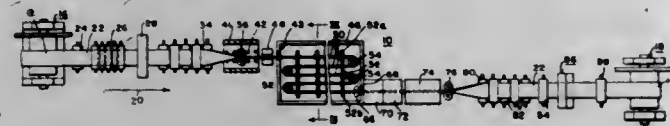
3,460,549

**STRIP HANDLING APPARATUS**

Joseph Leroy Webb, Scott Township, Allegheny County, Pa., assignor to Swindell-Dressler Company, a Division of Pullman Incorporated, Pittsburgh, Pa.  
Filed May 6, 1966, Ser. No. 548,242  
Int. Cl. B08b 3/10, 3/00

U.S. Cl. 134—64

7 Claims



Apparatus for handling strip material. The strip is coiled and uncoiled in a horizontal disposition, and between the coiling and uncoiling position a treatment chamber is positioned. The strip is twisted to a vertical disposition for passage through the chamber and is then relaied to the horizontal disposition for winding upon the coiling means.

3,460,550

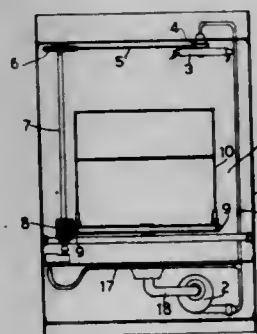
**DEVICE FOR DRIVING A ROTARY BASKET, PARTICULARLY FOR DISHWASHERS**

Lino Zanussi, Ronche di Fontanafredda, Italy, assignor to Industrie A. Zanussi S.p.A., Pordenone, Udine, Italy, an Italian company

Filed Sept. 1, 1967, Ser. No. 664,974  
Claims priority, application Italy, Sept. 3, 1966, 20,217/66, Patent 776,633  
Int. Cl. B08b 3/06

U.S. Cl. 134—112

9 Claims



Driving device for the basket in dishwashers, wherein said basket is rotated by means of hydraulic pressure.

3,460,551

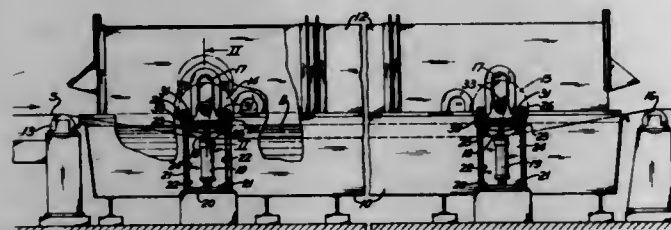
**ROLL MOUNTING**

Merrill V. Hamilton, Gary, and William R. Klahn, Crown Point, Ind., assignors to United States Steel Corporation, a corporation of Delaware

Filed Dec. 7, 1967, Ser. No. 688,912  
Int. Cl. B08b 3/08; B65h 17/20, 59/12

U.S. Cl. 134—122

6 Claims



A mounting for a vertically movable roll where opposite sides of the roll do not move in synchronism. The roll is journaled in bearings mounted on cradles. One

cradle has pivotal and translational movement and the other is pivoted to enable the ends of the roll to move unevenly without damaging the bearings.

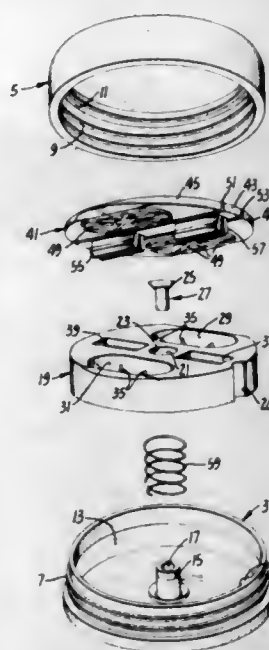
3,460,552

**CONTACT LENS CASE**

Robert G. Sturgeon, Sunnyvale, Calif., assignor to Barnes-Hind International, Inc., a corporation of California  
Filed June 20, 1967, Ser. No. 647,561  
Int. Cl. B08b 3/04, 3/00

U.S. Cl. 134—135

1 Claim



Liquid containing, flat contact lens case wherein the lenses are individually carried on a platform which rises out of the liquid as the case is opened and is lowered into the liquid when the case is closed.

3,460,553

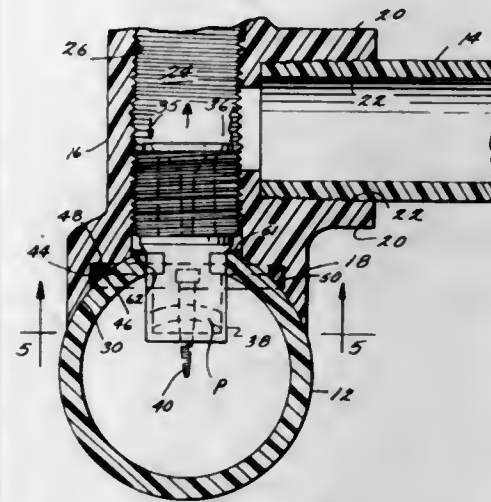
**METHOD AND CONNECTION FOR ESTABLISHING SERVICE BETWEEN A PLASTIC MAIN AND PLASTIC SERVICE PIPE WITH A PLASTIC SERVICE T**

Wilbur R. Leopold, Jr., John J. Smith, and Carl E. Floren, Decatur, Ill., assignors to Mueller Co., Decatur, Ill., a corporation of Illinois

Filed Dec. 2, 1966, Ser. No. 598,653  
Int. Cl. F16l 47/00

U.S. Cl. 137—15

8 Claims



A connection and a method of connecting a plastic service pipe to a plastic main by means of a plastic service T to establish service without the escape of fluid from the main to atmosphere. The connection and method permits immediate tapping of the plastic main after the application of the plastic T to the main as an initial fluid

tight seal is made between the main and the plastic T prior to complete formation of the fluid tight seal and ultimate strength of the joint provided by the solvent weld between the plastic T and the main.

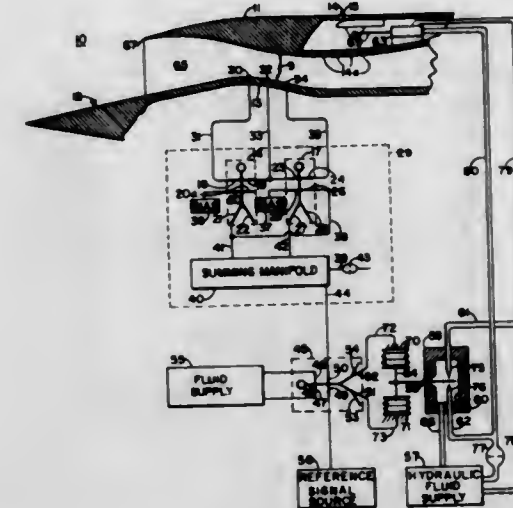
3,460,554

**CONTROL APPARATUS**

Elmer G. Johnson, White Bear, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware  
Filed Aug. 25, 1966, Ser. No. 575,062  
Int. Cl. F02k 11/00; F15c 1/08

U.S. Cl. 137—15.2

7 Claims



Apparatus for positioning a shock wave in the diffuser section of a jet engine comprising a plurality of fluid amplifiers each controlled by a signal from a pressure tap located along the diffuser section, summing means connected to receive and sum the output signals from the fluid amplifiers, and means responsive to the signal from the summing means for controlling the position of the shock wave. In operation, a varying number of the fluid amplifiers, depending on the position of the shock wave, supply signals to the summing means.

3,460,555

**PRESSURE REGULATOR CONSTRUCTION**

Louis M. Puster, Knoxville, Tenn., assignor, by mesne assignments, to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

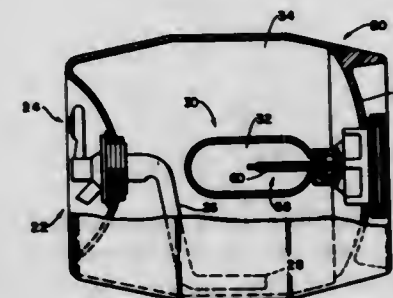
Application Jan. 21, 1965, Ser. No. 426,992, now Patent No. 3,252,622, dated May 24, 1966, which is a continuation-in-part of application Ser. No. 344,074, Feb. 11, 1964. Divided and this application May 18, 1966, Ser. No. 551,126

The portion of the term of the patent subsequent to May 24, 1983, has been disclaimed

Int. Cl. B67d 1/04, 1/14; B65d 83/14

U.S. Cl. 137—12

6 Claims



This application discloses a relatively large low pressure beer dispensing container with a relatively small

high pressure CO<sub>2</sub> container. The container has a dip tube with a filtering slot at one end and with an expansion valve at the other end. The valve discharges reduced pressure CO<sub>2</sub> into a small chamber under control of a diaphragm. The small chamber discharges low pressure CO<sub>2</sub> through passages and through a restrictor orifice into a check valve and into the beer container. The restrictor orifice prevents an unsafe volume of discharge of CO<sub>2</sub> into the beer container and prevents damage to the expansion valve.

3,460,556

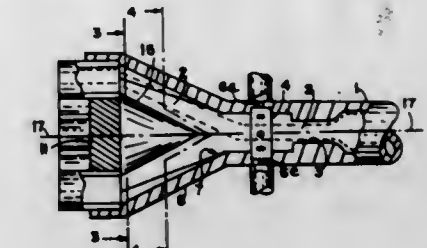
**MULTIPLE MODE FLUID AMPLIFIER**

Walker Morgan Sowers, Merrimack, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed Feb. 28, 1966, Ser. No. 530,686  
Int. Cl. F15c 1/10

U.S. Cl. 137—81.5

5 Claims



A fluid amplifier having several stable states, among which it can be switched in any order or sequence. The device illustrated and described includes a main fluid stream and eight outlet ports to any one of which it may be switched by operation of the appropriate one of eight control jets.

3,460,557

**DEVICE FOR PRODUCING AND REGULATING A PULSATING PNEUMATIC CONTROL SIGNAL**

Donald A. Gallant, 2611 Danbury St.,

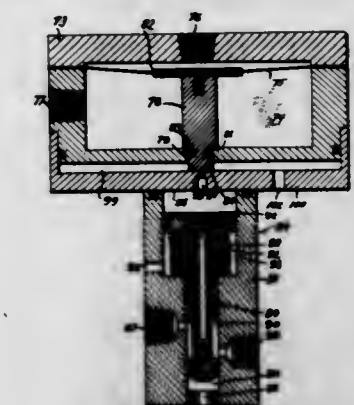
Charlotte, N.C. 28211

Filed Jan. 23, 1967, Ser. No. 611,067

Int. Cl. F15b 5/00; F16k 31/12

U.S. Cl. 137—82

16 Claims



A device for producing and regulating a pulsating pneumatic control signal for controlling the operation of a responsive apparatus. A pneumatic pulse generating component produces rising pressure pulses received by a pneumatic comparator component and compared thereby with a pilot air pressure indicative of a control condition to provide a control signal responsive to the comparison. The pulses so produced terminate in sharp pressure drops obtained by operation of a vent valve that is opened by displacement of a diaphragm, the displacement being accelerated by exhausting air from one side of the diaphragm in response to initial diaphragm displacement.



### 3,460,558 VALVE DEVICE, PARTICULARLY FOR BREATHING APPARATUS

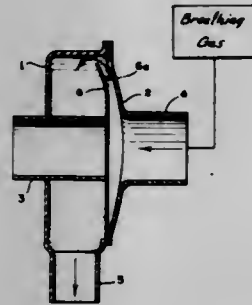
Dag Olof Alfred Johansson, Lidings, Sweden, assignor to AGA Aktiebolag, Lidings, Sweden, a corporation of Sweden

Continuation-in-part of application Ser. No. 206,509, June 29, 1962. This application Feb. 3, 1966, Ser. No. 524,796

Claims priority, application Sweden, July 4, 1961, 6,940/61

Int. Cl. F16k 7/17; A61m 16/00  
U.S. Cl. 137-102

2 Claims



A valve device for use with breathing apparatus comprises a chamber having three apertures, the first of which is for connection to the patient, the second to the source of breathing gas, and the third for exhalation. The second and third apertures terminate in valve seats. A flexible closure member cooperates to open and close the second and third apertures. The closure member is constructed and positioned so as to seat in its inoperative position on the valve seat of the third aperture and is formed with a free edge portion which in the inoperative position seats on a corresponding portion of the seat of the second aperture. The closure member is easily flexible inwardly toward the chamber upon the creation of a relative sub-pressure therein, thereby opening the second aperture to the chamber.

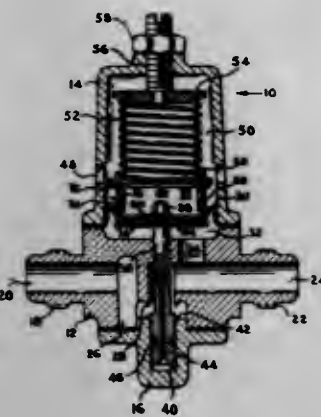
### 3,460,559 COMBINED PRESSURE REGULATOR AND RELIEF VALVE

Cecil V. Pullen, Utica, and Frederick A. Kaiser, Clinton, N.Y., assignors to The Bendix Corporation, a corporation of Delaware

Continuation-in-part of application Ser. No. 599,909, Dec. 7, 1966. This application Aug. 26, 1968, Ser. No. 767,883

Int. Cl. G05d 11/00  
U.S. Cl. 137-116.5

5 Claims



A fluid valve having combined pressure regulation and overpressure relief functions. A relief valve comprising mutually-movable members is interposed between a reference spring and the control diaphragm of a pressure regulator valve. The spring biases the members together to form a closed chamber which communicates via a passage through the diaphragm with the low pressure side

of the valve. When pressure downstream of the valve exceeds its predetermined value by a known, fixed percentage, the members separate to provide a flow path between the downstream side of the valve and a fluid dump.

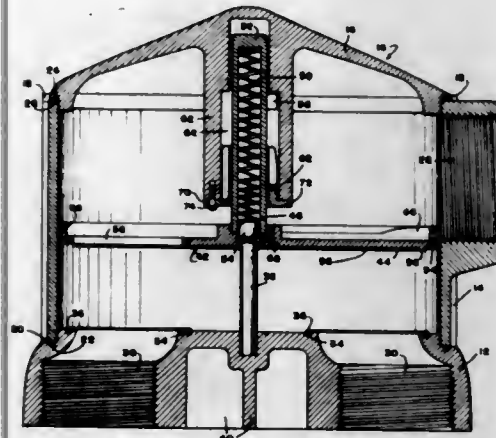
### 3,460,560 SEQUENCING VALVE

Carl L. C. Kah, Jr., 716 Ibis Way, North Palm Beach, Fla., 33403, and Roger D. Slagel, 294 Balsam St., Palm Beach Gardens, Fla. 33480

Filed July 5, 1966, Ser. No. 562,653

Int. Cl. F16k 1/24, 11/02  
U.S. Cl. 137-119

9 Claims



A sequencing valve comprising a cylindrical housing having a plurality of outlet ports through the lower end thereof and a tangential disposed inlet port at the upper side thereof is provided. A valve element in the form of a ported disc is disposed between the inlet and outlet ports and is supported for axial and rotational movement by a top cover located on the cylinder. The cover carries upper and lower cams which are engaged by a cam follower fixed to the disc, at the extreme axial positions of travel of the disc. The disc in addition carries vanes which are contacted by the fluid entering through the tangentially disposed inlet. The inlet and vanes arrangement aids in rotating the disc during changes in inlet line pressure. Suspension of all of the moving parts of the assembly from the cover facilitates removal for maintenance and repair.

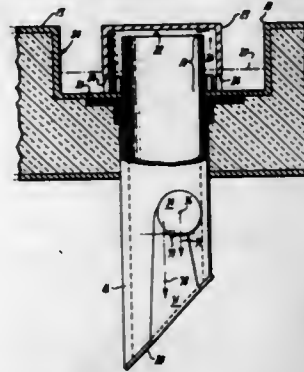
### 3,460,561 DRAIN VALVE CONSTRUCTION

Paul A. Lomolino, 3769 Farm Hill Blvd., Redwood City, Calif. 94061

Filed Mar. 21, 1967, Ser. No. 624,788

Int. Cl. F16k 1/20  
U.S. Cl. 137-247.13

1 Claim



A drain valve in the floor of a refrigerated cargo compartment of a railroad car or other vehicle includes a valve closure member at the bottom of the tube which opens upon receipt of liquid in the tube. The closure member is carried on a lever arm which also carries a counter-weight serving to normally urge the closure member to its closed position. The counter-weight and the

mass of the closure member serve to create counteracting moments of inertia which nullify one another upon receipt of vertical movements encountered by virtue of the bouncing of the vehicle.

At the upper end of the tube a fluid trap is formed which serves to limit the frequency of operation of the closure member by requiring a predetermined accumulation of liquid to first occur before being passed into the drain tube.

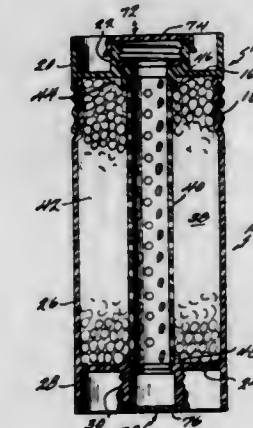
### 3,460,562 DISSOLVER CONTAINER HAVING FLANGES AT BOTH ENDS TO PROTECT THREADED HOSE COUPLINGS

Morgan M. Moulder, White Bldg.,  
Camdenton, Mo. 65020

Filed Aug. 4, 1967, Ser. No. 658,430

Int. Cl. B01f 1/00; A01c 23/00  
U.S. Cl. 137-268

4 Claims



A device for holding discrete particles of fertilizer, disinfectants, insecticides and the like for connection with an ordinary garden hose. The container is provided with an annular chamber with threaded inlet and outlet means for connection to this garden hose. Circumferential flanges integral with the outer wall of the container extend beyond the threaded inlet and outlet means as a guard thus preventing damage to these connections in transit. These circumferential flanges also aid in the reduction of required storage and shipping space.

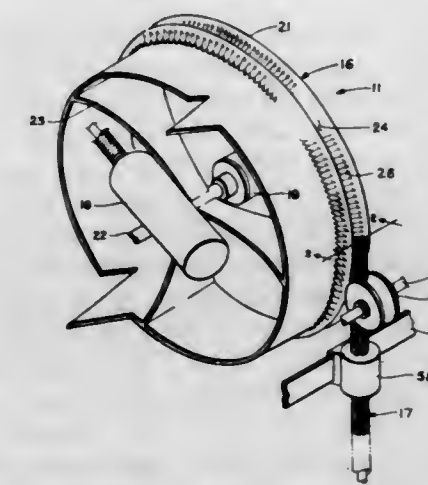
### 3,460,563 FLEXIBLE DRILL STRING AND OPERATING APPARATUS THEREFOR

Sheldon O. Bresin and Donald E. Ross, Huntsville, Ala., assignors to Northrop Corporation, Beverly Hills, Calif., a corporation of California

Filed July 19, 1965, Ser. No. 473,127

Int. Cl. B65h 75/46  
U.S. Cl. 137-355.26

5 Claims



A drilling assembly, adapted to operate in atmospheric or nonatmospheric environments, including a flexible member wound on a reel member. The cylindrical por-

tion of the reel member having a spiral groove formed therein, the flexible member in its assembled relation on the reel being received in the groove. The flexible member has high and low pressure passageway therein and the concentric relation lending rigidity and stiffness to the flexible member when inflated. The assembly also includes a torque sensing unit functioning to arrest twisting action originating in one portion of the flexible member from being transmitted to other portions of the flexible member.

### 3,460,564 ANTI-ICER VALVE

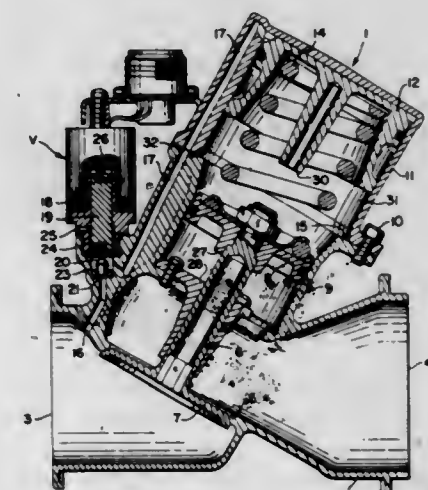
William P. Taylor, Los Angeles, and David V. Drazkowski, Torrance, Calif., assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Sept. 15, 1967, Ser. No. 668,228

Int. Cl. F16k 31/06, 31/143

U.S. Cl. 137-517

15 Claims



Anti-icer valve for use as with aircraft engines and/or aircraft surfaces for anti-icing purposes characterized in that the flow of heated air through the valve is controlled by inlet pressure.

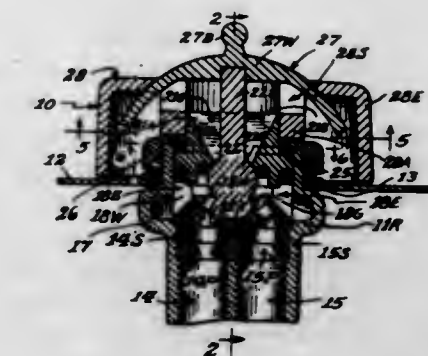
### 3,460,565 PADDLE VALVE

John W. Sanderson, Delphi, Ind., assignor to Globe Valve Corporation, a corporation of Indiana

Filed Oct. 18, 1966, Ser. No. 587,479

Int. Cl. F16k 11/07, 31/60  
U.S. Cl. 137-555

20 Claims



A mixing valve having a valve body defining inlet ports and composite ported valve means having a first ported valve member seated on the valve body and movable to vary the volume of flow through the inlet ports and a second valve member seated on said first valve member to vary the blend of fluid passing through the



ports in said first valve member, and a stem for moving the valve members conjointly and for separately moving the second valve member with respect to the first.

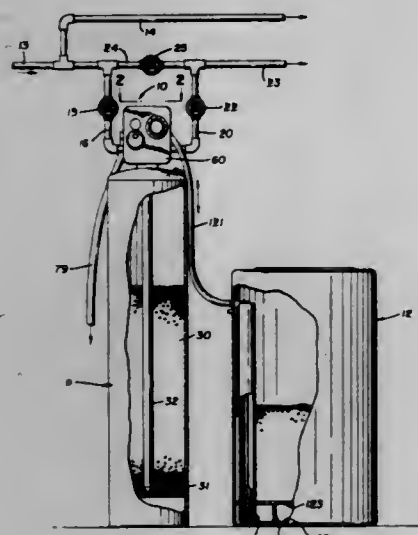
3,460,566

## MULTI-WAY FLOW CONTROL VALVE

Edmund Heartstedt and Neil Marshall, Ashland, Ohio, assignors to The F. E. Myers & Bro. Co., Ashland, Ohio, a corporation of Ohio

Filed July 10, 1967, Ser. No. 652,326

Int. Cl. F16k 11/22; B01d 29/38; C02b 1/18  
U.S. Cl. 137—571 20 Claims



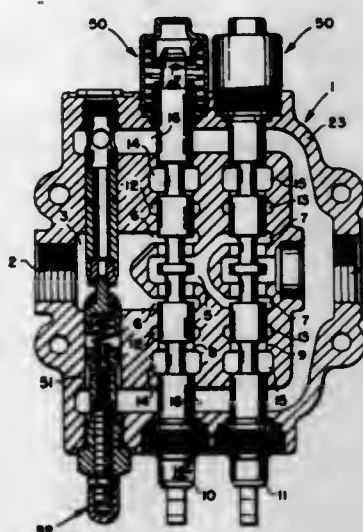
A control in the nature of a multi-way valve for directing fluid flow which, in its basic form, has particular usefulness as a control for a three cycle filtering unit, and, in its more complete form, for a five cycle water softening unit. Principally, the control directs fluid flow from the supply inlet selectively to the top or bottom of a conditioning tank and, from the conditioning tank selectively to a service outlet or drain. Within the housing of the control are two double acting poppet valves. One poppet valve is movable between two positions selectively to direct the fluid either from the inlet to a feed chamber which communicates with the top of the conditioning tank or to an outlet port. The second of said double acting poppet valves is also movable between two positions, but this valve selectively directs the fluid from a distributing chamber, which communicates with the bottom of the conditioning tank, to the outlet port or from the inlet to the outlet port. Pressure responsive means are provided for each double acting poppet valve to move them between their two positions. In addition, two single acting poppet valves are provided within the housing. The single acting poppet valves are each movable between an open and a closed position; one of the single acting poppet valves selectively permits flow from the distributing chamber to a drain, and the other single acting poppet valve selectively permits flow from the feed chamber to the drain. Pressure responsive means are also provided for moving each single acting poppet between its open and closed positions. For use as a softening control, a brining reservoir is connected to a venturi within the housing for drawing brine out of the reservoir and dispensing it into the top of the conditioning tank. A two-way flow control valve is provided in the passage between the reservoir and the venturi. The control valve is movable between a "closed" position and an "open flow" position with respect to the brine flowing from the reservoir to the venturi and provides either a "closed" position or a "metering" position with respect to water flowing from the housing to the reservoir.

3,460,567  
RELIEF-MAKEUP CHECK ASSEMBLY FOR  
DIRECTIONAL CONTROL VALVES  
George J. Martin, Lyndhurst, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 23, 1967, Ser. No. 677,306  
Int. Cl. F16k 31/36, 31/12

U.S. Cl. 137—596

11 Claims



A relief-makeup check assembly for directional control valves having a movable seat for the main valve member which provides a wide passage for increased flow from the tank to the motor passage when the return passage pressure is higher than the motor passage pressure to prevent cavitation under high shock loads.

3,460,568  
MIXING AND DIVERTER WATER VALVE

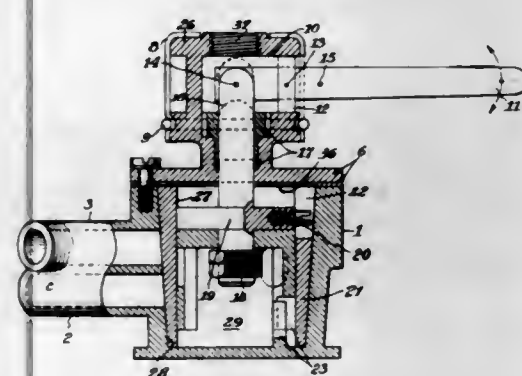
Agustin A. Busquets, 404 Virginia, Apt. 6,  
Royal Oak, Mich. 48067

Filed Dec. 19, 1966, Ser. No. 602,838

Int. Cl. F16k 5/02, 31/44, 5/10

U.S. Cl. 137—597

2 Claims



A hot and cold water control and mixing valve having a body with a tapered bore with vertically spaced hot and cold water inlets on one side and bathtub and shower outlets on the other side, an outer open ended tapered valve rotative in said bore and having a pair of vertically spaced inlet ports and an angularly displaced pair of vertically spaced outlet ports, for cooperative variable registry with said inlets respectively and with one of said outlets, the inlet ports and outlet ports adapted for reversible connection respectively with said inlets and outlets, a second tubular valve axially movable within the first valve open at one end defining a mixing chamber therein and having a side inlet port for selective cooperative registry with the outer valve inlet ports and the body inlets; and including a pair of opposed outer ports registerable with the said outer valve outlet ports and one of the body outlets, a longitudinally movable and rotatable stem journaled on the inner valve and connected thereto

for relative rotary movements, a cap closing the body including a nipple receiving the stem, the nipple having a lateral side opening, a fulcrum laterally movable in said side opening and a lever arm pivoted to the fulcrum intermediate its ends and at one end pivoted to the stem.

3,460,569

## IDENTICAL HALVES COUPLING

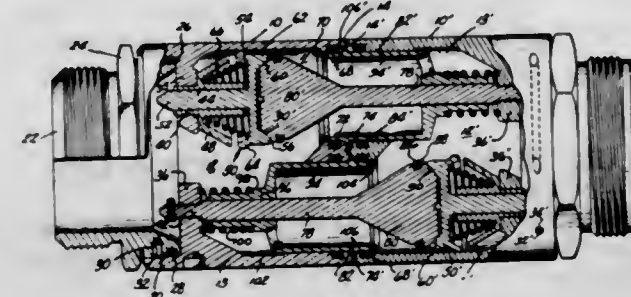
Joseph F. Reinker, Jr., Jackson, Mich., assignor to Aeroquip Corporation, Jackson, Mich.

Filed Jan. 19, 1966, Ser. No. 521,592

Int. Cl. F16l 37/28

U.S. Cl. 137—599

3 Claims



A self-sealing coupling employing identical coupling halves, having outer ends defining planar contacting surfaces each having first and second wall and seal means defining respective first and second passages therethrough. Male valve means associated with the first passage has a stem extending therethrough and terminates in an enlarged head. A sleeve valve is slidably mounted on the stem and in the first wall and seal means and seats on the head. A female valve member slides in the second wall and seal means and closes the second passage. The male member is adapted to unseat the female member from the second wall and seal means and permit the end of the sleeve to slide into engagement therewith, whereupon the sleeve is unseated from the enlarged head and the passage is opened.

3,460,570

## BALANCED CONTROL MIXING VALVE

Ernest H. Bucknell and Irving A. Ward, Los Angeles, Calif., assignors of ten percent to the trust of Ralph E. Bletcher, deceased; five percent each to Frederick Robertson and Gary Robertson; ten percent each to Lenora Bucknell and Richard J. Bletcher; five percent to Marcia Liston as trustee for Daniel E. Liston; five percent each to Carol Ann Liston, and James H. Liston; 10 percent each to Hazel Brondum and Pearl Bletcher; fifteen percent to Marcia Liston, and ten percent to Ernest H. Bucknell

Continuation of applications Ser. No. 501,389, and Ser. No. 501,007, Oct. 22, 1965. This application Jan. 16, 1968, Ser. No. 705,879

Int. Cl. F16k 11/02, 11/06; F17d 3/00

U.S. Cl. 137—607

14 Claims



A control valve having a single control member for varying the volume and relative amounts of inlet fluids, such as hot and cold water. The valve includes a pair of inlet plugs adapted to receive fluid along the longitudinal

axes thereof, the plugs having discharge ports. Sleeves are mounted over the plugs and have discharge openings therein. The discharge ports and openings are substantially normal to the inlet fluid flow. The sleeves are coupled together and may be rotated and moved longitudinally with respect to the plugs for varying the fluid output.

3,460,571

## HANDLE VALVE

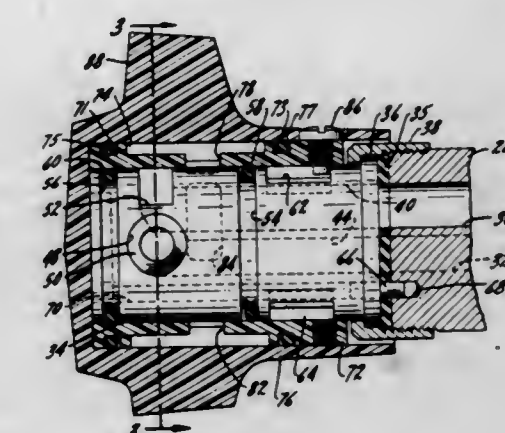
Alfred M. Moen, 25 Lakeview Drive,  
Grafton, Ohio 43331

Filed Feb. 23, 1966, Ser. No. 529,498

Int. Cl. F16k 11/14; E03c 1/05

U.S. Cl. 137—625.17

19 Claims



A single handle hot and cold water mixing faucet made up a body member having hot and cold water inlet passages which terminate on its exterior and a handle rotatable and reciprocal on the body member. The handle includes a confined mixing chamber. There is at least one portion of reduced size connecting the mixing chamber with the exterior of the body member and hence with the hot and cold water inlet passages. There are outlet means also connected to the circumferentially extending mixing chamber. Rotation of the handle relative to the body member selectively places the hot and cold water inlet passages into communication with the mixing chamber to vary the volume and temperature of water discharge through the outlet means.

3,460,572

## FLUIDIC SYSTEM

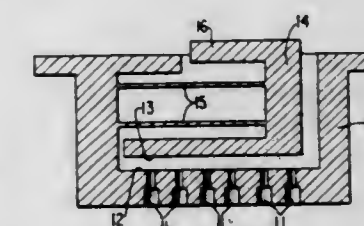
Robert B. Hartman, Bridgeport, Conn., assignor to Remington Arms Company Inc., Bridgeport, Conn., a corporation of Delaware

Filed Dec. 21, 1966, Ser. No. 603,533

Int. Cl. F16k 11/02, 31/56

U.S. Cl. 137—625.48

13 Claims



A fluidic valve arrangement including a valve body with fluid pressure ports, and a movable valve unit integrally and flexibly connected to the valve body at spaced points to provide a parallelogram-like arrangement. The valve unit is movable rectilinearly for simultaneously opening and closing all of the ports.



3,460,573

**FLUID CONTROL MECHANISM**

Thomas R. Beveridge, Spencerport, N.Y., and Benjamin N. Snyder, Orchard Lake, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

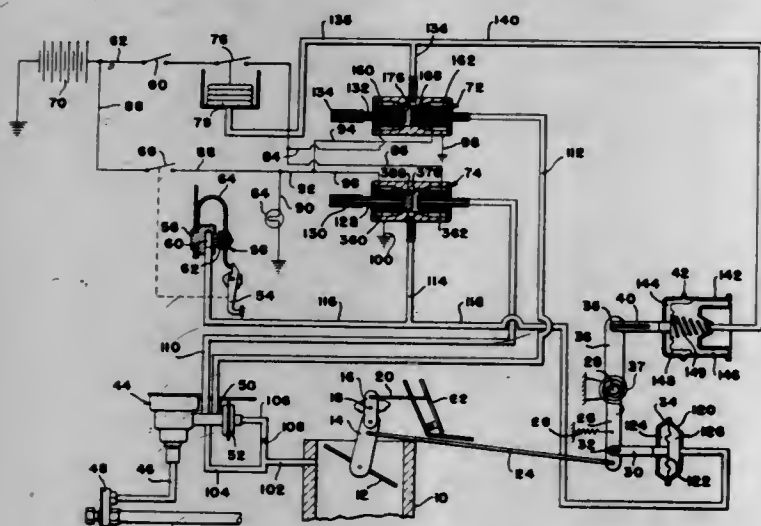
Original application Jan. 29, 1965, Ser. No. 429,100.

Divided and this application Nov. 21, 1966, Ser. No. 595,785

Int. Cl. F01b 25/06, 25/12; G05d 13/34

U.S. Cl. 137—625.65

6 Claims



A magnetically operated control valve assembly in a fluid control mechanism has a valve controlling two inlets and an outlet in an alternative manner, magnetically energizable valve actuating and holding mechanism, permanent magnet means associated with the valve, and means selectively energizing various elements of the valve actuating and holding mechanism to condition the valve assembly as desired.

3,460,574

**MULTI-PORT VALVE**

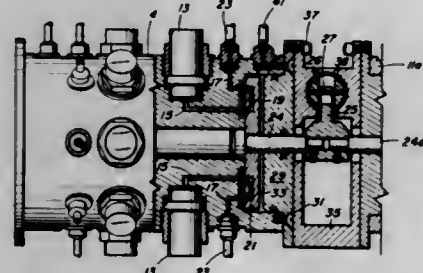
Donald B. Risher, Bowie, Md., assignor to the United States of America as represented by the Secretary of the Navy

Original application Aug. 28, 1964, Ser. No. 392,967, now Patent No. 3,326,046, dated June 20, 1967. Divided and this application Feb. 6, 1967, Ser. No. 630,480

Int. Cl. F16k 11/00

U.S. Cl. 137—625.66

10 Claims



A multiport valve assembly for use in a system for calibrating and measuring pressures at a large number of stations within supersonic or hypersonic wind tunnels. The multiport valve assembly includes (1) a housing provided with (a) a cylindrical chamber having a first radius, a central axis, and a flat end, (b) eight inner passages, each having one port opening into the chamber at the flat end, at a first radial distance from the axis, and equally circumferentially spaced, (c) eight outer passages, each having one port opening into the chamber at the flat end, at a second larger radial distance, and radially aligned with the inner passage ports, and (d) another passage having a port opening into the chamber near the end opposite the flat end; (2) a disc valve having a radius less than the first radius but greater than the first radial distance, a central axis, and a flat first end, the disc valve

being rotatably mounted coaxially within the chamber with its flat end sealingly abutting the flat end of the chamber, and provided with (a) eight passages, each having inner and outer ports at the first and second radial distances from the axis and equally circumferentially spaced and radially aligned and (b) eight passages, each having one port at the first radial distance from the axis, positioned between the aforementioned inner ports, on the flat end of the disc valve, and another port on the end of the disc valve opposite the flat end; and (3) means for intermittently rotating the disc valve including (a) a shaft coaxially connected to the disc valve, (b) a radially extending connecting rod secured to the shaft, (c) a reciprocally slidable mounted piston in a cylinder operatively connected to the rod, and (d) pressure tubes fluidly connected to opposite ends of the cylinder. O-rings are provided around each of the ports in the valve housing.

3,460,575

**FLUID POWER CONTROL SYSTEM AND COMPONENTS THEREFOR**

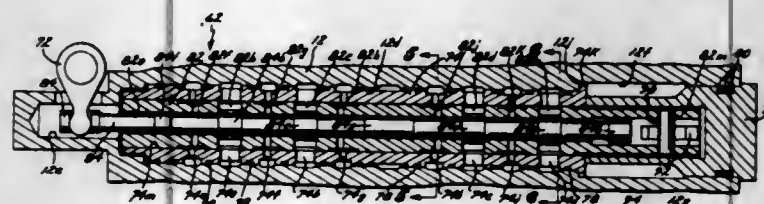
Alvin L. Dubrow, Corona Del Mar, Calif., assignor to Cadillac Gage Company, Detroit, Mich., a corporation of Michigan

Filed Jan. 23, 1967, Ser. No. 610,843

Int. Cl. F16k 11/00

U.S. Cl. 137—625.69

6 Claims



This invention relates to improvements in hydraulic control systems. The embodiment selected for illustration and description is adapted for use in the manipulation of aircraft control surfaces. It includes a control valve having a housing defining fluid flow paths and a port opening to an elongate bore in which a sleeve is mounted for movement reciprocally along the bore axis. A spool, formed with alternate lands and grooves, is mounted within the sleeve for reciprocal motion along the bore axis. The sleeve is provided with ports which cooperate with the ports of the housing and the lands and grooves of the spool to control the rate of flow of fluid through the valve as a function of the position of the sleeve and spool relative to one another and the housing. Mechanical motion is coupled to the sleeve and to the spool so that spool position and movement is unaffected by sleeve position and movement and so that sleeve position and movement is unaffected by spool position and movement. Two levers are provided, one at each end of the valve, and both levers are mounted for movement on three axes. Input movement structures are connected to two axes of each lever and the third axis of each lever is connected to an associated one of the sleeve and spool. The remaining elements of the aircraft control system are shown and their relationship to the valves and levers is described.

3,460,576

**PRESSURE REGULATING CONTROL VALVE DEVICE**

Clifford W. Allen, Lexington, Ky., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

Filed Dec. 28, 1966, Ser. No. 605,360

Int. Cl. F16b 13/04; F16k 11/06

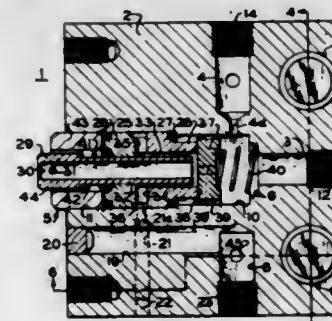
U.S. Cl. 137—627.5

10 Claims

A pressure regulating control valve device for delivering fluid pressure to opposite ends of a reciprocating cylinder via two delivery passages. One delivery passage con-

stantly provides fluid pressure to one end of the cylinder. A higher pressure in the other delivery passage is selectively delivered to the other end of the cylinder via manual operation of a poppet type valve. The relative pressures in the delivery passages are selected and determined by manual operation of an adjustable bleed mechanism associated with each delivery passage. The bleed mecha-

anism has a very wide range because of its structure comprising a leaf spring on the exterior of the housing biased to cover the exterior opening of a bleed passage, and a threaded stem threadedly disposed for axial movement in a threaded bore in the housing to adjust the deflection of the spring relative to the bleed passage opening, the smallest diameter of the bleed passage being greater than the smallest passage restriction upstream thereof.



3,460,579  
**INSULATED FLEXIBLE SUB-ZERO HOSE**  
Robert A. Clarkson, 803 Joliet, Cahokia, Ill. 62206  
Filed Apr. 12, 1966, Ser. No. 542,184  
Int. Cl. F16l 59/14, 11/02, 11/12  
U.S. Cl. 138—127

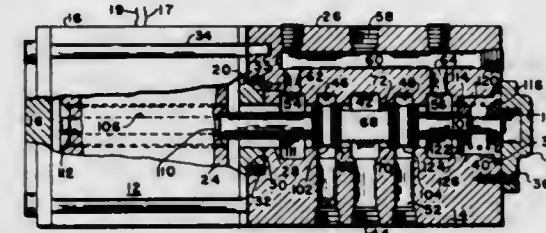
8 Claims



1. A flexible metal hose assembly for transfer of sub-freezing temperatures fluids which comprises in combination, a flexible corrugated inner metal tube, a braided wire sheath encasing said corrugated inner metal tube enclosing an insulated air space in each corrugation and a thick flexible insulating layer mounted over said flexible corrugated metal and metal braid extending the length thereof, whereby the hose assembly remains flexibly ice free and manageable at low temperatures.

3,460,577  
**SPOOL TYPE VALVE**  
Leland Clay Weathers, Plymouth, Mich., assignor to Sperry Rand Corporation, Troy, Mich., a corporation of Delaware  
Filed June 24, 1966, Ser. No. 560,195  
Int. Cl. F16k 11/07, 11/02  
U.S. Cl. 137—625.69

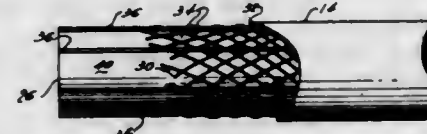
19 Claims



A valve for controlling the flow of fluid pressure between a plurality of spaced apart ports formed within a bore by means of a land formed on a spool reciprocally mounted therein, the land having a continuous threaded groove formed about its periphery in which fluid pressure will continuously flow therethrough for hydrostatically maintaining the land in a concentric relationship to the bore.

3,460,578  
**COMPOSITE FLEXIBLE SHAFT CASING**  
Walter Schmid, Bensenville, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia  
Filed May 1, 1967, Ser. No. 635,029  
Int. Cl. F16l 11/08, 11/00  
U.S. Cl. 138—125

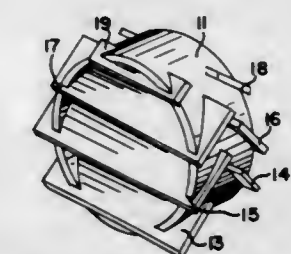
4 Claims



The following specification describes a flexible shaft casing having an inner plastic tube covered by a wire braid in turn covered with an extruded outer plastic cov-

3,460,580  
**BAFFLE ASSEMBLY AND METHOD OF FORMING SAME**  
Neil A. Carter, Danville, Calif., assignor to Cenco Instruments Corporation, Chicago, Ill., a corporation of Delaware  
Filed Feb. 19, 1968, Ser. No. 706,322  
Int. Cl. F16l 55/00; F15d 1/00  
U.S. Cl. 138—42

6 Claims



A baffle assembly having good diffusion characteristics formed by baffle plates inserted into angularly disposed slots extending inwardly from opposite ends of a supporting ring. The baffle plates may be sealingly locked into position by encapsulation, for example, by casting a second ring around the supporting ring. Each baffle plate has the inner edge in opposition to a side face of an opposed plate to assure maximum diffusion while not materially increasing resistance to flow. A baffle assembly cooling arrangement is also shown.

3,460,581  
**NON-POROUS ASBESTOS-REINFORCED PLASTIC PIPE**  
Robert T. Crouch, Middlesex, and Charles H. Barger, Nixon, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York  
Original application Oct. 6, 1960, Ser. No. 55,924, now Patent No. 3,235,530, dated Feb. 15, 1966, which is a continuation-in-part of application Ser. No. 847,419, Oct. 19, 1959. Divided and this application Nov. 18, 1965, Ser. No. 544,318  
Int. Cl. F16l 9/12, 9/14  
U.S. Cl. 138—141

3 Claims

A non-weeping fiber reinforced plastic pipe having smooth inner and outer surfaces, which pipe may be

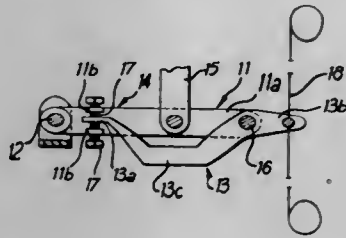


threaded with standard pipe threading equipment and which pipe is capable of withstanding hydrostatic pressures of at least 600 p.s.i. at room temperatures without weeping, formed from high bulk asbestos fiber paper impregnated with between 40 to 65% by weight of a thermosetting resin.

### 3,460,582 LOOM DOBBIES

Thomas Hindle, Blackburn, England, assignor to Hindle, Son & Co., Limited, Preston, Blackburn, England  
Filed Aug. 31, 1967, Ser. No. 664,693  
Claims priority, application Great Britain, Sept. 14, 1966, 40,978/66

Int. Cl. D03c 1/04, 9/00; G05g 1/04  
U.S. Cl. 139—68 6 Claims

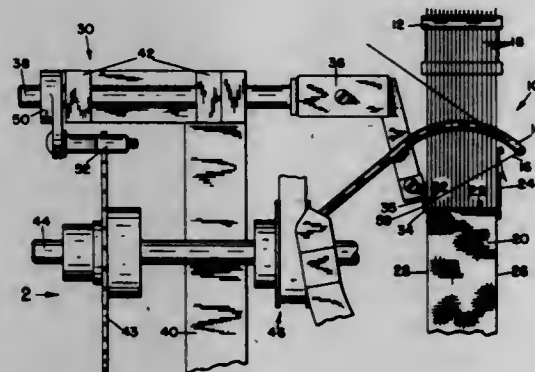


A jack lever device for a loom dobby wherein a primary lever has a secondary lever pivotally mounted thereon which is coupled to a heald frame, the secondary lever being angularly adjustable relative to the primary lever to provide a ready means of adjusting the heald frame when in position in a loom.

### 3,460,583 EDGE FORMING DEVICE FOR LOOMS

Melville C. Mosher, Hopedale, Mass., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts

Filed Apr. 22, 1968, Ser. No. 722,915  
Int. Cl. D03d 13/00, 45/50  
U.S. Cl. 139—118 8 Claims



An edge forming device for needle looms, which includes an edge wire at the weft insertion side of the loom for retaining the weft loops during the insertion of weft. The edge wire is moved parallel to the edge of the fabric being woven and away from the fell of the fabric to release the loop after the lay reaches the fell of the fabric. Means are also provided to vary the size of the loops.

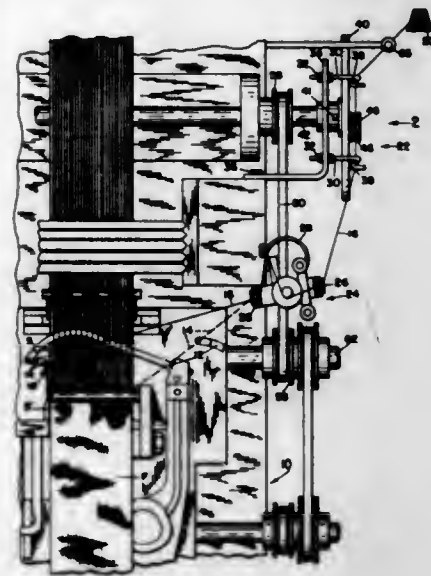
### 3,460,584 WEFT FEEDING MECHANISM

Melville C. Mosher, Hopedale, Mass., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts

Filed Jan. 15, 1968, Ser. No. 697,724  
Int. Cl. D03d 47/34  
U.S. Cl. 139—122 9 Claims

A weft feed mechanism for feeding weft from a stationary supply to a weft inserting member in which an

adjustably mounted guide roller on a constantly rotating arm engages a portion of the weft which extends between two stationary guides. The mechanism draws weft from



the supply during half of the rotation of the rotating arm and releases it to the weft inserting member during the other half of the rotation.

### 3,460,585 BINDER

Clinton W. Hampson, South Hadley, Mass., assignor to Clinton Silk Mill, Inc., Holyoke, Mass.

Continuation-in-part of application Ser. No. 578,330, Sept. 9, 1966. This application June 3, 1968, Ser. No. 734,004

Int. Cl. D03d 49/54  
U.S. Cl. 139—185 2 Claims



A binder for a shuttle box of a loom of the flying shuttle type wherein the binder is pivotally connected to the shuttle box comprising: a main body portion having a swell and a nose portion; a frictional covering layer of leather fixed to said main body portion and terminating at said swell; a combination wear resistant and cushioning means, disposed exteriorly of and fixed to said swell and to said nose portion for absorbing the impact of the flying shuttle on the binder; said combination wear resistant and cushioning means comprising an epoxy layer and a superposed metal wear plate; reinforcing strips spaced along the outer surface of said covering layer; said reinforcing strips being epoxy and being disposed at an angle to the longitudinal axis of the binder; and resilient means at the pivotal connection between the binder and the shuttle box comprising a resilient bushing sleeving a wear-resistant bushing mounted on the pivot.

### 3,460,586 PROTECTIVE DEVICE FOR SLAYS DRIVEN WITH RESILIENT CRANK ARMS

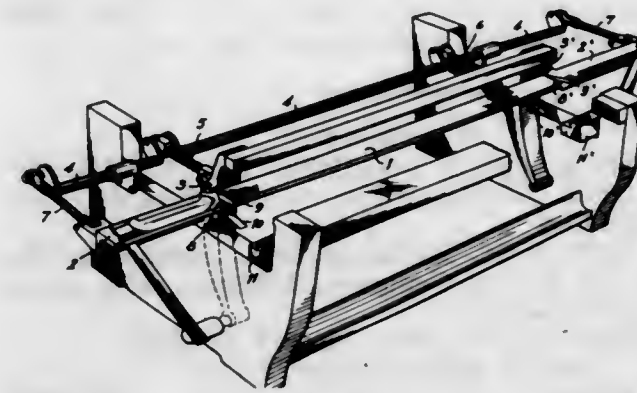
Jaime Picanol, Casa Pical Catalunya, Zandberg, Zillebeke, near Ypres, Belgium

Filed Mar. 7, 1968, Ser. No. 711,342  
Claims priority, application Belgium, Sept. 19, 1967, 47,207

Int. Cl. D03d 49/60, 51/42  
U.S. Cl. 139—188 5 Claims

Safety device for the slay with resilient crank arms in

looms comprising a rigid crank arm located between the



linked end or ends of the slay and the corresponding end or ends of the said crank-shaft.

### 3,460,587 WEFT BOBBIN FOR LOOMS

Leonid Trofimovich, Chereshev, ulitsa Suschevskaya 29, kv. 26, Moscow, and Viktor Dmitrievich Khokhlov, ulitsa Koltensaya 10, kv. 53, Khimki, Moskovskoi oblasti, U.S.S.R.

Filed Sept. 11, 1967, Ser. No. 666,867  
Int. Cl. B65h 75/02; D03j 5/08; D03d 45/00  
U.S. Cl. 139—289 1 Claim



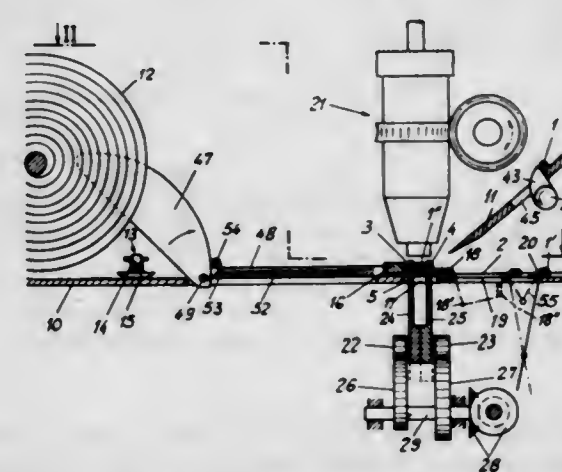
A bobbin for use with an electric weft feeler for a loom in which a portion of the surface of the bobbin adapted to be contacted by the electric feeler upon depletion of the weft on the bobbin has applied thereto a current-conducting coating of a synthetic resin with the resin containing carbon as a current-conducting component.

### 3,460,588 FEED DEVICE FOR A MACHINE PRODUCING REINFORCEMENT WIRE NETTINGS

Hans Schoch, Zurich, Switzerland, assignor to Ernst Schoch Aktiengesellschaft, Basel, Switzerland

Filed Mar. 13, 1967, Ser. No. 622,670  
Claims priority, application Switzerland, Mar. 17, 1966, 3,870/66

Int. Cl. B21f 15/02; B23g 7/06  
U.S. Cl. 140—113 4 Claims



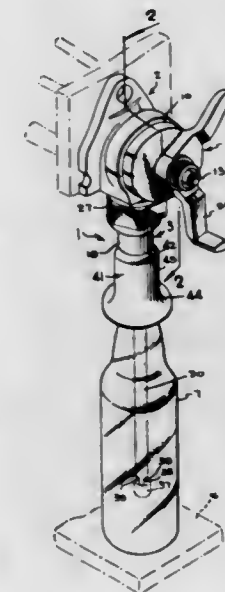
A device making reinforcement wire nettings in which one reinforcement iron at a time is fed transversely to its length in a direction somewhat inclined downwardly to a position on a horizontal base plate where spaced parallel spacer wires are fed horizontally and in the direction of their length under the reinforcement iron and are connected thereto by two U-shaped loops formed

in the spacer wires to both sides of the reinforcement iron. These loops are twisted together over the reinforcement iron and the latter is then moved by horizontally reciprocable members from the machine in a direction opposite to the initial feed direction of the reinforcement iron in cooperation with an abutment which is movable within predetermined limits and determines the distance of the reinforcement irons from each other in the wire netting.

### 3,460,589 METHOD AND APPARATUS FOR FILLING CONTAINERS WITH CARBONATED LIQUID

Luther E. Justis, Howard County, Md., assignor, by mesne assignments, to Crown Cork and Seal Company, Incorporated, Philadelphia, Pa., a corporation of New York

Filed Sept. 13, 1966, Ser. No. 579,095  
Int. Cl. B65b 31/00; B67c 3/00  
U.S. Cl. 141—6 10 Claims



A process for filling containers with carbonated liquid, and a filling head assembly for carrying out the method. The process includes raising a container to the filling head, filling the container with a gas under pressure to drive out factory air, flowing liquid into the container while allowing the gas to flow out, and injecting an inert gas into the space in the container above the liquid and into the liquid while lowering the container from the head. The apparatus includes a head with passages for counterpressure gas, liquid and inert gas, and with a rotatable valve having ports to open the head passages in desired sequence to sources of gas and liquid supply and to the container. A filling tool assembly depends from the head for entering into containers, and includes a filling tube surrounded by a vent tube, the vent tube having openings along its length to allow injecting inert gas into the liquid and head space of filled containers as the containers are being lowered from the filling head.

### 3,460,590 VALVE FOR FILLING BOTTLES, CONTAINERS AND THE LIKE AND METHOD

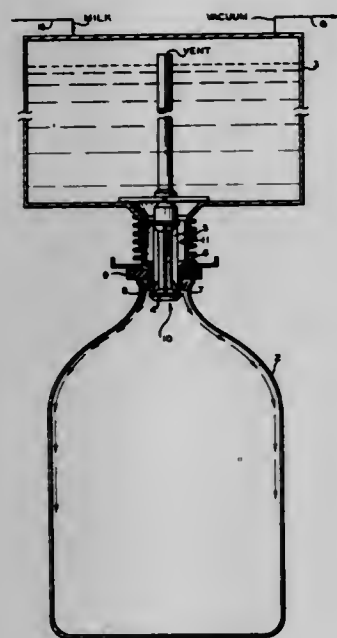
Eldred E. Robbins, Winston-Salem, N.C., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Apr. 25, 1966, Ser. No. 545,065  
Int. Cl. B67c 3/60  
U.S. Cl. 141—7 11 Claims

Method and apparatus for filling a bottle with a fluid, the apparatus having a downwardly discharging valve body or stem which is flared and angled to cause downwardly flowing liquid in pinching thereon to flow up-

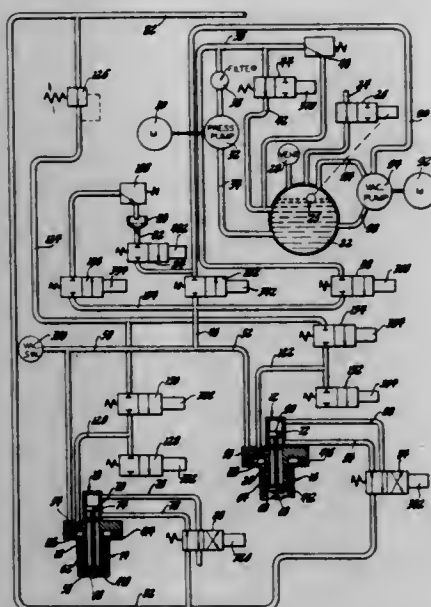


wardly into and to fill the neck of a container being filled so that the fluid will flow uniformly downwardly around the wall of the container without splashing, dripping or



foaming. In a now preferred embodiment rectilinearly and longitudinally extending vanes are provided along the valve body or stem.

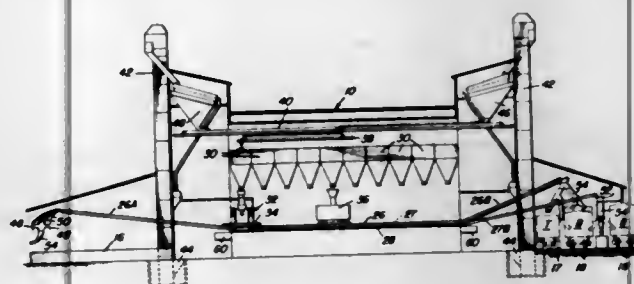
**3,460,591**  
**FLUID FILLING METHOD AND APPARATUS**  
Arthur A. Chalenski, Jr., Garwood, and Walton Hughes, Scotch Plains, N.J., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Aug. 10, 1967, Ser. No. 659,774  
Int. Cl. B65b 31/02; B67c 3/02  
U.S. Cl. 141—7



Filling a fluid system to a desired level where the system contains varying amounts of liquid precluding the possibility of filling with a premeasured volume of liquid. The filling cycle comprises an evacuating phase in which the system to be filled is evacuated of almost all the air therein leaving a small percentage of the original air remaining. The liquid for the system is then delivered thereto under pressure to overfill the system and build up a superatmospheric pressure so that the remaining air is compressed to a fraction of its normal volume. The excess liquid is then removed in a blowback phase while

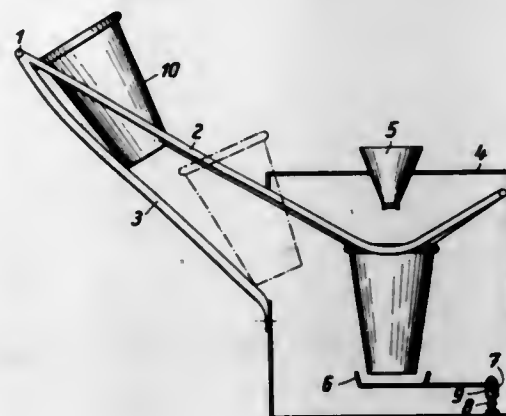
the system is maintained under pressure. At the end of the blowback phase the correct volume of liquid is trapped in the system and the excess air pressure is vented to the atmosphere to complete the filling cycle.

**3,460,592**  
**MULTI-PACKAGING, LOADING CONTROL SYSTEM FOR BOTH BULK AND PACKAGED MATERIALS**  
Walter J. Sackett, Sr., Baltimore, Md., assignor to The A. J. Sackett & Sons Company, Baltimore, Md., a corporation of Maryland  
Filed Sept. 23, 1965, Ser. No. 489,573  
Int. Cl. B65b 1/04; B67c 3/02  
U.S. Cl. 141—98



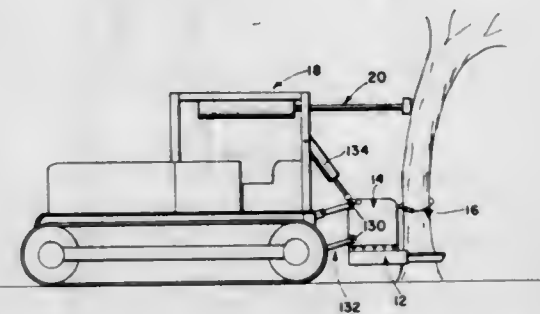
A plurality of hoppers are provided in a line, with a pair of tracks arranged beneath and along the line of the hoppers. A hopper is mounted to ride along one of the tracks, and a bag packer is mounted to ride along the other track, with each hopper being valved and gated to deliver granular material to either the bag packer or the hopper.

**3,460,593**  
**CUP DISPENSING DEVICE ESPECIALLY FOR AUTOMATIC BEVERAGE DISPENSING APPARATUS**  
Wolfgang Niehaus, Hamburg-Neugraben, and Alexander Kückens, Palmerstr. 9, Hamburg 26, Germany; said Niehaus assignor to said Kückens  
Filed July 15, 1966, Ser. No. 565,542  
Claims priority, application Germany, July 19, 1965, K 56,652  
Int. Cl. B65b 43/42, 35/56  
U.S. Cl. 141—372



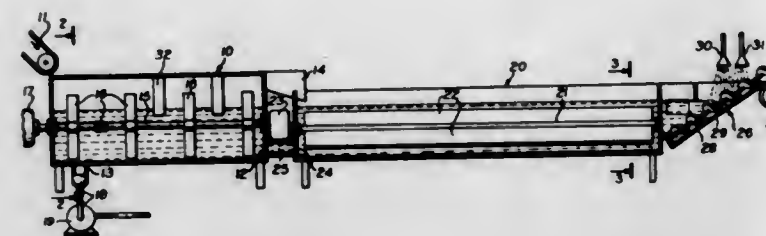
A device for transporting and orienting paper cups from a cup reservoir to a liquid dispensing means consisting of three elongated elements, two of which support the lip of the cup, and the third supporting the cup bottom, the cup bottom being unsupported while the cup is maintained in the filling position wherein proper orientation of the cup to the filling device is assured, and cup receiving means are located below the guide cup retaining means to receive the filled cup, and pivot the filled cup to an accessible location.

**3,460,594**  
**TREE HARVESTING APPARATUS AND METHOD**  
Harvey Donovan Burkhalter, Ruston, La., assignor to T. L. James & Company, Inc., Ruston, La., a corporation of Louisiana  
Filed Oct. 4, 1966, Ser. No. 584,129  
Int. Cl. B27c 9/00  
U.S. Cl. 144—3



A tree harvesting tractor attachment including a shear for severing standing trees and a logging arch for cooperating with a flexible connector for skidding the felled trees to a collection point. The flexible connector ends are fitted with enlargements which may be engaged with a choker slidable along the connector to form a tree-encircling loop, and other enlargements along the length of the connector may be selectively engaged with the arch to vary the length of the connector portion between the arch and the loop. The tractor is positioned adjacent a tree; the connector loop is attached to the tree; the shear is operated to sever the tree; the arch is elevated to lift the severed end portion of the tree; and then the tractor is driven to skid the felled tree to a collection point.

**3,460,595**  
**PEELING FRUITS AND VEGETABLES**  
Harold F. Snow, Pine Point, Maine, assignor to Borden, Inc., a corporation of New Jersey  
Original application May 26, 1964, Ser. No. 370,196, now Patent No. 3,322,173, dated May 30, 1967. Divided and this application Apr. 6, 1967, Ser. No. 628,955  
Int. Cl. A23I 1/12  
U.S. Cl. 146—231

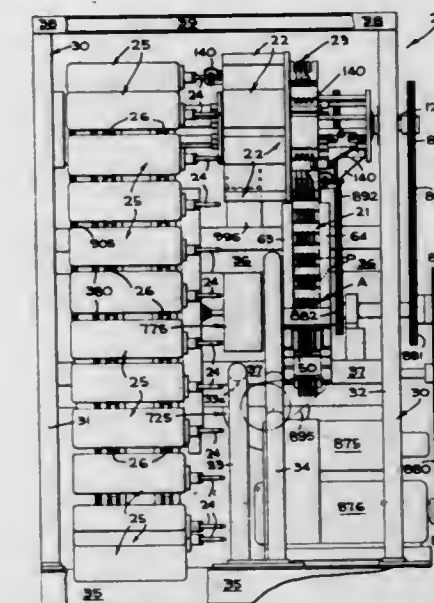


Method of cleaning and completing removal of peel from potatoes comprises moving the potatoes counter-currently through an aqueous solution in a confined area, and removing portions of the aqueous solution from the confined area when the potato solids content is within the range of from about 8% to 14%.

**3,460,596**  
**PINEAPPLE PEELING AND TRIMMING METHOD**  
Leslie Vadas, Los Gatos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware  
Original application Nov. 27, 1964, Ser. No. 414,121, now Patent No. 3,352,337, dated Nov. 14, 1967. Divided and this application Sept. 22, 1967, Ser. No. 704,959  
Int. Cl. A47j 25/00  
U.S. Cl. 146—238

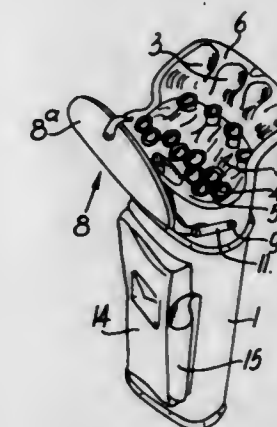
Pineapples are contour peeled in opposite directions

while rotating about their axes. The pineapples are advanced across end trimming knives while supported at



their core holes. The skin and flesh peelings are separately collected and the core is collected with the flesh.

**3,460,597**  
**GOLF BAGS**  
Noel Daly, 41A Young St., New Plymouth, New Zealand  
Filed Oct. 23, 1967, Ser. No. 677,482  
Claims priority, application New Zealand, Oct. 26, 1966, 146,805  
Int. Cl. A63b 55/00  
U.S. Cl. 150—1.5



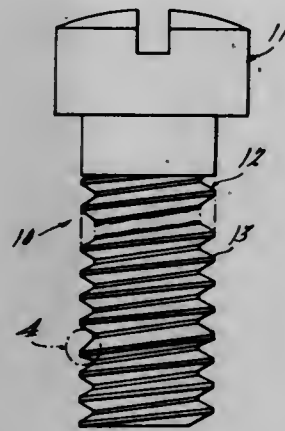
A golf club carrier in which a casing is provided at its upper part with a plurality of recesses for accommodating the heads of clubs supported thereby and means for maintaining the heads in their respective recesses. The casing length is such as to be capable of accommodating the club shafts when the heads are seated in the recesses.

**3,460,598**  
**SELF-LOCKING THREAD FORM FOR THREADED ELEMENT**  
Raymond L. Thurston, Dearborn, Mich., assignor, by mesne assignments, to Microdot Inc., New York, N.Y., a corporation of California  
Continuation of application Ser. No. 572,932, Aug. 17, 1966. This application May 9, 1968, Ser. No. 727,940  
Int. Cl. F16b 39/30

An improved thread form for a threaded element that effects self-locking and improves fatigue strength, wherein a portion of the thread is axially deflected from the



lead of the standard thread form while the root of the thread is of uniform diameter and lead throughout the standard and locking thread forms. The self-locking



thread form develops a locking force between and maximizes the load-carrying ability of adjacent convolutions of standard thread form.

3,460,599

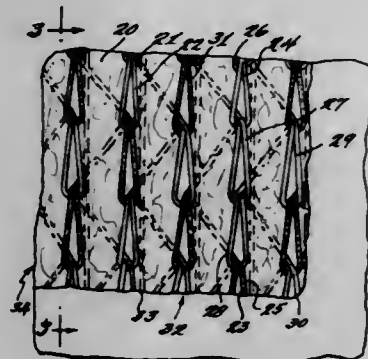
#### TUBELESS TIRE HAVING IMPROVED CHAFER FABRIC

Jack Leach, Greensboro, N.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware

Filed Sept. 6, 1967, Ser. No. 665,907  
Int. Cl. B60c 5/12

U.S. Cl. 152-362

10 Claims



A pneumatic tire, particularly a tubeless tire, is provided with a chaffer in the bead portion. The chaffer comprises a rubber or elastomer filled mat or web of staple fibers in more or less random array and a plurality of warp knit loop chains along it. The chains comprise interconnected loops of sewing thread along one side of the web and threads connecting between loops which pass through the web and along the other side.

3,460,600

#### INSTALLATION FOR PREPARING PULVERULENT MATERIAL FROM A LIQUID

Geert de Boer, Lippenhuizen, Netherlands, assignor to N.V. Machinefabriek Stork-Volma, Gorredijk, Netherlands

Filed Nov. 22, 1967, Ser. No. 685,067  
Claims priority, application Netherlands, Dec. 9, 1966, 6617397

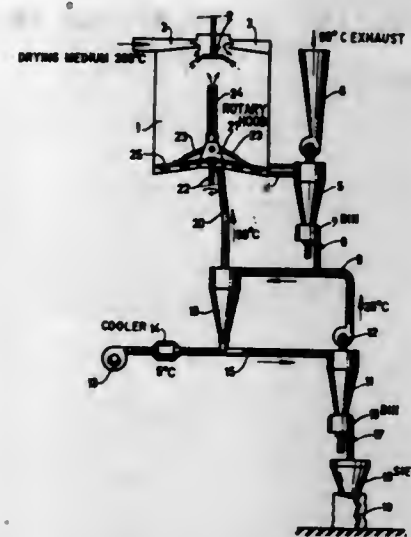
Int. Cl. B01d 1/16

U.S. Cl. 159-4

4 Claims

An installation for preparing pulverulent material from a liquid, comprising a spray drying chamber with an upper liquid spray device, an inlet for heated gas and an

outlet, which is connected to a separator for the powder particles. The powder outlet of this separator is connected to a flow of a cooling gas leading to a cyclone. The gas outlet duct of this cyclone terminates in a zone in the drying chamber lying under the spray device.



3,460,601

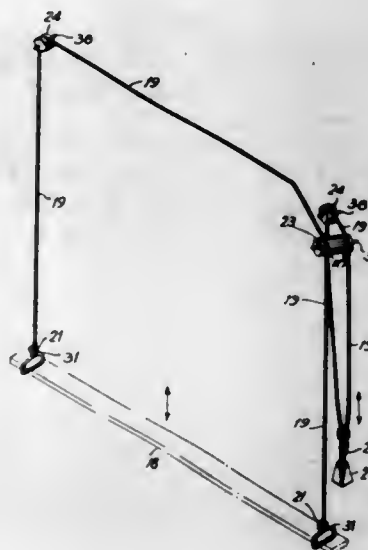
#### ADJUSTABLE BLIND MECHANISM

Garnett Abraham, 215 Manor Road, Staten Island, N.Y. 10314  
Continuation-in-part of application Ser. No. 610,471, Jan. 18, 1967. This application Nov. 1, 1967, Ser. No. 679,672

Int. Cl. E06b 9/322

U.S. Cl. 160-168

14 Claims



An adjustable blind mechanism for use with Venetian blinds and the like wherein the control cords of the blind are trunnioned around ratchet pulleys which rotate when the blind is raised and grip the control cord when held in tension by a counterweight to maintain the blind in a stable fixed position. The blind may be raised or lowered by directly lifting or pulling down the bottom rail, or by use of the counterweighted pull cords.

3,460,602

#### FLEXIBLE CLOSURE TENSIONING DEVICE

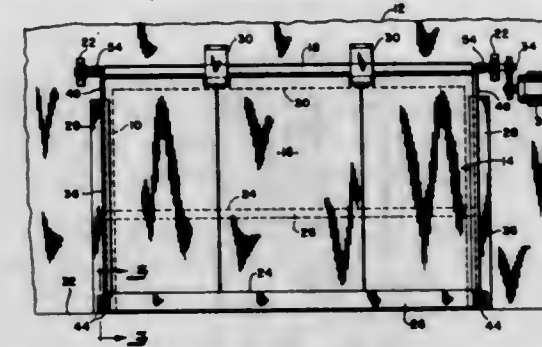
James G. Hugus, Findlay, Ohio, assignor to Closures, Inc., a corporation of Ohio  
Filed June 8, 1967, Ser. No. 645,856  
Int. Cl. A47h 1/00; A47g 5/02

U.S. Cl. 160-265

1 Claim

A device for tensioning the membrane of a closure employing a flexible membrane fastened to a bottom rail which is movable towards and away from an upper roller

on which the membrane wraps and unwraps itself as the closure opens and closes. This device includes a spring and cable system coacting together with the upper roller



and the bottom rail for biasing the bottom rail away from the roller, whereby tension is applied to the flexible membrane in all positions of the lower marginal edge of the latter.

3,460,603

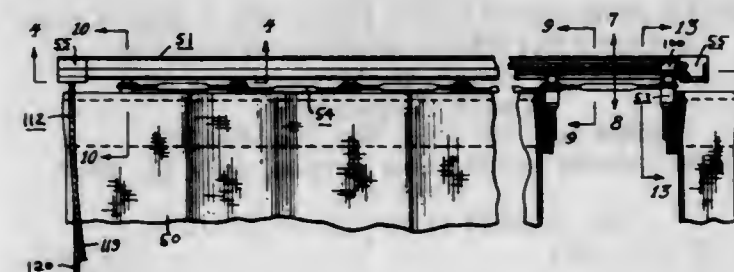
#### DRAPERY SYSTEM

Ellis I. Toder, 9225 Grace Lane, Philadelphia, Pa. 19115

Filed Apr. 26, 1968, Ser. No. 724,507  
Int. Cl. A47h 5/032, 1/104

U.S. Cl. 160-345

11 Claims



A traverse drapery system for reversely folded pleated drapes of both the single acting and double acting type including a one-piece extruded ceiling track, molded master carriers concealed within the track, molded drapery carriers slidable within the track and extending downward to one part of a molded detachable coupling of which the other part is formed at the upper end of a molded drapery heading stiffener, flexible spacers coupling together adjacent carriers to control the extent of pleat separation of adjacent pleats, and a molded pulley housing usable at both ends of the track. The master carriers ride above the upper level of the other drapery carriers and override some to closely stack the drape end folds against the drape. A novel L-shaped wall support bracket including a break-off wedge fastener for wall mounting of the ceiling track is described, as well as a molded pulley housing extension part which provides an option for concealment behind the drape of the vertical run of the traverse cord. A novel combined hem weight and hem pleat former is also disclosed consisting of elongated rod-like weights stitched into pockets in a continuous flexible sleeve, the weights being each somewhat shorter than the pleat width.

3,460,604

#### METHOD FOR VACUUM MELTING AND CASTING

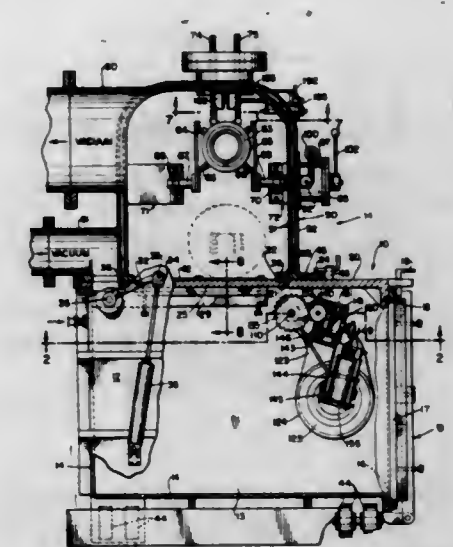
Stanley C. Tingquist, Sparta, Albert M. Talbot, Mountain Lakes, and William H. Hagedorn, Mount Arlington, N.J., assignors to Howmet Corporation, a corporation of Delaware

Original application Dec. 16, 1964, Ser. No. 418,770, now Patent No. 3,336,971, dated Aug. 22, 1967. Divided and this application Mar. 24, 1967, Ser. No. 641,715  
Int. Cl. B22d 27/16, 17/02

U.S. Cl. 164-61

4 Claims

A method for vacuum melting and casting in which a continuous vacuum is maintained in the vacuum melting



then opening the loading zone to a melting zone and thereafter continuously maintaining the melted charge under a vacuum until it is cast.

3,460,605

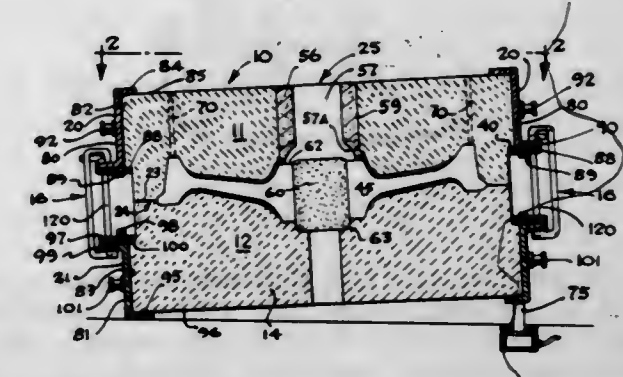
#### METHOD FOR CASTING IN A PERMANENT MOLD A CASTING HAVING THICK AND THIN SECTIONS

Robert H. Beetle, Mountain Lakes, and John B. Dabney, Ridgewood, N.J., assignors to Abex Corporation, a corporation of Delaware

Original application Nov. 12, 1965, Ser. No. 507,999, now Patent No. 3,302,919, dated Feb. 7, 1967. Divided and this application Nov. 25, 1966, Ser. No. 596,980  
Int. Cl. B22d 15/00, 27/04

U.S. Cl. 164-123

9 Claims



A method of casting metal in a permanent mold, the ultimate casting to have a thin section and a thicker section joined thereto, in which surfaces of the permanent mold material, defining the mold cavity for the thicker section of the casting, are exposed to chill at least a portion of the metal constituting the thicker section; whereas the permanent mold material is recessed and then lined with an insulating material to define the mold cavity for the thinner section of the casting.

3,460,606

#### METHOD OF FORMING A CASTING MOLD

Ronald Frederick Boddey, Birmingham, England, assignor to Fosco International Limited, Birmingham, England, a British company

Filed July 8, 1966, Ser. No. 563,846  
Claims priority, application Great Britain, July 19, 1965, 30,603/65

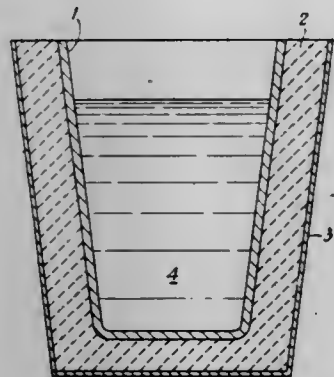
U.S. Cl. 164-137

7 Claims

A method of forming a casting mould comprising de-watering an aqueous slurry of particulate refractory ma-



material, organic fibrous material and binder onto a mesh evacuated whereafter the billets from the chambers are former of the shape of the article to be moulded, re-supplied to respective heating means in a vacuum cham-



moving the shape so formed from the former, drying it and backing it up with bonded or unbonded particulate refractory material.

3,460,607

#### MEANS FOR PROVIDING A CHOKE FOR IN-TUBE RETENTION OF SAND IN CORE BOX OR LIKE BLOW TUBES

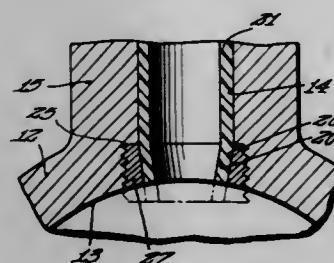
Richard L. Olson, Hickory Hills, Ill., assignor to Dike-O-Seal, Incorporated, Chicago, Ill., a corporation of Illinois

Filed Oct. 15, 1965, Ser. No. 496,546

Int. Cl. B22c 15/24; B05b 1/50

U.S. Cl. 164—200

6 Claims



A sand molding core box blowhole having a rigid tapered choke constriction leading to a delivery orifice opening into the molding cavity has a replaceable preformed blowtube liner of stiffly resiliently yieldable high impact strength highly abrasion resistant material (polyurethane) of a normal outside diameter along its length conforming to the blowhole and with its inner end portion forced into the choke constriction to provide a complementary constriction-protecting liner and sand column retaining choke restriction.

3,460,608

#### VACUUM INDUCTION CASTING PLANT WITHOUT CRUCIBLE

Vyacheslav Petrovich Grechin, Kutuzovsky prospekt 8, kv. 37; Zakhar Alexeevich Oreshnikov, Otkrytoe shosse 21, korpus 2, kv. 7; and Boris Fedorovich Milyaev, Izmarlovsky Prospekt 117/1, kv. 17, all of Moscow, U.S.S.R.

Filed Mar. 4, 1966, Ser. No. 531,980

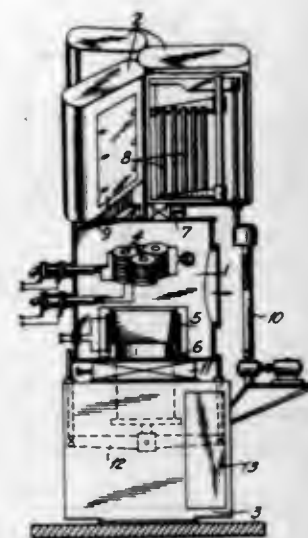
Int. Cl. B22d 27/02, 27/16

U.S. Cl. 164—251

3 Claims

A plant for producing castings by melting billets in which the billets are charged into chambers which are

ber in sequence and therein melted and deposited as a continuous stream into a mold.



3,460,609

#### NOZZLE FOR SUPPLYING MELT TO A MOULD IN A CONTINUOUS CASTING MACHINE

Erik Allan Olsson, Oerlikonerstrasse 88, Zurich, Switzerland

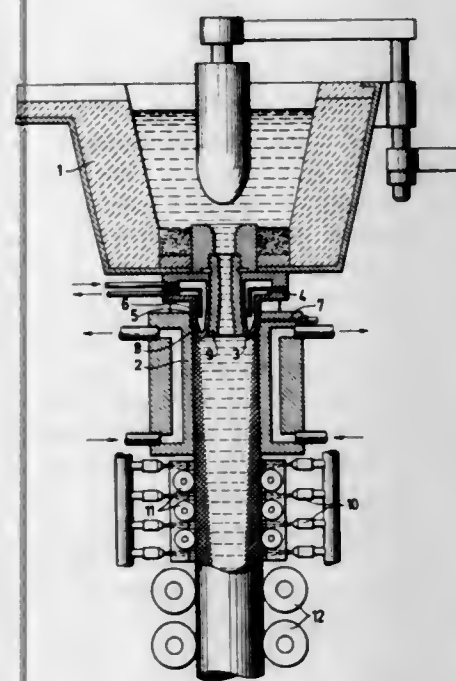
Filed July 23, 1965, Ser. No. 474,280

Claims priority, application Sweden, July 23, 1964, 8,980/64

Int. Cl. B22d 11/04, 11/10, 11/12

U.S. Cl. 164—281

4 Claims



This application discloses a continuous casting apparatus wherein metal is delivered from a receptacle through a nozzle into the upper end of a reciprocating mould. The mould is arranged for the introduction of lubricant into its upper end and the nozzle slidably projects into the upper end of the mold. The nozzle has a water-cooled metal exterior portion in the form of a hollow annulus for sliding engagement with the mould. Provision is made for the escape of gas generated by the lubricant upwardly between the nozzle and the mould, and in addition the nozzle has a lower terminal portion of decreasing overall diameter so as to taper away from the mould wall. The water-cooled metal annulus has a refractory sleeve passing there-

through which insulates the molten metal passing through the nozzle from the water-cooled surfaces and prevents premature cooling of this metal.

3,460,610

#### INGOT STRIPPING MECHANISM WITH SPHERICAL TAPERED ROLLER BEARINGS

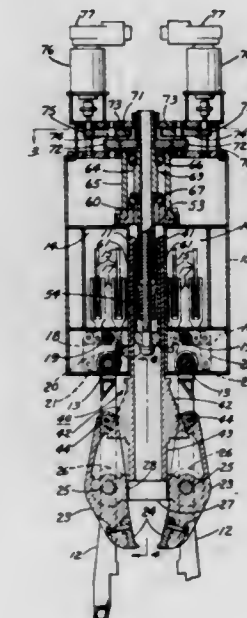
Nelson E. Baker, Alliance, Ohio, assignor to The Morgan Engineering Company, Alliance, Ohio, a corporation of Ohio

Filed Jan. 3, 1967, Ser. No. 606,916

Int. Cl. B22d 29/04; F16h 37/06; B66c 3/18

U.S. Cl. 164—405

3 Claims



This disclosure relates to an ingot stripping mechanism adapted to grip a metal ingot while in engagement with the ingot mold, and to pull the ingot loose by exerting suitable extraction forces. The mechanism utilizes pull tongs and a screw assembly for applying the gripping and extracting forces. The screw assembly is mounted in bearings which accommodate pendulous movement and the drive for the screw assembly is obtained from a plurality of vertically mounted motors arranged in geometrically balanced relation around a central main drive gear.

3,460,611

#### HEAT EXCHANGER OF PLATE FIN MODULES

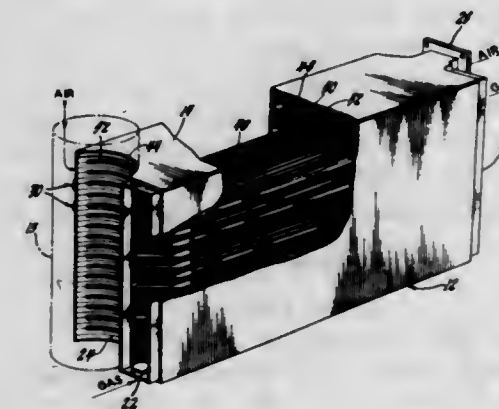
Floyd P. Folsom, Burt, and Salvatore S. Tramuta, Schenectady, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 6, 1967, Ser. No. 673,479

Int. Cl. F28f 3/14

U.S. Cl. 165—166

2 Claims



The heat exchanger comprises a stack of sheet metal modules, each module recessed to define channels having

corrugated strip fin means in contact with the plates of said modules and on opposite sides thereof and adapted to be arranged in an assembly contained in a casing so as to form separate flow passages for heat exchange between two fluids.

3,460,612

#### CYLINDRICAL POROUS METAL STRUCTURE

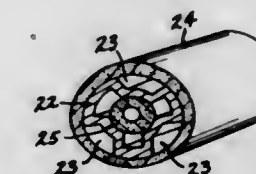
Emery I. Valyi, Riverdale, N.Y., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Application Sept. 21, 1964, Ser. No. 398,128, now Patent No. 3,289,750, dated Dec. 6, 1966, which is a division of application Ser. No. 202,612, June 14, 1962. Divided and this application Aug. 30, 1965, Ser. No. 495,743

Int. Cl. F28f 1/06, 7/00

U.S. Cl. 165—170

2 Claims



A composite tubular structure having an embossed sheet metal cylinder, a sheet-like sintered porous metal body metallurgically bonded to the outside thereof, and a second sheet-like sintered porous metal body metallurgically bonded to the inside thereof.

3,460,613

#### HEAT EXCHANGERS

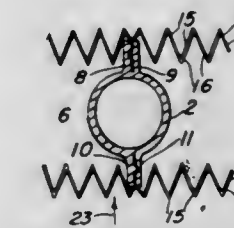
Richard W. Kritzer, Chicago, Ill., assignor to Peerless of America, Incorporated, Chicago, Ill., a corporation of Illinois

Filed Apr. 21, 1967, Ser. No. 632,613

Int. Cl. F28f 1/14, 1/32

U.S. Cl. 165—183

11 Claims



A heat exchanger embodying a tubular member for feeding working fluid therethrough, and with a perforated sheet material attached to the tubular member to afford a secondary heat-transfer surface.

3,460,614

#### PILOT VALVE AND MULTIPLE PILOT VALVE UNIT

Harry Lee Burgess, Houston, Tex., assignor to Hudson Machine Works, Inc., Houston, Tex., a corporation of Texas

Filed Feb. 20, 1967, Ser. No. 617,135

Int. Cl. E21b 33/035; F15b 13/04; F17d 3/00

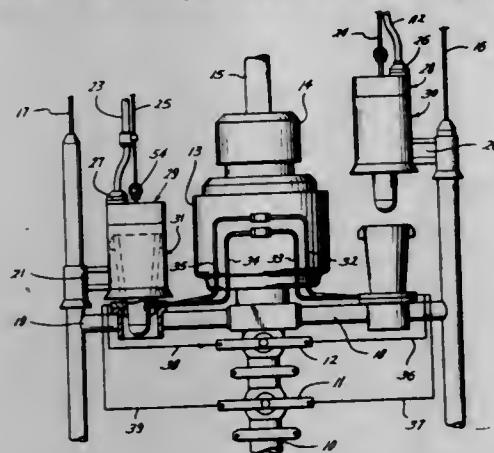
U.S. Cl. 166—6

7 Claims

A very rugged, compact, easily repaired multiple pilot valve unit is installed between the surface-controlled fluid lines and the fluid motors which operate subsurface

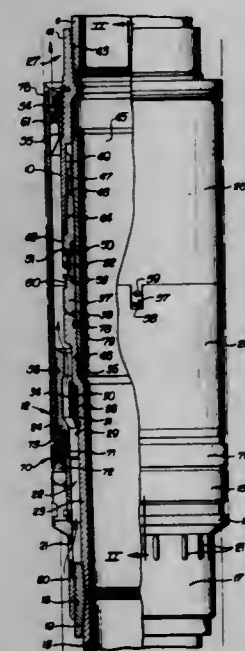


wellhead instrumentalities, such as blowout preventers and the like. The unique pilot valve of the hollow slide



valve type substantially eliminates shear seals which cause trouble in hydraulic systems.

**3,460,615**  
**CIRCULATING CASING HANGER AND RUNNING TOOL APPARATUS**  
Bruce J. Watkins, Palos Verdes Estates, Calif., assignor to Regan Forge and Engineering Company, San Pedro, Calif., a corporation of California  
Filed Oct. 9, 1967, Ser. No. 673,624  
Int. Cl. E21b 33/05, 33/14, 43/10  
U.S. Cl. 166—87 14 Claims

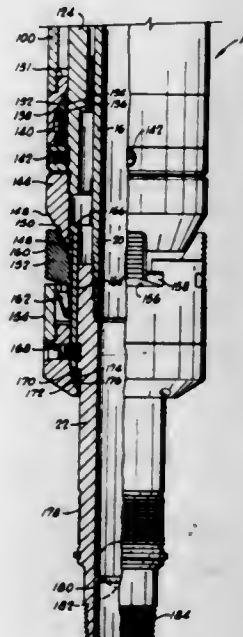
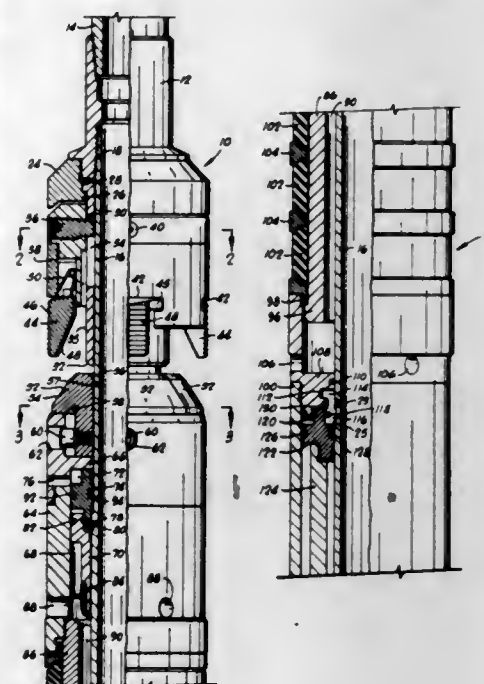


A casing hanger assembly having a casing hanger body having a landing surface for landing the assembly upon an internal ledge provided in a well head casing, an internal cement return passage in said body communicating the annulus between said hanger body and well head casing, and means associated with said hanger body and movable upwardly in said passage for engaging an internal seal means for closing said passage.

**3,460,616**  
**RETRIEVABLE PACKER**  
Andrew J. Tucker, Mesquite, and Marion D. Kilgore, Morgan L. Crow and Harry E. Simpson, Dallas, Tex., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware  
Filed July 26, 1967, Ser. No. 656,124  
Int. Cl. E21b 33/126, 33/129  
U.S. Cl. 166—120 13 Claims

A fluid pressure-actuated, retrievable packer assembly including a tubular mandrel, upper and lower slips encircling the mandrel and upper and lower expanders movable along the tubular mandrel into engagement with the slips to move the slips into holding engagement with

the wall of the well bore. A packing member that is deformable into sealing engagement with the wall of the well bore is carried by the upper expander. The upper and lower expanders being movable by fluid pressure in relatively opposite directions along the mandrel to engage the slips and to deform the packing member. The packer assembly also includes means for holding the slips and expanders out of engagement when the packer



assembly is being run into the well bore, means for retaining the slips and expanders in engagement when the packer assembly is set and means for holding the slips and expanders out of engagement during retrieval of the packer assembly. The packer assembly is actuated; that is, moved into the set position in response to the pressure of fluid in the mandrel and is retrieved by the exertion of a straight upward pull on the mandrel.

**3,460,617**  
**LINER HANGER PACKER**  
Joe R. Brown and James W. Montgomery, Houston, Tex., assignors to Brown Oil Tools, Inc., Houston, Tex.  
Filed Apr. 5, 1967, Ser. No. 628,632  
Int. Cl. E21b 33/129, 23/00  
U.S. Cl. 166—124 11 Claims

A liner hanger and well packer which is set by hydraulic pressure, is releasable from the tubing string on

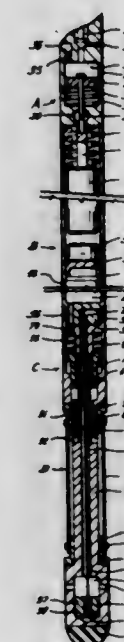
which it is lowered to remain in set position within a well bore after having been set and which is readily re-

leased of the material by produced fluids in the well conduit. The vent passageway can be selectively closed after releasing the pump structure.



trievable either by rotation or a straight upward pull on a tool engaging the device.

**3,460,618**  
**THRU-TUBING BRIDGE PLUG**  
Leon Blagg, Channelview, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas  
Filed Apr. 14, 1967, Ser. No. 630,864  
Int. Cl. E21b 23/00, 33/134  
U.S. Cl. 166—184 17 Claims



Apparatus for plugging a well conduit below open tubing, including a support tube having an inflatable packer element mounted thereon. A vent passageway extends between locations above and below the packer element. A remotely controllable pump structure is releasably coupled to the support tube and is adapted, when operated, to displace a cementitious medium into the packer element to inflate it. Thereafter, cementitious material can be deposited on top of the expanded packer element and the material can harden to plug the well conduit while the vent passageway remains open, thus preventing disturb-

**3,460,619**  
**HYDRAULICALLY LOCKED ADJUSTABLE TAIL PIPE FOR WELL TOOLS**  
Theodore A. Raugust, Edmonton, Alberta, Canada, assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware  
Filed Feb. 27, 1967, Ser. No. 618,910  
Int. Cl. E21b 23/00, 33/124, 41/00  
U.S. Cl. 166—237 6 Claims



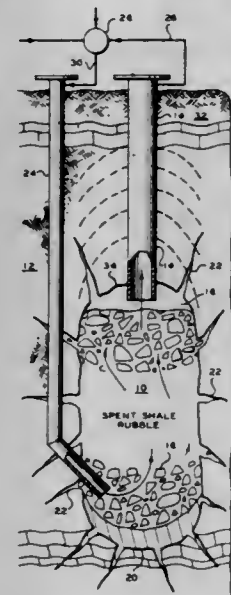
The present disclosure relates to an adjustable tail pipe for well tools or packers. The tail pipe is telescopically adjustable from a first position, at which it projects from a packer body to effect setting of the packing means upon engagement of the tail pipe with the bottom of the well and continued downward movement of the packer body relative to the tail pipe, to a second position at which it projects further from the packer body and is hydraulically locked in the second position, thus enabling the packing means to be set at a higher level in the well than when the tail pipe was in the first position. A frangible disc is provided to hold a body of liquid in a piston chamber to hold the telescopic parts against axial movement as the tool is being run into a well and, upon rupture of the frangible disc, an upper tail pipe member is movable upwardly relative to a lower tail pipe member, the piston chamber filling with liquid from the well to prevent return downward movement of the upper tail pipe member, thereby effectively extending the length of the tail pipe and thus the distance above the bottom of the well at which the packer is to be set. The telescopic tail pipe is disclosed in combination with a straddle packer and perforated pipe section of a drill stem tester, wherein the packers are adapted to be set in the open hole.

**3,460,620**  
**RECOVERING OIL FROM NUCLEAR CHIMNEYS IN OIL-YIELDING SOLIDS**  
Harry W. Parker, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed June 12, 1967, Ser. No. 645,445  
Int. Cl. E21b 43/24  
U.S. Cl. 166—257 7 Claims

Air or other oxygen containing gas is injected into the lower portion of a previously retorted nuclear chimney to burn coke and raise the temperature therein to a level at which the compressive strength of the shale rubble is substantially reduced. Reduction of the compressive strength of the shale results in compaction of the spent

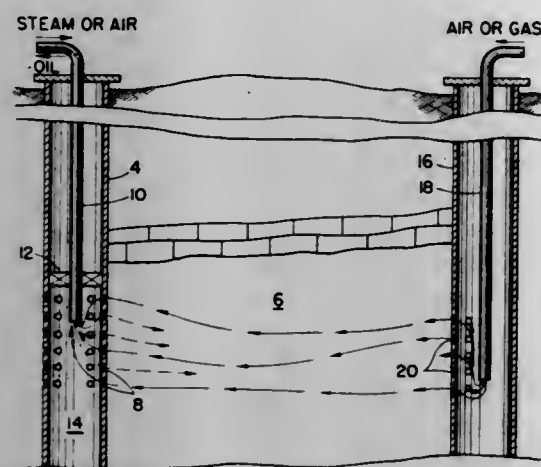


shale and consequent loss of support of the roof of the chimney, causing sloughing of raw shale onto the retorted,



mass where it is then retorted by hot combustion gases rising through the rubble.

**3,460,621**  
**CYCLIC STEAM INJECTION AND GAS DRIVE**  
Earl R. Gum and Roscoe F. Vandaveer, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware  
Filed May 22, 1967, Ser. No. 640,043  
Int. Cl. E21b 43/14, 43/22, 43/24  
U.S. Cl. 166—263 4 Claims



Steam extraction and reverse combustion are used alternately to recover viscous oils or tars. Production is carried out in the same well in which steam is introduced. The steam extraction step may be discontinued after a drainage zone has been opened near the producing or steam injection well. The remaining oil or tar is recovered by reverse combustion followed by forward combustion. An inert gas such as flue gas or natural gas may be substituted for air in which case the process is cyclic throughout with alternate steam and gas injection operation.

**3,460,622**  
**METHOD OF INCREASING INJECTIVITY OF FLUIDS INTO FORMATIONS**  
John A. Davis, Jr., Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio  
No Drawing. Filed Apr. 20, 1967, Ser. No. 632,201  
Int. Cl. E21b 43/22, 43/26  
U.S. Cl. 166—271 10 Claims

The present invention relates to the recovery of fluids from subterranean formations by injecting into the formation, first a slug of miscible-type material, second, displacing the first slug with a drive fluid, then fracturing the subterranean formation by injecting a fracturing fluid

under pressure while controlling the fracture so that it does not extend substantially into the slug of soluble oil and thereafter injecting a second amount of the drive fluid to displace hydrocarbons.

**3,460,623**  
**FOAMS IN ENRICHED GAS DRIVES**  
Robert O. Leach, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware  
No Drawing. Filed Nov. 20, 1967, Ser. No. 684,520  
Int. Cl. E21b 43/20  
U.S. Cl. 166—273 5 Claims

In an enriched gas drive of petroleum from an oil-bearing earth formation, the enriched gas is preceded by a water solution of an oil-sensitive foaming agent. The enriched gas then forms a foam which diverts more of the gas into the low permeability zones than would normally go into these zones. The foam breaks permitting a high injection rate of dry gas to drive the enriched gas through the formation.

**3,460,624**  
**THRU-TUBING BRIDGE PLUG**  
John Aitken and Jean-Louis Droulers, Caracas, Venezuela, assignors to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas  
Filed Apr. 14, 1967, Ser. No. 630,863  
Int. Cl. E21b 33/134, 23/00  
U.S. Cl. 166—285 16 Claims



Apparatus for plugging a well conduit below the lower end of a tubing string. A support has an inflatable bag mounted thereon for packing off the well bore. The bag is inflated by a cementitious medium which is contained within a chamber which is coupled to the support. A vent passageway through the support is normally open while the medium is hardening to prevent the development of a pressure differential across the bag, which passageway can be closed when desired.

**3,460,625**  
**METHODS AND APPARATUS FOR BRIDGING A WELL CONDUIT**  
Herbert J. Hart, Houston, Tex., and John N. Ellis, Bethany, Okla., assignors to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas  
Filed Apr. 14, 1967, Ser. No. 631,091  
Int. Cl. E21b 33/134, 23/00, 33/12  
U.S. Cl. 166—285 16 Claims

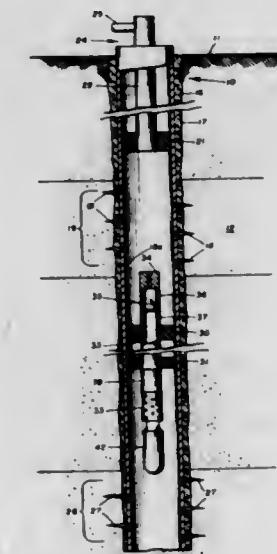
Methods and apparatus for plugging a well conduit, either cased or open hole. An inflatable packer can be

lowered into the well through tubing and then expanded to several times its lowering size to effect a seal against the well conduit. The expanded packer is temporarily vented so that well fluid can pass from one side of the packer to the other as a cementitious material is deposited



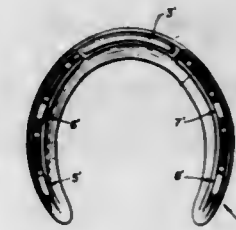
on top of the packer and allowed to harden. After the material has hardened, the vent can be closed. The venting procedure prevents produced fluids from disturbing the packer or the cementitious material as the plug is being formed.

**3,460,626**  
**METHOD AND APPARATUS FOR ALLEVIATING EROSION IN MULTIPLE-COMPLETION WELLS**  
Henry L. Ehrlich, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York  
Filed Mar. 31, 1967, Ser. No. 627,551  
Int. Cl. E21b 43/12, 33/12, 41/00  
U.S. Cl. 166—313 9 Claims



This disclosure describes a well installation and method for use in multiple-completed wells subject to "blast-zone" erosion. A packer is disposed within a well between upper and lower production intervals thereof. A conduit extends through the packer and terminates below the top of the upper production interval. This conduit provides for fluid communication between the upper and lower intervals. The conduit is provided with a flow-restricting device which reduces the pressure of the fluid flowing upwardly through the conduit.

**3,460,627**  
**HORSESHOE WITH RACING CALKS**  
Franklin W. Teixeira, Rte. 1, Box 758, Pleasanton, Calif. 94566  
Filed Mar. 10, 1967, Ser. No. 622,318  
Int. Cl. A011 7/04, 1/00  
U.S. Cl. 168—29 2 Claims



A horseshoe to give race horses greater traction on muddy as well as dry tracks having a plurality of calks protruding from the shoe. The calks consisting of elongated inserts positioned with their longitudinal axes parallel to a line tangent to the rim at the point of attachment to provide controlled sliding in a forward direction and resist slippage in a lateral direction.

**3,460,628**  
**LAMINATED TENSION-TORSION TIE-BAR**  
James A. Tankersley, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware  
Filed Nov. 6, 1961, Ser. No. 150,455  
Int. Cl. B64c 27/54; F16d 3/58  
U.S. Cl. 170—160.58 7 Claims



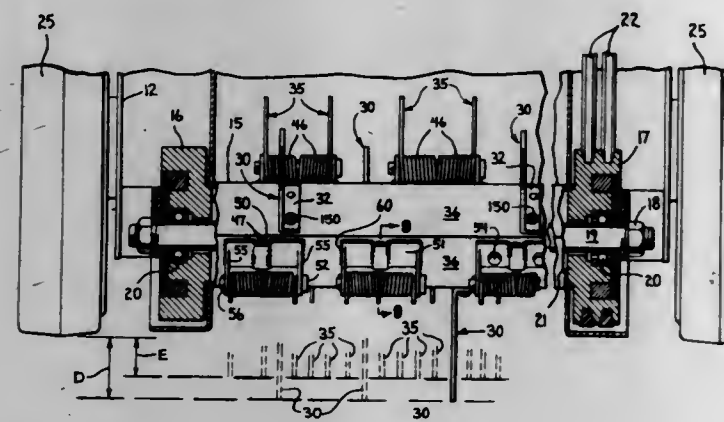
6. In a helicopter rotor system, a rotor hub and blade connection comprising:  
a rotor hub spindle;  
a rotor hub arm on said spindle;  
a bearing means between said spindle and said arm;  
a rotor blade;  
a first means to mount said hub to said rotor system;  
a second means to mount said arm to said blade;  
a pair of bushings one of which is operatively connected to said first means and the other of which is operatively connected to said second means;  
a lamination of a band of filaments including individual, parallel filaments each of which is coated with an elastomeric substance to hold the parallel alignment of said filaments, said lamination being wrapped around and bonded to said bushings by said elastomeric substance to form between said first and second means a structural link having side portions which do not overlap adapted to have axial strength and torsional resiliency in connecting said blade to said helicopter rotor system.

**3,460,629**  
**LAWN CARE APPARATUS**  
Earl P. Shapland, Jr., Fisher, Ill., and John R. West, Marysville, Ohio; said West assignor to The O. M. Scott & Sons Company, Marysville, Ohio, a corporation of Ohio  
Filed Mar. 29, 1965, Ser. No. 443,563  
Int. Cl. A01b 33/00, 39/06  
U.S. Cl. 172—42 18 Claims

Lawn care apparatus including a tube of hexagonal cross section mounted on a wheeled vehicle for powered rota-

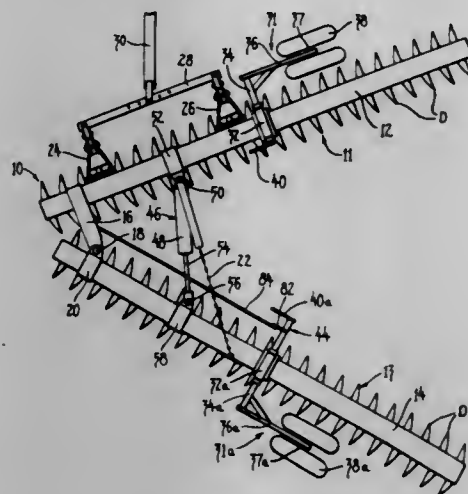


tion with the axis of the tube in parallel relation to the ground. On the external flat surfaces of the tube are the-road movement. Agricultural tools mounted on the frame are shifted as a unit by a power driven shaft that changes the position of the wheel assemblies with respect



mounted ground scarifying and thatch cutting blades at relatively widely spaced intervals and raking spring tines at more closely spaced intervals.

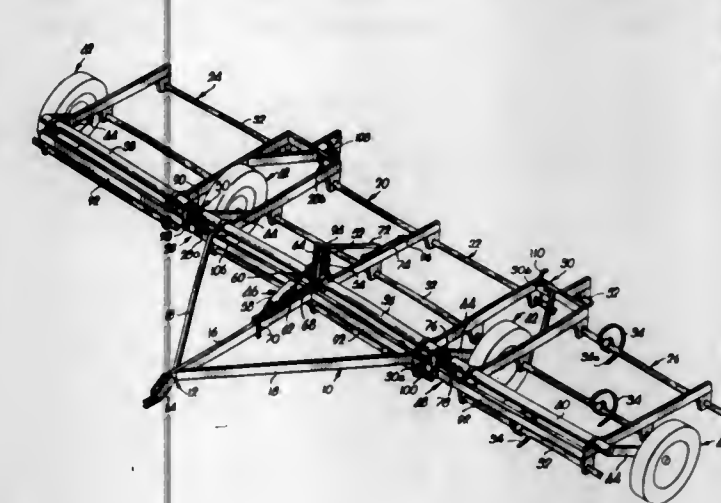
**3,460,630**  
**TRANSPORT ATTACHMENT FOR IMPLEMENTS**  
Clarence B. Richey, Fresno, Calif., assignor to Massey-Ferguson Inc., Detroit, Mich.  
Filed Dec. 16, 1965, Ser. No. 514,231  
Int. Cl. A01b 63/16, 21/08, 15/16  
U.S. Cl. 172-240 9 Claims



A transport attachment for an offset disc harrow having a pair of hinged disc gangs which are foldable together into parallel relationship when not in use. Transport attachment includes a pair of shafts, one rotatably mounted on the upper side of each disc gang such that when the gangs are in their transport, side by side position, the shafts are in coaxial alignment and can be coupled together to define a rockshaft. Each shaft is provided with a wheel that can be moved between an out of use position during earthworking and a position in which it supports the gangs above the ground for transport.

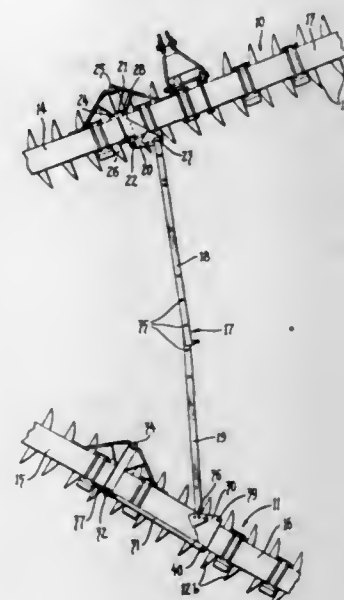
**3,460,631**  
**HIGH CLEARANCE WHEEL MOUNTED SPRING-TOOTH HARROW**  
Vernon W. Friesen, Jake D. Klassen, and Fred H. Kohman, Hillsboro, Kans., assignors to Friesen Industries, Incorporated, Hillsboro, Kans., a corporation of Kansas  
Filed Nov. 14, 1966, Ser. No. 593,946  
Int. Cl. A01b 19/04, 19/10, 23/04  
U.S. Cl. 172-311 7 Claims

An agricultural implement includes a wheel-supported frame having a main section and a pair of articulated end sections which may be folded upwardly to facilitate over-



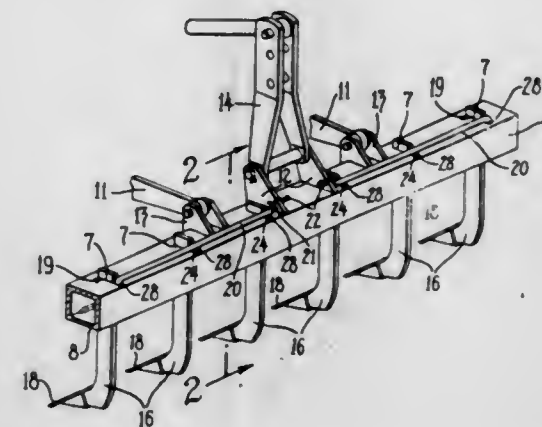
to the frame. The end sections and the main section are interlinked in a manner to permit upward and downward flexing of the end sections as uneven ground is traversed.

**3,460,632**  
**FLEXIBLE OFFSET DISC HARROW**  
Clarence B. Richey, Fresno, Calif., assignor to Massey-Ferguson Inc., Detroit, Mich.  
Filed Jan. 11, 1966, Ser. No. 519,924  
Int. Cl. A01b 21/08  
U.S. Cl. 172-596 9 Claims



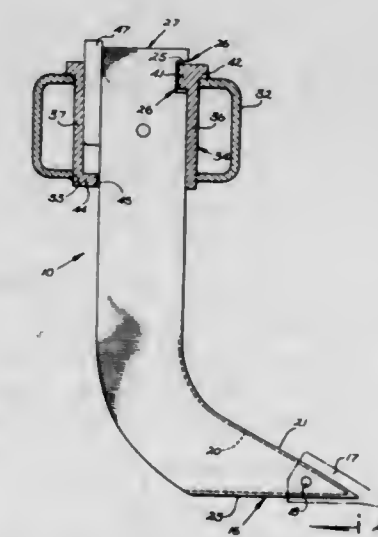
A flexible offset disc harrow having pivotally connected front and rear gangs each having an inner section and a vertically pivotable outer section with the inner sections pivotally connected to form the pivot between the gangs. The front gang discs act to dig in the ground while the oppositely forced rear gang discs act to lift out of the ground. A draft and leveling linkage extends between the front and rear gangs and includes a lever pivotally carried by each of the outer sections. There is an operative connection between each of the levers and the adjacent inner section. An adjustable length force transmitting member connects the lever to transmit draft forces between the front and rear gangs and at the same time provide a lifting force on the front outer section and a lowering force on the rear outer section. The operative connection between one of the levers and its associated inner section is a one-way connection permitting relative vertical movement between one of the outer sections and the other sections.

**3,460,633**  
**SCARIFIER TOOTH KEEPER**  
Clarence B. Richey, Fresno, and Richard W. Kramer, Fowler, Calif., assignors to Massey-Ferguson Inc., Detroit, Mich.  
Filed Mar. 11, 1966, Ser. No. 533,612  
Int. Cl. A01b 15/02, 13/00  
U.S. Cl. 172-691 1 Claim



A scarifier for mounting to a three-point tractor hitch includes a transverse box beam having a plurality of laterally spaced pairs of aligned openings in the top and bottom walls. A tooth having a shank portion sized to the opening is insertable through each pair of openings until a notch is aligned with the top wall, whereupon the notch is engageable therewith to prevent vertical tooth movement. An elongated keeper has a bent end insertable through one of the top openings and a plurality of projections insertable through the remaining openings in the top wall adjacent the teeth shanks to prevent fore and aft tooth movement. Means are provided to prevent movement of the bar and thus tooth movement.

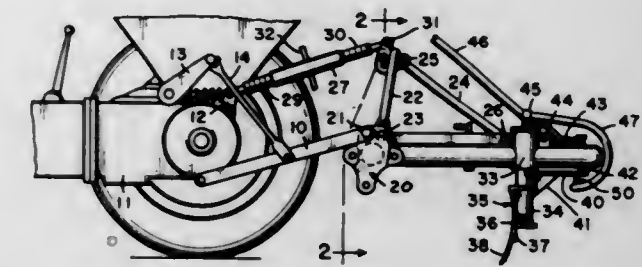
**3,460,634**  
**LAMINATED SHANK**  
Charles T. Mathers, Long Beach, Calif., assignor to Rheem Manufacturing Company, New York, N.Y., a corporation of California  
Filed Sept. 26, 1966, Ser. No. 581,833  
Int. Cl. A01b 33/10, 35/20, 39/22  
U.S. Cl. 172-708 4 Claims



The laminated shank for supporting excavation teeth of this invention comprises a shank produced from a plurality of pieces of steel of like shape and length which are joined in side-by-side relationship only at their lower

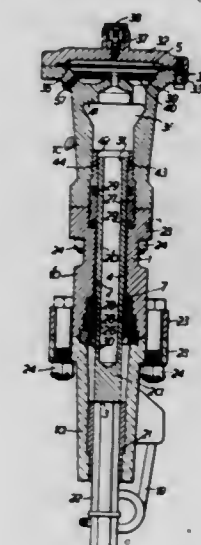
ends and the remainder of the steel plates are unjoined and thereby permit relative deflection when subjected to side or lateral forces.

**3,460,635**  
**MULTIPLE HITCH ATTACHMENT FOR EARTH-MOVING IMPLEMENT**  
John Henry Danuser, % Danuser Machine Company, Fulton, Mo. 65251  
Filed Aug. 25, 1965, Ser. No. 482,337  
Int. Cl. A01b 65/06  
U.S. Cl. 172-741 7 Claims



An earth-moving implement in which the frame carrying the blade includes opposed brackets, each of which is provided with a plurality of spaced connections. The spaced connections of opposed brackets are selectively alignable in pairs in the reference axis to connect the frame to the hitch means to regulate the angular disposition of the frame, and hence of the blade.

**3,460,636**  
**PERCUSSIVE TOOLS AND MACHINES**  
David Richard James, Coverts, Gloucester, England, assignor to Sonomotive Engineers Limited, Cheltenham, England  
Filed July 5, 1967, Ser. No. 651,257  
Int. Cl. E21b 1/00; B25d 9/00, 1/00  
U.S. Cl. 173-116 9 Claims



A percussive tool or machine derives motive power from a series of fluid pressure pulses produced by a hydraulic generator, and employs a striker into which energy is imparted as a result of the application of the pressure pulses to a piston which may be separate from or formed integrally with the striker. The piston is disposed in a pressure chamber which is connected to the generator, the piston being stepped to provide a differential area on which the fluid pressure acts in the opposite sense to the power stroke. A piston return spring provides the power stroke of the piston.



3,460,637

## OSCILLATING WORKING DEVICE

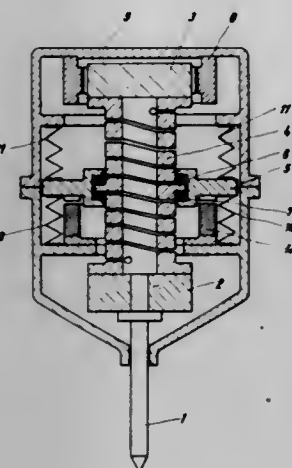
Gotthilf Schulin, Fellbach, Germany, assignor, by mesne assignments, to Wacker-Werke KG, Munich, Germany

Filed Aug. 21, 1967, Ser. No. 666,231

Claims priority, application Germany, Aug. 25, 1966, Sch 39,453

U.S. Cl. 175—56 Int. Cl. E21b 3/08

22 Claims



Oscillatory system for a working element in which two oscillatory systems exert oscillatory forces on the working element at respectively different frequencies so the working element performs work oscillations with idle oscillations interposed therebetween.

3,460,638

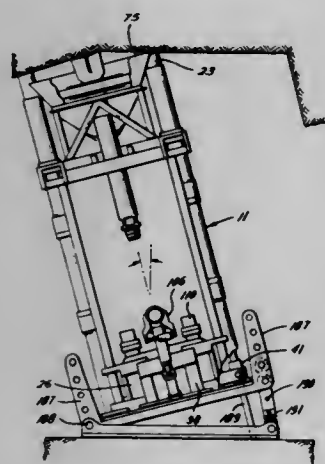
## RAISE DRILLING APPARATUS

Stuart C. Millsapps, Jr., Houston, Tex., assignor to Hughes Tool Company, Houston, Tex., a corporation of Delaware

Filed Oct. 10, 1966, Ser. No. 585,458

U.S. Cl. 175—85 Int. Cl. E21b 19/00, 41/00; E21c 11/00

21 Claims



A raise drilling apparatus useful for drilling raise holes in mines between upper and lower levels. It is arranged such that it may drill either upwardly or downwardly. It generally includes a frame and a carriage movable vertically therein, with the carriage having drive means for rotating a Kelly connected to a drill string. Wrench means are provided both on the carriage and on the frame for making up and breaking out sections of the drill string.

3,460,639

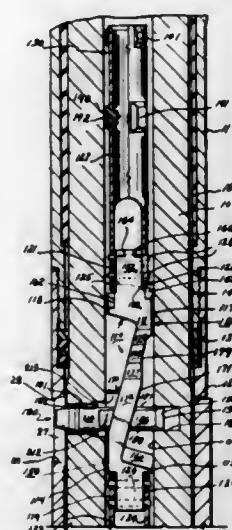
## LATCH FOR DRILL BIT CONTROL APPARATUS

William R. Garrett, Midland, Tex., assignor to Smith Industries International, Inc., a corporation of California

Filed Aug. 31, 1967, Ser. No. 664,878

Int. Cl. E21b 17/10, 7/04; E21c 9/00

U.S. Cl. 175—230 10 Claims



The hydraulic guide barrel for a drill bit mandrel is releasably latched to mandrel in lower position of barrel on mandrel by a latch pin radially reciprocable in mandrel into and out of engagement with a slot in the barrel. The pin is positively driven by a cam which reciprocates axially in barrel in response to predominating of two forces, namely, an upward force provided by a helical compression spring and a downward force provided by fluid in the mandrel acting against piston connected to cam.

3,460,640

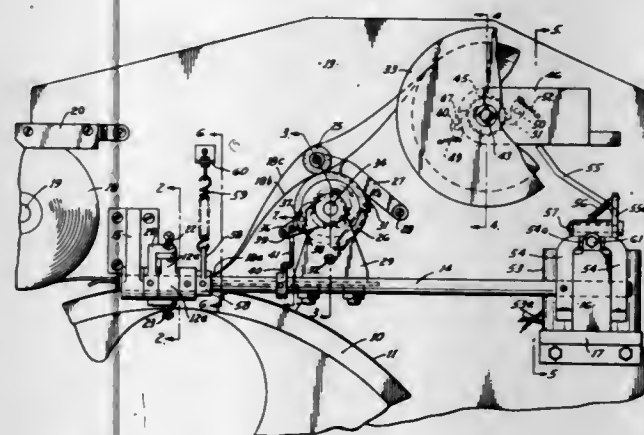
## SCALE RECORD PAPER TAKE-UP MECHANISM

Alvin C. Dyer, Jr., Novelty, Ohio, assignor to The Atlas Bolt & Screw Company, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 9, 1967, Ser. No. 614,942

Int. Cl. G01g 23/38

U.S. Cl. 177—9 1 Claim



A weighing scale provided with a continuous length of tape on which weights are sequentially recorded is provided with a take-up reel for the printed tape which is actuated in a take-up direction by means of a falling weight which is reset for each printing operation.

3,460,641

## FLUENT MATERIAL WEIGHING SYSTEM

Allie A. Johnson, Rte. 1, Pulaski, Tenn. 38478

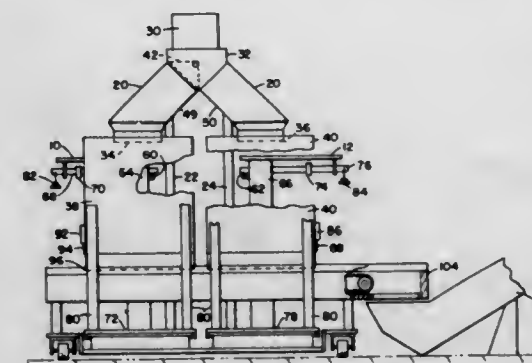
Filed Dec. 11, 1967, Ser. No. 689,456

Int. Cl. G01g 13/22

U.S. Cl. 177—99 6 Claims

A weighing system which accepts fluent material on a continuous flow basis, then batch weighs the material and

finally discharges the material on a continuous flow basis. Alternating weigh chambers are correlated so as to be the vehicle is at a complete standstill so that said wheel engages the ground and the rear wheels of the vehicle are raised off the ground, a motor operatively connected to said single wheel through a non-reversing reduction



alternatively filled and discharged onto a conveyor by the use of an electrically controlled, pneumatically operated valving system.

3,460,642

## LOW PROFILE BATHROOM SCALES

Mike A. Provi and S. Robert Guinter, Rockford, Ill., assignors to The Brearley Company, Rockford, Ill., a corporation of Illinois

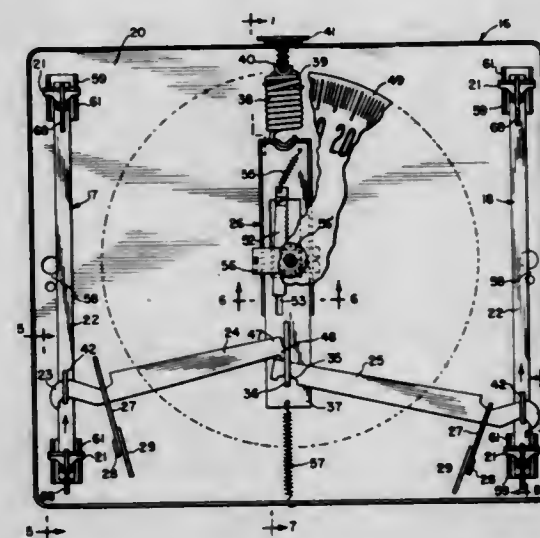
Continuation-in-part of application Ser. No. 585,078,

Oct. 7, 1966. This application Apr. 28, 1967 Ser.

No. 641,096

Int. Cl. G01g 21/08

U.S. Cl. 177—256 20 Claims



Low profile bathroom scales comprising four bell-crank levers fulcrumed on four corners of the base, platform suspended on hangers on the bell-crank levers, pairs of the bell-crank levers connected by a bar for reciprocal actions, two motion multiplying levers, oppositely disposed and each connected to one of said bars connecting the bell-crank levers, said motion-multiplying levers acting in a plane parallel to the platform to produce an indication of weight.

3,460,643

## WHEEL DEVICE FOR LATEROALLY MOVING AN AUTOMOTIVE VEHICLE FROM REST

Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France

Filed Nov. 16, 1967, Ser. No. 683,670

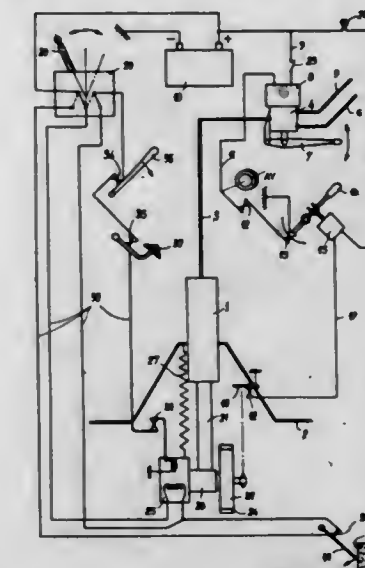
Claims priority, application France, Dec. 16, 1966,

87,725

Int. Cl. B60s 9/20

U.S. Cl. 180—1 8 Claims

A lifting device equipped with a single wheel at its lower end is mounted on the rear portion of the vehicle and control means are adapted to lower this device when



gearing is adapted to move the rear portion of the vehicle laterally in either direction, auxiliary locking and safety means being provided for avoiding any untimely maneuver.

3,460,644

## REAR ENGINE DRIVE PASSENGER MOTOR VEHICLES

Ferdinand Anton Ernst Porsche, Stuttgart-Nord, and Wolfgang Eyb, Leonberg, Germany, assignors to Dr. Ing. H. C. F. Porsche KG, Stuttgart-Zuffenhausen, Germany

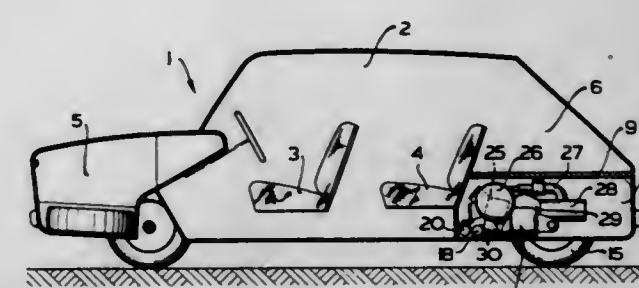
Filed Apr. 13, 1967, Ser. No. 630,758

Claims priority, application Germany, May 6, 1966,

P 39,381, Patent P 1,580,530.8

Int. Cl. B60k 5/04, 5/12

U.S. Cl. 180—56 13 Claims



A rear engine drive passenger motor vehicle having an internal combustion engine with its cylinders arranged in a row transverse to the longitudinal direction of the vehicle and change speed transmission generally transverse to the longitudinal direction of the vehicle. The engine and transmission are located forwardly of the rear axle with the cylinders pointing forwardly and upwardly at an acute angle with respect to the horizontal plane of the vehicle. The engine and transmission are located rearwardly of the rear seats and below a luggage compartment floor.

3,460,645

## SAFETY BRAKE SYSTEM

Archer W. Brown, Minneapolis, and James L. Montgomery and Walter A. Beer, St. Paul, Minn., assignors to American Hoist & Derrick Company, St. Paul, Minn., a corporation of Delaware

Filed Nov. 6, 1967, Ser. No. 680,634

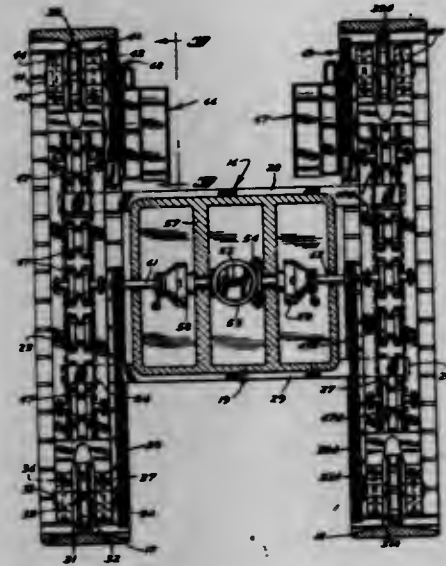
Int. Cl. B62d 11/00; F16d 67/02

U.S. Cl. 180—6.7 19 Claims

A crawler tractor having a pair of endless tracks trained about drive tumbler and idler tumblers. A drive mechanism having a pair of clutches for each of the drive tumblers transmits power from an engine to the drive



tumblers. Separate self-contained brake units are drivably connected through a torque reducing power transmitting chain and gear drive to the axles carrying the idler tumblers. Each brake unit has a fluid motor control



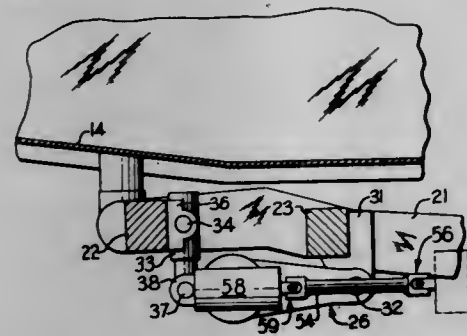
operatively coupled to the control for the clutches so that when the clutch for one of the drives of the tracks is released the brake for the non-driven track is applied. The brake units are spring applied fluid pressure release band brakes operable to function independent of the drive mechanism for the tracks.

3,460,646

**INDEPENDENT WHEEL SUSPENSION FOR MINIMIZING UNIVERSALJOINTED SHAFT WEAR**  
Charles C. Sons, Jr., Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California  
Filed May 8, 1967, Ser. No. 636,881  
Int. Cl. B60k 17/32

U.S. Cl. 180—73

1 Claim



A strong and durable suspension provides for the individual mounting of drive wheels on a vehicle. The wheel is carried on a link pivoted at one end to the vehicle frame and coupled thereto at the other end through a resilient strut which provides for independent oscillation of the wheel in response to ground irregularities. A rotary shaft transmits drive to the wheel and has spaced universal joints to accommodate to the wheel oscillation. To minimize wearing of the drive shaft, the pivot which couples the link to the frame is situated between the universal joints.

3,460,647

**AIR-CUSHION VEHICLE**  
Nikolaus Laing, Rosenbergstrasse 24a, Stuttgart, Germany

Continuation of application Ser. No. 132,756, Aug. 21, 1961. This application Aug. 5, 1966, Ser. No. 571,159  
Claims priority, application Germany, Aug. 20, 1960, L 36,868

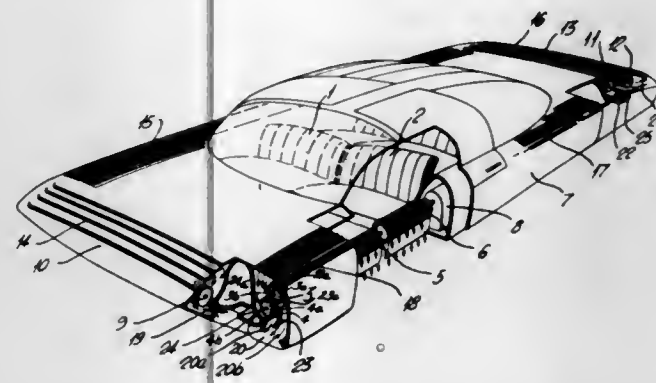
Int. Cl. B60v 1/00, 1/02

U.S. Cl. 180—120

16 Claims

A vehicle for traveling over a support surface while being supported on an air cushion formed between the

support surface and the vehicle, wherein the air cushions are produced by at least one pair of blowers rotating in opposite directions and respectively extending along op-



posite sides of the vehicle and producing a lift-generating flow of air directed generally downwardly and substantially within the projected area of the vehicle. Also included are means to propel and steer the vehicle.

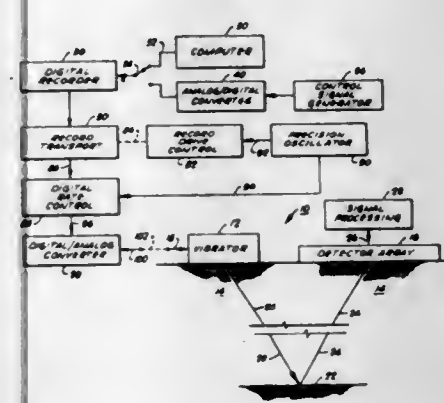
3,460,648

**DIGITAL SYSTEM FOR CONTROLLING A SEISMIC VIBRATOR**

Graydon L. Brown and Bobby J. Thomas, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware  
Continuation of application Ser. No. 594,790, Nov. 16, 1966. This application Aug. 29, 1968, Ser. No. 757,222  
Int. Cl. G01g 1/02

U.S. Cl. 181—5

13 Claims



A system for controlling a seismic vibrator comprising a computer for producing an electrical control signal having predetermined frequency characteristics in digital form, a recorder for recording the control signal and transferring the recorded signal to an intermediate storage device, wherein a timing device is connected for controlling the release of the stored control signal to an analog to digital converter which converter signal is used to drive the seismic vibrator.

3,460,649

**TREE CLIMBING-HUNTING PLATFORM**  
James E. Baker, 2202 Pinecliff Drive, and Fred L. Walters III, 2106 Park Lane, both of Valdosta, Ga. 31601  
Filed Nov. 21, 1967, Ser. No. 684,877  
Int. Cl. E04g 3/10

U.S. Cl. 182—187

7 Claims

The tree climbing-hunting platform has a base plate adapted to be positioned substantially horizontally against the side of a tree; with a V-shaped blade extending from the rear edge of the plate adapted to bite into the tree. Angularly disposed frame members extend upwardly and rearwardly from the front end of the plate beyond the said

blade; and a second V-shaped blade is removably and adjustably secured to the rear ends of the frame members and has a sharpened inner edge adapted to bite into the opposite side of the tree from the first blade. The blades embracing the tree therebetween at different elevations; and a foot strap is secured upon the top of the

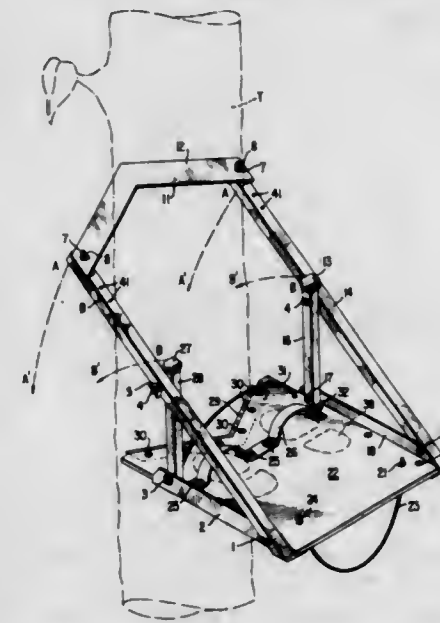


plate adapted to overlie the feet of a person standing on the plate while facing the tree, so that the person by placing his arms around the tree and pulling upwardly with his feet may climb the tree thereby raising the plate with respect to the tree, the plate remaining self-supporting in raised position whenever the weight of the person is again distributed on the plate.

3,460,650

**ARTICULATED JOINTS**

Edmond Henry-Blaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French society

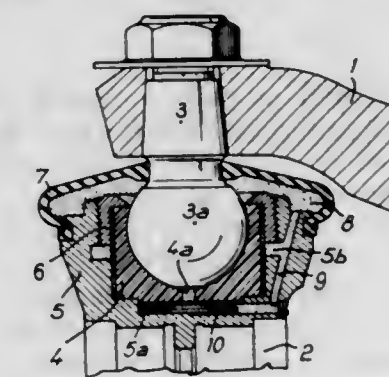
Continuation-in-part of application Ser. No. 476,926, Aug. 3, 1965. This application Nov. 6, 1967, Ser. No. 686,363

Claims priority, application France, Aug. 6, 1964, 984,330; Nov. 21, 1966, 84,385; Feb. 9, 1967, 94,276

Int. Cl. F01m 9/12, 11/04

U.S. Cl. 184—105

12 Claims



An articulated joint having a movable ball held in a flexible, apertured seat and which is automatically and continuously lubricated. The aperture in the seat communicates with a grease reservoir disposed in a casing surrounding the assembly so that upon movement of the ball the seat is moved to allow grease to penetrate into the joint.

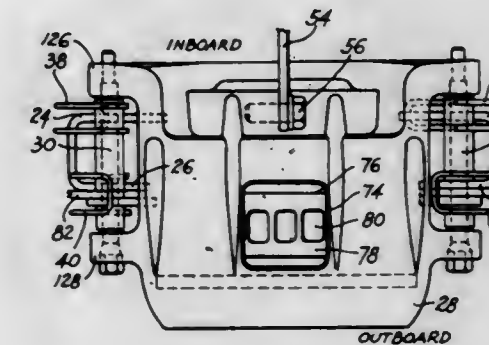
3,460,651

**CALIPER DISC BRAKE AND MOUNTING MEANS THEREFOR**

Richard T. Burnett, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware  
Filed Nov. 14, 1967, Ser. No. 682,846  
Int. Cl. F16d 55/00, 65/14, 65/38

U.S. Cl. 188—73

18 Claims



This invention pertains to a floating head caliper disc brake which is mounted with respect to a support structure so as to permit wrenching of its friction elements against a rotatable disc. The floating head caliper envisioned for use in this invention permits hydraulic and mechanical braking of the disc in that it is provided with a hydraulic cylinder and a structure which can be moved to pivot a housing for the caliper on its support and wrench the pads as aforementioned.

3,460,652

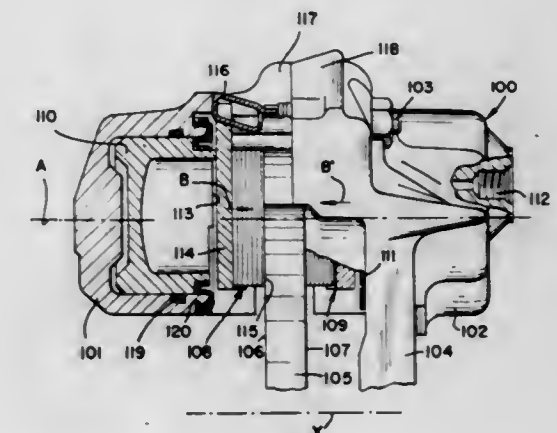
**ANTI-NOISE DISK BRAKE**

John Redvers Botterill, Rugby, Warwickshire, England, assignor to Alfred Teves G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany  
Filed Nov. 30, 1967, Ser. No. 687,043

Claims priority, application Germany, Dec. 1, 1966, T 32,647  
Int. Cl. F16d 55/00, 65/14

U.S. Cl. 188—73

13 Claims



A fixed-yoke disk brake having a piston bearing against the brakeshoe with a stepped annular contact face with a pair of major steps and a further step in axially offset relationship, the further step having a height of about 0.1 mm. and contacting the backing plate of the brakeshoe.

3,460,653

**BRAKE ADJUSTER**

George F. Wieger, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware  
Filed July 28, 1967, Ser. No. 656,852  
Int. Cl. F16d 51/46, 65/38

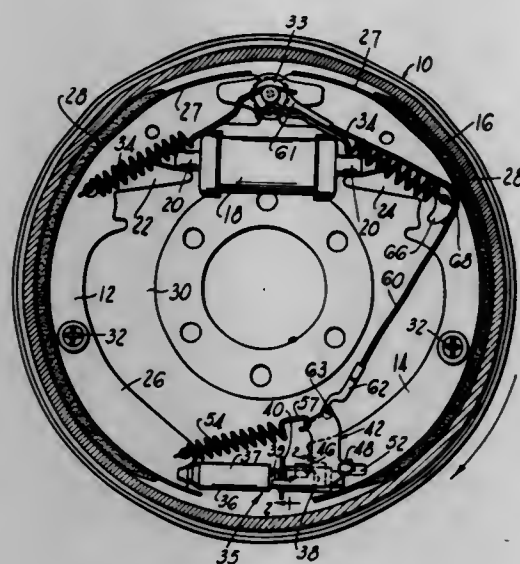
U.S. Cl. 188—79.5

5 Claims

A brake equipped with an automatic adjusting device



interposed between adjacent ends of a pair of brake shoes to compensate for shoe wear, comprising an adjustable strut interconnecting said adjacent shoe ends and a lever provided with a pawl and a locating element, the latter of which establishes said pawl in engagement with said



adjustable strut to adjust the same, said lever being pivotally carried on one of said shoes and operatively connected to said other shoe and to a fixed part of said brake via said one shoe to thereby impart rotation of said lever in response to shoe movement.

3,460,654

#### DIRECTIONAL ROTATION RESPONSIVE TRAILER BRAKE APPARATUS

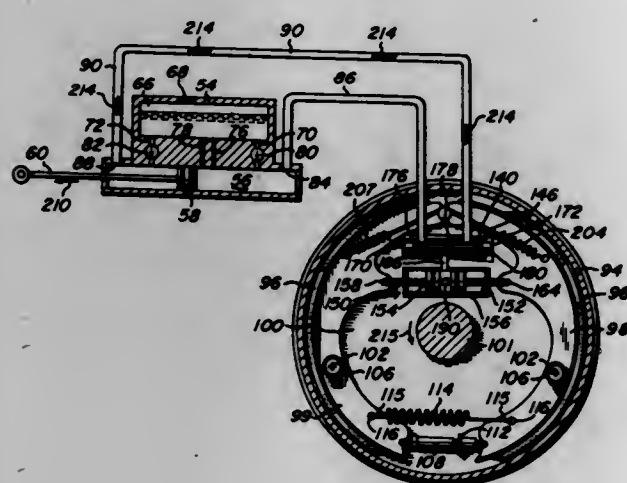
Arthur R. White, Dayton, Ohio, and John M. Beach, 116 Davis Ave., Dayton, Ohio 45403; said White assignor to said Beach

Filed Mar. 24, 1967, Ser. No. 625,751

Int. Cl. B60t 7/20, 11/10

U.S. Cl. 188—141

8 Claims



This invention relates to automatic brake apparatus. The automatic brake apparatus includes control means which controls the application of the brake mechanism in accordance with the direction of rotation of the wheel with which the brake apparatus is associated. Sensing means are pivotally mounted adjacent a brake drum of a trailer vehicle, the sensor being responsive to directional rotation of the wheel to control a valve means which controls the operation of the trailer brake actuator.

3,460,655  
COMBINED SEAL AND WASHER FOR A ROLLER CLUTCH  
Roy Price Bowcott, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company

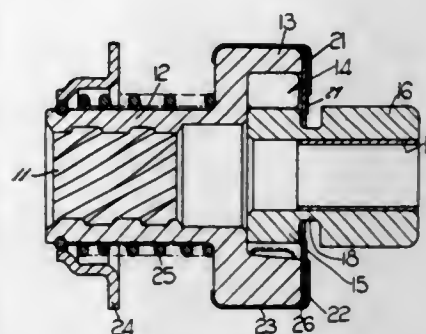
Filed July 24, 1967, Ser. No. 655,497

Claims priority, application Great Britain, Aug. 19, 1966, 37,251/66

Int. Cl. F16d 11/06, 13/04

U.S. Cl. 192—45

1 Claim



This invention relates to a combined seal and washer, particularly for use in a starter assembly for internal combustion engines, comprising an annular resilient sealing member and a substantially similarly shaped annular washer in facial contact therewith, the washer being divided into at least two parts and the parts of the washer being bonded to the sealing member in such a way that the combined seal and washer can be threaded over a cylindrical shaft of greater diameter than the central hole in the sealing member and washer.

3,460,656

#### MISSED ENGAGEMENT CONTROL

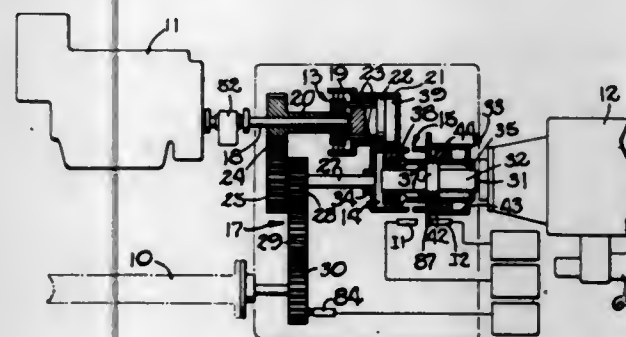
James P. Swanson, Rockford, Ill., assignor to Twin Disc, Incorporated, Racine, Wis., a corporation of Wisconsin

Filed Jan. 24, 1968, Ser. No. 700,084

Int. Cl. F16d 47/02, 23/00, 47/00

U.S. Cl. 192—48.5

14 Claims



A control for a propulsion system including a diesel engine and a gas turbine engine with a friction clutch for coupling the diesel to an output shaft and a synchronizing twin clutch for coupling the turbine to the shaft, first with a friction clutch for reducing the turbine speed to that of an intermediate output shaft while the latter is driven by the diesel and then with a positive-locking toothed clutch engageable when the speeds are synchronized. The control includes means for actuating fluid operators for the three clutches, proximity sensors signaling full engagement and disengagement of the positive clutch, and speed sensors preventing engagement of the positive clutch before synchronization and also preventing return to diesel drive while the speed is above the proper diesel range. In addition, the control produces an automatic cycle during attempted engagement of the positive clutch including signaling of failure to engage in the proper manner due to interference between the clutch teeth, full disengagement of the positive clutch, controlled slipping of the syn-

chronizing clutch to change the angular relation of the teeth, and initiation of another attempt to engage the positive clutch, repeating this cycle until the positive clutch is fully engaged and the diesel and synchronizing clutches can be disengaged.

3,460,657

#### TORQUE CLUTCHES

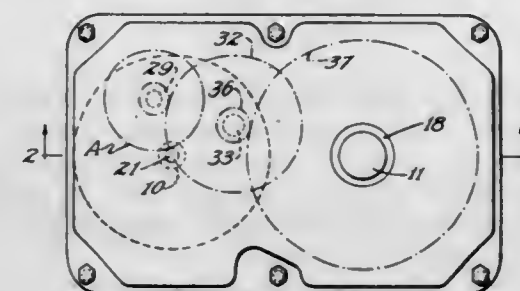
Mortimer J. Huber, St. Paul, Minn., assignor to Joseph M. Huber, White Bear Lake, Minn.

Filed Dec. 30, 1966, Ser. No. 606,379

Int. Cl. F16d 31/04

U.S. Cl. 192—61

1 Claim



A drive mechanism is provided particularly for rotating advertising signs and the like which are rotated about a vertical axis by a motor. Such signs are subject to wind pressure which sometimes overloads the motor and at other times tends to override the motor. The one gear in the gear reduction unit is provided with an internal epicyclic gear system enclosed in a chamber and submerged in hydraulic fluid openings in the chamber walls are spaced so that some fluid is trapped between the sun gear, internal gear, and planet gears and must leak past the planet gears to escape. As a result, the gear provides a hydraulic slip clutch which operates in either direction.

3,460,658

#### CENTRIFUGAL FLUID-POWDER CLUTCH WITH RADIAL GROOVES

Ferdinand Edmond Badin, Paris, France, assignor to Centri-Engineering, Paris, France, a French body corporate

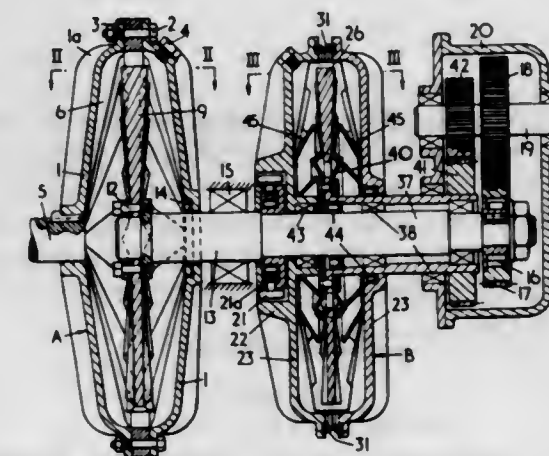
Filed Jan. 8, 1968, Ser. No. 696,336

Claims priority, application France, Jan. 19, 1967, 91,775

Int. Cl. F16d 23/10, 43/24, 31/00

U.S. Cl. 192—105

11 Claims



A centrifugal clutch for mechanical transmission which includes a casing and an internal rotor with a granular or pseudo-fluid material between these two elements, wherein a face of the rotor opposite a face of the casing has grooves which are substantially radial and rounded at the base, and the said face of the casing has analogous grooves but whose width, measured in the peripheral direction is different from that of the grooves of the said rotor face.

3,460,659  
STORAGE VESSEL

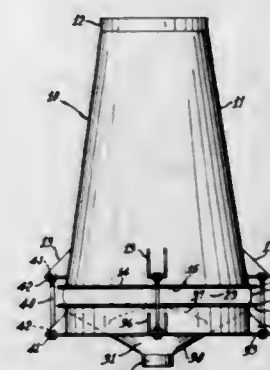
Arnold Gooding, Roselle, N.J., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed Jan. 19, 1967, Ser. No. 610,366

Int. Cl. B65g 11/00

U.S. Cl. 193—3

5 Claims



A storage vessel comprising a chamber having a wall or walls disposed outwardly from the vertical axis of the vessel from an upper material inlet to a lower material outlet.

3,460,660

#### LOOM BEAM STORAGE AND DISPENSING DEVICE

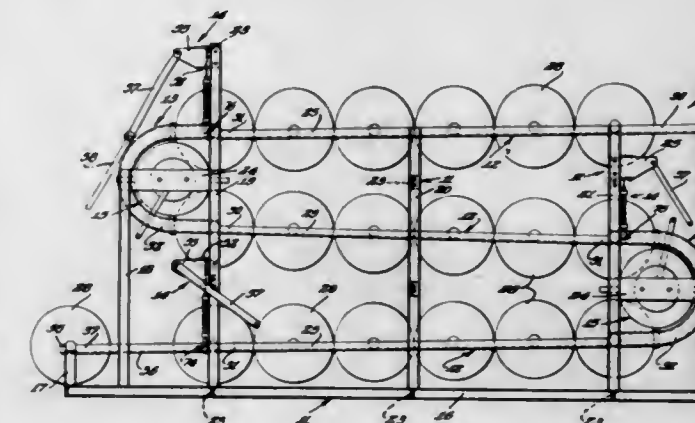
Carrol D. Edens, Easley, and Patrick C. Norungolo and Howard J. Barrowclough, Greenville, S.C., assignors to The Pyle National Company, Chicago, Ill., a corporation of New Jersey

Filed July 7, 1967, Ser. No. 651,781

Int. Cl. B65g 11/08, 11/00

U.S. Cl. 193—27

13 Claims



A vertical storage and dispensing device for loom beams having a serpentine-shaped track means for holding the loom beams. The track means having a releasable stop means at each curved portion to prevent the loom beams from moving into the curved portion, and a brake means located at each of the curved portions to guide and control the movement of the loom beams while moving through the curved portions.

3,460,661

#### CHECK OPERATED SWITCHES

Henry J. Albright, Oswego, and Royal F. Smith, Aurora, Ill., assignors to Lektro-Vend Corp., Aurora, Ill., a corporation of Delaware

Filed Feb. 8, 1967, Ser. No. 614,644

Int. Cl. G07f 5/10; G07b 5/14

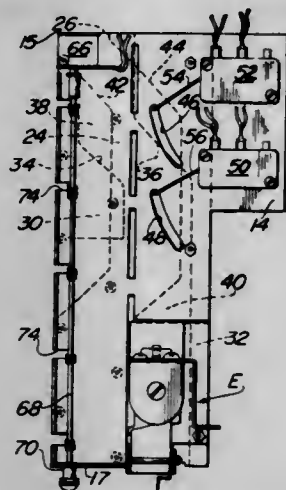
U.S. Cl. 194—9

1 Claim

An electrical pulse generator for emitting a number of pulses related to the value of the coin inserted, e.g., nickel, one pulse; dime, two pulses; and quarter, five



pulses. The gravity fed coins act directly on sensitive switches commonly known as micro-switches and means



is provided for slowing the descent of the quarter so that it can act five times on a single micro-switch.

3,460,662

**COIN-OPERATED LOCKING MECHANISM**

Yoshio Kinoshita, Himeji-shi, Japan, assignor to Kabushiki Kaisha Kokuei Kikai Selsakusho, Himeji-shi, Hyogo-ken, Japan

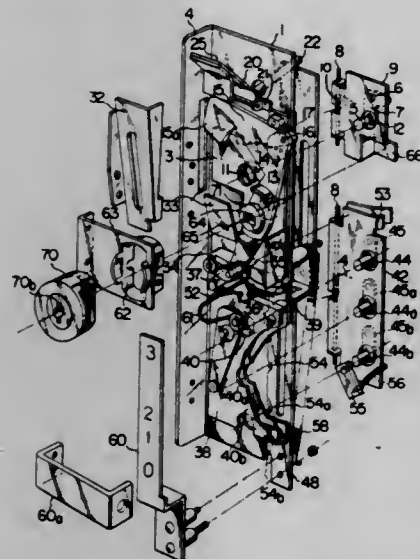
Filed July 5, 1967, Ser. No. 651,164

Claims priority, application Japan, July 6, 1966, 41/44,346

Int. Cl. G07f 17/12, 5/00, 3/02

U.S. Cl. 194—51

5 Claims



A mechanism in which a latch coupled to and turned by a key operated lock is permitted, by the insertion of a proper coin, to latch and unlatch and is locked in the latched state upon extraction of the key. The locked latch can be unlocked and unlatched with the key during a specified period but cannot be unlocked thereafter unless one or more additional proper coins of a number corresponding to the overtime, after the expiration of the specified period, are inserted.

3,460,663

**PLURAL SUCCESSIVELY OPERABLE CHECK CONTROLLED SLIDES**

Donald E. Schmitt, Marvin R. Manzer, and Howard W. Clay, Rockford, Ill., assignors to Reed Electromech Corp., Rockford, Ill., a corporation of Delaware

Filed Mar. 12, 1968, Ser. No. 712,471

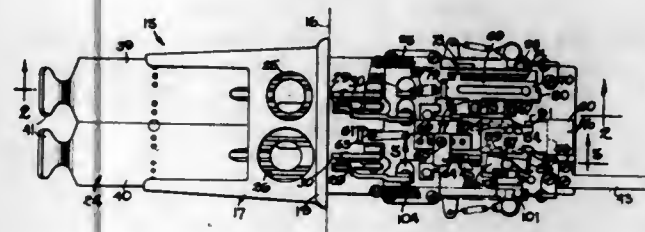
Int. Cl. G07f 5/18, 5/14

U.S. Cl. 194—92

22 Claims

For delivering coins to and triggering a coin-operated device, a coin chute includes first and second side-by-side slides each adapted to hold coins of a different denomina-

tion and each movable inwardly to a coin-depositing position to drop the coins, such movement of the second slide being effective to trigger the device. Movement of the second slide to its coin-depositing position is prevented until the first slide has been moved inwardly a predetermined number of times to deposit a corresponding number of first



denomination coins. The chute is adjustable to change the number of first denomination coins which must be deposited before the second slide can be moved inwardly and thus the chute may be changed over to trigger the device upon the deposit of different combinations of first and second denomination coins.

3,460,664

**EQUIPMENT FOR SORTING GROOVED PINS**

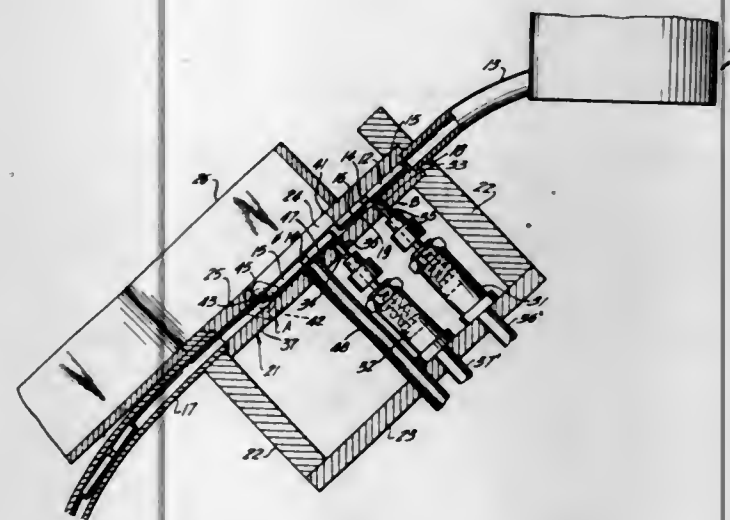
Robert W. Bosse, Englewood Cliffs, N.J., assignor to Groov-Pin Corporation, Ridgefield, N.J., a corporation of New York

Filed May 1, 1967, Ser. No. 634,984

Int. Cl. B65g 47/24

U.S. Cl. 193—43

3 Claims



This invention relates to an equipment for sorting pins of the type having an off-center annular groove therein defining a long portion and a short portion on each side thereof respectively and which are haphazardly oriented as they are successively fed in longitudinally aligned relation, so that pins having the same orientation may be successively fed.

3,460,665

**INKING CARTRIDGE**

James W. Dodsworth, Mount Tabor, and Armin O. Fischer, Cranford, N.J., assignors to Monroe International, Inc., Orange, N.J., a corporation of New York

Filed Mar. 13, 1967, Ser. No. 622,705

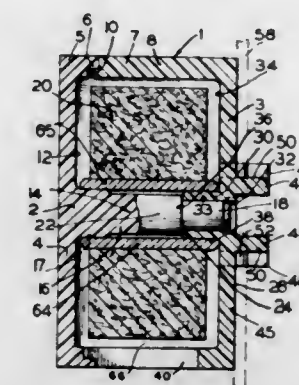
Int. Cl. B41j 31/16, 35/00

U.S. Cl. 197—171

7 Claims

A cartridge for supplying ink to a printing ribbon in devices, such as calculating machines, which employ a ribbon for their printing mechanism. The cartridge, which is quickly and easily assembled prior to use, is formed as

a completely contained unit, including an ink absorbent roller, the shaft on which it is journaled, and the cover case surrounding it, so as to be readily insertable into and removable from a machine without any assembly or dis-



assembly of the machine or the cartridge. The ink absorbent roller may be all one color, e.g., black, or may be split, each half of which is a different color, e.g., red and black, as would be used for inking a two color red-black ribbon.

3,460,666

**ENDLESS PRINTING RIBBON**

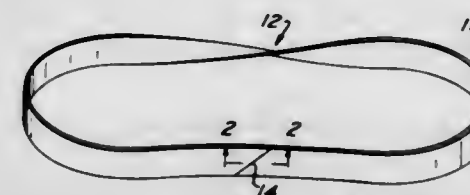
Walter Ploeger, Jr., North Bellmore, N.Y., assignor to Filmon Process Corp., New York, N.Y., a corporation of New York

Filed Mar. 6, 1968, Ser. No. 710,900

Int. Cl. B41j 33/10, 31/02

U.S. Cl. 197—172

4 Claims



Endless printing ribbons are disclosed with a permanent ravelproof 180 degree twist in the ribbon for increased structural life and increased ink life.

3,460,667

**METHOD AND APPARATUS FOR TRANSFERRING BAKERY PRODUCTS AND SIMILAR ARTICLES**

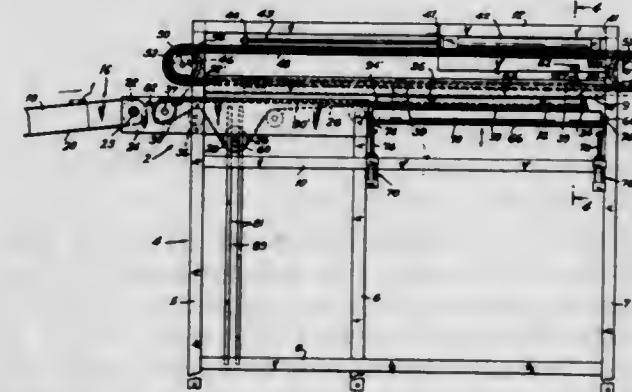
William E. Lanham, Jr., Decatur, Ga., assignor to Lanham Machinery Company, Inc., Atlanta, Ga., a corporation of Georgia

Continuation of application Ser. No. 446,233, Apr. 7, 1965. This application Oct. 9, 1967, Ser. No. 674,384

Int. Cl. B65g 47/26, 17/00, 15/00

U.S. Cl. 198—30

9 Claims



A system is disclosed for arranging and positioning items such as unbaked bakery products for further processing. The products are received on a conveyor and are moved outwardly over a transfer zone upon an endless

conveyor. The conveyor is then peeled back away from the products so that the products are deposited in upright position upon another endless conveyor or the like. The rate of movement outwardly over the transfer zone may be regulated to provide the desired spacing between the items, and the conveyor is then withdrawn at a much more rapid rate.

3,460,668

**ARTICLE ORIENTING AND SPACING DEVICE**

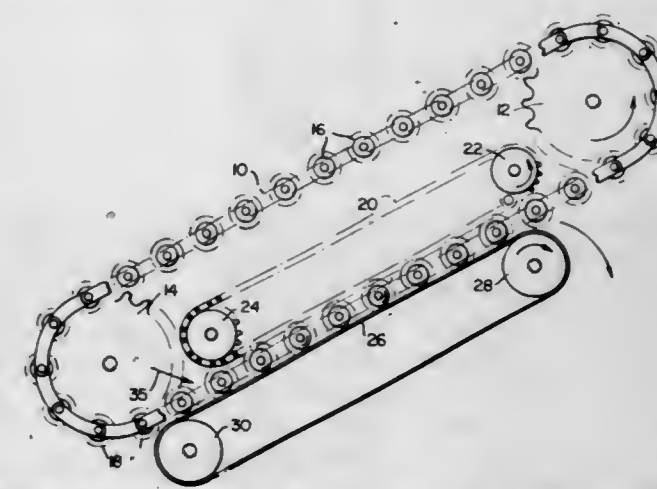
Alfred W. Gerrans, San Jose, Calif., assignor to Sun-sweet Growers, Inc., San Jose, Calif., a corporation of California

Filed Jan. 3, 1967, Ser. No. 606,854

Int. Cl. B65g 47/31, 19/02, 37/00

U.S. Cl. 198—33

12 Claims



The operating speed of an inclined platform type prune aligning and spacing device in a packing machine is greatly increased by making the platform along which the prunes are rolled movable in its own right. The operating speed is then determined by the total speed of the system, whereas the prune rotation is determined by the relative speed of the system components to one another. Successive segments having different rotational speeds can thus be provided as e.g., for inspection purposes.

3,460,669

**CONTAINER INDEXING AND ROTATING**

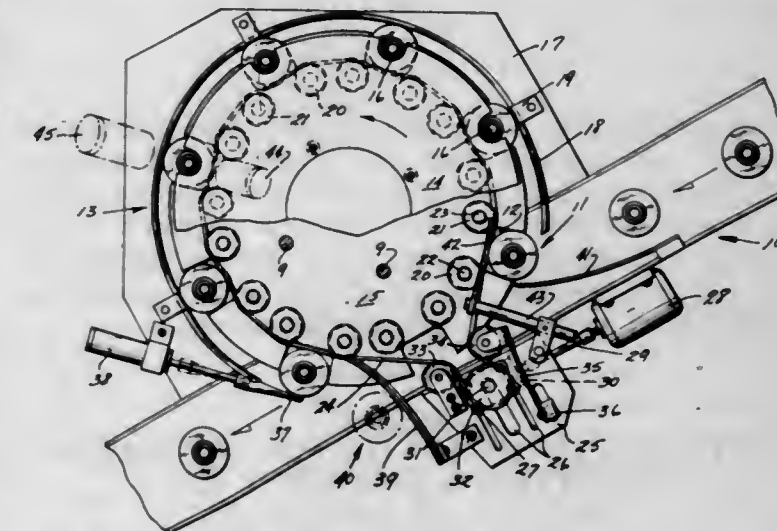
John R. Johnson, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed July 31, 1967, Ser. No. 657,095

Int. Cl. B65g 47/24, 29/00

U.S. Cl. 198—33

8 Claims



In mechanism for handling containers through a series of inspection operations, the containers are moved in series on a conveyor to the inspection device. A pocketed indexing head positioned with its periphery overlying a portion of the conveyor receives the containers to be inspected in a pocket of the head. The head is rotated



through a predetermined angle to position the container at a first inspection station. Since the head contains a plurality of pockets, a plurality of containers are indexed by the head into and out of plural inspection stations. The containers are confined between a guide rail and an endless belt, with the belt bearing against the side of the container. The belt is supported by pulleys on the head and is driven independently of the head so as to rotate the containers about their respective axes for inspection purposes.

**3,460,670**  
**STACKED FLUTED-WALL RECEPTACLES**  
Frederick C. Stakel, 31 Ramhorne Road,  
New Canaan, Conn. 06840  
Filed Jan. 21, 1965, Ser. No. 426,918  
Int. Cl. B65d 85/60

U.S. Cl. 206-65

2 Claims



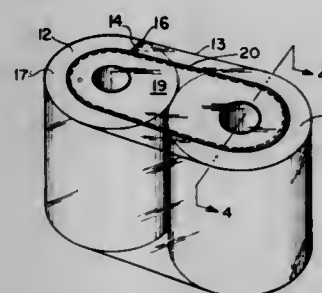
Nested stacks of concave fluted wall cup-shaped receptacles such as baking cups, candy cups and the like, die formed from stacked layers of non-adherent sheet material, incorporating at least one layer, and optionally having each alternate layer, formed of metallic foil, providing a stiff, moisture-resisting assembly tending to avoid the flattening sagging encountered with nested fluted paper cups, and processes for producing these nested stacked receptacles.

**3,460,671**  
**PACKAGE FOR CYLINDRICAL ARTICLES OR OBJECTS**

Alson Robert Harm, Colerain, Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio  
Filed Aug. 2, 1967, Ser. No. 657,899  
Int. Cl. B65d 85/62, 65/00, 75/00

U.S. Cl. 206-65

8 Claims



A package for a plurality of cylindrical articles arranged with parallel axes and coplanar end surfaces. The articles are held in contiguous relationship by a band of flexible wrapping material, the ends of which extend beyond and are folded down against the end surfaces of the articles. Separate end panels are sealed against the folded down portions to complete the package.

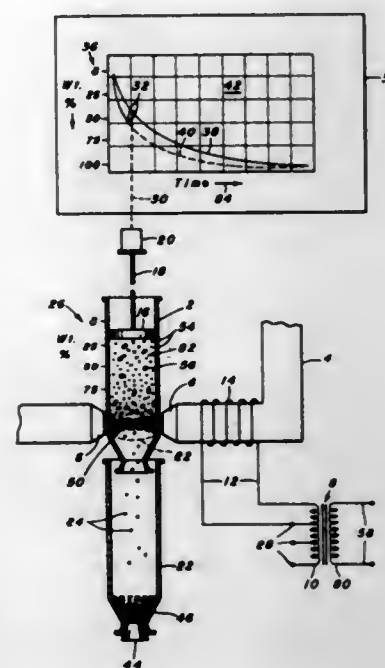
**3,460,672**  
**METHOD AND APPARATUS FOR SEPARATING PARTICLES OF DIFFERENT SIZES**  
Paul Imris, 507 Pittsburgh, St.,  
Springdale, Pa. 15144  
Filed Sept. 6, 1967, Ser. No. 665,871  
Int. Cl. B03c 7/00, 1/00

U.S. Cl. 209-1

6 Claims

This patent discloses a method and apparatus for separating particles of different sizes, and in particular, to

a method and apparatus useful for size-fractionating powdered material having particles ranging in diameter from 0.01 to 1000 microns. The method works rapidly and accurately and may be practiced with inexpensive equipment. It is suitable not only for size analysis of small samples but also for the production of quantities of pow-



dered material falling within a particular size range. According to the invention, separation is obtained by forcing an input powder through a bed of particles of ferromagnetic material, such as iron powder, while the particles of ferromagnetic material are caused to vibrate in a magnetic field.

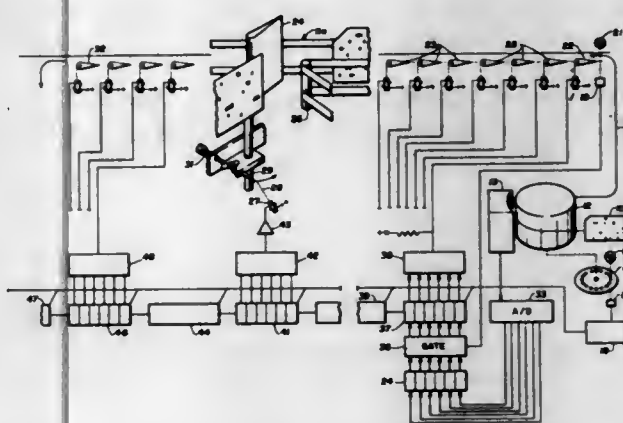
**3,460,673**  
**DOCUMENT SORTING APPARATUS**  
Medford D. Sanner, Irving, Tex., assignor to Recognition Equipment Incorporated, Dallas, Tex., a corporation of Delaware

Filed June 19, 1967, Ser. No. 647,012

Int. Cl. B07c 5/344

U.S. Cl. 209-73

9 Claims



Apparatus for sorting documents having a code imprinted thereon including a plurality of stacker pockets and a document reading drum for generating a binary code gated into a shift register associated with the first stacker pocket and serially shifted into subsequent registers associated with each of the other stacker pockets as the document moves through the system. The binary code is applied to an AND gate system and a deflector is actuated to divert the document into a particular pocket.

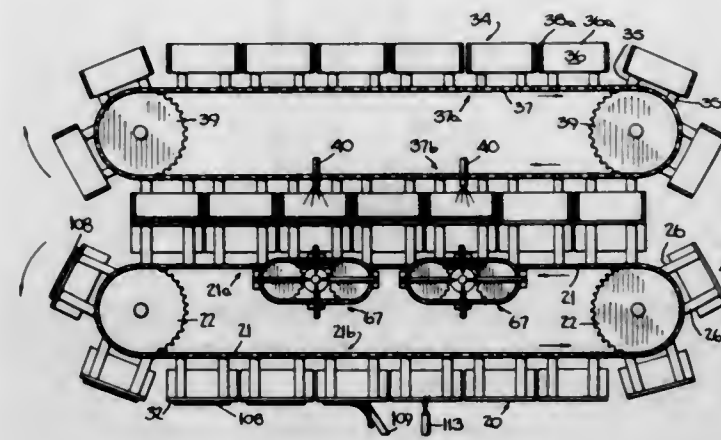
**3,460,674**  
**APPARATUS AND METHOD FOR CONTINUOUS FILTERING**  
William S. Eakins, St. Andrews Lane,  
Glen Cove, N.Y. 11542

Continuation-in-part of application Ser. No. 578,361,  
Sept. 9, 1966. This application Dec. 21, 1966, Ser.  
No. 613,691

Int. Cl. B01d 33/02, 33/00

U.S. Cl. 210-77

33 Claims



A traveling filter comprising a plurality of trays disposed to travel along a path, a plurality of frames adapted to travel along a second path and through a portion of said path mate with the trays to confine material thereon, and a plurality of conduit means adapted to travel along a third path and adapted to be advanced and retracted to establish communication with and discharge liquid from said trays.

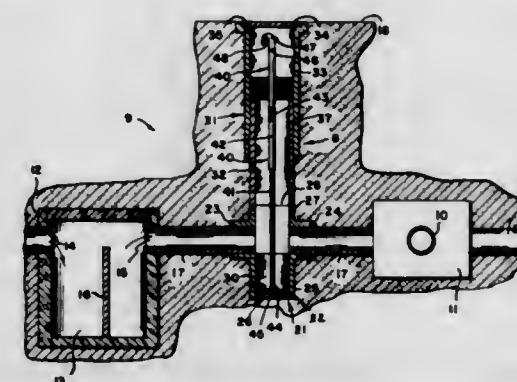
**3,460,675**  
**SEPTIC TANK INSPECTION APPARATUS AND PROCESS**

Robert M. Hicks, Westford, and Henry A. Anderson, Townsend, Mass., assignor to Robert M. Hicks, trustee  
Filed June 12, 1967, Ser. No. 645,338

Int. Cl. B01d 21/24; B03b 3/38; C02c 1/00

U.S. Cl. 210-83

10 Claims



A test apparatus for determining whether a septic tank requires pumping out, said test apparatus comprising (1) a removable trap compartment situated between a septic tank and the leach field therefor, and (2) means for removing and inspecting said trap for solid material, said means being operable from and communicating with the surface of the soil in which the septic tank is buried. In preferred embodiments of the invention, the test apparatus comprises height-adjustable inspection means to facilitate installation of the apparatus without necessity for pre-determination of the depth to which a septic tank system is buried.

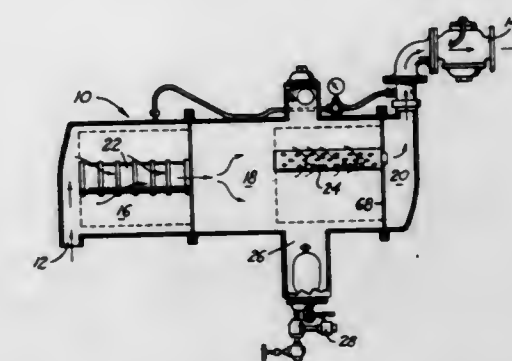
**3,460,676**  
**UNITARY WATER SEPARATOR AND FUEL MONITORING ELEMENT**

Walter Kasten, Madison Heights, Mich., assignor to The Bendix Corporation, a corporation of Delaware  
Filed Aug. 17, 1967, Ser. No. 661,347

Int. Cl. B01d 35/02, 29/10

U.S. Cl. 210-96

7 Claims



The following relates to a unitary porous tubular member for use in a fuel monitoring element or fuse. The tubular member is formed from a plurality of registered face-to-face contacting layers of material having a hydrophobic upstream portion for preventing water droplets from flowing through the pores which extend radially between the layers and a hygroscopic downstream portion for absorbing any water which passes through the hydrophobic upstream portion. The layers of the tubular member can be formed of a plurality of axially aligned convolutions of ribbon material or of a plurality of stacked washers.

**3,460,677**  
**TRANSPORTABLE SEWAGE TREATING APPARATUS**

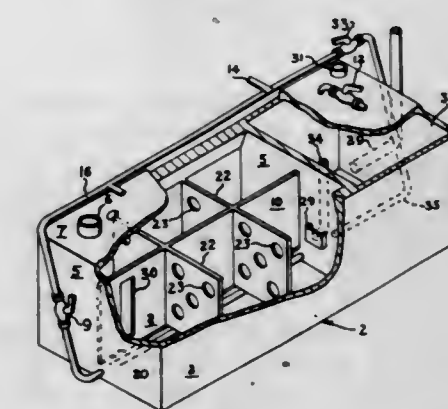
Rolland L. Fifer, 6211 Glenhill Road,  
Louisville, Ky. 40222

Filed Oct. 22, 1968, Ser. No. 769,605

Int. Cl. C02c 1/26, 1/02; B01d 15/00

U.S. Cl. 210-199

5 Claims



The activated sludge treatment of sewage involves the use of a tank in which sewage is mixed with previously activated sludge and subjected to the action of bacteria, oxygen being necessary for bacterial action. A sewage treatment plant has been made in the form of a single aeration tank so elongated that its length, or both length and width, exceed its height. This is accomplished by dividing the chamber by the use of at least one substantially vertical impermeable baffle. Since such units are installed in boats, aircraft, and the like, they will often be subjected to a rocking action. Resulting sloshing of the sewage during rocking is mitigated by the apparatus provided herein without disturbing the original circulation pattern.

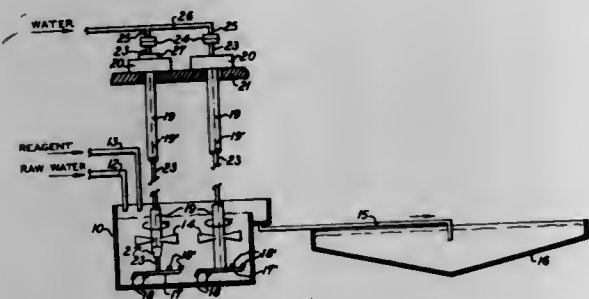


3,460,678

**FLOCCULATION APPARATUS**

Elie Condolios, Grenoble, France, assignor to Societe  
Grenobloise d'Etudes et d'Applications Hydrauliques  
(Sogreah), Grenoble, France, a corporation of France  
Filed Apr. 21, 1967, Ser. No. 632,681  
Claims priority, application France, Apr. 22, 1966,  
4,924

Int. Cl. B01d 21/08; C02b 1/20  
U.S. Cl. 210-219 4 Claims



This invention relates to a flocculator for a water treatment system and in which the floor thereof is maintained clear of deposit by rotating jets of water.

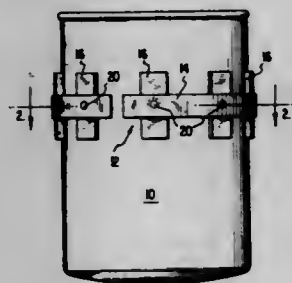
3,460,679

**MAGNETIC BELT ASSEMBLY FOR OIL FILTER CARTRIDGE**

Thomas E. Llewellyn, 222 Beattie Ave.,  
Lockport, N.Y. 14094

Filed Dec. 2, 1966, Ser. No. 598,860  
Int. Cl. B03c 1/02; B01d 35/06, 27/00

U.S. Cl. 210-222 6 Claims



An annular spring steel belt having a number of permanent magnets secured to its inner surface with the inner surfaces of the magnets being fully exposed. In use the belt is placed around an oil filter cartridge with the inner surfaces of the magnets in complete engagement with the outer surface of the cartridge. Made of magnetizable material, the cartridge is magnetized by the magnets for attracting metallic particles from the oil contained therein. For purposes of assembly and disassembly as well as adjustment to various cartridge diameters, the belt is discontinuous with closely positioned opposite ends thus permitting the belt to be expanded or retracted radially. The belt is removably secured to the cartridge through the magnetic attraction of the magnets and the spring-like quality of the belt.

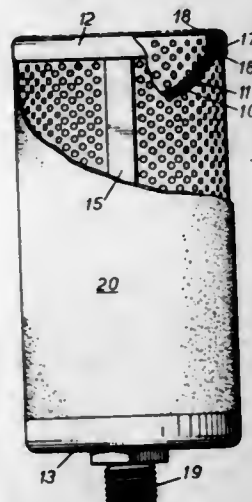
3,460,680

**FILTER MEDIA SUPPORT WITH FILTER MEDIUM**

Keith R. Domnick, East Boldon, Durham, England  
Continuation-in-part of application Ser. No. 434,443,  
Feb. 23, 1965. This application Sept. 20, 1967, Ser.  
No. 669,241

Int. Cl. B01d 27/08, 27/02  
U.S. Cl. 210-315 6 Claims  
A fluid filter medium for the complete removal from the fluid of substances such as viruses and bacteria having

the dimensions of the order of 1 micron and less, is supported between two fluid permeable support members,



edge regions of the fluid filter medium juxtaposed between such permeable support members being sealed with a fluid impervious sealant.

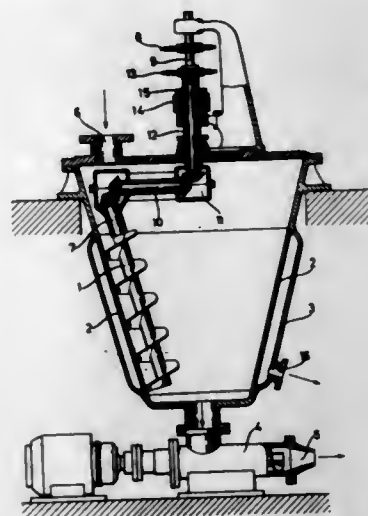
3,460,681

**APPARATUS FOR MECHANICALLY AFTER-DEHUMIDIFYING AND FURTHER TREATING FILTER PRESS CAKES OF PIGMENT OR DISPERSION DYES**

Karl-Hermann List and Gerhard Nöltner, Frankfurt am  
Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Brünig,  
Frankfurt am Main, Germany, a corporation of Germany

Filed Feb. 1, 1966, Ser. No. 524,117  
Claims priority, application Germany, Feb. 12, 1965,  
F 45,211

Int. Cl. B01d 33/36, 33/06  
U.S. Cl. 210-415 3 Claims



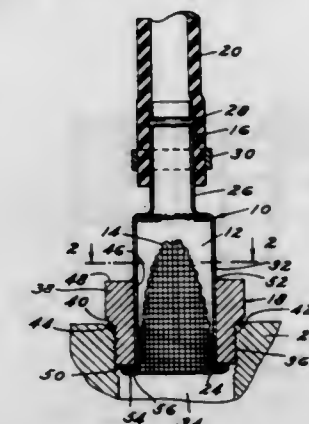
An apparatus has been provided for mechanically after-drying filter press cakes or dispersion dyes which comprises a conical vessel, a feed means located on a top closure therefor, a discharge means located at the bottom closure therefor, a foraminous wall for said vessel defining an inner, conical space on the outside of said conical vessel, a space for removing a liquid through said foraminous wall, a filter means placed on said foraminous surface, a rotatable helical transport means, an axially driven means for driving said helical transport means around the periphery of said vessel and rotating the same, means for driving the transport means around the means rotating around the same and means for varying the rate of rotation of each of said helical transport means, and the means rotating said transport means around the periphery of said vessel.

3,460,682

**FUEL LINE FILTER**

George Rohall Onufer, Bloomfield Hills, Mich., assignor  
to RB&W Fabricated Metal Products, Inc., Livonia,  
Mich., a corporation of Michigan  
Filed Feb. 21, 1967, Ser. No. 617,566  
Int. Cl. B01d 27/00, 35/02, 29/04

U.S. Cl. 210-448 2 Claims



This disclosure relates to a filter particularly suitable for use as a fuel line filter for internal combustion engines wherein the filter element is housed in a tubular part adapted to be connected at one end with the fuel line hose and at the other end provided with a nut sealingly brazed to the tube with the filter secured in the tube in a manner permitting ready quality control inspection as well as inspection for accumulation of filtered waste.

3,460,683

**CELLULOSE ACETATE MEMBRANES**

Charles R. Cannon, Baldwin Park, Calif., assignor to  
Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio  
No Drawing. Filed Aug. 22, 1966, Ser. No. 573,880  
Int. Cl. B01d 39/00, 13/04

U.S. Cl. 210-500 6 Claims  
A reverse osmosis membrane made from a casting solution comprising cellulose acetate with a critical acetyl content, a polar solvent, water, and no swelling salt.

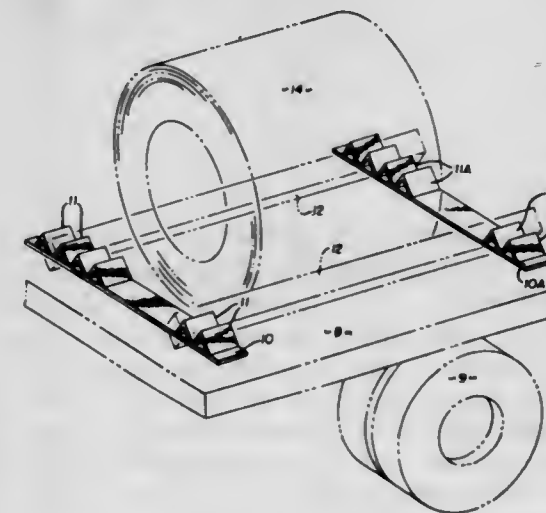
3,460,684

**COIL RACK**

David M. Almasy, 2233 N. Hubbard Road,  
Hubbard, Ohio 44425

Filed May 10, 1967, Ser. No. 637,486  
Int. Cl. A47f 7/00; B60p 7/00; B61d 3/16

U.S. Cl. 211-13 3 Claims



A coil rack for holding coils of steel and the like, arranged to hold wooden four-by-fours to present flat surfaces thereof in supporting relation and flat contact with the coils being held thereby.

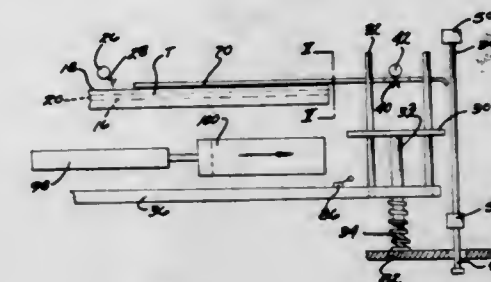
865 O.G.-18

3,460,685

**ARTICLE STACK FORMER, REGULATOR, AND HANDLER**

Russel H. Kirkhof, Marne, Mich., assignor to Kirkhof  
Manufacturing Corporation, Grand Rapids, Mich., a corporation of Michigan  
Filed Feb. 24, 1967, Ser. No. 618,470  
Int. Cl. B65g 57/00

U.S. Cl. 214-6 3 Claims



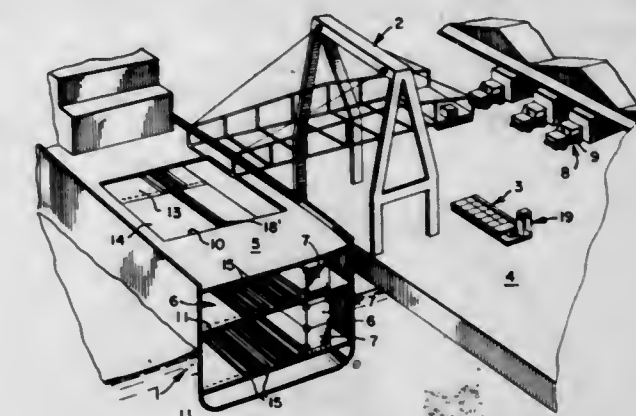
Apparatus and method of high speed translation of lightweight, three dimensional shell-type articles, such as plastic trays, with controlled pneumatic advancing, and preferably in combination with pneumatic stacking.

3,460,686

**SHIP CARGO HANDLING SYSTEM**

William M. Cole, Metuchen, N.J., assignor to Seatrain  
Lines, Inc., Edgewater, N.J., a corporation of Delaware  
Filed Apr. 24, 1967, Ser. No. 632,954  
Int. Cl. B63b 27/10

U.S. Cl. 214-14 8 Claims



A system for loading and unloading cargo in a ship at dockside including a cargo transporter for supporting the cargo and moving it within the storage area of the ship, a crane positioned at dockside for lifting the transporter into and out of the storage area of the ship and for transferring cargo between the dock and the transporter located within the ship, and cargo supports in the storage area for receiving cargo from said transporter.

3,460,687

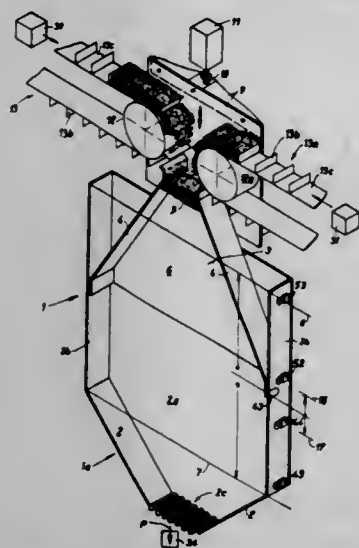
**APPARATUS FOR MANIPULATING ROD-SHAPED ARTICLES**

Dietrich Bardenhagen, Hamburg-Lohbrügge, Germany,  
assignor to Hauni-Werke Korber & Co. KG., Hamburg-Bergedorf, Germany  
Original application Oct. 26, 1964, Ser. No. 406,334, now  
Patent No. 3,371,036, dated Sept. 12, 1967. Divided and  
this application July 25, 1967, Ser. No. 655,800  
Claims priority, application Great Britain, Oct. 25, 1963,  
42,185/63  
Int. Cl. B65g 65/30

U.S. Cl. 214-17 8 Claims  
Apparatus for manipulating cigarettes or the like comprises a conveyor which advances cigarettes sideways and

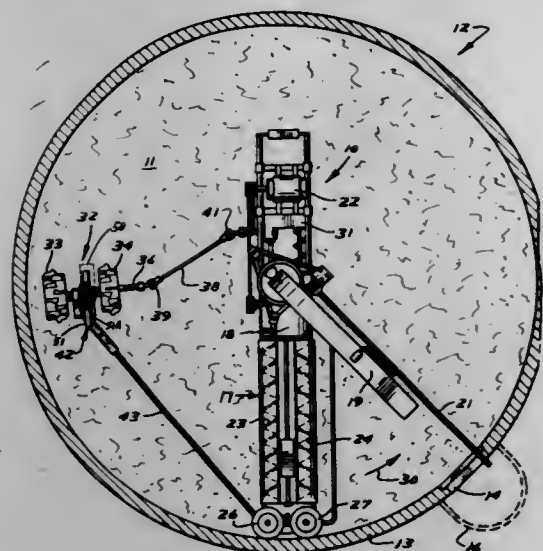


has a vertically movable discharging portion located above the inlet of a magazine which contains a floating store of cigarettes and has an outlet at a level below the inlet to discharge cigarettes into a consuming machine. The dis-



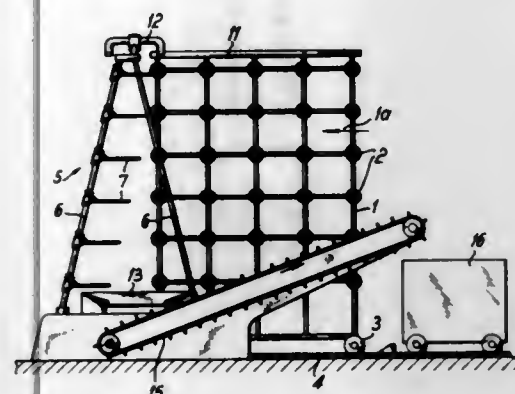
charging portion of the conveyor moves up or down in response to changes in the upper level of the floating store so that the distances covered by cigarettes during descent into the magazine remain unchanged.

**3,460,688**  
**SILO UNLOADER DRIVE**  
Floyd E. Buschbom, Long Lake, Minn., assignor to Van Dale Corporation, Long Lake, Minn., a corporation of Minnesota  
Filed Nov. 15, 1967, Ser. No. 683,273  
Int. Cl. B65g 65/38, 33/14  
U.S. Cl. 214-17 11 Claims



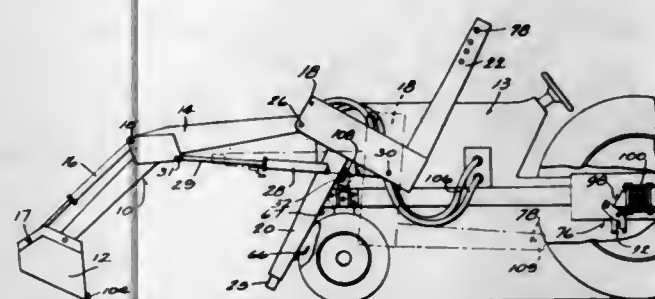
A top unloading silo unloader having a pair of drive hubs for moving a collector arm around the silo. A tie rod extended from the outer end of the collector arm is attached to the drive shaft between the drive hubs by a connector assembly having an arcuate arm cooperating with a guide having a pair of spaced grooves receiving the arm to hold the drive hubs in an adjusted angular position with reference to the collector arm. Each of the drive hubs has circumferentially spaced oppositely directed pairs of radial lugs. Removably and reversibly mounted on the outer ends of the collector arm augers are wall cleaners having forwardly projected teeth.

**3,460,689**  
**TRAVELING CREEL ASSEMBLY FOR BEAM WARPERS**  
Stefan Fürst, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany  
Filed Jan. 17, 1968, Ser. No. 698,535  
Claims priority, application Germany, Feb. 11, 1967, R 45,250  
Int. Cl. B65g 67/24; B65h 49/00  
U.S. Cl. 214-59 10 Claims



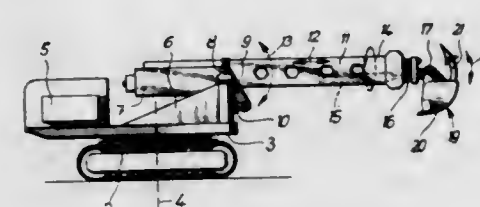
A creel assembly for beam warpers comprises a creel carriage which can be run into and out of its operative position by moving it on track rails. The traveling carriage cooperates with a doffer device composed of supporting columns which are stationarily mounted on opposite sides of the track and carry stripper arms extending toward the creel mandrels to strip the residual yarn coils or empty cores off the mandrels as the carriage passes by. When the carriage reaches the position where the coils are to be replenished, all of the mandrels are thus cleared and ready to receive new coils.

**3,460,690**  
**QUICKLY DETACHABLE LOADER**  
Lester H. Seifert, Box 95, St. Nazianz, Wis. 54232  
Filed Aug. 18, 1967, Ser. No. 661,579  
Int. Cl. E02f 3/62  
U.S. Cl. 214-140 10 Claims



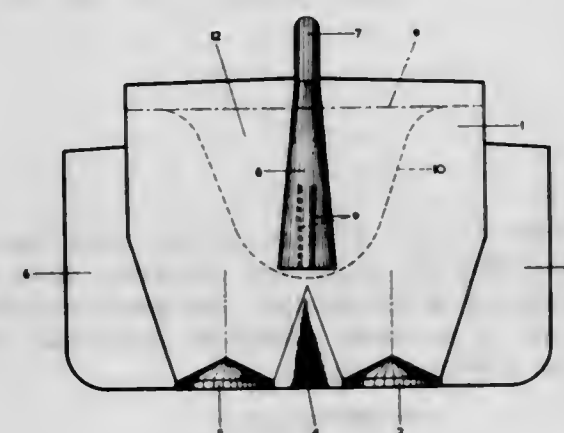
A front end loader attachment for a tractor is supported on the tractor by paired cross-connected Z-shaped side frames which are tilted forwardly with forward frame arms engaging the ground to support the loader in a parked dismounted position. Horizontally extending trunnions adjustably mounted on each side of the tractor at the forward end of the tractor provided pivot points about which the side frames are swung from their parked position to their tractor mounted position under retraction pressure of the loader boom lifting hydraulic cylinders. The trunnions also support the loader in the mounted position. In the mounted position, the rear arms of the side frames are secured in downwardly open hitches located on the rear axle housing.

**3,460,691**  
**TELESCOPIC DREDGE**  
Ernst Wieger and Erhard Wieger, Düsseldorf, Germany (both of Neuss a. Rh., Budencherstrasse 13, Neuss, Germany)  
Filed Feb. 27, 1967, Ser. No. 618,610  
Claims priority, application Germany, Feb. 26, 1966, W 41,017; Nov. 26, 1966, W 38,590  
Int. Cl. E02f 3/00; B62d 21/14, 55/00  
U.S. Cl. 214-141 8 Claims



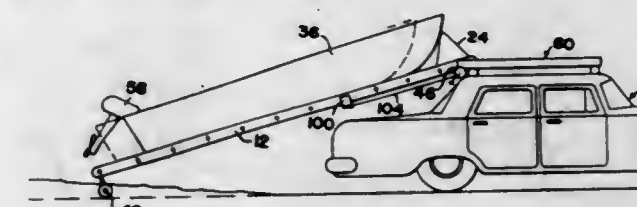
This invention relates to a telescopic dredge in which the boom comprises two sections, namely an inner section and an outer section, said outer section being telescopically movable relative to said inner section and comprising means rotatable about an axis extending in the longitudinal direction of the boom. The rotatable means are adapted detachably to receive an earth-working tool for selectively rotating the same, as for instance a drill, or for alternately shifting a double-purpose earth-working tool, such as a combined pick and grab bucket, into one position for operating said pick and into another position for operating said grab bucket.

**3,460,692**  
**PROCESS FOR FILLING THE HOLD OF A SHIP WITH SAND**  
Hendrik Pot, Kinderdijk and Adam Pieter Hendrik van Baardewijk, Krimpen aan den IJssel, Netherlands, assignors to Koninklijke Maatschappij tot het Uitvoeren van Openbare Werken Adriaan Volker N.V. and N.V. Industriële Handels Combinatie Holland, The Hague, Netherlands  
Filed Dec. 5, 1966, Ser. No. 599,249  
Claims priority, application Netherlands, Dec. 7, 1965, 6515897  
Int. Cl. B63b 27/00; B65g 53/30, 53/40  
U.S. Cl. 214-152 3 Claims



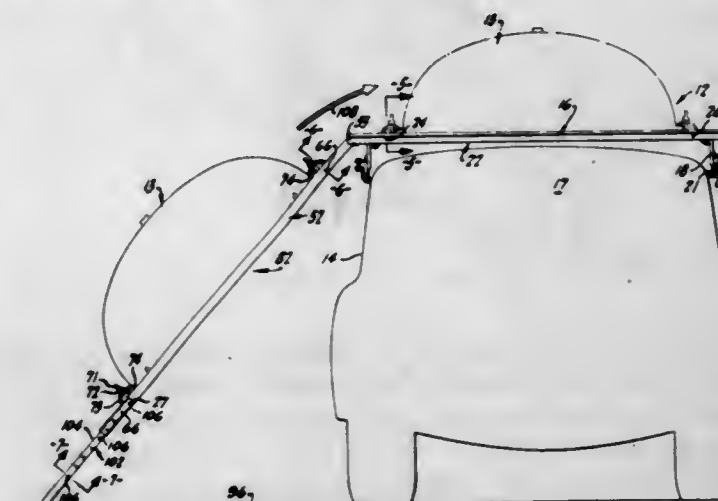
Sand entrained in water is fed to the hold of a ship, and this invention minimizes the quantity of sand which will overflow with the water. A filling conduit extends deep into the hold, and is enlarged at its lower end to prevent plugging with sand. Openings are provided through the side walls of the lower end of the filling conduit, for example vertical slots, in order to promote the flow of water when the filling is resumed after being stopped.

**3,460,693**  
**CAR TOP BOAT CARRIER**  
Albert H. Oldham, 3031 Silver Lake Blvd., Cuyahoga Falls, Ohio 44224  
Filed July 25, 1967, Ser. No. 655,930  
Int. Cl. B60r 9/04  
U.S. Cl. 214-450 7 Claims



This disclosure relates to apparatus for carrying a boat on top of a car in an upright position with an outboard motor mounted on the transom of the boat, and the gas can, anchor, oars, and other equipment in the boat. The apparatus provides for one man launching of the boat from the car top into a body of water, and for one man reloading of the boat from the water onto the car top. The apparatus includes a ladder-like beam mounting the usual boat trailer rollers and a stop for the front of the boat. In loading the boat, the car is positioned with the ladder extending into the lake, the boat is winched up the ladder against the stop, and further winching moves the ladder and boat up on top of the car. To launch, the operation is reversed.

**3,460,694**  
**CAR TOP BOAT HANDLING DEVICE**  
John R. Simms, 7495 Christine Ave., Riverside, Calif. 92509  
Filed Sept. 18, 1967, Ser. No. 668,437  
Int. Cl. B60r 9/04  
U.S. Cl. 214-450 2 Claims



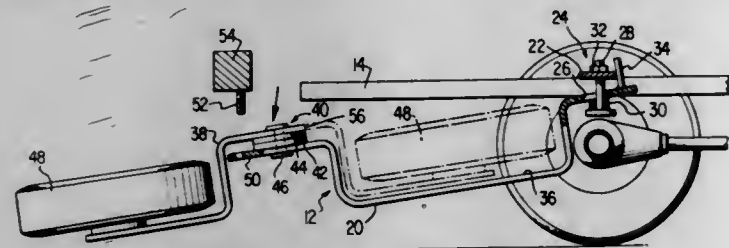
An inclined rack, capable of carrying a boat, is pivotally mounted at its upper end on the side of a horizontal framework on the top of an automobile, the lower end of the rack being supported on the ground. The rack is loaded by tilting it upwardly to horizontal attitude and sliding it into nesting engagement with the car top framework to which it is then secured. Unloading is effected by reversing the foregoing procedure.

**3,460,695**  
**SWING-OUT TIRE RACK**  
Chester R. Steele, Sherman, Tex., assignor to Swing Co., Inc., Sherman, Tex., a corporation of Texas  
Filed Nov. 9, 1967, Ser. No. 681,670  
Int. Cl. B62d 43/00  
U.S. Cl. 214-454 7 Claims

The disclosure is directed to an automotive tire rack mounted beneath the body of a vehicle to provide ready accessibility to the tire carried thereon. The tire rack in-

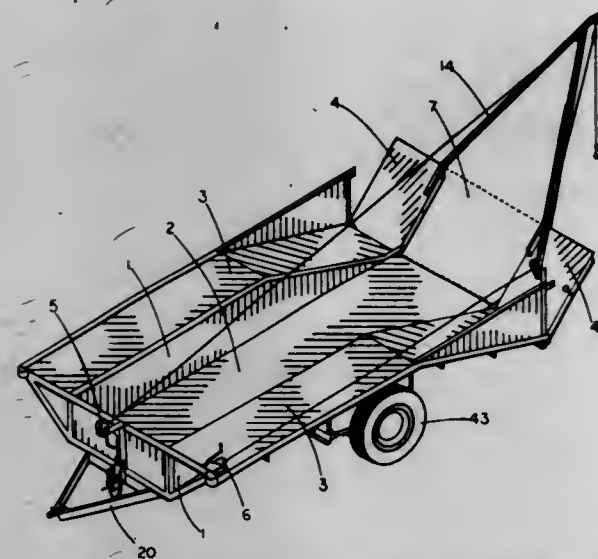


cludes upper and lower support arms which are mounted for limited vertical swinging movement underneath a vehicle body by virtue of a loose connection between the lower arm and the vehicle frame. The upper arm, which carries the tire, is pivotally supported by the lower arm through a pivot connection which permits movement of



the upper arm through 360° relative to the lower arm. The rear end of the tire rack may thus be dropped down below the level of the vehicle body by virtue of the loose pivot connection between the lower arm and frame to permit the upper arm to be swung outwardly, in either direction, to make the tire readily accessible adjacent either side of the vehicle.

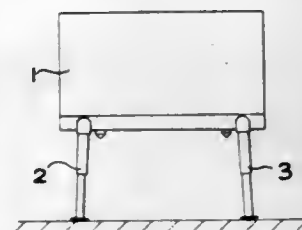
**3,460,696**  
**MULTIPURPOSE TRAILER**  
Clure H. Owen, Jr., 35 Clinton St.,  
White Plains, N.Y. 10603  
Filed Sept. 29, 1967, Ser. No. 671,840  
Int. Cl. B60p 1/64; B66c 21/00  
U.S. Cl. 214-505 11 Claims



A trailer vehicle having a unitized frame and bed with plate girder sides forming longitudinal frame rails and a bottom portion extending between the lower edges of the plate girder sides. Each of the plate girder sides has attached thereto at the upper edge thereof a ramp member extending laterally outwardly therefrom to serve as a support for the wheels of a vehicle upon the trailer. A portion of each of the plate girder sides is of progressively reduced height towards the rear of the trailer, and the portions of the ramp members associated therewith form downwardly sloping ramps.

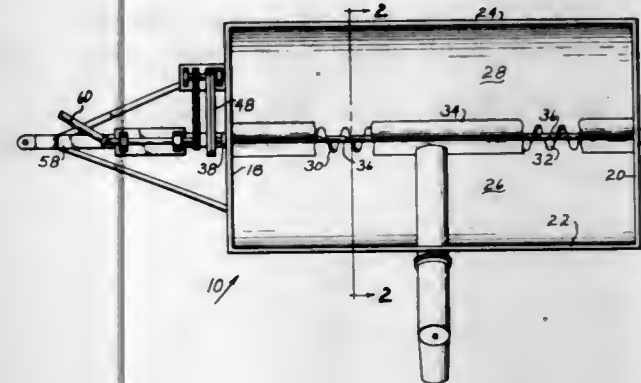
**3,460,697**  
**TRANSPORTABLE LOAD-CARRYING APPLIANCES**  
Frank Cowlishaw, Linby, and Frank Town, Burton Joyce, England, assignors to W. E. & F. Dobson, Limited, Colwick, Nottingham, England  
Filed Feb. 1, 1968, Ser. No. 702,269  
Claims priority, application Great Britain, Feb. 7, 1967, 5,772/67; Apr. 4, 1967, 15,351/67; Aug. 16, 1967, 37,668/67  
Int. Cl. B60p 1/64  
U.S. Cl. 214-515 10 Claims  
A transportable load-carrying appliance to be removably received on a transport vehicle and comprising a

container, base frame, or other body structure having hydraulic legs which by suitable mounting means are displaceable between an outer operative position and an inner inoperative position within the vehicle width, said legs being in hydraulic circuit, with valve control devices, enabling extension of the legs in the outer operative position and contraction of the legs for the inner inoperative position, and there being also hydraulic jacks in the circuit for effecting the legs' displacements, locating catch



devices displaced with the legs to co-operate with the vehicle for centralizing and locking the body structure on the vehicle, and helical slot and follower or hydraulic jack devices for converting the displacements of the legs to pivotal movements thereof so that the inner inoperative position is horizontal and the outer operative position is vertical, and the arrangement may be that the leg cylinders in the vertical position are wholly above the lower part of the body structure so that the latter can be lowered to ground level.

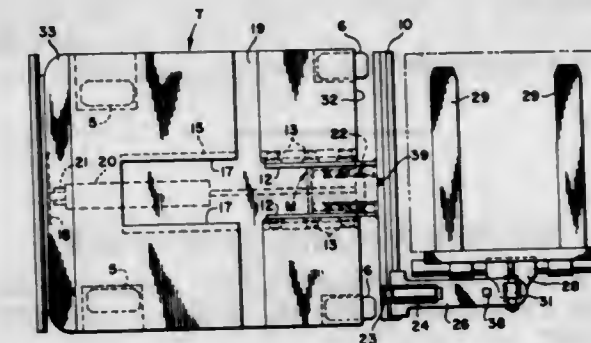
**3,460,698**  
**FARM CART**  
Harold D. Harris, Lubbock, Tex., assignor to Harris and Thrush Manufacturing Company, Lubbock, Tex., a corporation of Texas  
Filed Mar. 4, 1968, Ser. No. 709,981  
Int. Cl. B60p 1/40  
U.S. Cl. 214-519 10 Claims



A cart receives grain from a combine while the combine is harvesting the grain and delivers it to a truck for transportation to an elevator. The grain is delivered from the cart by an auger driven by the power takeoff of the tractor pulling the cart.

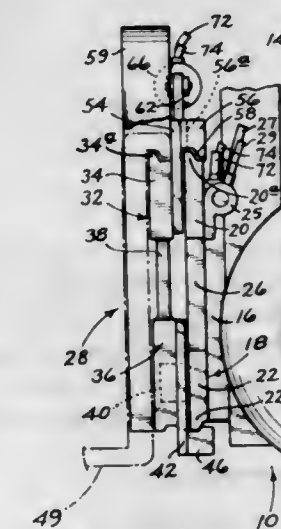
**3,460,699**  
**MOVABLE UPRIGHT ASSEMBLY WITH A LATERALLY AND PIVOTALLY MOUNTED CARRIER**  
Frederick F. Ohntrup, Plymouth Meeting, Pa., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio  
Filed Oct. 27, 1967, Ser. No. 678,621  
Int. Cl. B66f 9/12  
U.S. Cl. 214-660 12 Claims  
An industrial truck having a longitudinally movable mast with a load member so connected to the mast that

the load may be maneuvered at the side as well as the front of the truck with the load in juxtaposed re-



lation to the front of the truck. Thus, the overhang or moment exerted by the load is a minimum.

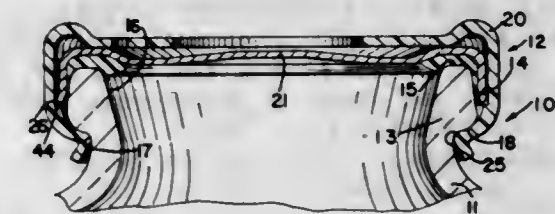
**3,460,700**  
**SIDE-SHIFT APPARATUS FOR A LIFT TRUCK**  
Robert J. Kroupa, Gresham, Oreg., assignor to Cascade Corporation, Portland, Oreg., a corporation of Oregon  
Filed Aug. 21, 1967, Ser. No. 662,149  
Int. Cl. B66f 9/14  
U.S. Cl. 214-730 5 Claims



Side-shift apparatus for mounting a load-handling attachment on the carriage of a lift truck, such apparatus in operative position including a side-shiftable frame section disposed in front of the carriage, laterally-spaced mounting parts secured to the back of the frame section, and an elongated hook for the frame section secured to the backs of, and spanning the space between the mounting parts, slidably mounted on the carriage. A stationary motor anchor bracket is mounted on the front face of the carriage in the space between the mounting parts positioned centrally relative to laterally opposite sides of the carriage, and a motor anchor lug is mounted on each of the mounting parts, with the bracket and lugs aligned in a direction extending transversely of the lift truck. A hydraulic motor for shifting the frame section is interposed between the bracket on the carriage and one of the lugs on one of the mounting parts.

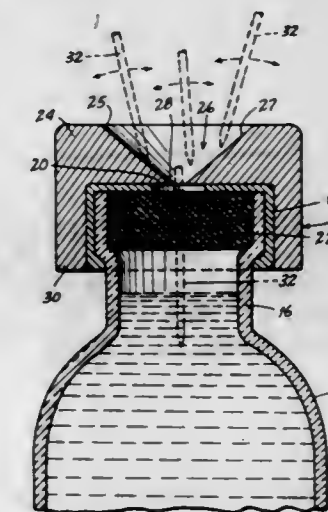
**3,460,701**  
**COMPOSITE CLOSURE**  
Joseph C. Powalowski, Chicago, and James E. Westfall, Western Springs, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York  
Filed June 7, 1967, Ser. No. 644,227  
Int. Cl. B65d 41/32  
U.S. Cl. 215-10 9 Claims  
A composite closure consisting of a flexible plastic fitment and a gasketed rigid metal closure panel. The metal closure panel is held within the fitment by the lower end

of the skirt resting on a shoulder formed in the plastic fitment. A lifting ring is joined to the top panel of the plastic fitment by bridging portions, all except one of which are adapted to be broken to permit lifting of the closure from the container. Once the frangible bridging



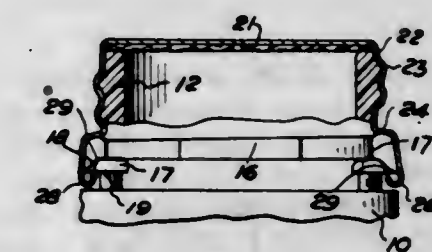
portions are broken, it serves to alert purchasers that the closure has been previously removed or tampered with. The lower end of the plastic fitment is necked in to engage the neck of the container to hold the closure in position initially and during resealing.

**3,460,702**  
**SELF-CENTERING ADAPTER CAP FOR HYPODERMIC NEEDLES**  
James E. Andrews, St. Louis, Mo., assignor of one-half interest to Edward M. Dorey, St. Ann, Mo.  
Filed Nov. 2, 1966, Ser. No. 591,475  
Int. Cl. B65d 17/00, 17/16, 39/00, 41/00  
U.S. Cl. 215-37 2 Claims



This invention relates to improvements in self-centering caps and in particular is concerned with self-centering or guide caps that can be used with ampules having a limited pierceable target area to be pierced by the hypodermic needle.

**3,460,703**  
**CONTAINER AND CLOSURE**  
Charles J. Leftault, Jr., Richmond, Ind., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed July 18, 1967, Ser. No. 654,109  
Int. Cl. B65d 53/00  
U.S. Cl. 215-40 5 Claims

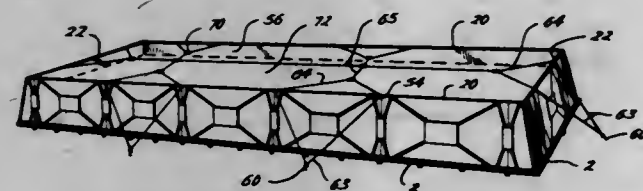


A container having a screw threaded neck with plastic lugs below the screw threads and a metal cap screwed onto the neck and having an upwardly directed edge of the cap skirt underlying the lower surfaces of the lugs. The cap



skirt has a circumferential weakened fracture line between the cap screw threads and cap skirt edge so that upon unscrewing the cap, the skirt fractures.

**3,460,704**  
**PORTABLE SURFACE-ERECTED STORAGE CONTAINER FOR LIQUID AND DRY MATERIALS**  
Alvan A. Moore, Corpus Christi, Tex. (Box 187, Encinal, Tex. 78019), and David L. Washington, 4502 Ocean Drive, Corpus Christi, Tex. 78412  
Filed July 31, 1967, Ser. No. 657,179  
Int. Cl. B65d 7/02, 57/00, 85/00  
U.S. Cl. 220—5 13 Claims



Portable, prefabricated apparatus having a modular base structure with an inwardly slanting mounting rail adjacent its outer periphery, side panels attached to the mounting rail and slanting inwardly to define an open-topped enclosure, a flexible liner suitable to contain liquid or dry materials, attached within the enclosure and supporting cables to hold the side panels in equilibrium regardless of the depth of materials contained within the lined enclosure.

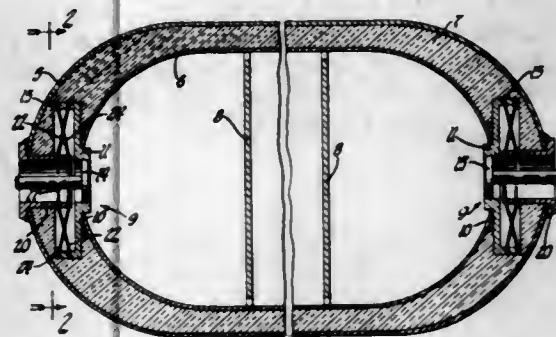
**3,460,705**  
**STORAGE CONTAINER MEANS**  
Marion C. Green, 1005 Wichita Plaza Bldg., Wichita, Kans. 67202  
Filed May 27, 1968, Ser. No. 732,321  
Int. Cl. B65d 7/02; E04h 3/16  
U.S. Cl. 220—5 14 Claims



A self-reinforcing storage container means is provided which is capable of being dismantled and erected a number of times without damage to the container means. The container means is provided with an outer shell formed of a plurality of panel members. A rail means, a flexible liquid impervious liner member, and a securing means are detachably connected to the upwardly extending end portion of the shell. An endless conduit is provided within the upwardly extending portion of the liner means and the conduit has a cable member positioned therein. Thus, the conduit member and cable member cooperate with

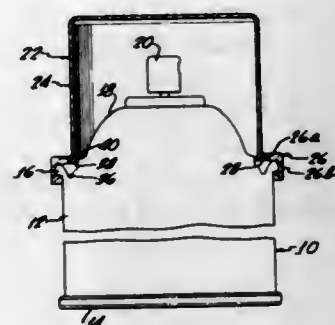
the rail means and the securing means to prevent slippage of the liner member when fluids or other materials are placed within the liner member and thus the storage container means. Further, a cover means is provided which prevents water, dirt, and the like from contaminating the materials positioned within the storage container means.

**3,460,706**  
**DOUBLE-WALLED CONTAINER**  
Charles T. Hoover, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed July 19, 1967, Ser. No. 654,608  
Int. Cl. B65d 25/02  
U.S. Cl. 220—15 6 Claims



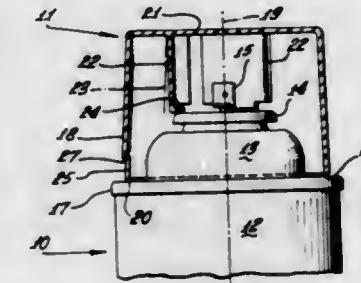
A container comprising an outer casing, an inner casing, and means to support the inner casing from the outer casing or an internal body and to minimize heat transfer through the support. There are at least two supports for the inner casing, each comprising a drum, a hub within the drum, and rows of spokes in tension between the hub and drum.

**3,460,707**  
**TAMPER-PROOF CLOSURE FOR DISPENSER CANS**  
Henry F. Luke, 2102 Serrano Ave., Newport Beach, Calif. 92661  
Filed Jan. 31, 1968, Ser. No. 701,912  
Int. Cl. B65d 17/00, 43/10, 47/10  
U.S. Cl. 220—27 1 Claim



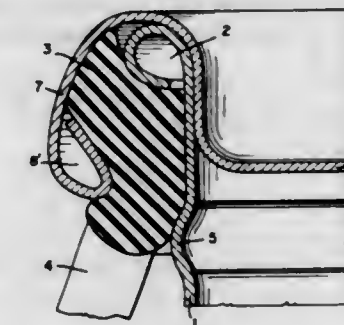
A dispenser can top is closed by a cap having a skirt which prevents the cap from being removed by hand; however, by striking the end of the cap on a table, a web joining the skirt to the cap body is broken. The cap body can then be removed and subsequently reused to cover the dispenser valve. Once separated from the cap body, the skirt can be easily removed by hand and snapped onto the bottom of the can to serve as a coaster for collecting dripage from the can.

**3,460,708**  
**DESTRUCTIBLE CAP FOR AEROSOL CONTAINERS**  
Gary L. Vollers, Upland, Calif., assignor to Pactra Incorporated, Los Angeles, Calif., a corporation of California  
Filed Apr. 29, 1968, Ser. No. 724,717  
Int. Cl. B65d 17/00, 25/00  
U.S. Cl. 220—27 8 Claims



The disclosure concerns an unusually effective tamper-proof, protective cover for the valve controlling dispensing outlet of an aerosol can.

**3,460,709**  
**CLOSURE FOR CONTAINERS AND A METHOD OF MAKING IT**  
Gert Gottfried Bieder, Detroit, Mich., and Herbert Walter Ziesak, Braunschweig, and Kurt Gerhard Kuhn, Broistedt, Germany, assignors to J. A. Schmalbach AG., Braunschweig, Germany, a corporation of Germany  
Filed Aug. 23, 1966, Ser. No. 574,368  
Int. Cl. B65d 43/02  
U.S. Cl. 220—47 1 Claim

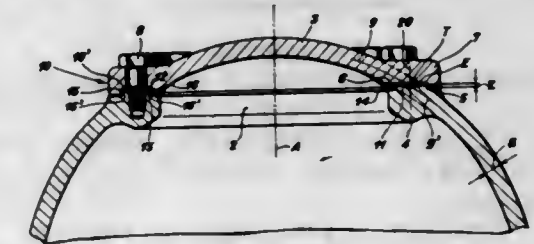


A closure for a package container, for example, a can for preserves, consists of an elastic removable sealing ring provided with a tab and clamped between the edge of the container cover and an outwardly curved edge of the container body. The closure is characterized in that the sealing ring is placed under tension directly below the rounded edge of the body, while a rolled edge flange which is substantially completely closed, is provided in the edge portion of the cover which is bent toward the container body. This rolled edge flange engages the sealing ring only by an outer surface directed toward the container body in order to change the shape of the ring.

**3,460,710**  
**COVER PLATE FOR A PRESSURE VESSEL**  
Ernst Vögeli, Wiesendangen, Zurich, Switzerland, assignor to Sulzer Brothers, Ltd., Winterthur, Switzerland, a corporation of Switzerland  
Filed July 12, 1968, Ser. No. 747,767  
Claims priority, application Switzerland, July 27, 1967, 10,684/67  
Int. Cl. B65d 45/00; A47j 27/08, 36/10  
U.S. Cl. 220—55 5 Claims

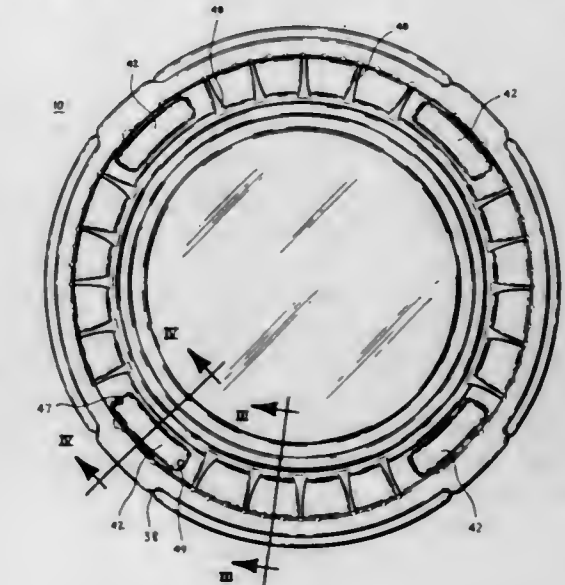
The centerline of the cover plate wall is arranged in alignment with centerline of the pressure vessel wall while the axes of the mounting bolts intersect the plane bisecting the zone of mutual engagement between the mat-

ing annular groove and projection of the cover plate and pressure vessel, respectively. The curvature of the



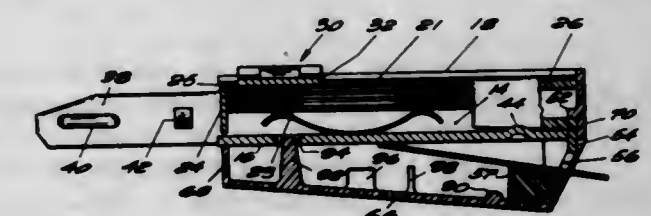
cover plate is the same as the pressure vessel while the built-up areas do not exceed eight times the square of the pressure vessel wall thickness.

**3,460,711**  
**SEALED RECLOSABLE CONTAINER HAVING STACKING FEATURES**  
John D. Al-Roy, Bloomfield, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
Filed July 15, 1968, Ser. No. 744,946  
Int. Cl. B65d 43/10, 21/00  
U.S. Cl. 220—60 12 Claims



A container which includes a body and lid combination, each of which is stackable without wedging, the lid being of the insert type and sealable on the body in two areas which may be separated from each other by a closed air space. Lever means create a mechanical advantage which permits unlocking the lid from the body by an applied force which can be less than the sealing force holding the lid on the body, thus permitting tight interlocking of the parts while still maintaining the container easily openable. Both lid and body may be structurally reinforced against bending in the sealing portions thereof.

**3,460,712**  
**BLADE DISPENSER WITH USED BLADE COMPARTMENT**  
Alan B. Lowry, Canton, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware  
Filed Jan. 15, 1968, Ser. No. 697,757  
Int. Cl. A47f 1/06; B65h 1/04, 1/12  
U.S. Cl. 221—102 6 Claims



The present invention is concerned with injector blade dispensers and more particularly with injector blade dis-



pensers having novel used blade compartments which can be readily joined to the dispensers.

### 3,460,713 METHOD OF DISPENSING A REFRIGERATED BEVERAGE

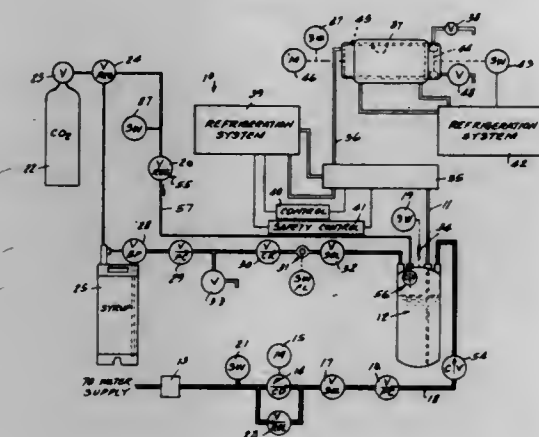
Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota

Filed Nov. 9, 1967, Ser. No. 681,717

Int. Cl. B67d 5/62, 5/56

U.S. Cl. 222—1

32 Claims



Water, syrup, and carbon dioxide gas are combined to form a carbonated beverage having a predetermined level of carbonation and predetermined level of sweetness, the resulting product being first refrigerated to a temperature near freezing, and then transferred to a freezing chamber where a selected percentage of the water in such beverage is frozen out as pure ice, thereby raising the sweetness and level of carbonation of the remaining liquid to a desired level, such desired level being controlled by sensing the viscosity of the resulting slush.

### 3,460,714 AEROSOL PACKAGE PROVIDING UNIFORM FOAMS

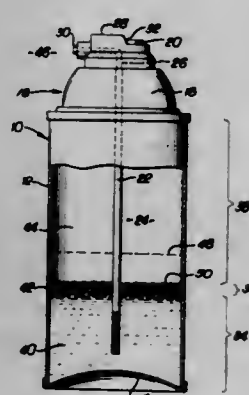
Harry W. Mace, Milford, Conn., assignor to Aerosol Techniques Incorporated, Milford, Conn., a corporation of New York

Filed July 24, 1967, Ser. No. 655,509

Int. Cl. B65d 83/14, 79/00

U.S. Cl. 222—4

9 Claims



An aerosol dispensing package in which a reservoir body of liquefied propellant is provided, independent of the liquid product to be dispensed, for progressive vaporization with package use, thus eliminating the problem of depletion of propellant concentration in the dispensable product, as head space in the package increases, and resultant foam variation.

### 3,460,715 TAPS

Charles Anthony Lane, Ham, and Alan Thomas Jones, London, England, assignors to Waddington & Duval (Holdings) Limited, London, England

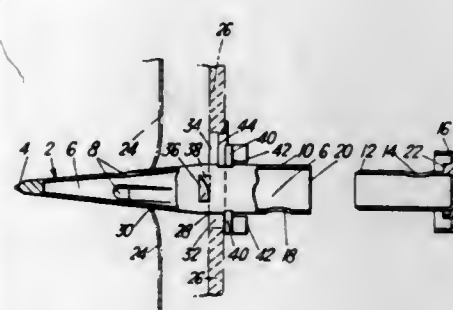
Filed Dec. 13, 1965, Ser. No. 513,374

Claims priority, application Great Britain, Dec. 22, 1964, 52,120/64

Int. Cl. B67b 7/26; F16k 51/00

U.S. Cl. 222—90

5 Claims



A tap for a "bag in a box" container comprising a pointed "probe" section for piercing the inner bag and provided with a hole or holes communicating with an interior passage through the tap body, which passage terminates in an outlet hole, the flow of liquid from the outlet hole being controllable by a rotary valve element, the body of the tap being provided with means for engagement with the outer protective box to prevent the body of the tap turning on operation of the valve element.

### 3,460,716 MIXING ASSEMBLY FOR A DISPENSER

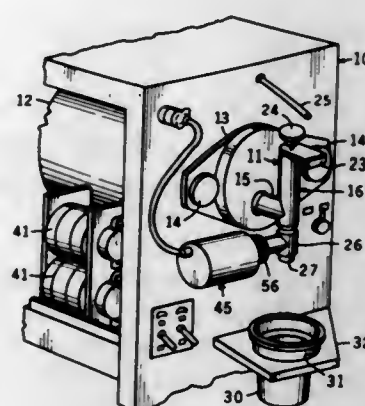
Donald J. Thomas, Town and Country, Mo., assignor to Burger Chef Systems, Inc., Indianapolis, Ind., a corporation of Indiana

Filed July 14, 1967, Ser. No. 653,364

Int. Cl. B67d 5/56, 5/60

U.S. Cl. 222—129.1

4 Claims



A mixing assembly for a dispenser of fluid and semi-fluid substances such as shakes, slush and soft ice cream, which includes an impeller located in a dispensing nozzle just upstream of a discharge outlet and just downstream of the entrance provided for the introduction of a flavoring. A drive means, carried by the nozzle, rotates the impeller on an axis arranged at an angle to the longitudinal flow axis of nozzle end extending between the valve means controlling flow through the nozzle and the discharge outlet. The impeller mixes the flavoring and substance in the nozzle upon opening the valve means. The centrifugal action cleans the nozzle end and impeller by throwing the mix out the discharge outlet after the valve means is closed and the flavoring feed means is deactivated.

### 3,460,717 MIXING ASSEMBLY FOR A DISPENSER

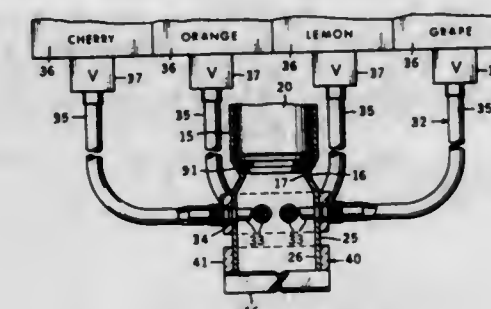
Donald J. Thomas, Town and Country, Mo., assignor to Burger Chef Systems, Inc., Indianapolis, Ind., a corporation of Indiana

Filed Oct. 16, 1967, Ser. No. 675,372

Int. Cl. B67d 5/56

U.S. Cl. 222—129.1

7 Claims



A mixing assembly for a dispenser of semi-fluid substances such as slush and soft ice cream, which includes a non-rotating mixing means carried by a nozzle and located at the discharge outlet of such nozzle. Flavoring is introduced into the nozzle upstream of the mixing means. Upon actuation of a valve means, that controls flow of the substance from a reservoir through the nozzle, the mixing means disperses the flavoring into the substance upon discharge from the nozzle. The mixing means includes a plurality of vanes extending across the nozzle at the discharge outlet, the vanes being relatively stationary to the nozzle during usage. An attachment means enables quick and easy connection of the mixing means to the nozzle, and permits ready disconnection for cleaning and maintenance. The attachment means provides an effective seal.

### 3,460,718 SHIPPING CONTAINER

Roger Patrick Plant, 5441 Notre Dame St. W., Montreal 30, Quebec, Canada

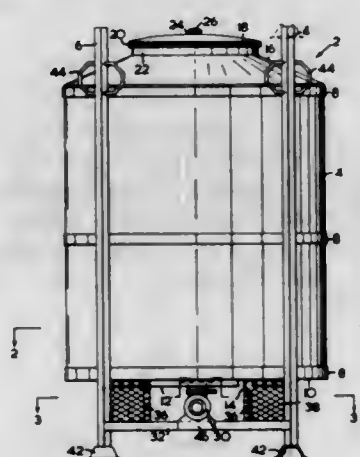
Filed Sept. 9, 1968, Ser. No. 758,322

Claims priority, application Canada, July 12, 1968, 24,984

Int. Cl. B67d 5/60, 21/00, 7/42

U.S. Cl. 222—143

10 Claims



A corrosion resistant shipping container assembly comprising a cylindrical tank of impact resistant plastic and a supporting framework of four long steel struts running up the side of the cylinder and a platform for it to sit on. A steel band runs round the cylinder to locate the struts as the base is provided with hollow pyramids to give a stacking facility with a built in self guiding feature.

### 3,460,719 ACTUATOR CAP FOR DISPENSERS HAVING ROTATE-TO-LOCK CAPTIVE BUTTON

William R. O'Donnell and Arthur J. Banyas, Trumbull, Conn., assignors to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware

Filed Apr. 20, 1967, Ser. No. 632,272

Int. Cl. G01f 11/00; B65d 83/00

U.S. Cl. 222—320

7 Claims



A locking-type actuator cap comprising an outer stationary tubular shell having a deep front notch through which the product is discharged, and comprising a captive depress button vertically movable in the shell and having a side nozzle for discharging the product. The button is turnable in the shell between on the one hand a discharging position wherein the nozzle is disposed at the said notch and the button can be depressed, and on the other hand a non-discharging position wherein depressing movement of the button is prevented and the nozzle is concealed by being disposed behind the wall of the shell. A boss in the button extends through an apertured wall of a cup in the stationary shell, and has a projection which prevents its withdrawal from the cup wall.

### 3,460,720 HILLDROP PLANTER

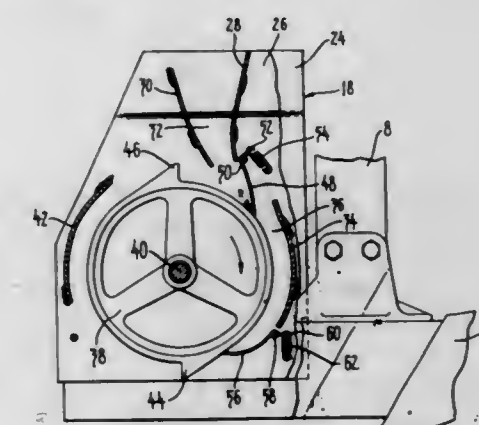
Merton W. Peterson, Dearborn, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich.

Filed Mar. 28, 1967, Ser. No. 626,584

Int. Cl. G01f 11/10

U.S. Cl. 222—367

4 Claims



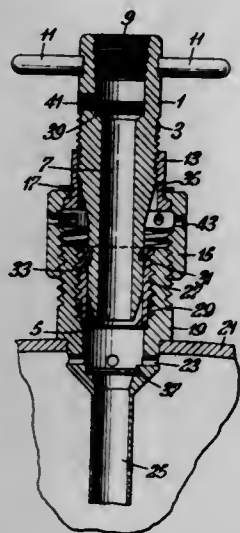
A hilldrop planting assembly including a dispensing passage for receiving seeds from dispensing mechanism on the seed hopper and means for collecting and maintaining seeds in a group for discharge into a furrow. The seeds are collected into a group from the dispensing passage by a collecting valve. A seed wheel having projecting lobes sweeps the group from the collecting valve through a discharge passage, and a discharge valve, also operated by the seed wheel lobes, prevents separation of the group prior to discharge.



### 3,460,721 VALVE FOR SELECTIVE WITHDRAWAL OF LIQUID OR VAPOR

William J. Hamel and John J. Potter, Jr., St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York

Filed Oct. 22, 1965, Ser. No. 501,013  
Int. Cl. B65d 83/14; F04f 5/16; F16k 51/00  
U.S. Cl. 222-402.18 3 Claims

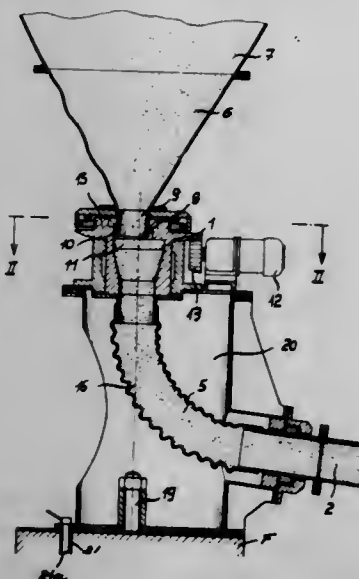


A specially constructed valve has been discovered which is adapted to be mounted on top of containers and pressure vessels containing liquid or vapor under some positive pressure above atmospheric pressure. This valve comprises a valve body having a passageway through which liquid or vapor can be withdrawn. The valve body has a lower tapered end with vapor ports interiorly of the cylinder and also comprises means for lowering or raising the tapered end of the valve body relative to the vapor ports so as to withdraw vapor or liquid selectively.

### 3,460,722 ROTARY TUBULAR CONVEYOR WITH FLEXIBLE HOLLOW SHAFT

Richard Jung, Gummersbach, Germany, assignor to L. & C. Steinmuller G.m.b.H., Gummersbach, Germany

Filed July 6, 1967, Ser. No. 651,485  
Claims priority, application Germany, July 8, 1965, St 25,615  
Int. Cl. G01f 11/20; B65g 65/35, 47/16  
U.S. Cl. 222-410 7 Claims



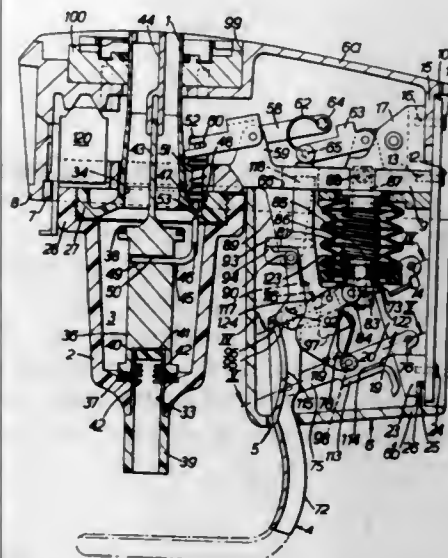
The present invention concerns a rotary tubular conveyor having first rotary tubular conveying means adapted to be connected to a hopper for receiving pourable goods therefrom, and also comprises second rotary tubular means arranged in spaced relationship to said first rotary tubu-

lar means, said first and second rotary tubular means being interconnected by flexible tubular body means for conveying goods from said first to said second rotary tubular means and for transferring the rotary movement from said first rotary tubular means to said second rotary tubular means.

### 3,460,723 LIQUID MEASURES

Robert William Young, Battledown, England, assignor to Autic Developments Limited, Cheltenham, England

Filed Aug. 24, 1967, Ser. No. 662,938  
Claims priority, application Great Britain, Aug. 24, 1966, 37,921/66  
Int. Cl. G01f 11/28  
U.S. Cl. 222-453 18 Claims

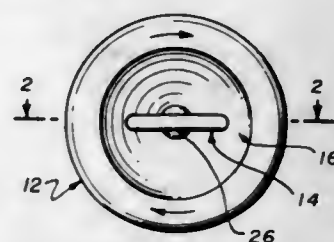


A liquid measure having a measuring chamber, a normally open inlet port and a normally closed outlet port for the chamber, with the ports being alternatively closable by a common shuttling valve member. A dispensing member is operable to change over the valve member and dispense the measured quantity of liquid contained in the chamber, and an interlock mechanism is provided which includes a time delay device in the form of a bellows and is operative to prevent reverse change over of the valve member after a dispensing operation until an adequate delay has elapsed for the chamber to drain completely and to prevent another operative movement of the dispensing member with attendant change-over of the valve member until a further delay has elapsed to allow the chamber to refill.

### 3,460,724 CLOSURE CAP

John F. Chmela, 7256 Davis St., Morton Grove, Ill. 60053

Filed Nov. 14, 1967, Ser. No. 682,932  
Int. Cl. B65d 47/06 8 Claims



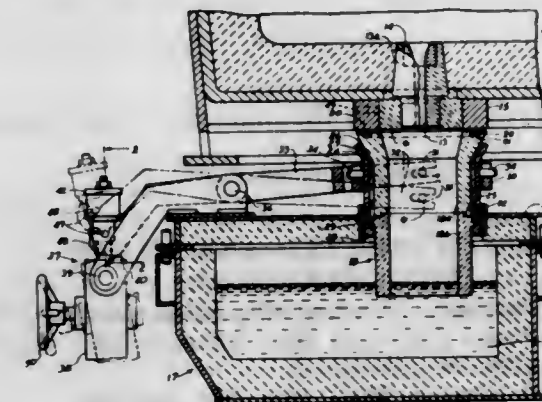
This invention relates to a closure cap which is molded as an integral unit preferably of plastic, and which has an opener contained within a recessed cavity formed in one of its walls. The cavity preferably is of a depth such

that the opener does not project beyond the plane of the wall in which it is contained. The opener is easily and quickly removed simply by twisting it, or otherwise breaking it, with the fingers to provide a dispensing aperture in the cap. The opener also may be formed in a fashion such that it can be used to re-seal the dispensing aperture in the cap, if desired.

### 3,460,725 APPARATUS FOR POURING MOLTEN METAL

Karl-Heinz Golde, Ratingen, and Horst Buschmann, Solingen-Ohligs, Germany, assignors to Schloemann Aktiengesellschaft, Dusseldorf, Germany a company of Germany

Filed May 2, 1968, Ser. No. 726,161  
Int. Cl. B65d 5/72, 25/40; B22d 41/00  
U.S. Cl. 222-567 10 Claims

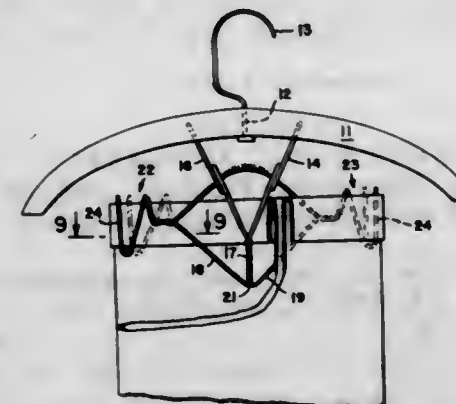


Apparatus for use in pouring molten metal from a first vessel to a second vessel below through an outlet in the bottom of the first vessel consists of a tube of refractory material having a larger diameter than the outlet. The tube is in two parts, one resting on the other with a tubular jacket encircling contiguous portions of both parts, both parts being supported in the jacket. Thus, either part is replaceable. The jacket is larger than the tube to provide space for inserting refractory material between them. A lever pivotally connected to the jacket is adapted to raise the jacket and tube to, and lower it from, a position in which the upper end of the tube is against the bottom of the first vessel, around the outlet. The lever is adapted to press the tube resiliently against the bottom of the first vessel, and the tube is made sufficiently long for its bottom end to extend below the surface of molten metal contained in the second vessel.

### 3,460,726 GARMENT HANGER CONSTRUCTION FOR CUFF-LESS TROUSERS

William B. Rooz, 36 Portola Ave., Daly City, Calif. 94015

Filed Aug. 16, 1965, Ser. No. 479,859  
Int. Cl. A47j 51/094 17 Claims



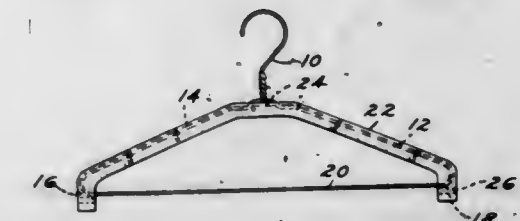
A garment hanger construction of a type wherein the garment engaging feet depend downwardly and incor-

porate an unobstructed zone around each foot whereby the feet can enter the open end of a garment to be supported. The feet move downwardly and outwardly in an arc struck from a point above and outwardly of the feet so that the weight of the garment will hang from the feet in a manner causing the radius arms supporting the feet to be subjected to tensioning forces.

### 3,460,727 COAT HANGER SHEATH

Walter P. Baughman, Livonia, Mich., assignor to Plastomer Corporation, Livonia, Mich., a corporation of Michigan

Filed July 6, 1966, Ser. No. 563,265  
Int. Cl. A41d 27/22 2 Claims



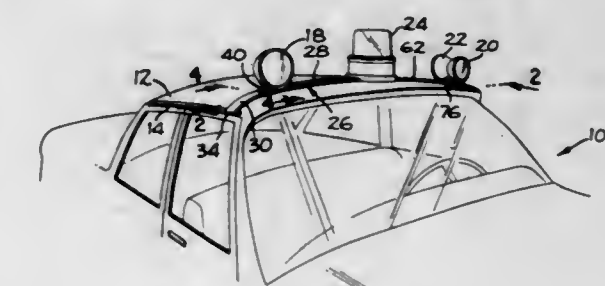
A coat hanger sheath and more particularly that type of cover which comprises a strip of polyurethane foam material which is a sponge-like material having a fairly high frictional characteristic.

### 3,460,728 WARNING EQUIPMENT MOUNT FOR EMERGENCY VEHICLES

James L. Adamson, Sunnyvale, Calif.

(210 San Jose Ave., Apt. 8, San Jose, Calif. 95125)  
Filed July 11, 1967, Ser. No. 652,583  
Int. Cl. B60r 7/00, 9/04, 11/00 2 Claims

U.S. Cl. 224-42.1



A mount for quickly attaching warning equipment to the roof of an emergency vehicle, without drilling holes in the roof, is revealed herein and includes a pair of flexible straps adapted to opposite sides of the roof and conform to the profile thereof. The straps are connected together by an adjustable link which tensions the straps upon the roof, drawing the under surfaces thereof into contact with the top surface of the roof.

### 3,460,729 WEB TENSION CONTROL MECHANISM

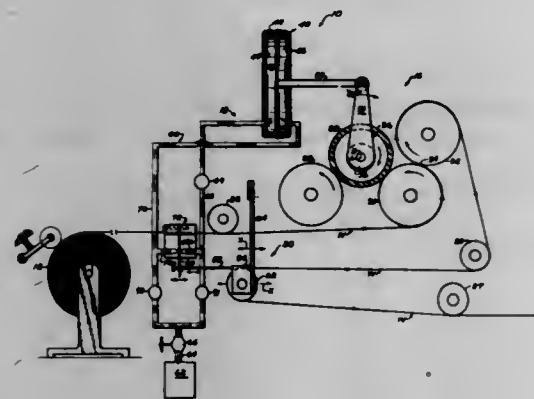
Ernest H. Treff, Pawcatuck, Conn., assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware

Filed Apr. 13, 1967, Ser. No. 630,670  
Int. Cl. B65h 23/22, 25/14 16 Claims

U.S. Cl. 226-42 The extent of respective circumferential pressure engagements between a resiliently deformable surface of a



drive transmitting roll and the surfaces of the driving and driven rolls determines the speed of the driven roll which, in turn, advances web material so that the web material is maintained at a predetermined tension. A flapper member associated with air nozzles moves upon a deviation in the tension of the web and thereby actuates a servo-motor to



vary the abovementioned pressure engagements and provide for driving the driven roll at a speed which will compensate for the tension deviation. The drive transmitting roll is supported by eccentrics which are rotated by the servo-motor to bodily move the drive transmitting roll and thereby vary the pressure engagements between the rolls.

3,460,730

## FILM ADVANCING DEVICE

Fritz Krumbein, Stuttgart-Möhringen, Germany, assignor to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany, a corporation of Germany

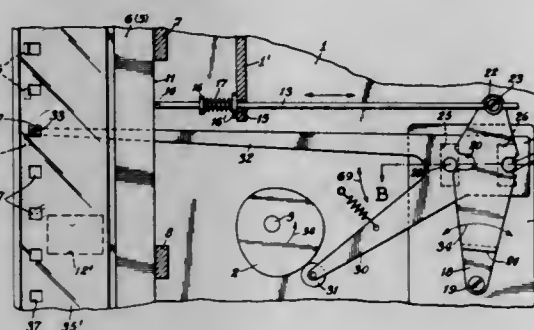
Filed June 13, 1967, Ser. No. 645,828

Claims priority, application Germany, July 1, 1966, Z 12,311

Int. Cl. G03b 1/22, 41/00

U.S. Cl. 226—64

10 Claims



The film advancing device is intended for use in photographic apparatuses, such as motion picture cameras and projectors and is provided with a pivotally mounted film gripper whose feeding stroke is controlled by a driven cam and also with a displaceable gripper bearing which permits the selective employment of two films whose perforations are differently spaced from each other and also are arranged at different laterally offset relations with respect to the picture window.

3,460,731

## FILAMENT DEFLECTING APPARATUS

Henry McCardell Troth, Jr., Hendersonville, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 7, 1967, Ser. No. 651,794

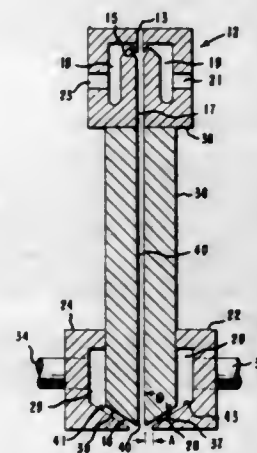
Int. Cl. B65h 17/32

U.S. Cl. 226—97

5 Claims

An apparatus for deflecting filaments emerging from the

outlet of a forwarding jet. A housing attached to the outlet end of the jet is periodically supplied with pressurized



fluid which discharges onto the filament stream emerging from the jet.

3,460,732

## CONTACT PRINTER AND PAPER DRIVE THEREFOR

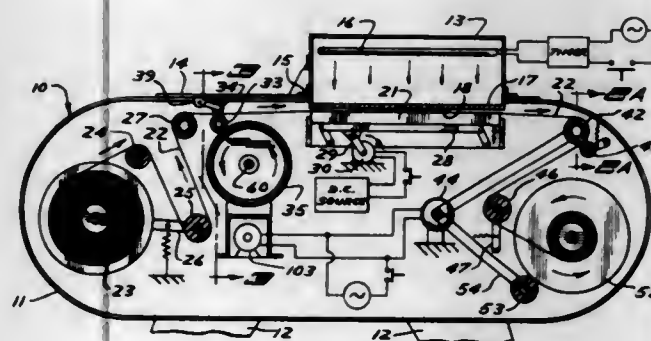
Karl J. Kallenberg, Minneapolis, Minn., assignor to Prestige Photo Products, Inc., Minneapolis, Minn., a corporation of Minnesota

Filed Mar. 6, 1967, Ser. No. 620,940

Int. Cl. B65h 17/26, 23/08

U.S. Cl. 226—136

16 Claims



A contact printer including a paper feed mechanism having a feed roller and a paper takeup roller which exerts a constant tension on the paper as it moves across a platen used for supporting the paper in printing. The paper feed roller is driven with a friction tendency drive, and is normally latched against movement. Upon disabling of the latch, the roller will be driven, feeding the paper, and at the same time an element will be released and will rotate with the roller until the element contacts a switch to disable the feed roller. The positioning of the switch in relation to the number of degrees of rotation of the roller can be changed to provide variable feed.

3,460,733

## TAPE-PLAYING APPARATUS

Norman Lane, Halesowen, England, assignor to BSR Limited, Old Hill, Stafford County, England, a British company

Filed Oct. 20, 1967, Ser. No. 676,829

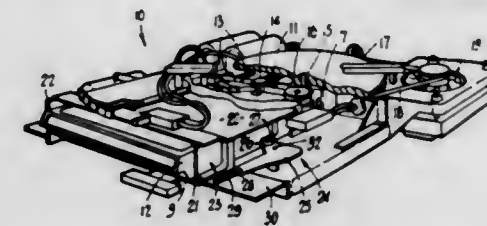
Int. Cl. B65h 17/20; G11b 15/32

U.S. Cl. 226—176

4 Claims

A magnetic tape-playing apparatus for use with tape provided in a removable cassette and in which movement of the tape is achieved by engagement with a capstan spindle, there being a transporter means releasably engageable with the cartridge to move the tape into and out

of engagement with the capstan spindle, the cartridge being releasably engaged with the transporter means by means of a spring catch, which spring catch is held positively in engagement with the cartridge when the tape is



engaged with the capstan spindle whilst the catch may be disengaged from the cartridge when the transporter means has moved the cartridge so that the tape is out of engagement with the capstan spindle.

3,460,734

## FRICTION WELDING MACHINE

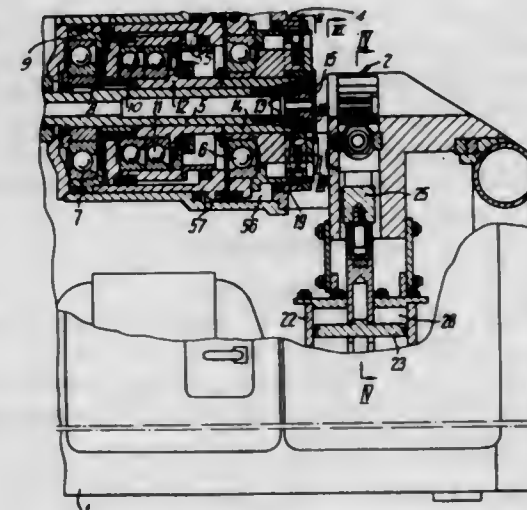
Vadim Ivanovich Vill, Nikolai Jakovlevich Kochanovsky, Semen Molisevich Tazba, Miron Matveevich Shpeizman, and Lev Alexandrovich Shternin, Leningrad, U.S.S.R., assignors to Vsesouzny Nauchno-Issledovatel'sky Institut Elektrosvarochnogo oborudovaniya, Leningrad, U.S.S.R.

Filed June 2, 1964, Ser. No. 372,054

Int. Cl. B23k 27/00

U.S. Cl. 228—2

3 Claims



A friction welding machine for workpieces including a stationary element on the machine, a headstock and a tailstock mounted on the stationary element, in which a rotatable spindle is mounted in the headstock for free axial displacement, and means for clamping one of the workpieces arranged on the spindle. Further means for clamping the other workpiece is arranged on the tailstock coaxially with the first clamping means whereby axial displacement and rotation of the spindle effects axial and rotary movement of one workpiece relative to the other workpiece for heating the workpieces to be welded. Each of the clamping means includes jaw means located on the spindle and tailstock respectively, and two V-shaped prisms arranged in the jaw means and embracing the workpieces to be welded. Two power-actuated wedges mounted on the spindle and tailstock respectively are operative for moving the V-shaped prisms axially for effecting a primary clamping of the workpieces with the V-shaped prisms being adapted to move axially in the jaw means when the welding thrust is applied to the workpieces as a result of the axial displacement of the spindle during the heating cycle for finally clamping the workpieces.

3,460,735

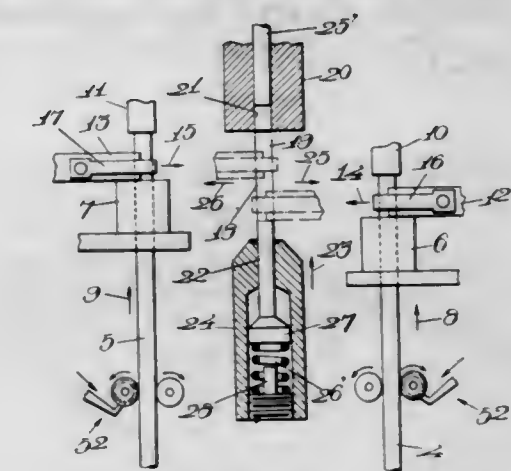
## HEADING MACHINE

Akira Shibata, Tokyo, Japan, assignor to Chugai Denki Kogyo Kabushiki Kaisha, Tokyo, Japan  
Filed Sept. 13, 1965, Ser. No. 486,621  
Claims priority, application Japan, May 13, 1965, 40/28,128

Int. Cl. B23k 21/00; B21k 1/46

U.S. Cl. 228—18

6 Claims



A heading machine for joining and shaping, by cold welding under pressure, cut lengths of wire of respectively different metal compositions includes means for feeding continuous wires of the different metal compositions, means for severing short lengths of the different wires, means for positioning and retaining the short lengths in axial alignment with each other, pressure means for forcing the cut ends of the short lengths of wire into abutment to cold weld the short lengths to each other, and shaping means operable to deform and "head" one end of the joined short wire pieces.

3,460,736

## COLLAPSIBLE BACK-UP RING FOR PIPE WELDING

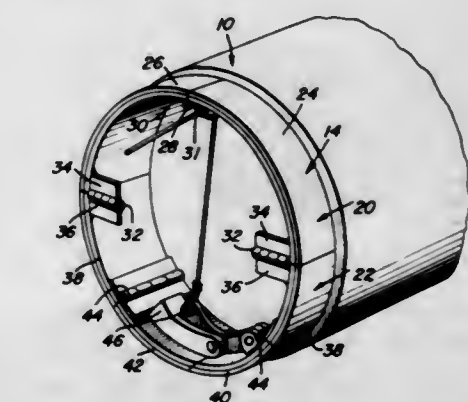
Norman Cadle, R.D. 2, Box 40, Hollidaysburg, Pa. 16648, and Carl G. Bridenbaugh, R.D. 2, Barry Road, Greenville, Pa. 16125

Filed May 25, 1967, Ser. No. 641,247

Int. Cl. B23k 5/22, 9/02

U.S. Cl. 228—50

11 Claims

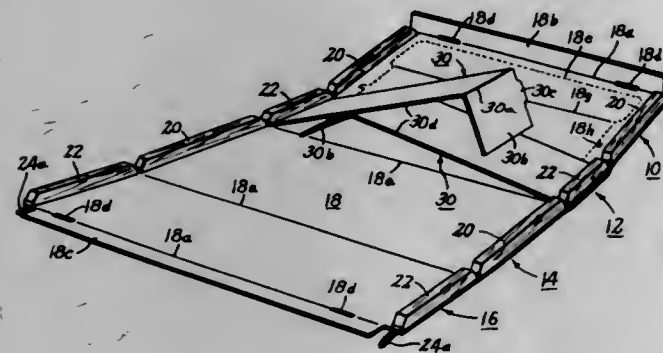


A back-up member for the joint to be welded between end aligned and slightly axially spaced or fully abutted pipe sections and which may be first expanded into a generally cylindrical configuration forming a backing member for the joint as the pipe sections are positioned in end abutted relation and which may be collapsed from a remote location, such as one of the remote ends of the pipe sections, after the joint defined by the abutted ends



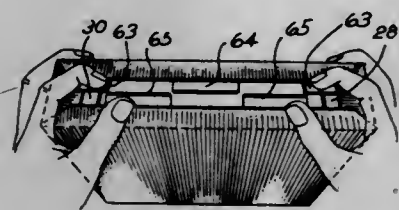
of the pipe section has been welded, after being collapsed the back-up ring being sufficiently small in cross-sectional area to be readily axially withdrawn from one of the remote ends of the welded pipe sections.

**3,460,737**  
**WIREBOUND BOX WITH INTEGRAL ENDS**  
Joseph McCrea, Rockaway, N.J., assignor to  
Stapling Machines Co., Rockaway, N.J.  
Filed Sept. 18, 1967, Ser. No. 668,466  
Int. Cl. B65d 13/00, 9/12  
U.S. Cl. 229—23 6 Claims



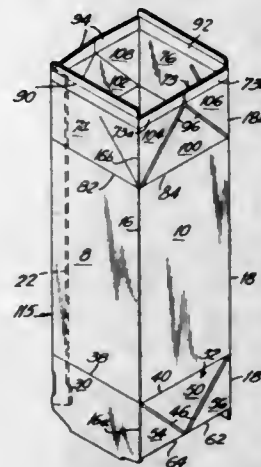
Wirebound box with foldable sheet material and reinforcing cleats, with integral end members of sheet material hinged at one end to the rear section of the box and having at the other end locking flaps extending along the front of the box between the face material thereon and a retaining flap folded downwardly from the upper edge thereof to lie against the inner faces of the locking flaps. The locking flaps and/or the retaining flap may be provided at their edges with locking tabs engaging slots in the face material.

**3,460,738**  
**PREWRAPPED GIFT CARTON**  
Leonard Adams, Jr., and Suvella Richardson, Louisville, Ky., assignors to The Finn Industries, Chicago, Ill., a corporation of Delaware  
Filed Feb. 28, 1968, Ser. No. 708,894  
Int. Cl. B65d 5/02, 65/02  
U.S. Cl. 229—37 8 Claims



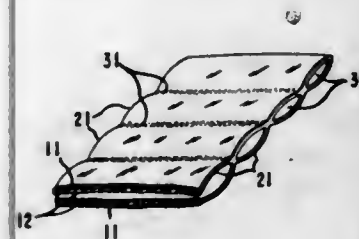
A prewrapped gift box is disclosed having front and rear panels joined by side panels with a simulated pre-wrap tucked at the joint between one side panel and the front panel. Closure tabs at the end extend from the side panels, and end flaps to which the prewrap is secured are alternatively folded over the closure tabs to effect a simulated gift wrapped box. In another embodiment a central seam is defined at the box end by providing locking tabs on one of the end flaps and reclosure tabs on the other end flaps so that the prewrapped gift box may be opened for inspection. A transparent band is employed optionally which tucks in face-to-face relationship in the glue flap and contains printed indicia, the band being removable so that the box takes on a gift-like appearance.

**3,460,739**  
**END CLOSURES FOR LIQUID CONTAINER**  
Norman John Asman, Appleton, Wis., assignor to American Can Company, New York, N.Y., a corporation of New Jersey  
Filed Mar. 11, 1968, Ser. No. 711,956  
Int. Cl. B65d 5/08, 5/74, 13/00  
U.S. Cl. 229—37 10 Claims



A container made from sheet material such as thermoplastic coated paperboard includes a body portion and integral top and bottom closures for closing and sealing the container. Each of the top and bottom closures is provided with outer and inner end closure panels. The inner end closure panels are connected along their side edges to the outer closure panels and include diagonal score lines so that the inner panels may be folded into a nested condition within the container and into underlying relationship with the outer closure panels when the carton end closures are formed. The diagonal score lines on the end closures are impressed from the inner surface of the container so that the score line will protrude from the outer surface of the container. These score lines give improved folding and sealing action to the container end closures.

**3,460,740**  
**HEAT-SEALABLE CUSHIONING AND INSULATING STRUCTURES**  
Richard M. Hagen, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
Filed Dec. 22, 1967, Ser. No. 692,901  
Int. Cl. B65d 31/00, 27/10; B29d 27/00  
U.S. Cl. 229—53 9 Claims

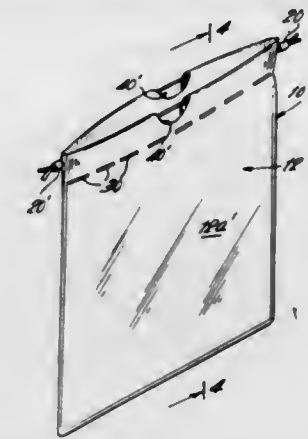


Bags and envelopes composed entirely of thermoplastic polymers, the walls thereof containing at least one layer each of a closed cell foam and an unexpanded film joined along the edges by heat-seal seams.

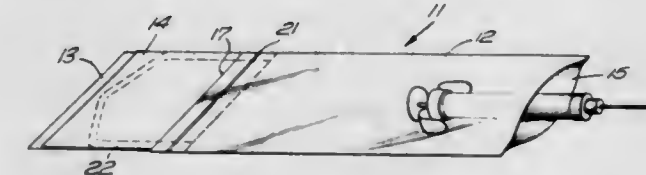
**3,460,741**  
**SIFTPROOF PLASTIC BAG**  
Emanuel Kugler, 124 Richmond Place, Lawrence, N.Y. 11559  
Filed Feb. 12, 1968, Ser. No. 704,725  
Int. Cl. B65d 31/12, 33/28  
U.S. Cl. 229—56 4 Claims

A siftproof construction formed by an outer and inner bag arranged one within the other and wherein the outer

bag has an upper gusset which, when ruptured to remove the bag contents, provides a remaining bag which is convenient for reuse by virtue of having three usable compartments.

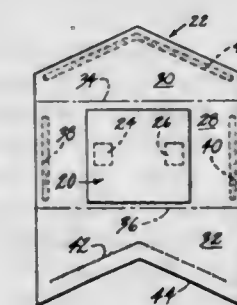


**3,460,742**  
**PEELABLE TRANSPARENT ENVELOPE FOR STERILE ARTICLES**  
Arthur J. Langdon, East Hampton, Conn., assignor to Edward Weck & Company, Inc., Long Island City, N.Y., a corporation of Delaware  
Filed Jan. 29, 1968, Ser. No. 701,320  
Int. Cl. B65d 33/16; A61b 19/02  
U.S. Cl. 229—62 8 Claims



A sterilizable transparent plastic envelope for retaining articles before, during and after sterilization and maintaining sterility of the contents for several months. One end of the envelope is left open for receiving the article to be stored, whereupon it may be sealed for sterilization and storage. The other end is formed with sealed paper tabs which are readily peeled open to expose the enclosed sterile article for removal.

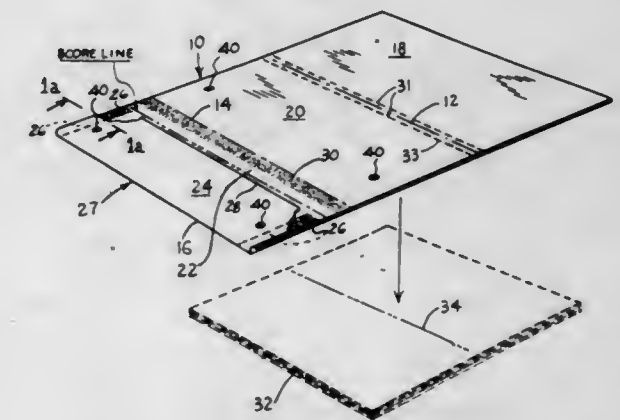
**3,460,743**  
**ENVELOPE WITH INSERTED COUPON**  
Robert C. Burnett, Worcester, Mass., assignor to United States Envelope Company, Springfield, Mass., a corporation of Maine  
Continuation-in-part of application Ser. No. 558,478, June 17, 1966. This application Sept. 22, 1967, Ser. No. 669,903  
Int. Cl. B65d 27/00  
U.S. Cl. 229—70 8 Claims



An envelope made from folded sheet material has a front panel, a rear panel overlying the front panel and

cooperating therewith to at least partially define a pocket and an integrally formed sealing flap providing a closure for the pocket. A coupon positioned in the pocket extends therefrom and is held in an extended position therein by a quantity of adhesive adhering to a portion of the coupon surface and to an adjacent portion of the envelope inner surface. In its dry state the adhesive has a shear strength substantially less than that of the materials from which the envelope and the coupon are made or has a relatively weak bond to at least one of said materials so that the coupon may be pulled out of the envelope without substantial damage to either of the latter materials.

**3,460,744**  
**SHEET FORM TYPE OF BOOK INSERT**  
Eugene Turkenkopf, 615 Warburton Ave., Yonkers, N.Y. 10704  
Filed Mar. 8, 1968, Ser. No. 711,575  
Int. Cl. B65d 27/10, 27/08; B42d 1/00  
U.S. Cl. 229—92.1 2 Claims



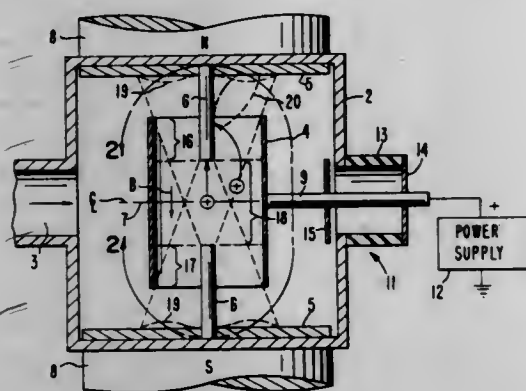
A combined envelope and sheet form constituting a signature insert or cover for a book or the like. The envelope and sheet form has a rectangular shaped body with straight edges. The body of the envelope and sheet form has a transverse fold-line spaced from one end thereof, and also a transverse cut-line spaced inwardly from said fold-line. Another fold-line is provided inwardly from the cut-line. The fold and cut lines divide the body of the envelope and sheet form into page sections. Adjacent sections at one end of the body are folded over each other. The folded over sections are affixed to each other at the ends thereof. The remainder of the folded sections are unattached thereby defining an envelope and as the book is trimmed it is separated from the remainder of the sheet form and is held in position only by the spots of gum. The envelope now may be removed from the sheet form and separated from the book merely by lifting up the envelope. This leaves the book and sheet form in tact as one complete unit and undisturbed thereby facilitating economic and efficient binding of the combined envelope and sheet form and book as one unit.

**3,460,745**  
**MAGNETICALLY CONFINED ELECTRICAL DISCHARGE GETTER ION VACUUM PUMP HAVING A CATHODE PROJECTION EXTENDING INTO THE ANODE CELL**  
Lawrence T. Lamont, Jr., Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California  
Filed Aug. 23, 1967, Ser. No. 662,635  
Int. Cl. F04b 37/02; H01j 7/16  
U.S. Cl. 230—69 10 Claims

A magnetically confined electrical discharge getter ion vacuum pump is disclosed. The pump includes an anode structure having a discharge passageway therein. A cathode structure includes an elongated cathode projec-



tion, preferably made of tantalum, which extends into the discharge passageway from one end and terminates at a point substantially less than halfway along the length



of the discharge passageway to define separate discharge regions therein one being a magnetron discharge and the other being a hollow anode magnetically confined Penning discharge.

3,460,746

**TWO-STAGE INFLATION ASPIRATOR**

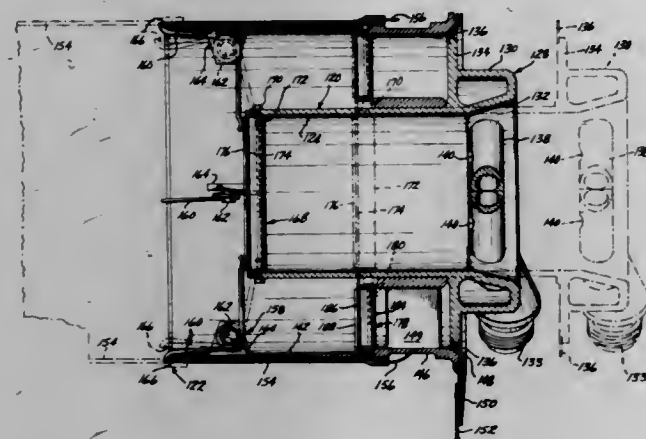
Charles J. Green, Vashon Island, Alan K. Forsythe, Seattle, John W. Goode, Mercer Island, and Lyle D. Galbraith, Redmond, Wash., assignors to Rocket Research Corporation, Seattle, Wash., a corporation of Washington

Filed Oct. 27, 1967, Ser. No. 678,565

Int. Cl. F04f 5/22, 5/48; F16k 15/20

U.S. Cl. 230—104

20 Claims



A first stage ambient air aspirator discharges into a second stage ambient air aspirator which in turn discharges into an inflatable object. A separate valve is provided for each stage. The back pressure in the object operates to automatically close the second stage valve when the back pressure in the object exceeds the pressure of the second stage aspirated air stream. Inflation is completed by the first stage alone. The two valves prevent deflation through the aspirator when inflation has been completed.

3,460,747

**INFLATION METHOD AND APPARATUS**

Charles J. Green, Vashon Island, Alan K. Forsythe, Seattle, John W. Goode, Mercer Island, and Lyle D. Galbraith, Redmond, Wash., assignors to Rocket Research Corporation, Redmond, Wash., a corporation of Washington

Continuation-in-part of application Ser. No. 678,565, Oct. 27, 1967. This application Nov. 5, 1968, Ser. No. 773,587

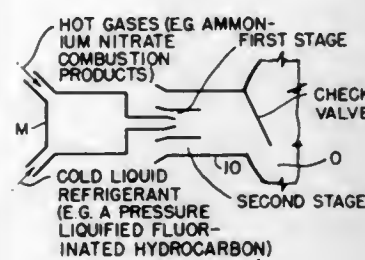
Int. Cl. F04f 5/22, 5/48; F16k 15/20

U.S. Cl. 230—104

5 Claims

Gases under pressure are continuously delivered at a

rate characterized by substantially no pressure droop into the first stage of a two-stage ambient air aspirator connected to a gas confining type inflatable, to serve as the aspirating fluid for the first stage. The first stage effluent is used as the aspirating fluid for the second stage and



the second stage effluent is directed into the inflatable until it is substantially full. Thereafter, the ambient air path for the second stage is valved shut and the first stage effluent alone is used to complete inflation.

3,460,748

**RADIAL FLOW MACHINE**

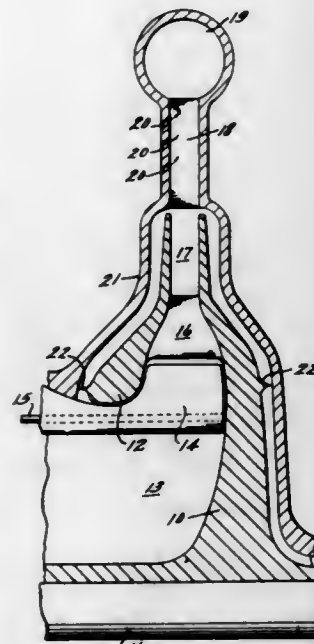
John R. Erwin, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Continuation of application Ser. No. 243,561, Dec. 10, 1962. This application Nov. 1, 1967, Ser. No. 684,585

Int. Cl. F04d 27/00, 17/08

U.S. Cl. 230—114

12 Claims



The disclosure shows a radial outflow compressor having two axially spaced rotor disks. A plurality of highly cambered blades extend between the disks and are disposed generally radially of the rotor axis with the blades being spaced from and concentric of the rotor axis. The disks define an inlet fluid flow path to the blades which directs the entering fluid essentially normal to the rotor axis and outwardly thereof. Guide vanes are provided to properly direct the air radially outwardly towards the highly cambered blades extending between the disks. The opposed surfaces of the disks, from the inward to the outward edges of the blades, are converging so as to form an annular rotating compressor section through which fluid flows from the inlet. The disks extend radially outwardly of the blades to form a rotating diffuser. A stationary, bladed, annular diffuser is disposed concentric of the rotating diffuser and is a continuation of the rotating diffuser. The pressurized fluid thus passes from the rotat-

ing diffuser to the stationary diffuser and is collected by appropriate means for direction to the point of utilization of the pressurized fluid. A second embodiment illustrates an inlet to the compressor wherein fluid may be directed thereto from opposite axial directions.

3,460,749

**CENTRIFUGAL SEPARATION OF LIQUID SOLUTIONS INTO FRACTIONS HAVING HIGHER AND LOWER SOLUTE CONCENTRATIONS**

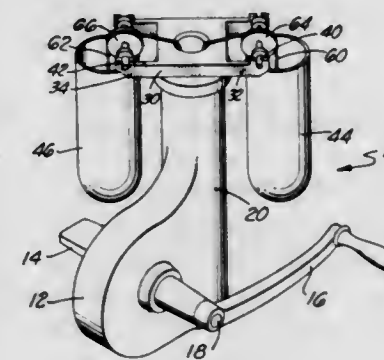
Arthur Seymon Martin, 2316 French St., Santa Ana, Calif. 92706

Continuation-in-part of application Ser. No. 397,470, Sept. 18, 1964. This application Nov. 13, 1967, Ser. No. 684,593

Int. Cl. B01d 21/26, 43/00; B04b 5/02

U.S. Cl. 233—1

1 Claim



Unsaturated liquid solution of solute in a liquid solvent is separated into two solutions which have different concentrations of the solute in the liquid solvent by centrifuging the solution. The centrifuging results in liquid fractions in which the concentrations of the solute in the solvent are different. The separation also includes physically separating the fractions from each other while centrifuging to prevent inter-mixture of the fractions.

3,460,750

**CENTRIFUGAL SEPARATOR**

Cuccolini Silla, Via F. 11i Bandlera No. 1, Reggio Emilia, Italy

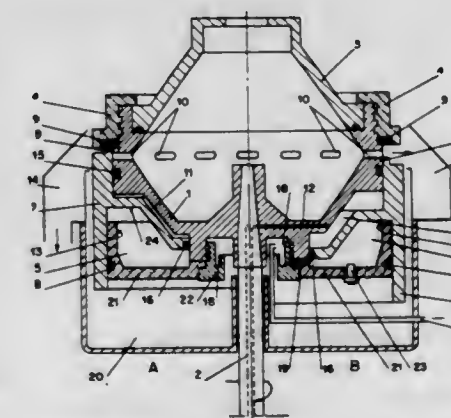
Filed Apr. 12, 1967, Ser. No. 630,247

Claims priority, application Italy, Apr. 21, 1966, 8,976/66

Int. Cl. B04b 11/00

U.S. Cl. 233—20

3 Claims



A centrifugal separator comprising means for closing the separator outlets which is moved in one direction by centrifugal force and in the other by fluid pressure, the actuating mechanism being so located as to prevent contamination of the separator contents by any actuating fluid.

3,460,751

**CENTRIFUGES FOR THE SEPARATION OF LIQUID MIXTURES**

Heinrich Hemfort, Sr., Oelde, Westphalia, Germany, assignor to Westfalia Separator A.G., Oelde, Westphalia, Germany, a corporation of Germany

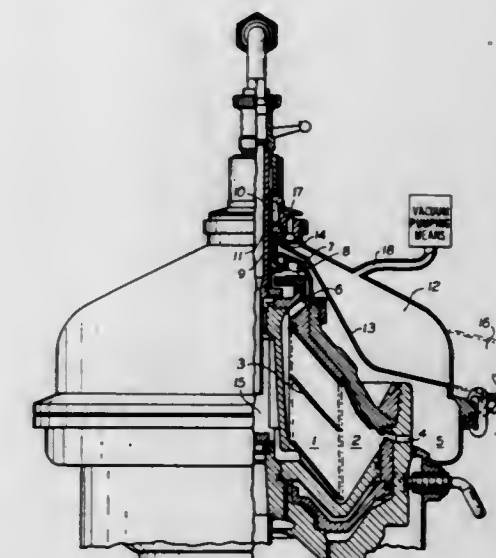
Filed June 26, 1967, Ser. No. 648,788

Claims priority, application Germany, July 15, 1966, W 42,010

Int. Cl. B04b 11/00, 15/00

U.S. Cl. 233—21

3 Claims



This specification discloses a centrifugal apparatus and process carried out therein for the resolution of a liquid mixture which may or may not have solids admixed therewith. There is disclosed a centrifuge having a separating chamber and plate stack in a drum of conventional structure. The lighter component of the liquid flows toward the axis and passes out of the drum through a passageway near the axis. After leaving the drum, this lighter liquid passes through a skimming chamber having at least one skimming disc therein which acts to remove the lighter liquid under pressure to a chamber which communicates with a non-rotating receiver which is at a lower pressure than the liquid. Upon entering the lower pressure area, the component of the liquid having a lower boiling point and higher vapor pressure will flash off, thus purifying the liquid being recovered. The system is applicable to the separation particularly of oil-water mixtures, since the oil is the lighter phase, but the water will flash off upon sudden reduction in pressure, thereby permitting recovery of purified oil.

3,460,752

**APPARATUS FOR PERFORMING PLASMAPHERESIS IN SITU**

Victor Grifols Lucas, Barcelona, Spain, assignor, by mesne assignments, to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois

Original application Nov. 9, 1965, Ser. No. 502,190, now Patent No. 3,407,812, dated Oct. 29, 1968. Divided and this application Sept. 12, 1968, Ser. No. 759,377

Int. Cl. B04b 9/12, 9/14; B01d 43/00

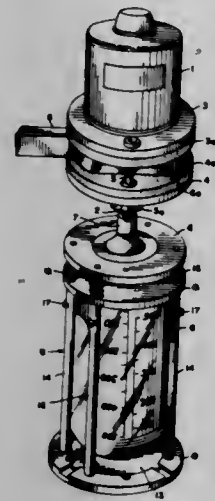
U.S. Cl. 233—26

7 Claims

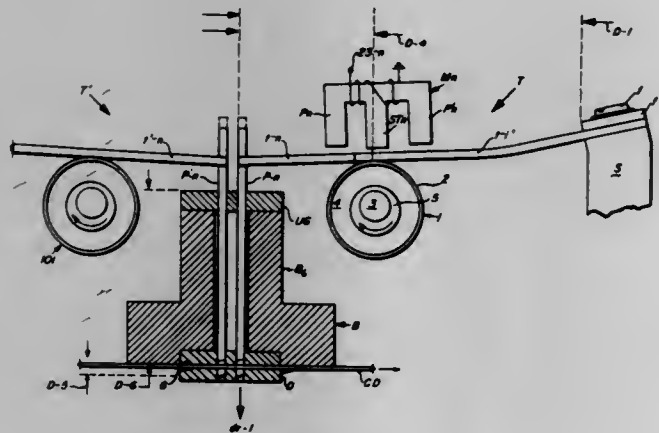
An apparatus for performing plasmapheresis in situ including an inverted blood bottle, a bottle retainer secured to a driven shaft and equipped with means for holding the bottle in inverted position with the bottle's axis in alignment with the axis of the shaft, a motor for rotating the shaft and bottle at a predetermined rotational speed and for gradually reducing the speed of rotation



of the bottle, and cushioning means associated with the motor and bottle for absorbing vibrations which might otherwise be transmitted to the bottle held by the retainer during operation of the centrifuge.



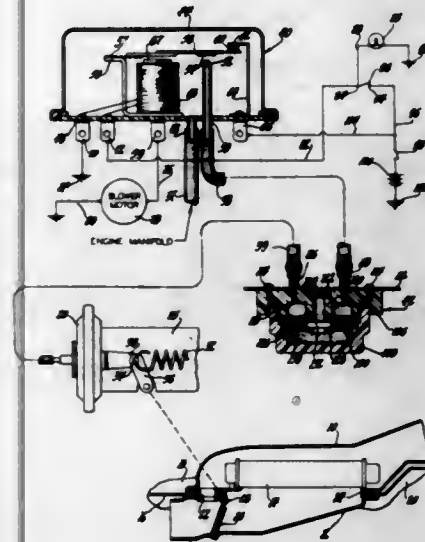
**3,460,753**  
**SPRING ACTUATOR ARRANGEMENT**  
Frank A. Digillo, Medfield, Mass., assignor to Honeywell, Inc., Minneapolis, Minn., a corporation of Delaware  
Filed Dec. 12, 1966, Ser. No. 600,976  
Int. Cl. G06k 1/02  
U.S. Cl. 234—109 10 Claims



A multi-time flexure actuator for use in a punch station adapted for selectively thrusting individual punches disposed in an array. The actuator comprises a set of flexure bars each coupled to one of the punches, means for reciprocating the flexure bars, and magnetic means for selectively positioning the flexure bars in a driving or a non-driving relationship with the reciprocating means.

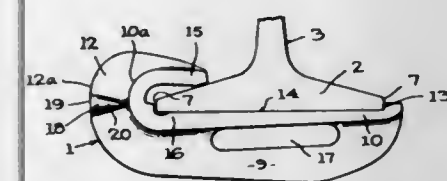
**3,460,754**  
**VACUUM TEMPERATURE CONTROL SYSTEM WITH HOLD**  
Jackson R. Templin and Thomas A. Zickel, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed Aug. 24, 1967, Ser. No. 663,071  
Int. Cl. G05d 23/00  
U.S. Cl. 237—2 1 Claim  
An automobile passenger compartment temperature control system in which modulation of the temperature is dependent upon vacuum supplied by the engine and suitably varied and the control system having an electrically

operated delay relay to de-activate or hold it from operation until the engine coolant is of adequate temperature



for providing heat needed in the desired working of the system.

**3,460,755**  
**RAIL ANCHOR**  
Ralph E. Johnson, Downers Grove, and Arthur D. Van Sant, Lansing, Ill., assignors to Portec, Inc., Chicago, Ill., a corporation of Delaware  
Filed Feb. 9, 1968, Ser. No. 704,354  
Int. Cl. E01b 13/02  
U.S. Cl. 238—315 8 Claims



A rail anchor having a hook at one end and including an outwardly extending flange. An enlarged striking head is provided in the medial area of the hook and presents a striking face having a lateral dimension substantially greater than that of the anchor flange.

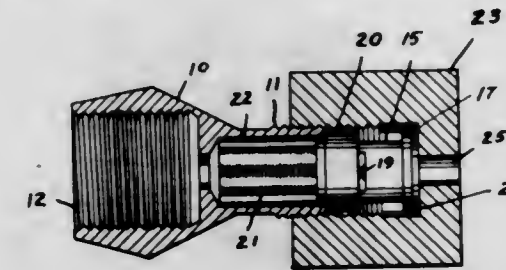
**3,460,756**  
**INSULATING FASTENER FOR A RAILWAY RAIL**  
Leopold Stewart Sanson, Surrey, England, assignor to Locksple Limited, London, England, a British company  
Filed Nov. 15, 1967, Ser. No. 683,386  
Int. Cl. E01b 9/00, 13/00, 21/04  
U.S. Cl. 238—338 6 Claims



A device for electrically insulating a railway rail from parts for securing it consists of an elongate metal member of substantially L-shaped cross-section and an electrically insulating member extending across those faces of the limbs of the L which are on the inside of the angle of the L. Projections on one of the two members prevent the device from sliding along the rail. The device is placed on the edge of the rail flange with one limb of the L between a resilient rail-fastening member and the top of the flange and the other limb of the L between the edge of the rail flange and an anchoring member. The rail-fastening member engages said metal member and the in-

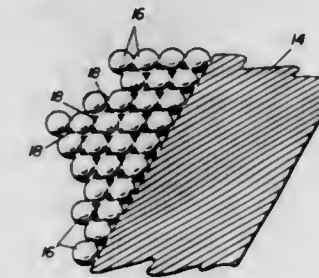
insulating member insulates the flange from the rail-fastening member and from the anchoring member.

**3,460,757**  
**CLEANING ATTACHMENT FOR SPRAY PAINTING DEVICE**  
James E. Adams, 1102 Candy Lane, Erie, Pa. 16505  
Filed May 11, 1967, Ser. No. 637,791  
Int. Cl. B05b 15/02  
U.S. Cl. 239—119 1 Claim



A reversible paint nozzle and adapter made up of a hollow threaded nozzle sleeve that has a hole in one end to be threadably received on a male threaded paint gun. A nozzle being cylindrical and having a cylindrical flange at one end. An inner cylindrical member is supported against the end of the threaded male member and the flange of the nozzle rests against the inner member with the cylindrical part of the nozzle extending through the hole in the nozzle sleeve. An adapter is provided being internally threaded and adapted to receive the nozzle when reversed so that the flanged end is adjacent the reduced size hole in the adapter. Thus the nozzle adapter can be made shorter and the male threaded member does not have to have the extreme length that would be necessary if the nozzle adapter were made to receive the nozzle in both positions.

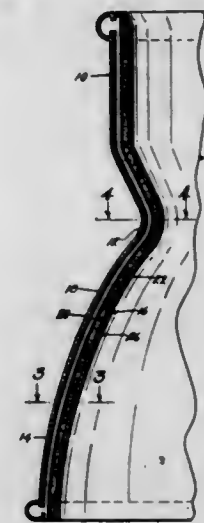
**3,460,758**  
**COOLING LINERS FOR ROCKET THRUST NOZZLE**  
James D. McGregor, Logan, Utah, and Richard E. Corder, Monroeville, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware  
Filed Nov. 16, 1966, Ser. No. 594,788  
Int. Cl. B64d 33/04; F02k 1/24  
U.S. Cl. 239—127.1 4 Claims



A cooling liner for convergent-divergent, hollow-cone, rocket nozzles, the liner having annuli of solid, refractory material axially stacked alternately with annular, refractory, porous matrices made of tiny, welded-together spheres with solid coolant filling the spaces between them.

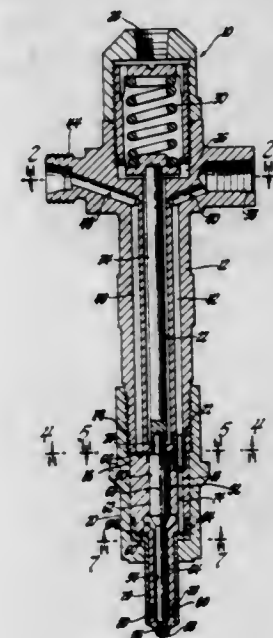
**3,460,759**  
**COMBUSTION CHAMBER**  
John W. Gregory, Middleburg Heights, and Donald L. Nored, Cleveland, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration  
Filed Mar. 7, 1967, Ser. No. 621,742  
Int. Cl. B64d 33/04  
U.S. Cl. 239—127.1 14 Claims  
A rocket combustion chamber including a downstream convergent-divergent throat section and having an inner wall of high temperature material, an outer structural

wall spaced from the inner wall, a plurality of regenerative coolant tubes of constant cross-section longitudinally disposed in the space between the walls, and a variable thickness, powdered-ceramic heat barrier also disposed in such space and encasing the coolant tubes therein. The



coolant tubes are spaced apart at the combustion chamber portion and are contiguous at the throat section. Heat dispensing fins are disposed between and secured to the tubes at the combustion chamber portion. The heat barrier is of increased thickness at the throat-section.

**3,460,760**  
**FUEL INJECTION NOZZLE ASSEMBLY**  
Elmer Bluhm, Grandville, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed June 15, 1967, Ser. No. 646,258  
Int. Cl. B05b 15/00, 1/30  
U.S. Cl. 239—132.3 4 Claims



A cooled fuel injection nozzle assembly provides a holder and abutting nozzle, the latter having a central needle valve and fuel receiving chamber. Oppositely disposed fuel delivery ducts in the nozzle supply fuel to opposite sides of said chamber and connect through a semicircular duct between the nozzle and holder with a single supply duct in the holder. Coolant passages in the nozzle are connected with inlet and outlet ducts passing

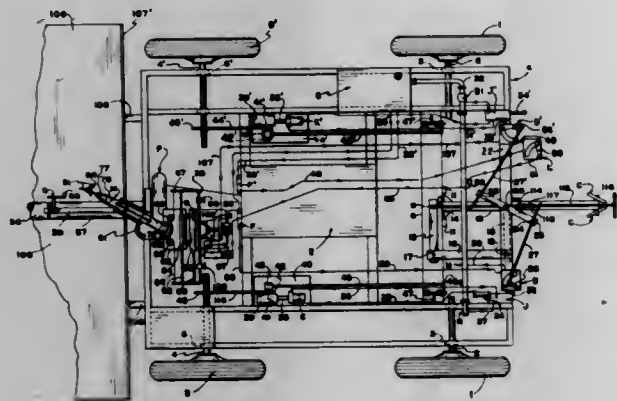


through hollow dowels in the holder and nozzle. The dowels are angularly spaced from the delivery ducts and index the nozzle and holder to properly locate their connecting ducts.

3,460,761

**ROBOT IRRIGATOR**

Ralph Tuck, P.O. Box 1046, Missoula, Mont. 59801  
Filed Mar. 23, 1967, Ser. No. 625,357  
Int. Cl. B05b 3/14, 9/06; B62d 11/04  
U.S. Cl. 239—179 6 Claims

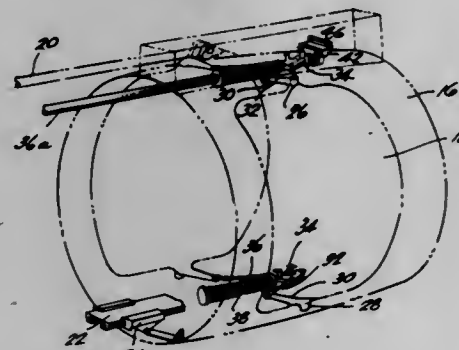


The robot irrigator has an automatic steering mechanism for causing the machine to follow a ditch filled with water. The machine will suck up water from the ditch and propel the water through a nozzle that swings in an arc to throw the water on both sides of the machine and to the rear as the machine travels along the ditch. The swinging of the water nozzle can be controlled to oscillate the nozzle in an arc up to about 180° and to water any portion of this arc. The machine will automatically stop at the end of the ditch.

3,460,762

**THRUST REVERSER ROLLER LATCH**

Carl A. Weise, San Pedro, Calif., assignor to McDonnell Douglas Corporation, a corporation of Maryland  
Filed July 24, 1967, Ser. No. 655,485  
Int. Cl. B65c 15/04; B64b 1/36; F02k 1/24  
U.S. Cl. 239—265.29 4 Claims

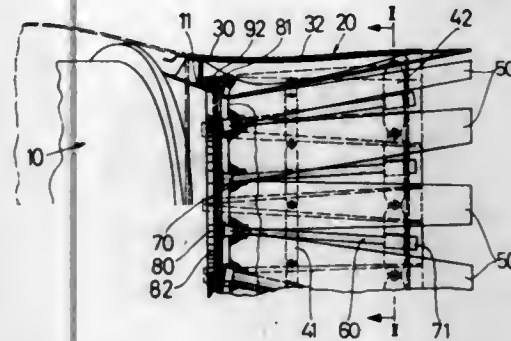


This invention relates to apparatus for reversing the gas discharge of a jet aircraft engine wherein the reversing bucket ring first translates rearwardly before the buckets turn inwardly to their reverse position, and wherein the buckets must return to their stowed position before the ring can be moved forward to the normal flight position. The roller latch is a feature which insures that the buckets are properly oriented before the ring can move forward again.

3,460,763

**VARIABLE-AREA NOZZLE**

Gerhard Kopp, Munich, Germany, assignor to Entwicklungsring Sud G.m.b.H., Munich, Germany, a corporation of Germany  
Filed Apr. 12, 1967, Ser. No. 630,414  
Claims priority, application Germany, Apr. 28, 1966, E 31,552  
U.S. Cl. 239—265.43 6 Claims

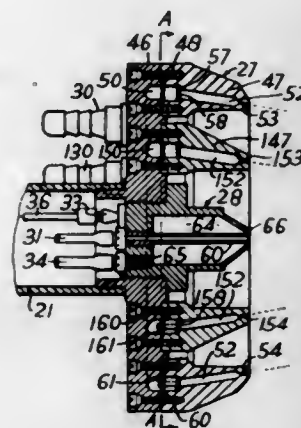


An afterburner nozzle having a spring steel outer shell having a plurality of longitudinal slots, an inner shell located within said outer shell, tension bands limiting the expansion of shells and motor operated spindles for adjusting the diameters of said bands.

3,460,764

**COATING APPARATUS**

Neil R. Wallis, "Cariad," Goring on Thames, Oxfordshire, England  
Filed Aug. 9, 1965, Ser. No. 478,074  
Claims priority, application Great Britain, Aug. 13, 1964, 32,979/64  
Int. Cl. F23d 11/16, 11/28; B05b 5/00  
U.S. Cl. 239—422 1 Claim



Electrostatic spray coating apparatus for use in the open air and provided with two rings of air jets. The inner ring of air jets produces a convergent air stream controlling the natural divergence of the paint particles, and the outer ring of jets produces a protective air stream designed to eliminate the effect of the wind on the atomized particles.

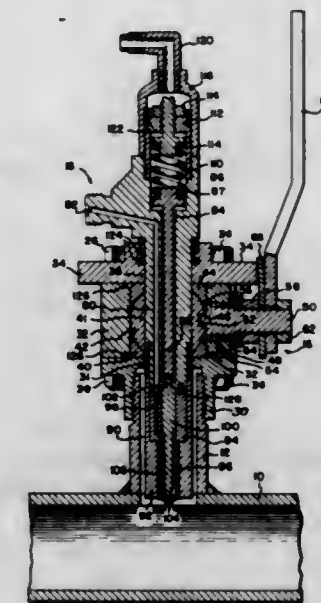
3,460,765

**APPARATUS FOR INJECTING LIQUID INTO A GAS LINE**

Walter R. Lord, Longview, Tex., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware  
Filed Sept. 15, 1967, Ser. No. 667,900  
Int. Cl. B05b 1/32; F16k 51/00  
U.S. Cl. 239—533 4 Claims

Apparatus for injecting liquid into a gas line comprising a ball valve assembly attached to a lateral inlet

to the gas line and suitable for having inserted there-through a nozzle assembly which has an interior liquid supply duct terminating in an opening to the gas line; the



nozzle assembly further being provided with adjustable plunger means for varying the cross-sectional area of the nozzle opening.

3,460,766

**ROCK BREAKING METHOD AND APPARATUS**

Erich Sarapuu, Kansas City, Mo., assignor, by mesne assignments, to Small Business Administration, Kansas City, Mo., an independent agency of the United States Government  
Filed June 13, 1966, Ser. No. 556,948  
Int. Cl. B02c 19/00, 23/00  
U.S. Cl. 241—1 17 Claims



1. A process in aid of fracturing rocks comprising contacting two spaced apart zones of a rock mass with a pair of relatively large yet limited area multi-point contact electrodes against the rock within said area and flowing sufficient electrical power into said rock to effect heating of a plurality of internal channels of relatively high conductivity in said rock, thereby creating a multiplicity of thermal stresses within said rock.

3,460,767

**PROCESS FOR DISPERSING PIGMENTS IN LIQUID MEDIA**

Leif Asbjornson Sonsthagen, 28 Wimbledon Close, The Downs, London SW. 20, England  
No Drawing. Filed Feb. 2, 1965, Ser. No. 429,897  
Claims priority, application Great Britain, Feb. 6, 1964, 5,036/64  
Int. Cl. B02c 1/12 5 Claims

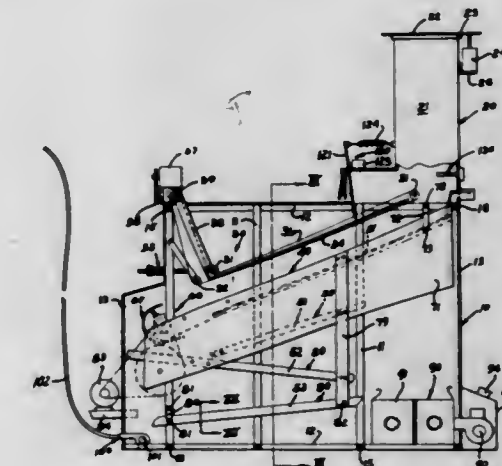
1. A continuous process for dispersing pigments in liquid media which comprises causing a mill base to flow by gravity through a grinding tank in which it is agitated with solid grinding material, diluting the mill base by substantially continuously injecting a variable volume of a suitable diluting vehicle into at least one point of a milling

chamber so as to ensure that the consistency of the mill base does not increase to the point where the milling efficiency of the machine is reduced and the mill base fails to flow sufficiently rapidly through any screen which is used to separate the mill base from the grinding media at the conclusion of the grinding process.

3,460,768

**DRYING AND PULVERIZING DEVICE**

Harvey M. Wenger, Zeeland, Mich., assignor, by mesne assignments, to DCA Corporation, Benton Harbor, Mich., a corporation of Michigan  
Filed July 18, 1966, Ser. No. 565,956  
Int. Cl. B02c 21/00, 13/04, 13/31  
U.S. Cl. 241—17 32 Claims

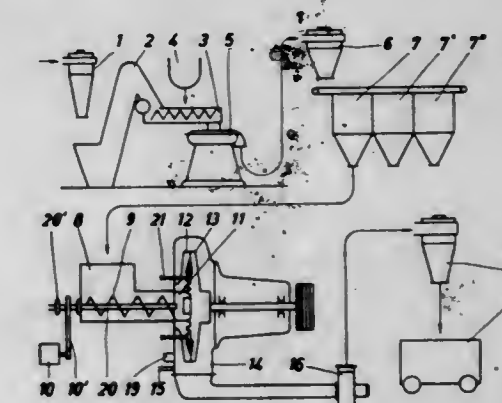


A plurality of tray devices positioned within a housing at angles to the horizontal and arranged to migrate material desired to be dried and pulverized downwardly and along successive such trays, including a means intermediate the beginning and ending points of material travel for pulverizing partially dried material with a beating action while simultaneously projecting material from the pulverizing zone to a different zone for additional drying.

3,460,769

**METHOD AND APPARATUS FOR RECLAIMING RUBBER SCRAP**

Herbert Alfred Merges, Werkstrasse 1, 6451 Wolfgang, Germany  
Filed July 12, 1966, Ser. No. 564,694  
Claims priority, application Germany, July 20, 1965, U 11,897  
Int. Cl. B02c 1/00; B01d 45/12  
U.S. Cl. 241—17 8 Claims



Vulcanized rubber scrap is reclaimed by heating and intimately mixing it with additives after the scrap has been pulverized, and this heated mixture is subjected to centrifugal forces while being exposed in a matter of second to friction, milling, shearing and crushing forces in a pulsating manner.



### 3,460,770 STATOR WINDING APPARATUS

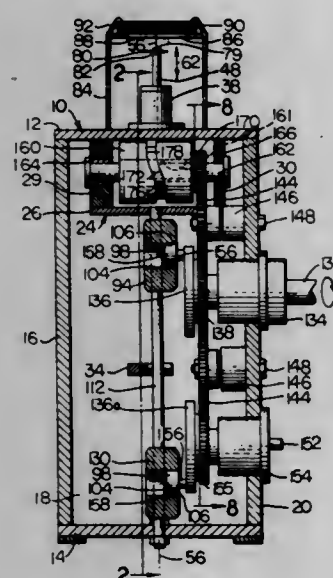
Robert J. Eminger, Fort Wayne, Ind., assignor to Fort Wayne Tool & Die, Inc., Fort Wayne, Ind., a corporation of Indiana

Filed Jan. 30, 1967, Ser. No. 612,487

Int. Cl. B65h 81/06

U.S. Cl. 242—1.1

11 Claims



An apparatus for converting rotary motion into reciprocal motion which is especially useful in high-speed gun-type stator winding machines. Two elongated gun-type winding head assemblies are mounted on a frame. Each of the assemblies has a longitudinal axis and is movable in relation to the frame in the direction of its axis. Two "Scotch yokes" are mounted on the frame in a manner rendering them also movable in relation to said frame in the direction of the assembly axes. One of the yokes is secured to both assemblies; the other of the yokes is movable independently of the assemblies. A shaft and two cranks are mounted on the frame. Each of the cranks and the shaft are rotatable with respect to the frame. The cranks have separate and spaced-apart axes of rotation. The cranks are operatively connected to the yokes, respectively. The cranks are fixed in relation to the shaft, and are 180° out of identical rotational relation in respect to the shaft. Selective clearances between the assemblies, yokes and frame are provided to allow for any expansion of the yokes in a direction transverse to the assemblies during operation. A barrel cam is positioned between the assemblies and mounted on the frame in a manner allowing the cam to rotate with respect to said frame. The barrel cam is connected to the shaft and to each of the assemblies whereby the rotation of the shaft simultaneously rotates each of the assemblies alternately in opposite directions as the assemblies and yokes reciprocate in the direction of the assembly axes in a manner minimizing vibration and wear due to the expansion of the yokes during operation.

### 3,460,771 BEAMING MACHINE

William Harry Kimpton, Quarry Bank Mills, Styal, Wilmslow, Cheshire, England

Filed Apr. 17, 1967, Ser. No. 631,443

Claims priority, application Great Britain, Apr. 30, 1966, 19,091/66

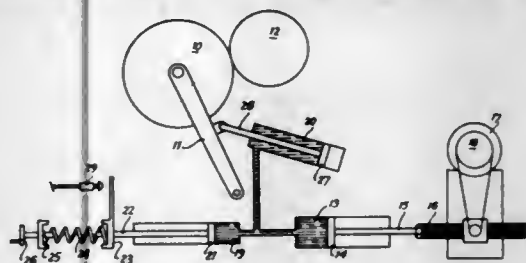
Int. Cl. D02h 5/00, 13/00; B65h 17/08

U.S. Cl. 242—18

6 Claims

Beam swingable upwardly against a fixed pressure roller by means of a hydraulic piston-cylinder device. As material builds up on beam, latter moves downwardly and pressurizes the hydraulic fluid. Pressure is taken up by a spring acting upon another piston. When spring reaches a certain degree of compression, a switch is actuated, thus causing a third piston to move in a direction to re-

lieve pressure on the hydraulic fluid, and move the beam away from the pressure roller. In consequence, switch is



deactuated, and as material continues to build up on beam, spring once again becomes compressed.

### 3,460,772 THREAD-WINDING DEVICE FOR SEWING MACHINES

Luigi Bono, Pavia, Italy, assignor to Necchi Societa per Azioni, Pavia, Italy

Filed Mar. 13, 1967, Ser. No. 622,611

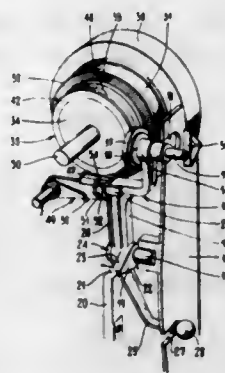
Claims priority, application Italy, Mar. 18, 1966,

Patent 762,611/66

Int. Cl. B65h 54/82

U.S. Cl. 242—20

10 Claims



A sewing machine having a spool winding device wherein the respective driving engagements of the winding device and of the machine main shaft relative to the power driving means are controlled simultaneously and automatically relative to each other through a single maneuver of the machine operator upon a single control member.

### 3,460,773 AUTOMATIC REWINDING APPARATUS

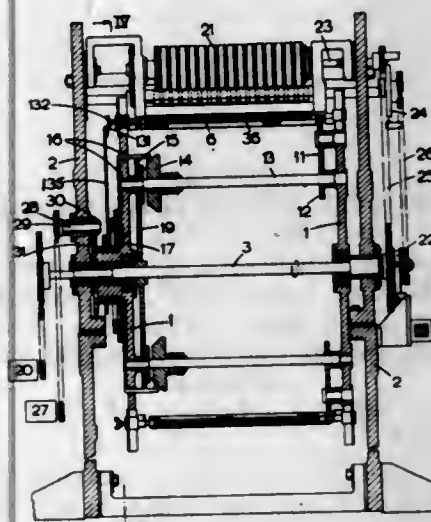
Edward A. Breacker, London, England, assignor to Societe d'Etudes de Machines Speciales

Filed Apr. 23, 1965, Ser. No. 450,312

Int. Cl. B65h 35/04, 75/34

U.S. Cl. 242—56.6

15 Claims



The present apparatus is for rewinding a web into separate rolls on one mandrel at a time with a plurality of said mandrels being detachably positioned on a rotatable

turret with means for rotating the turret intermittently to locate one mandrel at a time at a web rewinding station, means for driving each mandrel at said station to rewind the web on the rotating mandrel, means for displacing the rewound mandrel from the rewinding station and replacing it by an empty mandrel carried in an adjacent mounting, a guillotine for severing the web after the rewound mandrel has been so displaced and means for engaging the severed supply end of said web with a slot in said empty mandrel.

### 3,460,774

#### CLOTH ROLL CARRIER

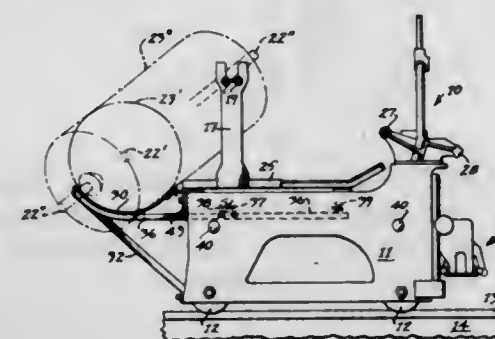
Thomas W. Martin, Nashville, Tenn., assignor to Cutters Machine Company, Inc., Nashville, Tenn., a corporation of Tennessee

Filed Nov. 20, 1967, Ser. No. 684,206

Int. Cl. B65h 19/02

U.S. Cl. 242—58

5 Claims



A frame having a pair of transversely spaced, upright standards adapted to rotatably support the spindle of a cloth roll, and an auxiliary cloth roll carrier mounted upon the frame adjacent the standards, the proximate end of the auxiliary roll carrier being spaced inwardly toward the remote side of the frame to provide a fulcrum upon which an auxiliary cloth roll may be pivoted for manipulating the remote end of the spindle into position supported on the remote standard.

### 3,460,775

#### TURRET UNWINDER

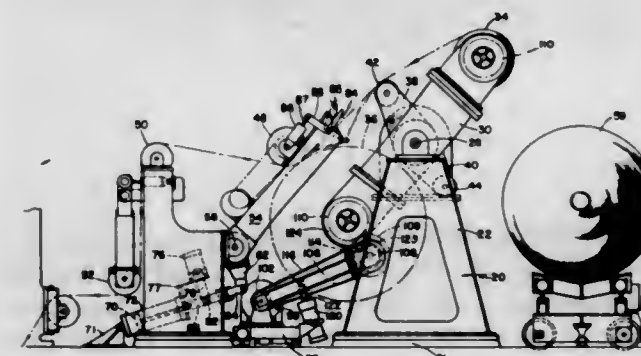
Frank Peter Ford and Kirk Walter Bassett, Worcester, Mass., assignors to Rice Barton Corporation, Worcester, Mass., a corporation of Massachusetts

Filed Mar. 13, 1967, Ser. No. 622,672

Int. Cl. B65h 19/14

U.S. Cl. 242—58.3

6 Claims



A turret unwinder having: a reel rotatable about an axis providing support for two rolls in unwinding and reserve locations, means for drawing a web from the roll at the unwinding location past the roll at the reserve location, means rotating the reel in a direction opposite to the roll draw-off direction for moving a roll from the reserve location to the unwind location and thence to an intermediate roll replenishing location, a paste roll normally located in an operative position adjacent the reserve roll location and movable to engage the travelling web

against the reserve roll for pasting, and to an alternative inoperative position beyond the orbital path of the web rolls, and means operable prior to exhaustion of a web roll at the roll unwind location for moving the paste roll and engaged traveling web against the reserve web roll, thereafter for retracting said paste roll to the alternate inoperative position for movement of the reel to the intermediate replenishing location, and thereafter to the operative position adjacent the reserve roll location.

### 3,460,776

#### FILM WINDING APPARATUS

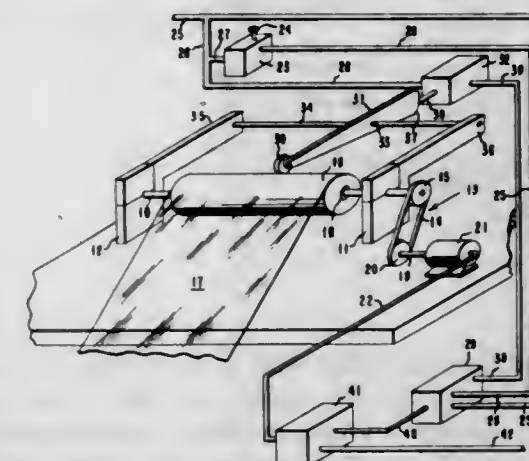
Theodore Donald Stiegler, James Phillip Janosik, and Edward Brantley Burns, Richmond, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 7, 1967, Ser. No. 688,758

Int. Cl. B65h 77/00

U.S. Cl. 242—75.53

6 Claims



An apparatus for winding film material into roll from upon a mandrel driven by a pneumatically operated drive system in which the winding torque delivered by the drive system is controlled by a variable pressure signal which is a function of the diameter of the winding roll as determined by an associated diameter sensing assembly.

### 3,460,777

#### DEPOSITION OF A CONTINUOUS STRING OF TURNS OF WIRE UPON A CONVEYOR

Egbert Schröder, Lank, Germany, assignor to Scholemann Aktiengesellschaft, Düsseldorf, Germany, a company of Germany

Filed Jan. 31, 1968, Ser. No. 701,883

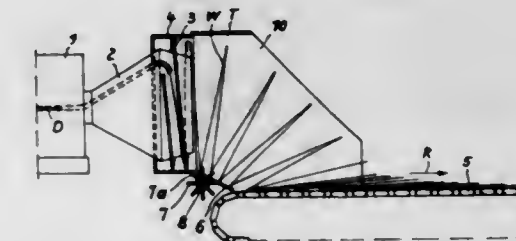
Claims priority, application Germany, Feb. 4, 1967,

Sch 40,177

Int. Cl. B21c 47/00

U.S. Cl. 242—83

9 Claims



A method of and means for laying a continuous series of turns of wire upon a conveyor having a substantially horizontal conveyor plane, wherein turns of wire, coming from a turn-layer, are deposited over-lapping one another upon the conveyor, and a relative movement,

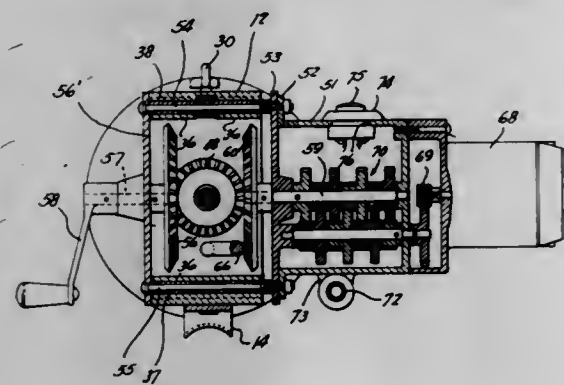


transverse to the direction of movement of the conveyor, is imparted to the turns of wire by rotatable deflecting means applied to the foot points of the turns of wire laterally of the axis of symmetry of the conveyor, the said transverse movement being directed in each case obliquely and laterally to the direction of fall of the turns.

**3,460,778**  
**MANUAL-ELECTRIC FISHING REEL**  
Melvin T. Folbrecht, Rte. 3, Box 192,  
Fort Pierce, Fla. 33450  
Filed Mar. 18, 1966, Ser. No. 535,426  
Int. Cl. A01k 89/00, 89/02

U.S. Cl. 242—84.2

3 Claims

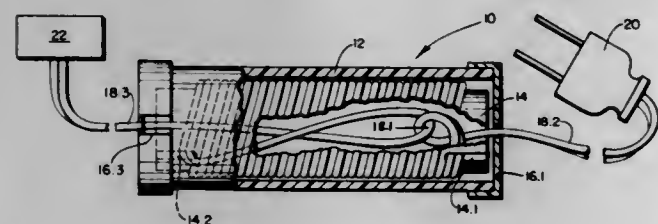


A spinning reel is provided with a main housing supporting a transversely slidable casing, one side of the casing carrying an electric motor coupled through gearing to a first bevel gear, the other side of the casing carrying a hand crank and second bevel gear. A manually-operated crankshaft is selectively engageable with the bevel gears to slide the casing so that one or the other bevel gears meshes with winding mechanism of the reel to afford manual or electric motor drive. The windings mechanism includes a driven shaft and notched winding drum selectively moved between casting and winding positions by a suitable manually operable lever. The spool of the reel is held normally non-rotatable by an adjustable brake.

**3,460,779**  
**CORD HOLDER AND STORAGE DEVICE**  
Curtiss M. Peasley, W. Medford, Mass.  
(25 Boulder Drive, Burlington, Mass. 01803)  
Filed July 14, 1967, Ser. No. 653,471  
Int. Cl. B65h 75/36

U.S. Cl. 242—85.1

1 Claim



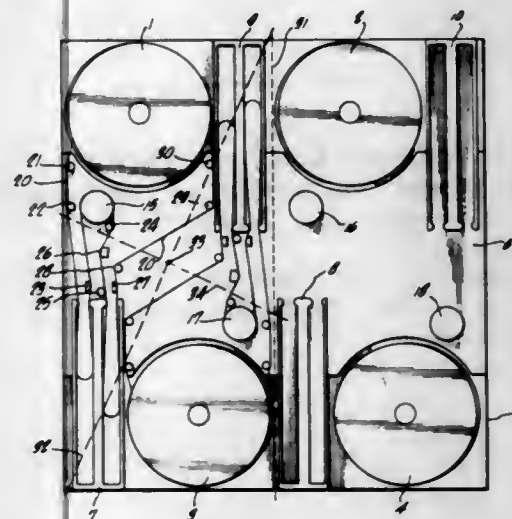
A device for shortening and storing the excess lengths of electrical line cord, between an electrical appliance and the electrical plug at the end thereof wherein the line cord is first looped through the central bore of a hollow core, wound about the outside of the core and then secured to the core by running the free end through the previously formed loop. The device is further provided with a cover for the wire and with end covers to secure the device against dust.

**3,460,780**  
**MULTIPLE STATION TAPE HANDLING APPARATUS**

Magne Jarle Kjos, Duarte, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan  
Filed Apr. 28, 1967, Ser. No. 634,723  
Int. Cl. G11b 15/44

U.S. Cl. 242—180

14 Claims



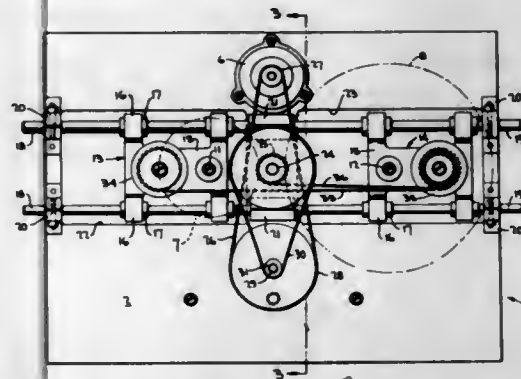
A plurality of spaced-apart pairs of coaxially arranged tape reels and a common work surface for transporting the tape from each pair of reels. Vacuum column pairs are arranged in staggered relationship in two rows such that all the vacuum columns are parallel to one another. Each reel pair is located substantially across from the vacuum column pair that serves it. The tape handling stations, each including one reel pair, are grouped in couples such that the components of each couple occupy a rectangular area having an odd-function positional relationship.

**3,460,781**  
**TAPE RECORDER**

Paul W. Uber, Bowie, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration  
Filed Sept. 6, 1967, Ser. No. 666,551  
Int. Cl. G11b 15/44

U.S. Cl. 242—192

4 Claims



A tape recorder including a capstan having a resilient, deformable cylindrical drive surface adapted to directly couple and simultaneously drive both magnetic tape take-up and supply reels by frictional surface engagement with the outer layer of magnetic tape carried on the periphery of each reel. The takeup and supply reels are supported on slidably mounted carriages and nonaccumulative force springs are provided to control movement of the carriages with respect to the capstan, so as to maintain a greater contact force between the capstan and the magnetic tape carried on the periphery of the takeup reel than on the magnetic tape carried on the periphery of the supply reel, whereby magnetic tape during transfer between reels is subjected to a desired tension.

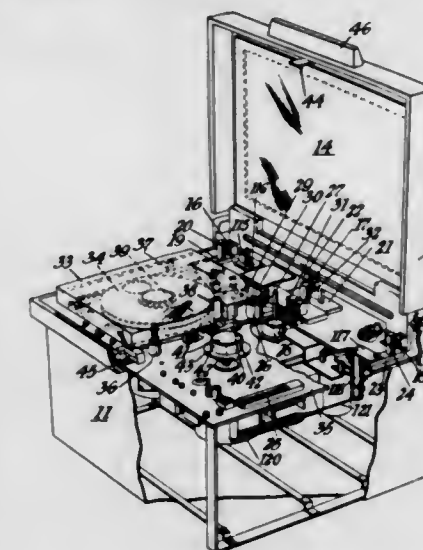
The invention described herein was made by an employee of the United States Government and may be

manufactured and used by or for the Government for governmental purposes without the payment of any royalties thereon or therefor.

**3,460,782**  
**PORTABLE MAGNETIC TAPE RECORDER**  
Heinz Helmuth Findeisen, Feltham, England, assignor to Epsilon Research and Development Company Limited, Bedford, Feltham, England, a British company  
Filed Sept. 22, 1966, Ser. No. 581,283  
Claims priority, application Great Britain, Sept. 27, 1965, 40,959/65, 40,960/65, 40,961/65  
Int. Cl. C11b 15/32

U.S. Cl. 242—198

8 Claims



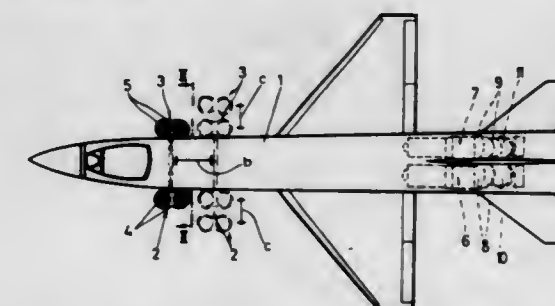
A portable tape recorder built into a container having a hinged lid and containing a mechanism panel with slides which are moved when the lid is closed, the mechanism panel being arranged to accept a cassette containing two tape spools which are automatically engaged when the cassette is pressed into position on the mechanism panel, closure of the lid actuating the slides to cause a pinch roller to engage the tape with the capstan and to move arms with tape guide rollers so that the tape is brought into operative contact with magnetic recording and/or playback heads.

**3,460,783**  
**APPARATUS FOR POSITIONING OF THE THRUST ENGINES OF A VERTICAL TAKE-OFF AND LANDING AIRCRAFT**

Joseph A. Erich Haberkorn, Riemerling, Germany  
assignor to Bolkow G.m.b.H., Ottobrunn, Germany  
Filed Aug. 9, 1967, Ser. No. 659,354  
Claims priority, application Germany, Aug. 11, 1966, B 88,427

U.S. Cl. 244—56

8 Claims



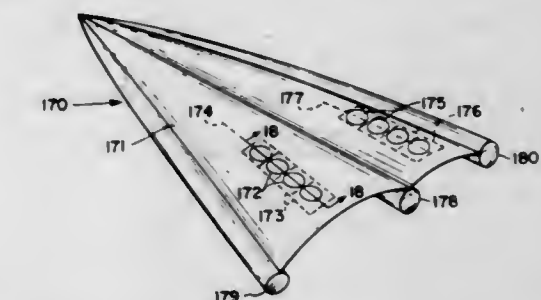
The embodiment illustrated includes apparatus for selectively positioning in three geometric planes the four forward jet engines of a vertical take-off and landing aircraft. Each pair of forward engines is mounted upon one end of a pair of support rods, the remaining ends of which are coaxially positioned within a cylindrical sleeve which passes through the nacelle of the aircraft. Pressurized fluid is selectively introduced into the sleeve so

as to cause axial sliding movement of the rods with respect thereto so as to permit positioning of the engines along a plane transverse to the longitudinal axis of the fuselage. Serving to provide movement of the engines along a plane parallel to the fuselage is means for shifting the sleeve along the longitudinal axis of the fuselage. The angle of intersection between the longitudinal axis of the fuselage and the axis of the forward engines is selectively determined by a hydraulic actuator which causes rotary movement of the support rods and thus the engines with respect to the fuselage.

**3,460,784**  
**CONTROL DEVICES FOR FLEXIBLE WING AIRCRAFT**  
Francis M. Rogallo, 17 Milford Road,  
Newport News, Va. 23601  
Original application Jan. 17, 1964, Ser. No. 338,537, now Patent No. 3,396,921, dated Aug. 13, 1968. Divided and this application Sept. 1, 1967, Ser. No. 670,004  
Int. Cl. B64c 3/38; B64d 17/00

U.S. Cl. 244—138

3 Claims

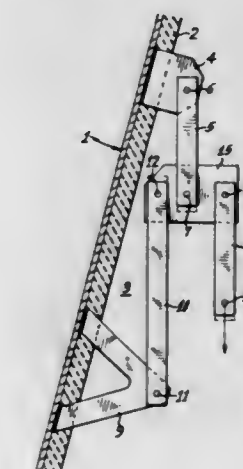


This invention is a control for a flexible wing aircraft. The flexible wing aircraft has a generally triangular-shaped superstructure including a centrally disposed keel and angularly disposed leading edge members, connected to the apex of the keel. A flexible membrane-like material is fixed to the keel and leading edge members to form wing panels and a lift surface. Apertures are formed in the membrane-like material in the trailing edge area of the vehicle. Covers are provided for the apertures, an actuator being attached to the covers to open and close the apertures. The opening and closing of the apertures spoils the airflow over the wing panels providing a means for controlling the vehicle.

**3,460,785**  
**EQUIPMENT SUPPORT**  
Farsheed Abidi, Jackson Heights, N.Y., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware  
Filed Oct. 10, 1967, Ser. No. 674,253  
Int. Cl. F16m 1/00

U.S. Cl. 248—17

5 Claims

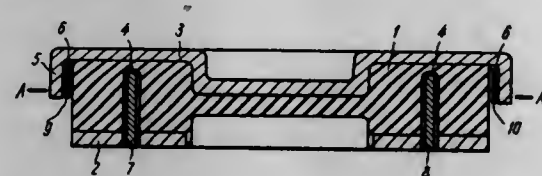


An equipment support and guide adapted for use under high or low temperatures in which expansion or contrac-



tion of lever arms acting in unison operate to compensate for the expansion of the body being supported or guided and to maintain a constant tension on the body.

**3,460,786**  
**ELASTIC VIBRATION-PROOF SUPPORT**  
Evgeny Izrailevich Rivin, Ulitsa Vavilova 44, Korpus 4, Kr. 61, Moscow, U.S.S.R.  
Filed Oct. 4, 1967, Ser. No. 672,774  
Int. Cl. E02d 27/44; A47j 45/02  
U.S. Cl. 248—22 7 Claims



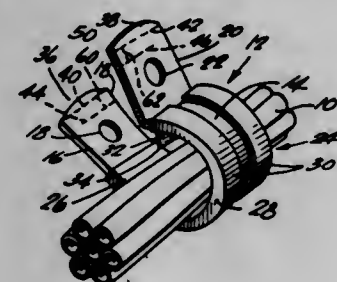
An elastic vibration-proof support which comprises an elastic shock absorbing member interposed between a base and a cover and forming a gap with a side wall of the cover, the elastic member having a groove formed therein, there being a gap-block of greater hardness than the elastic member removably inserted into the groove and/or gap to reduce the size thereof and increase the stiffness of the support.

**3,460,787**  
**CABLE GUARD**  
Charles L. Petze, Jr., New Castle, Del., assignor to Delaware Research & Development Corporation  
Filed Apr. 13, 1967, Ser. No. 630,575  
Int. Cl. F16l 3/02  
U.S. Cl. 248—60 6 Claims



Distribution cables are frequently supported using cable spacers bearing saddles in which the cables rest. This invention provides guards that grip the spacer and that have a holding, protective element for the cable.

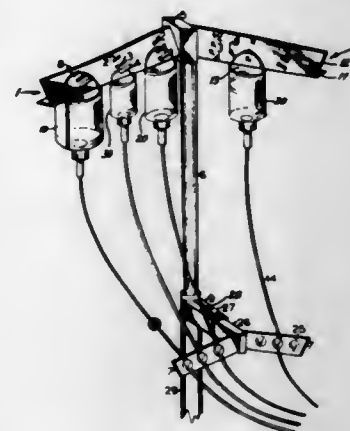
**3,460,788**  
**CLAMP LATCH**  
Israel Goldman, Los Angeles, Calif., assignor to McDonnell Douglas Corporation, a corporation of Maryland  
Filed Oct. 2, 1967, Ser. No. 672,112  
Int. Cl. F16l 3/08, 3/14  
U.S. Cl. 248—74 2 Claims



An improved latch consisting of inter-engaging tabs on the feet of a clamp for temporarily retaining the

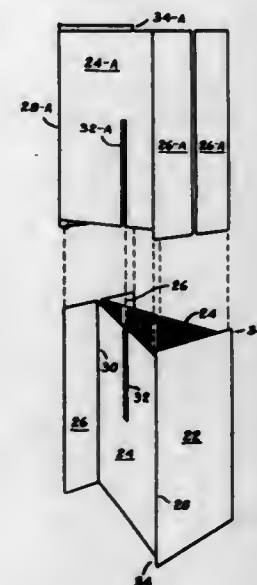
clamp in closed position around the elongated members to be supported thereby when affixed to a supporting structure.

**3,460,789**  
**CONTAINER SUSPENSION DEVICE**  
Robert W. McKirdy, Scarsdale, and Harvey J. Engelher, Yonkers, N.Y., assignors, by direct and mesne assignments, to Horizon Industries, Ltd., a corporation of New York  
Filed Apr. 12, 1966, Ser. No. 542,434  
Int. Cl. A47b 73/00; A61m 5/14  
U.S. Cl. 248—146 4 Claims



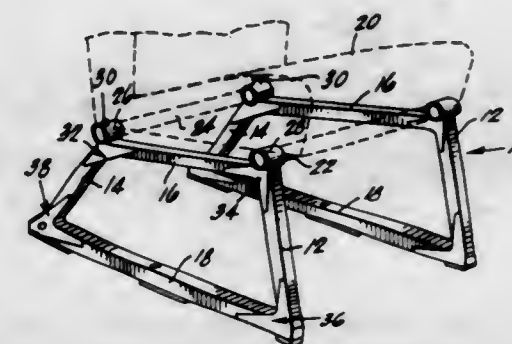
A container suspension device including a member having an acute angular cross-section. The handle of the container engages with an element projecting outwardly from one leg of the angular member and serves to locate the container in contacting, wedging relation with the other leg of said angular member.

**3,460,790**  
**SUPPORTING UNIT**  
David W. Baird, 1954 Indianola Ave., Columbus, Ohio 43201  
Filed May 26, 1967, Ser. No. 641,656  
Int. Cl. A47l 7/00  
U.S. Cl. 248—165 8 Claims



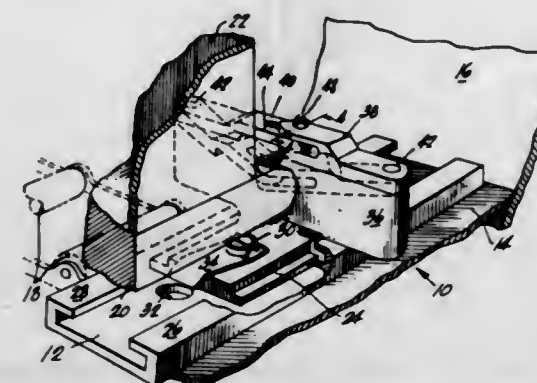
A bookshelf support or the like formed from a pair of identical blanks made of inexpensive material such as corrugated board. The device is characterized by each of the blanks comprising an end wall, a pair of side walls joined to said end wall along respective fold lines, a foldable end flap on each side wall, and a slot in each side wall. The identical blanks then may be folded to fit together to form a strong but light support.

**3,460,791**  
**FAIL SAFE SEAT SUPPORT FRAME**  
Ronald I. Judd, Anaheim, Calif., assignor to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland  
Filed Feb. 8, 1967, Ser. No. 614,675  
Int. Cl. F16m 11/00  
U.S. Cl. 248—188.91 4 Claims



A seat support frame is provided with yieldable and non-rigid legs which absorb energy as they deform under high deceleration. The frame is of open truss design with corner gussets protecting each corner up to the same crippling stress. The gussets distribute and control the leg deflections beyond the load carrying capability of the attachments of the frame to the floor. Failure of welds in tension is eliminated while the frame members deflect into an S-shaped curve.

**3,460,792**  
**RESTRAINT LATCH**  
Raymond P. Brenner, Whittier, and Robert A. Warren, Long Beach, Calif., assignors to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland  
Filed Mar. 29, 1967, Ser. No. 626,785  
Int. Cl. B60p 7/06  
U.S. Cl. 248—361 3 Claims

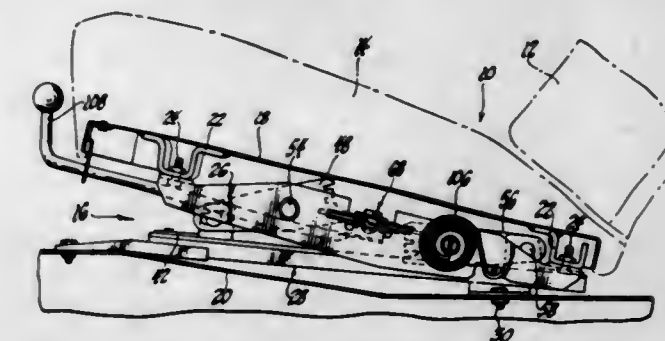


A latch applicable for use with cargo handling apparatus and specifically to restrain vertical movement of a cargo handling pallet. The latch includes spring biased restraining arms which automatically retract to permit passage of the pallet during pallet movement.

**3,460,793**  
**ADJUSTABLE SEAT ASSEMBLY**  
Raymond C. Posh, Livonia, Mich., assignor to Lear Siegler Inc., Santa Monica, Calif., a corporation of Delaware  
Filed Mar. 15, 1967, Ser. No. 623,261  
Int. Cl. F16m 11/24, 13/00; B60n 1/02  
U.S. Cl. 248—394 13 Claims

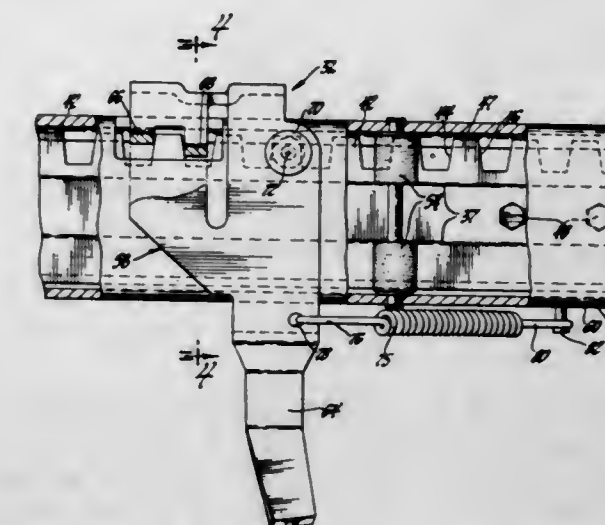
An adjustable seat supporting assembly including a pair of spaced seat support members and base means including tracks for adjusting the horizontal position of the seat. The seat support members and the base means

are interconnected by elongated levers, each of which is pivotally connected to the base means and independently pivotally connected to the seat support members. There are two such levers on each side of the seat assembly. The pivotal connection of each of the levers to the seat support member on one side of the seat assembly is disposed inwardly and between the pivotal connection of the respective levers to the base means. The inward ends



of the levers on each side of the assembly include a plurality of notches therein and are spaced apart. A latching means is operatively attached to one of the support members and engages the notches in the respective levers for selectively controlling the pivotal movement of the levers to selectively change the vertical position of either or both the front and rear portions of the seat support members.

**3,460,794**  
**SEAT ADJUSTER**  
Albert J. Colautti, Windsor, Ontario, Canada, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
Filed June 14, 1967, Ser. No. 645,964  
Int. Cl. F16m 13/00  
U.S. Cl. 248—430 5 Claims



A seat adjuster mechanism using a telescoping slide structure wherein a latch bar, pivotally connected to the movable upper slide member, has locking bars that are selectively engageable with rack teeth formed on the lower stationary slide member. The latch bar is spring biased toward a locked position wherein one of the locking bars engages the rear side of a rack tooth at a point forwardly and inwardly of the latch bar pivot axis and the other locking bar engages the front side of the rack tooth at a point outwardly and forwardly of the aforesaid pivot axis so that fore-and-aft loading of the seating structure produces a camming action that tends to force the locking bars inwardly into positive engagement with the rack tooth.

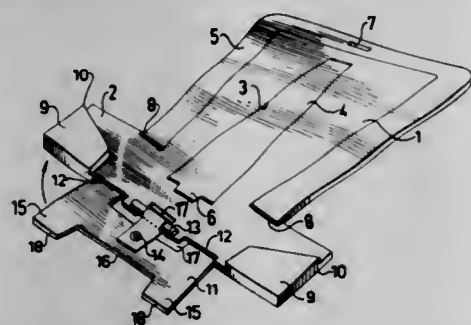


3,460,795

**BOOK HOLDER**

Olof Gustaf Dahlin, Stockholm, Sweden, assignor to Aktiebolaget Orga, Stockholm, Sweden, a corporation of Sweden  
Continuation of application Ser. No. 462,634, June 9, 1965. This application July 24, 1967, Ser. No. 655,669  
Int. Cl. A47b 97/08  
U.S. Cl. 248—452

9 Claims



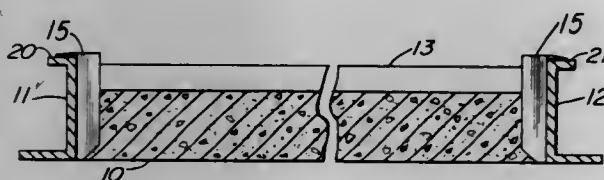
1. A book holder comprising a flat bottom plate, a support member hingedly connected to said bottom plate near a first end of said bottom plate, a brace hingedly connected to said bottom plate near the opposite end of said base plate, and at least one support element rotatably connected to said first end of said bottom plate, means for pivoting said support element manually as one single unit toward said support member to bear on said book and press it against said support member, and resilient frictional means associated with said support element for strongly resisting displacement by said pivoting of said support element when engaging a book.

3,460,796

**JOINT-FORMING DEVICE**

Delmont D. Brown, North Baltimore, Ohio, assignor to The D. S. Brown Company, North Baltimore, Ohio, a corporation of Ohio  
Filed Dec. 9, 1966, Ser. No. 600,448  
Int. Cl. B01c 11/02  
U.S. Cl. 249—9

2 Claims



Joint-forming tool for concrete pavements adapted to be pushed into wet concrete at ends of transverse pavement joints to form vertical slots or grooves adjacent concrete-retaining forms or rails and embodying molded thermoplastic polymer body having slot-forming bar with diagonal lower corner on front edge and relatively flat foot member, preferably having a beveled upper face, extending laterally from the upper portion of the rear edge of said bar.

3,460,797

**HOSE COMPRESSOR**

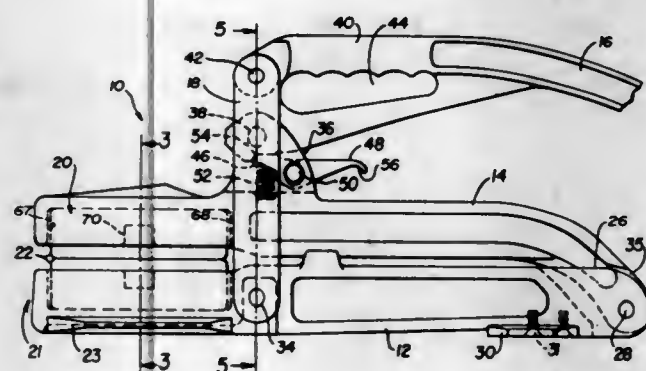
George G. Allenbaugh, Jr., Rittman, Ohio, assignor to Akron Brass Company  
Filed Oct. 5, 1966, Ser. No. 584,477  
Int. Cl. F16l 55/10

U.S. Cl. 251—9

9 Claims

A hose compressor for preventing or restricting fluid flow through a fire hose. Two pivoted arms form clamping jaws actuated by a lever that closes and holds the

jaws in a clamping position. Removable elastomeric inserts loosely received and held in each jaw contact the



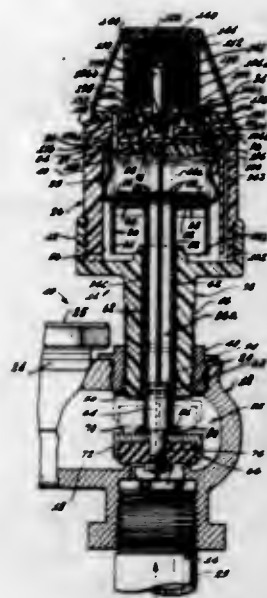
hose and deform under clamping pressure, providing an effective seal, reducing damage to the hose and resisting movement of the compressor along the hose.

3,460,798

**PILOT ACTUATED VALVE**

Paul W. Carsten, Malibu, Calif., assignor to Aquamation Inc., Glendora, Calif., a corporation of California  
Filed May 26, 1966, Ser. No. 553,258  
Int. Cl. F16k 1/32, 31/06, 31/12  
U.S. Cl. 251—30

1 Claim



A valve assembly including a rolling diaphragm as a frictionless seal between a piston and inner walls of a piston supporting cylinder. Porting means are included in the valve assembly between opposite sides of the rolling diaphragm and upstream and downstream sides of the valve which are of successively larger cross-sectional area from upstream to downstream and operation of the valve assembly is controlled by a diaphragm actuated pilot valve regulating the flow of fluid through the porting means.

3,460,799

**VARIABLE TORQUE VALVE ACTUATOR**

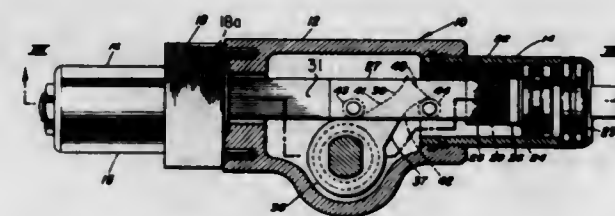
Robert E. Sanctuary, 38 Saturn Drive, Shrewsbury, Mass. 01545  
Continuation-in-part of application Ser. No. 404,225, Oct. 16, 1964. This application Aug. 25, 1967, Ser. No. 663,412  
Int. Cl. F16k 31/42, 31/52; F15b 15/06

U.S. Cl. 251—30

8 Claims

A rotatable member connected to a valve stem is provided with two spaced force receiving surfaces. An elongated

gated reciprocable member carries two pusher elements in respective engagement with the two force receiving surfaces for moving the rotatable member, and thereby the valve stem, through a predetermined arc of rotation in two opposing directions when the reciprocable member is reciprocated by a fluid pressure motor attached thereto. The spaced force receiving surfaces are contoured to provide a torque-force curve which is asymmetrical with respect to the center-line of the predetermined arc of rotation in both directions of rotation, the force-torque curve in each direction of rotation being characterized by a relatively high initial torque which drops rapidly to a lesser value, and which provides a finishing torque less than the initial torque.



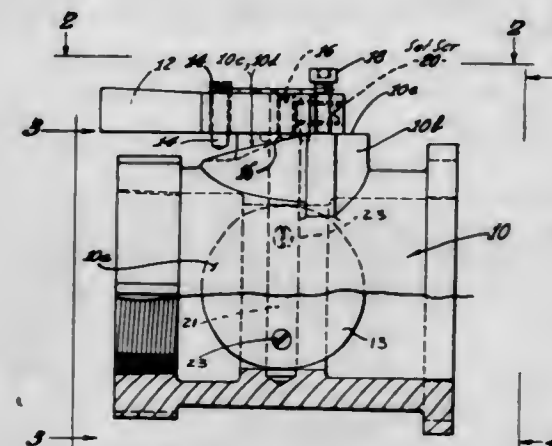
vide a torque-force curve which is asymmetrical with respect to the center-line of the predetermined arc of rotation in both directions of rotation, the force-torque curve in each direction of rotation being characterized by a relatively high initial torque which drops rapidly to a lesser value, and which provides a finishing torque less than the initial torque.

3,460,800

**VALVE WITH ADJUSTABLE STOP AND CLAMP FOR STEM**

Antons Mikuls, Buffalo, N.Y., assignor to Roberts-Gordon Appliance Corporation, Buffalo, N.Y., a corporation of New York  
Filed Aug. 24, 1966, Ser. No. 574,597  
Int. Cl. F16k 1/22, 31/60  
U.S. Cl. 251—101

3 Claims



An improved valve assembly is provided which incorporates adjustable stops so that the degree of opening and closing of the valve can be adjustably controlled; this being achieved by providing a cam surface on the upper edge of the valve housing, and by providing adjustable screws threaded through the valve handle to depend down from the lower face thereof and to engage the cam surface when the valve handle is turned to its limiting positions.

3,460,801

**VALVED FLUID COUPLING OR CONDUIT**

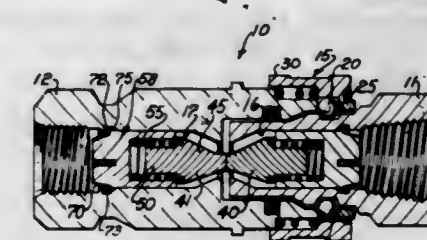
James Frederick Norton, Cleveland, Ohio, assignor to The Hansen Manufacturing Company, Cleveland, Ohio, a corporation of Ohio  
Filed July 25, 1966, Ser. No. 567,517  
Int. Cl. F16l 37/28, 37/22

U.S. Cl. 251—149.6

13 Claims

A valved coupling in which a valve is supported in a spring received in a recess defined by the legs of two

U-shaped plates disposed at right angles to each other with the plates having tapered surfaces at the end remote from the recess which engage and expand an expansible



member over a shoulder in a conduit in which the valve is positioned. The valve has a stem which is closely received by the spring inside the recess, the spring fits in the recess so as to provide a guide for the valve.

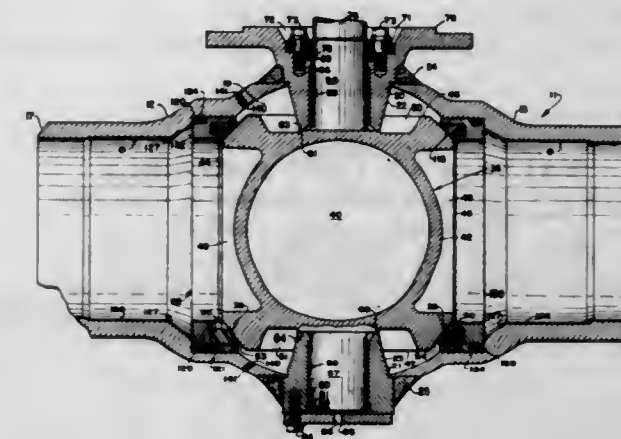
3,460,802

**VALVE ASSEMBLY**

Joseph M. Colby, Paul A. Manor, and Gustav Kania, Pittsburgh, Pa., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Dec. 13, 1966, Ser. No. 601,412  
Int. Cl. F16k 5/06, 27/06

U.S. Cl. 251—172

17 Claims

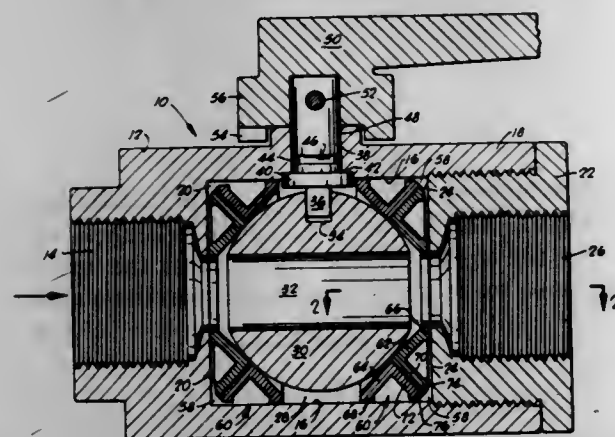


A ball type valve plug assembly having a body defined by separately formed, axially aligned sections which are joined at their inner ends by an endless weld joint and which respectively defined upstream and downstream passages opening at their inner ends into a valve plug cavity. An axially floating seat ring assembly which is mounted at the inner end of each passage has a plug-sealing, elastically deformable annulus anchored to a rigid seat ring. Each seat ring assembly is axially slidable between a ported valve plug in the valve body cavity and an opposing internal wall surface of the valve body. The valve body sections are sufficiently drawn together by shrinkage of the weld joint to engage the internal wall surface with the seat ring assembly and to axially urge it to a position where the sealing annulus deforms against the valve plug, thereby providing a preloaded seating pressure between the plug and seat ring assembly during valve operation. The valve plug is formed with a plurality of annular ribs integrally extending from a ported, central, cylindrical portion and defining a series of outwardly opening cavities, space around the central, cylindrical portion. The end faces of the ribs are contained in a common spherical envelope and are engageable by the seat ring sealing annulus as the plug is rotated between its opened and closed positions.



### 3,460,803 HIGH TEMPERATURE AND PRESSURE VALVE SEAT

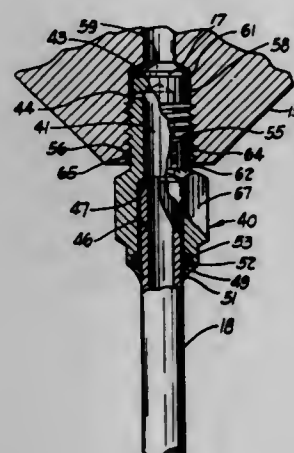
Domer Scaramucci, Oklahoma City, Okla., assignor to Balon Corporation, Oklahoma City, Okla., a corporation of Oklahoma  
Filed Oct. 17, 1966, Ser. No. 587,304  
Int. Cl. F16k 5/06, 27/06  
U.S. Cl. 251-175 21 Claims



A ball valve having upstream and downstream seats formed of two rings. One ring of each seat has a length greater than its thickness and is supported to extend along a tangent to the outer surface of the ball, such that it will twist to follow, yet support the ball, particularly at the downstream end of the valve. The second ring of each seat may be similarly constructed, or may be of a more elastic material to enhance the seal provided by the seat.

### 3,460,804 VALVE AND TUBE ASSEMBLY

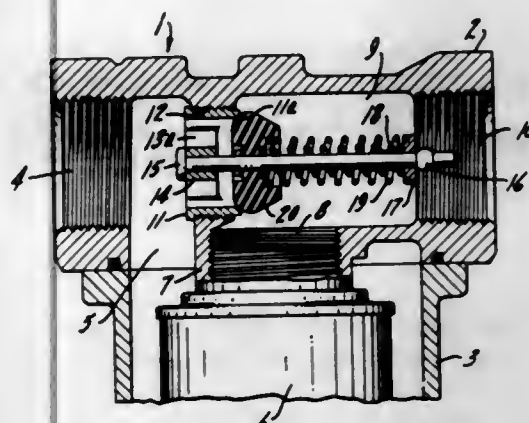
Albert J. Balon, 9717 Greenhaven Parkway, Brecksville, Ohio 44141  
Filed Oct. 22, 1965, Ser. No. 501,545  
Int. Cl. F16k 31/00; F16l 27/08; F23q 9/12  
U.S. Cl. 251-340 12 Claims



A fitting for connecting a gas tube to a threaded socket. The fitting having a closed end, a hollow interior, external threads for engaging the socket threads, a bore intermediate the closed end and the threads to provide communication with the interior of the fitting and a shank having a greater external diameter of the socket threads and more remote from the closed end than the fitting threads and engaging and deforming the socket threads and such a fitting with a flange extending parallel with the tube and having an end inhibiting rotatable engagement with the tube and defining a relief in which sealant is disposed about the tube and within the fitting.

### 3,460,805 VALVE HEAD FOR BY-PASS VALVE

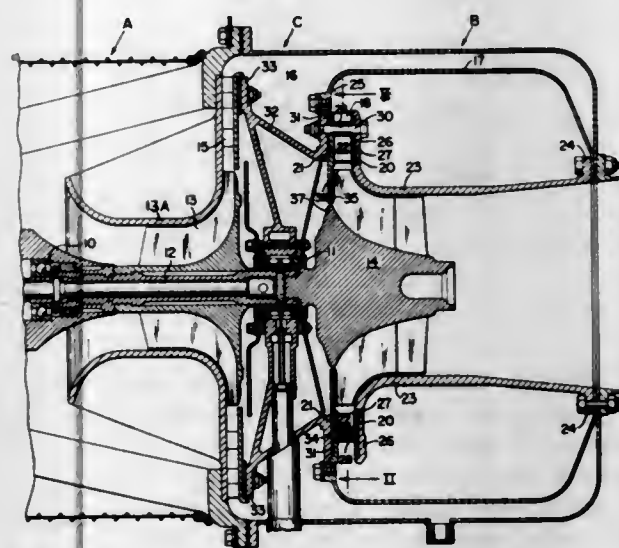
Walter J. Kudlaty, Elmhurst, Ill., assignor to Marvel Engineering Company, Chicago, Ill., a corporation of Illinois  
Filed Oct. 18, 1966, Ser. No. 587,452  
Int. Cl. F16k 17/04, 15/14  
U.S. Cl. 251-357 2 Claims



A valve head made of rubber-like material with an axial bore therethrough so as to be slidably received on a valve stem. An annular groove is formed in the forward end face of the head and surrounds the bore, with the inner wall of the groove being inclined outwardly toward the bore whereby fluid filling the groove under pressure will urge the wall toward the bore to seal the stem.

### 3,460,806 FLOATING NOZZLE AND SHROUD CONSTRUCTION FOR GAS TURBINE

Roy W. Vershure, Jr., Phoenix, Ariz., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California  
Filed Sept. 8, 1967, Ser. No. 666,407  
Int. Cl. F01d 1/08, 9/02, 25/26  
U.S. Cl. 253-39 8 Claims

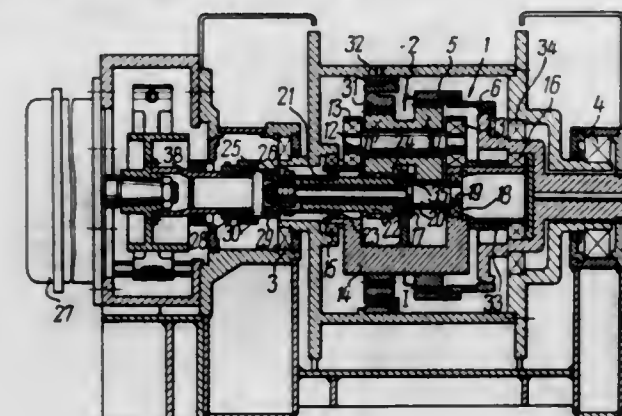


This floating nozzle and shroud for a centripetal gas turbine includes an integral nozzle structure having spaced rings connected by circumferentially spaced, angularly disposed vanes, the wall thickness of the rings, vanes and shroud being substantially equal and the structure being loosely arranged in an open annular space between a gas-receiving torus and turbine wheel chamber. The nozzle-receiving space is formed by bolting a combined shroud and exhaust tube to a flange on the frame with spacers therebetween, the bolts and spacers extending through openings formed in the vanes. One ring of the

nozzle structure is extended inwardly to form a shroud at the back of the turbine wheel. The loose mounting permits thermally induced expansion and contraction without stress or strain.

### 3,460,807 WINCH

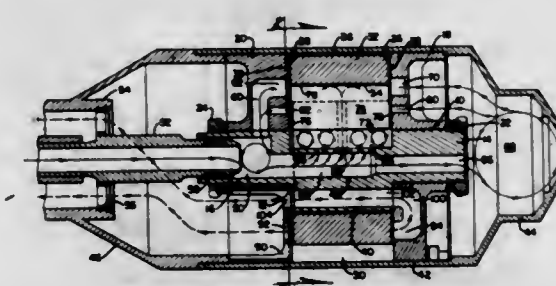
Viktor Ivanovich Prikhodko, poselok imeni M. Gorkogo, ulitsa Gagarina, 2, kv. 19, and Boris Vasilievich Pankov, poselok imeni M. Gorkogo, ulitsa Lomonosova, 18, kv. 13, both of Khabarovsk, U.S.S.R.  
Filed Feb. 21, 1967, Ser. No. 617,647  
Int. Cl. B66d 1/26; F16h 3/44  
U.S. Cl. 254-185 11 Claims



A planetary reduction gear built into the drum of a single-drum winch. The gear includes sun wheels of different diameters, interconnected planet pinions on a common carrier and engaged with the sun wheels, epicycles of different diameters respectively connected to the drum and to the winch frame and respectively engaged with the sun wheels, a winch drive, and a coupling selectively engaged between the drive and one of the sun wheels.

### 3,460,808 APPARATUS AND METHOD FOR GENERATING VIBRATIONS

Robert L. Wilde, Denver, Colo., assignor to Dart Mfg. & Sales Co., Denver, Colo., a corporation of Colorado  
Filed June 23, 1966, Ser. No. 559,904  
Int. Cl. B01f 11/00; F16h 33/10  
U.S. Cl. 259-1 26 Claims

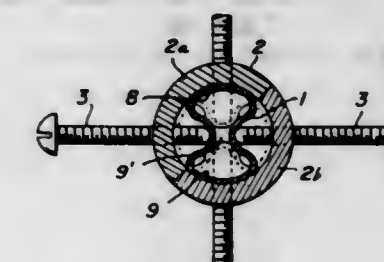


An apparatus for generating vibrations utilizing an inertia ring mounted for orbital movement relative to a member wherein a work chamber is formed between the opposed surfaces of the ring and the member, said apparatus being characterized in the use of means for moving the ring orbitally relative to the member while maintaining at all times during such movement a predetermined amount of minimum separation between the opposed surfaces of the ring and the member. The means for moving the ring orbitally relative to the member includes means for supplying to the motor cavity, during at least approximately one-half of each cycle, a predetermined amount of fluid of substantially constant pressure

without substantially any linear mass velocity, the volume of fluid equaling the instantaneous volume of the motor cavity whereby the increase volume of fluid, to be disposed within the motor cavity, occurring from expansion of the fluid substantially equals the increased volume of the motor cavity during movement of the ring. The means for moving the ring orbitally relative to the member also includes means for effecting at least a partial decompression of the motor cavity and exhausting the exhaust cavity.

### 3,460,809 MEANS FOR CONTINUOUSLY BLENDING MISCIBLE MATERIALS

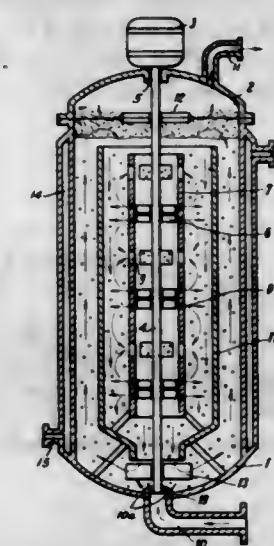
Joseph A. Hauss, Gwynedd View, R.D. 1, North Wales, Pa. 19454  
Filed Feb. 13, 1968, Ser. No. 705,151  
Int. Cl. B01f 13/00; F16l 11/12  
U.S. Cl. 259-4 3 Claims



The invention contemplates utilization of a flexible tubular conduit and means for locally deforming it in association with means for introducing into one end of the conduit flowing supplies of a plurality of miscible materials whereby the combined streams are constrained to follow contiguous sinuous courses through the conduit until the individual ingredients become intimately blended together into a single homogeneous mixture.

### 3,460,810 MIXER

Hans Mueller, Erlenbach, Zurich, Switzerland, assignor to Process Engineering Co., S.A., Mannedorf, Zurich, Switzerland  
Filed July 3, 1967, Ser. No. 651,054  
Claims priority, application Switzerland, July 4, 1966, 9,772/66; Sept. 14, 1966, 13,370/66; Sept. 21, 1966, 13,805/66  
Int. Cl. B01f 5/10, 7/20  
U.S. Cl. 259-96 11 Claims



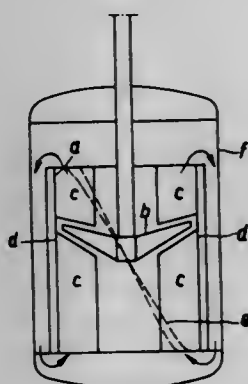
A mixing arrangement. A first wall defines an outer chamber and a second wall arranged within the first wall defines an inner chamber. The second wall is provided with a plurality of orifices which communicate with both



of the chambers and the inner chamber is also open at both axial ends thereof. Agitating means is arranged within the inner chamber and is rotatable about an axis coinciding with the axis of the inner chamber whereby, when both chambers are filled with a coarse mixture of a liquid phase and a gaseous phase, the agitation of the mixture within the inner chamber imparts a circulation to the mixture in both of the chambers and serves also to eject a plurality of jets of the mixture through the orifices into the outer chamber whereby these jets are dispersed in the mixture circulating in the outer chamber and an intimate admixture of the two phases is obtained.

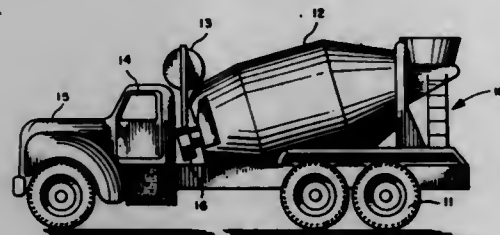
### 3,460,811 MIXING DEVICE

Gottfried Hügli, Basel, Switzerland, assignor to Lonza Limited, Gampel, Valais, Switzerland (direction: Basel, Switzerland), a corporation of Switzerland  
Filed Nov. 30, 1967, Ser. No. 686,867  
Claims priority, application Switzerland, Dec. 1, 1966, 17,200/66  
Int. Cl. B01f 7/22, 5/10  
U.S. Cl. 259-97 6 Claims



Apparatus for mixing materials including a cylindrical housing with a coaxial cylindrical jacket disposed therein to form an inner chamber and an outer chamber, an impeller disposed in the inner chamber, and a plurality of baffles disposed in the outer chamber to define a plurality of flow paths having varying cross sectional areas throughout the outer chamber.

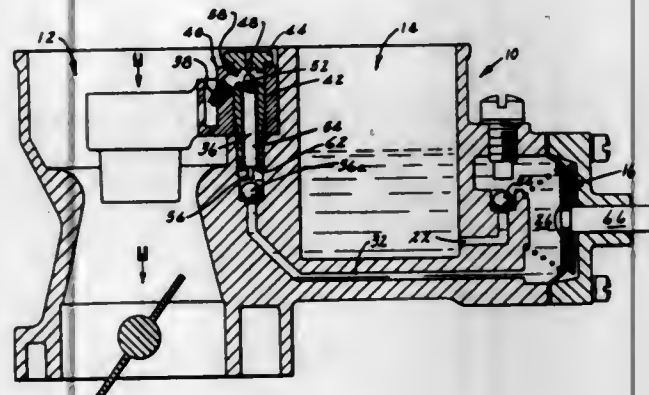
3,460,812  
CONCRETE MIXING CONTROL APPARATUS FOR CONCRETE MIXING TRUCKS  
Robert R. Kaufman, Maitland, Fla.  
(45 Wisteria Drive, DeBary, Fla. 32713)  
Filed Mar. 25, 1968, Ser. No. 715,650  
Int. Cl. B28c 7/02  
U.S. Cl. 259-177 6 Claims



A concrete mixing control apparatus comprising a concrete mixing truck having a mixing drum with an engine power source. A solenoid is adapted to pull and hold the throttle of the engine a preset distance upon actuation by a timing relay. The timing relay is actuated by a momentary contact switch and operated for a preset timing cycle during which the solenoid holds the engine throttle.

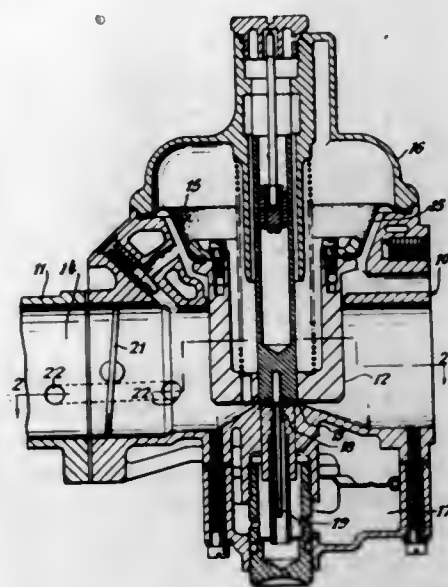
When the cycle is completed the power to the solenoid is cut off, and the throttle is released. The mixing drum is thus capable of being rotated a preset time at a preset speed of rotation to assure quality mixing of the concrete.

3,460,813  
VENTED ACCELERATION DISCHARGE CHECK VALVE  
Robert Henry Hiegar, 14305 Faust Ave.,  
Detroit, Mich. 48223  
Filed Jan. 19, 1967, Ser. No. 610,361  
Int. Cl. F02m 37/12  
U.S. Cl. 261-34 10 Claims



An atmospheric vent in the acceleration pump discharge passage of the carburetor for an internal combustion engine which functions when the acceleration pump chamber is exhausted so as to (1) reduce the pollution and contaminants in the air, while (2) aiding in the reduction of fuel consumption by the provision of a more efficient metering system.

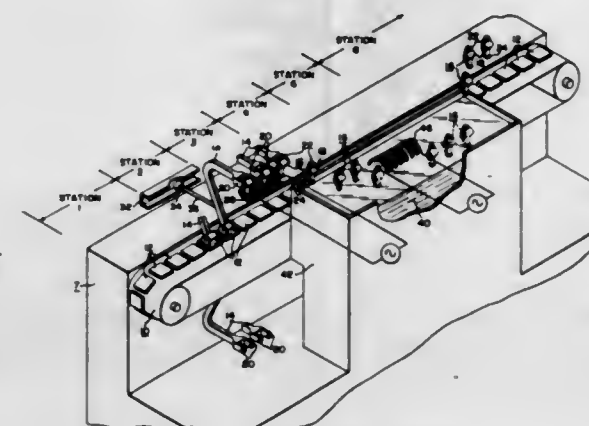
3,460,814  
FUEL-AIR MIXTURE INTAKE SYSTEMS FOR INTERNAL COMBUSTION ENGINES  
Cormac Garrett O'Neill, Berkhamsted, England, assignor to The Zenith Carburettor Company Limited, Stanmore, Middlesex, England  
Filed Aug. 9, 1967, Ser. No. 659,529  
Claims priority, application Great Britain, Aug. 12, 1966, 36,239/66; Oct. 3, 1966, 44,083/66  
Int. Cl. F02m 7/12  
U.S. Cl. 261-44 8 Claims



A by-pass for the throttle valve of an internal combustion engine, closed by an obturator during most operating conditions, is opened when the throttle valve is closed and the depression downstream of the said throttle

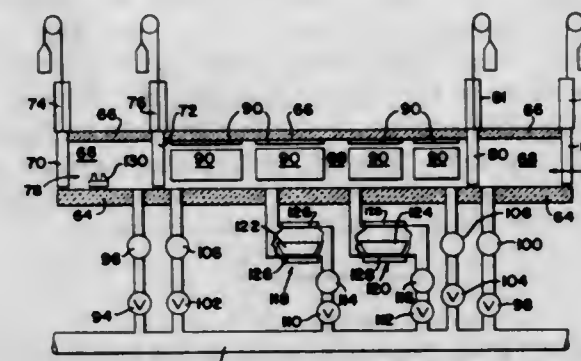
valve is above that which obtains during idling (i.e. during overrun conditions) to supply fuel/air mixture to the induction downstream of the throttle valve.

3,460,815  
HEAT TREATING APPARATUS FOR HARDENING SELECTIVE WORKPIECE REGIONS WHILE PROTECTING ADJACENT REGIONS AGAINST HARDENING  
William L. Corteggiano, Birmingham, Mich., and Donald R. Lackey, Franklin Township, Export, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Mar. 2, 1966, Ser. No. 531,295  
Int. Cl. C21d 1/66; B08b 3/10  
U.S. Cl. 266-4 4 Claims



Apparatus for hardening at least the cup end of rocker arms while preventing the adjacent bore-containing portions of such arms from becoming hardened. Induction heating means disposed above a coolant bath provides for the selective heating of the cup end of the rocker arm while its bore-containing portion remains immersed in the bath for protection from such heating; prior to quenching such heated cup end to complete its hardening.

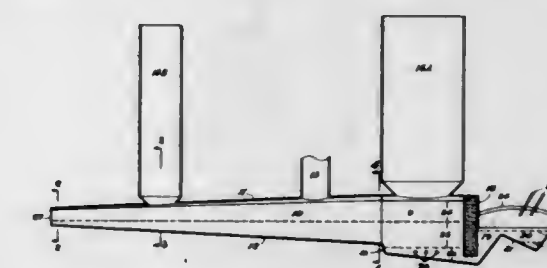
3,460,816  
FLUXLESS ALUMINUM BRAZING FURNACE  
Clarence John Miller, Paoli, Pa., assignor to General Electric Company, a corporation of New York  
Application Aug. 8, 1966, Ser. No. 573,774, now Patent No. 3,378,914, dated Apr. 23, 1968, which is a continuation-in-part of application Ser. No. 477,566, Aug. 5, 1965. Divided and this application Oct. 19, 1967, Ser. No. 707,896  
Int. Cl. B23k 27/00; C23c 13/08; F27b 17/00  
U.S. Cl. 266-5 1 Claim



Furnace for fluxless brazing of aluminum base alloy parts, having means for providing gaseous atmosphere inert to the parts, and separately heated chamber in which magnesium may be vaporized and its vapor swept by a flow of inert gas into the furnace chamber.

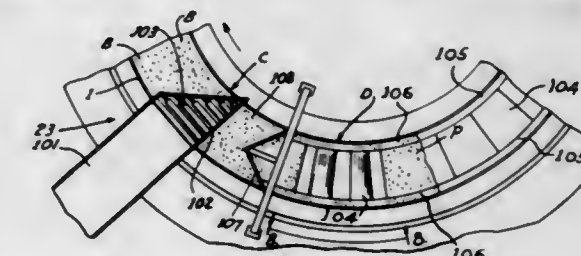
865 O.G.—19

3,460,817  
FURNACE FOR CONTINUOUS TREATMENT OF SULPHIDE COPPER ORES  
Geoffrey Joynt Brittingham, 34 Cambridge Road, Surfers Paradise, Queensland, Australia  
Filed Sept. 21, 1964, Ser. No. 397,931  
Claims priority, application Australia, Sept. 30, 1963, 35,892/63  
Int. Cl. C22b 15/00  
U.S. Cl. 266-11 10 Claims



A furnace for continuous treatment of copper sulphide ores includes a smelting hearth producing white-metal and slag layers, a section in which portion of the slag layer is isolated from underlying white-metal layer, means for reducing the isolated slag layer to separate matte therefrom, and means to return said matte to the white-metal layer.

3,460,818  
APPARATUS FOR TREATMENT OF PARTICULATE MATERIAL ON MOVING SUPPORT  
Melvin J. Greaves, Cleveland, and Tage Werner, Rocky River, Ohio, assignors to Arthur G. McKee & Company, Cleveland, Ohio, a corporation of Delaware  
Filed May 31, 1966, Ser. No. 553,939  
Int. Cl. F27b 21/02; C21b 1/16; C22b 1/08  
U.S. Cl. 266-21 30 Claims

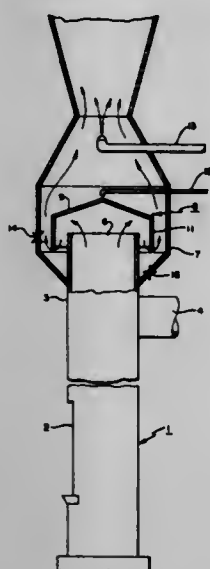


Apparatus and process for treating particulate material that is carried by a support traveling in a generally circular path, such as a circular grate for heat hardening balls of iron ore. One form of the apparatus includes means for removing particulate material from only a portion of the width of the support as the support passes a discharge location, and means for spreading across the support the particulate material that has not been removed to form a layer on which other material is subsequently deposited. Another form of the disclosed apparatus includes a gas permeable circular grate having gas enclosing means above or below the grate and liquid seals at the sides of the grate sealing the grate to the gas enclosing means. The process includes the steps of passing the material on the grate through several zones and maintaining at each zone a superatmospheric pressure on the higher pressure side of the grate from which the gas is passed through the grate to the other side of the grate in said zone.

3,460,819  
GAS DRAFT APPARATUS  
Daniel E. Pike, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware  
Filed July 25, 1967, Ser. No. 655,815  
Int. Cl. C21b 7/08; F23j 15/00; F23i 17/16  
U.S. Cl. 266-31 3 Claims  
Apparatus for drafting hot gases in a metallurgical



system including an improved wet cap arrangement co-operating with the discharge end of a hot gas conduit to helical conveyor for upward transport of a solid reaction product, and a stirrer device surrounding the conveyor for subjecting the molten substance at the bottom of



selectively provide a gas treating liquid curtain and a liquid seal.

3,460,820

## CONVERTER ASSEMBLY

Othmar Pühringer and Alexander Patuzzi, Linz, Austria, assignors to Vereinigte Österreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a corporation of Austria

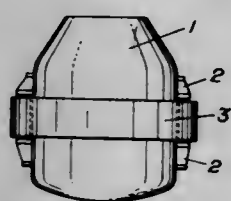
Filed Sept. 13, 1966, Ser. No. 579,029

Claims priority, application Austria, Sept. 14, 1965, A 8,379/65

Int. Cl. C21c 5/42

U.S. Cl. 266—35

4 Claims



Thermal stresses on the carrier ring of a converter are reduced by protecting the carrier ring from thermal radiation from the converter body. In one embodiment, the ring is insulated on all surfaces; in a second embodiment, a metal shield is inserted between the ring and the converter body. In both embodiments air is blown between the ring and converter body to further reduce the heat transfer.

3,460,821

## APPARATUS FOR THE REACTION OF A MOLTEN SUBSTANCE AND GAS AT ELEVATED TEMPERATURE AND PRESSURE

Jaroslav Vit, Vladimir Prochazka, and Vaclav Salat, Prague, Czechoslovakia, assignors to Ceskoslovenska Akademie VED, Prague, Czechoslovakia

Filed May 15, 1967, Ser. No. 638,302

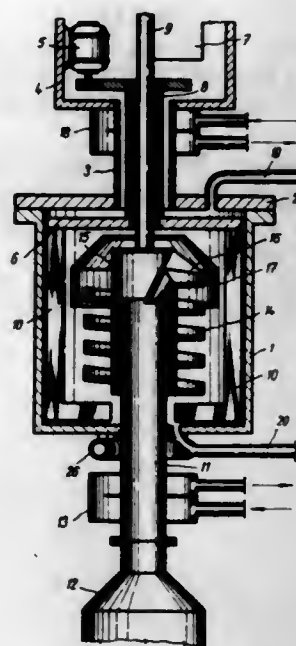
Claims priority, application Czechoslovakia, May 14, 1966, 3,227/66; June 28, 1966, 4,332/66; July 7, 1966, 4,606/66

Int. Cl. C21c 7/00; C21b 7/14; F27d 3/14

U.S. Cl. 266—34

14 Claims

A reactor including a pressure vessel for the reaction of a molten substance such as molten sodium with a gaseous substance such as hydrogen at elevated temperature and pressure, the vessel containing a vertically vibrating



the pressure vessel to centrifugal force such that the solid reaction product can be transferred upwardly without contacting the molten substance.

3,460,822

## VACUUM WORKHOLDER

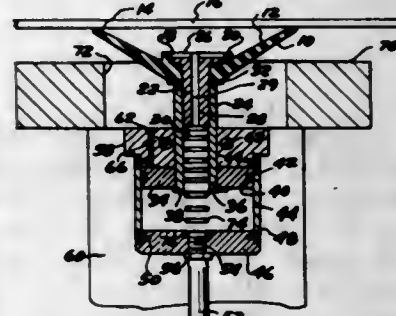
Jack W. Link, Utica, Mich., assignor to E & E Engineering Company, Detroit, Mich., a corporation of Michigan

Filed Oct. 23, 1965, Ser. No. 502,906

Int. Cl. B25b 1/00; B65h 3/08; B23b 31/30

U.S. Cl. 269—21

3 Claims



A workholder comprising a rod having a vacuum cup for engaging the workpiece on one end of a piston disposed in an actuating cylinder on its opposite end. A source of vacuum is connected to the cylinder and to the vacuum cup by a bore extending through the rod from the cylinder. The surface of the cup initially engaging the workpiece is greater than the piston area exposed to the vacuum so that the workpiece is securely engaged with the cup before the piston is moved in the cylinder.

3,460,823

## ACTUATING DEVICE FOR WEB PIERCING PINS OF FOLDER MECHANISM

Frank Neal, Green Brook, and Robert A. Snyder Gillette, N.J., assignors to Wood Industries, Inc., a corporation of Virginia

Filed Apr. 13, 1967, Ser. No. 630,748

Int. Cl. B65h 45/16

U.S. Cl. 270—77

9 Claims

A cam assembly for selectively actuating the web mounted circular cam, a cam follower for each pin assem-

3,460,825

## FAN FOLD STACKING APPARATUS

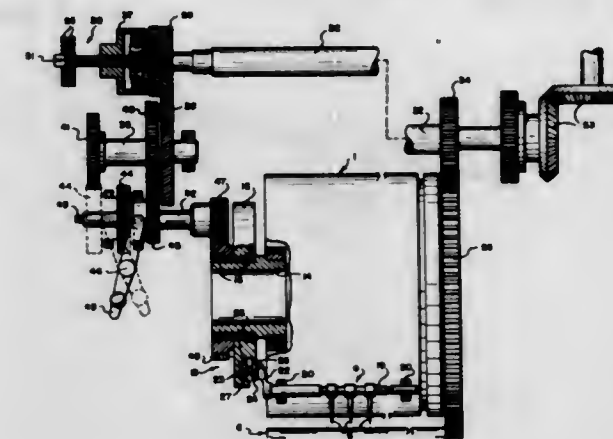
Franklin C. Mets, Rochester, and Neal R. Robbins, Webster, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Dec. 22, 1966, Ser. No. 603,930

Int. Cl. B65h 45/06

U.S. Cl. 270—61

4 Claims



opposite sides of the cam for successively moving the cam followers to actuate the associated pin assemblies, and a power source for rotating the cam in the same direction as the cylinder at speed ratios of 3:2 and 3:4 relative to the speed of rotation of the cylinder to effect the desired straight or collect operation.

3,460,824

## MODULAR SHEET DISTRIBUTOR

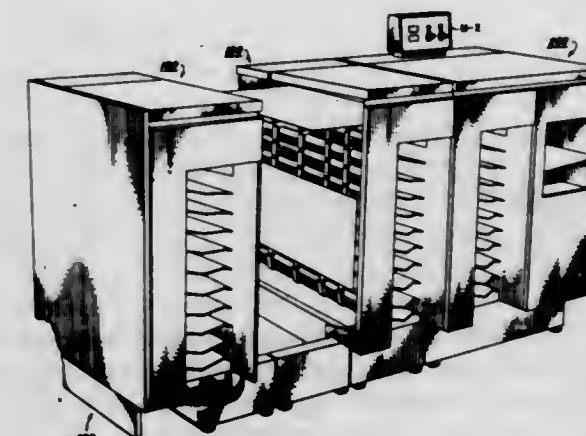
Karl E. Bahr, Pittsford, Augustus W. Griswold, Rochester, Aldon A. Price, Fairport, and Charles R. Young, Rochester, N.Y.; said Karl E. Bahr, said Augustus W. Griswold, and said Aldon A. Price, assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Aug. 26, 1966, Ser. No. 575,476

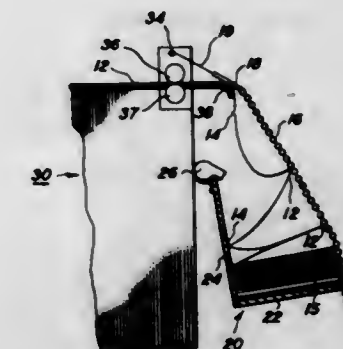
Int. Cl. B65h 37/00, 29/58

U.S. Cl. 270—58

7 Claims



A modular sheet distributor capable of being used in combination with like modular sheet distributors to form a larger capacity unitary sheet distributor. Each distributor includes an input and an output end with transport means connecting them and a first diverting means located adjacent the transport means to selectively transport sheet material towards the output end, or in the alternative, towards stacked copy catch trays. Each of the copy catch trays has an associated diverting means for selectively permitting the fed sheet material to be distributed to a preselected tray.



An apparatus for folding and stacking web material in a fan folded or zigzag manner having a receptacle located below the discharge end of a path along which web material is advanced, a weighted flexible member having a frictional resistive surface freely suspended across the discharge end and extending into the receptacle for engaging and retarding the movement toward the receptacle of edges formed in the web along alternate transverse weakening lines and a source of pressurized air for positively advancing the edges along the flexible member.

3,460,826

## DEVICES FOR SINGLE SHEET FEEDING OF PAPER

Erwin Porth, St. Georgen, Black Forest, Germany, assignor to Mathias Bauerle Gesellschaft mit beschränkter Haftung, St. Georgen, Black Forest, Germany, a German company

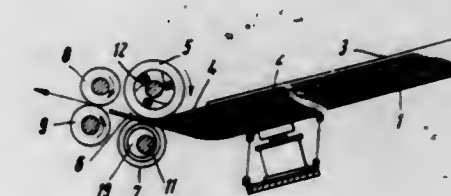
Filed Apr. 3, 1967, Ser. No. 628,119

Claims priority, application Germany, Apr. 29, 1966, B 86,888

Int. Cl. B65h 1/04, 3/04

U.S. Cl. 271—37

9 Claims



A device for single sheet feeding of paper in particular where employed in paper-folding machines and paper-processing machinery wherein a retard roll is eccentrically mounted on a shaft spaced from a feed roll and an indexing means is mounted directly on one end of the shaft and in alignment therewith to rotate the retard roll to thereby adjust the distance between the rolls and wherein the eccentricity of the retard roll is such that the incremental differentials when the retard roll and the feed roll are close together are small in comparison to the incremental differentials when the retard roll and the feed roll are far apart.



3,460,827

**TEST GRADING MACHINE**

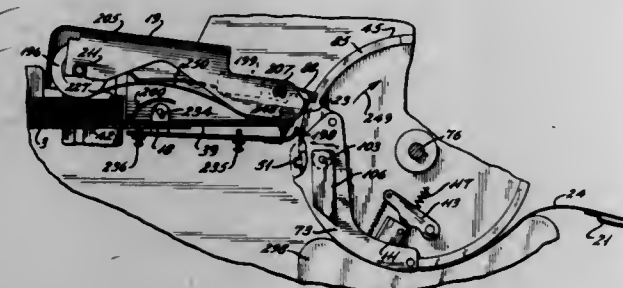
John S. Shaw, Kensington, Md., John J. Dostel, Garden City, N.Y., Donald K. White, Fairfax, Va., and Edwin S. Elste, Silver Spring, and John F. Kellogg, Bethesda, Md., and John D. O'Neale, Arlington, Va., assignors, by mesne assignments, to Acme Visible Records, Inc., Crozet, Va., a corporation of Delaware

Original application July 18, 1963, Ser. No. 296,071, now Patent No. 3,324,576. Divided and this application Feb. 9, 1967, Ser. No. 632,846

Int. Cl. B65h 7/04

U.S. Cl. 271—57

7 Claims



Disclosed herein is the test grading machine shown also in Patent 3,324,576 in which a master sheet is mounted on a rotating drum and student sheets are successively presented to the drum for pick up thereon and carry thereon over a portion of a revolution during which the scoring operation is effected. The present invention is a division of Patent 3,324,576 and is directed to the arrangement controlling student sheet pick up by the drum. Sensing and control means determine presence of a student sheet for pick up when the drum is at proper angular position and halt rotation of the drum if no student sheet is presented or if some failure in sheet pick up occurs.

3,460,828

**RANDOM MOTION RECREATION VEHICLE**

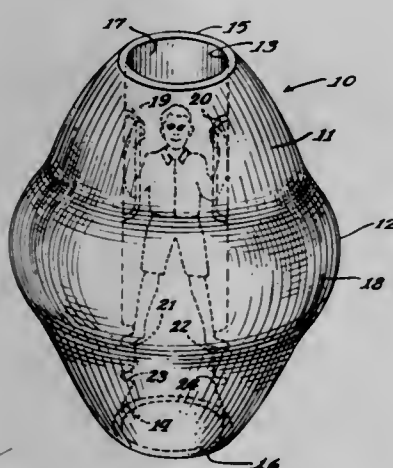
John W. Curlee, 17910 S. Sayre, Tinley Park, Ill. 60477

Filed Aug. 18, 1965, Ser. No. 480,547

Int. Cl. A63g 1/12, 31/00; B63c 9/18

U.S. Cl. 272—33

6 Claims



A recreational apparatus is disclosed having a resilient body including a cavity for receiving a human passenger (child) therein, said body having a major and a minor axis and its outer surface including protruding projections to permit a random bouncing motion to be imparted to the apparatus.

3,460,829

**HANDLE FOR ELASTIC EXERCISING DEVICE**

Costantino Roggero, Camino, Alessandria, Italy (Ufficio Gaetano Capuccio, via Venti Settembre 60, Turin, Italy)

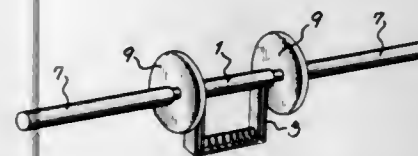
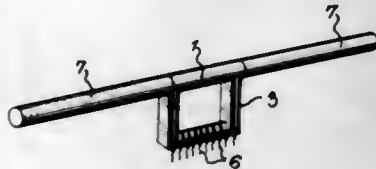
Filed Aug. 3, 1965, Ser. No. 476,842

Claims priority, application Italy, Aug. 20, 1964, 25,872/64

Int. Cl. A63b 21/02, 11/00

U.S. Cl. 272—82

5 Claims



Apparatus for gymnastic use having a cylindrical hollow handle for receiving tubular elements extending laterally from the handle for extension handle portions for balanced gripping. Means for connecting elastic pulley straps are provided, either on the handle portion or an extension thereof. The means for connecting the elastic straps are also arranged for detachable connection to the handle, and disc weights are arranged to be attached to the handle.

3,460,830

**DUELING GAME APPARATUS**

Gordon A. Barlow, Burton C. Meyer, and Marvin I. Glass, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership

Filed Nov. 17, 1966, Ser. No. 595,210

Int. Cl. A63f 9/00; A63h 3/06

U.S. Cl. 273—1

3 Claims



A game wherein each player is provided with an elongated balloon having fitted thereon a head portion and a tail portion to simulate the appearance of a snake. The head portion includes a protuberance which is effective to burst an opponent's balloon when it strikes the latter, and the tail portion includes loose elements to provide a rattling noise as the balloon is moved about.

3,460,831

**ASSEMBLING AND BALANCING SKILL GAME**

Marvin I. Glass, Chicago, Harry Disko, Park Ridge, and Hans E. Jernstrom, Northbrook, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership

Filed Feb. 9, 1967, Ser. No. 614,953

Int. Cl. A63f 9/00

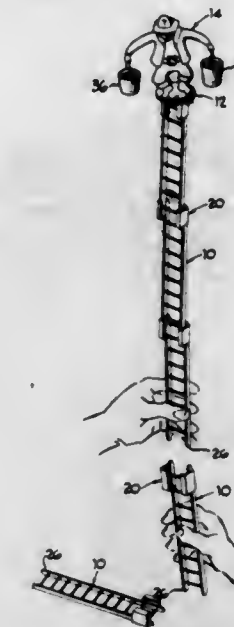
U.S. Cl. 273—1

2 Claims

A game involving skill in the assembly of removable ladder sections in extending relation to one another,

while balancing a figure on the top of a platform supported on the uppermost ladder section. A chance device

the marbles have a pin located midway between two of the bumper pins and are displaced from the bumper pins one-half the diameter of the marbles in the direction of motion



determines the number of ladder sections to be joined together, and a life-net is provided for catching the figure in the event it topples off the platform.

3,460,832

**BOWLING BALL PATH INDICATOR**

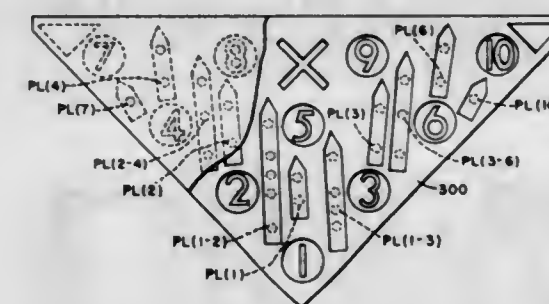
Roy E. Blewitt, Jr., Southport, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed May 28, 1965, Ser. No. 459,697

Int. Cl. A63d 5/04

U.S. Cl. 273—54

10 Claims



A bowling ball path computer and indicator including a central computer having a plurality of output lines each of which represents a Boolean expression for and is energized in response to a particular standing and fallen pin combination (but independent of the number of pins standing) detected by any one of a group of associated pinsetters. Each pinsetter circuit includes a stepping switch which scans the output lines in a predetermined order of priority and actuates a selected ball path indicator upon encountering the first occurring energized output line.

3,460,833

**MARBLE GAME DEVICE WITH TROUGHS**

Richard J. Killoren, 169 Locust Drive, Fairborn, Ohio 45324

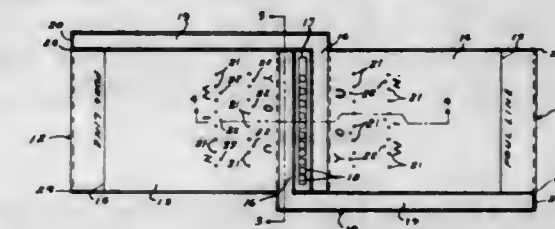
Filed Sept. 26, 1966, Ser. No. 581,777

Int. Cl. A63d 3/02; A63b 37/00; A63f 7/10

U.S. Cl. 273—120

9 Claims

A marble game device, to be played by two or more players, having a plurality of inclined surfaces whereby marbles may be rolled toward pins spaced a distance slightly greater than the diameter of the marbles and forming bumpers for the marbles. Pockets for retaining



of the marbles. Channels are provided at the end of the inclined surfaces for rapid delivery of missed marbles to a position adjacent the next playing position.

3,460,834

**GAME BOARD WITH PLAYING POSITIONS ARRANGED ABOUT A CENTRAL VACANT AREA**

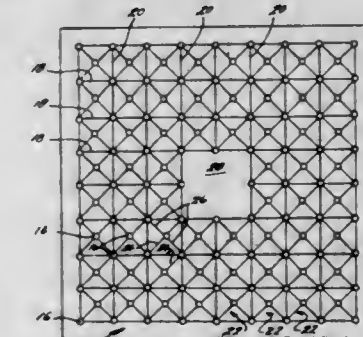
Wilbur H. Nickel, 1281 A. Defence, Muskegon, Mich. 49441

Filed May 29, 1967, Ser. No. 641,917

Int. Cl. A63f 3/02

U.S. Cl. 273—131

3 Claims



A game apparatus comprised of a playing board and sets of playing pieces, the board having a large number of spaced playing positions, each for placement of a single playing piece, arranged at the corners and centers of a plurality of contiguous mutually aligned squares and defining a continuous rectilinear loop having a central area devoid of playing positions. The loop so formed has a width around its circumference consisting substantially of the same number of aligned playing positions as there are playing pieces in each such set.

3,460,835

**APPARATUS FOR PLAYING A MATHEMATICAL BOARD GAME**

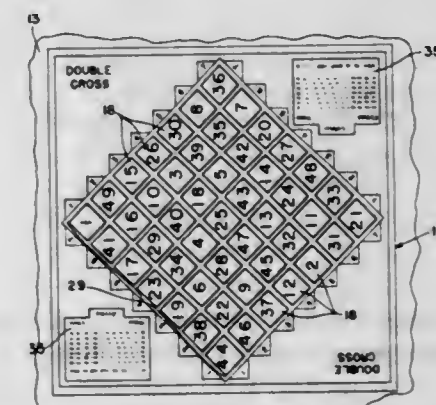
David E. Crans, 1149 N. Old Manor, Wichita, Kans. 67208

Filed Aug. 22, 1966, Ser. No. 573,942

Int. Cl. A63f 3/00, 9/06

U.S. Cl. 273—135

3 Claims



Game apparatus including a game board with a plurality of intersecting rows of spaces; indicia means on the game board adjacent the respective rows of spaces;



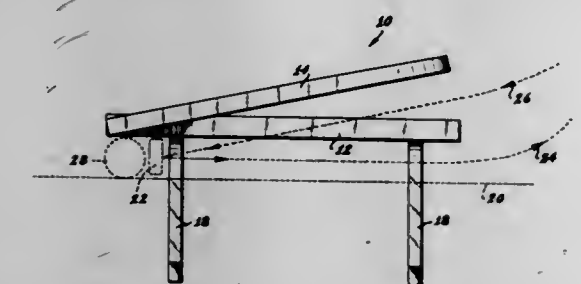
a plurality of consecutively numbered marked pieces each positionable within one of the spaces whereby the numerical sum of the pieces in each row may be equal to a pre-determined value. The diagonals of the spaces extend perpendicular to the edges of the game board and the pieces have the numerical indicia thereon extended parallel with one of the respective diagonals.

**3,460,836**  
**MAP GAME APPARATUS COMPRISING ADHESIVE OVERLAY MEMBERS APPLICABLE TO THE MAP**  
Milton Schwartz, 29 Coventry Road, Syosset, N.Y. 11791  
Filed May 19, 1967, Ser. No. 639,772  
Int. Cl. A63f 3/04  
U.S. Cl. 273-135 6 Claims



A map game including a board having a map of the United States and a placard disposed adjacently of said map, the map being divided into regions having different color designations and each consisting of a plurality of states, said placard being removably connected to said board and having a plurality of overlay members removably secured thereto, the overlay members being arranged into groups each of a different color designation corresponding to that of one of said regions, said overlay members each having a reusable adhesive surface whereby after removal of said overlay members from said placard, said members are adherable to selected portions of said map, and securement means in the form of a flap member and an adhesive strip for removably uniting said board and placard. The game is played by applying the overlay members to the map within the outlines of States whose vehicle license plates are observed by the players.

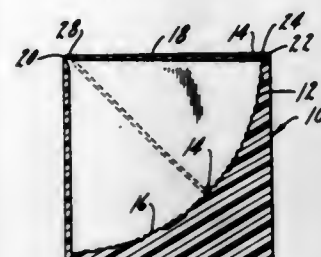
**3,460,837**  
**GOLF SWING TRAINING DEVICE**  
Nicholas A. Cassa, Jr., 430 N. Gilbert, Fullerton, Calif. 92633  
Filed Oct. 16, 1967, Ser. No. 675,598  
Int. Cl. A63b 69/36  
U.S. Cl. 273-186 2 Claims



A golf swing training device includes an upwardly inclined rod having one of its ends secured to one side of the first end of a horizontal bar. The second end of the rod terminates above and in substantially vertical alignment with the second end of the bar. A support is provided to hold the bar above a horizontal surface at a distance such that a golf club head may be passed therebeneath by a

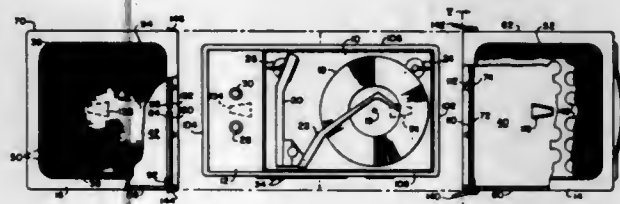
golfer while addressing a golf ball positioned on the horizontal surface below the point of securement of the rod to the bar. The horizontal bar defines the extent a golf club head should be moved only horizontally during a backswing and the inclined rod defines the lower part of the downswing path of a golf club head.

**3,460,838**  
**DEVICE FOR REPRODUCING SOUND**  
Howard N. Greenlee, Jr., 2001 McDowell Road, Vincennes, Ind. 47591  
Filed July 17, 1967, Ser. No. 653,819  
Int. Cl. G11b 1/04  
U.S. Cl. 274-1 7 Claims



A device for reproducing audible sounds including a sound source mounted within the device and a swingable top pivotally attached to the device. The swingable top includes a sound pick up adapted to engage the sound source for generating auditory impressions when moved across the sound source.

**3,460,839**  
**PHONOGRAPH RECORD PLAYER ASSEMBLY**  
John L. Benty, Scotch Plains, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Mar. 20, 1967, Ser. No. 624,405  
Int. Cl. G11b 1/02, 1/00, 3/02  
U.S. Cl. 274-2 7 Claims

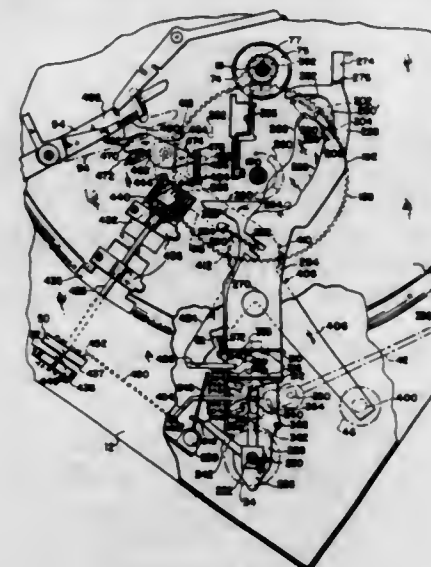


A portable phonograph record player assembly in which a record player is disposed within a pair of speaker enclosures which act as a cabinet for storing and carrying the record player and are detachable therefrom when the record player is to be operated. The speaker enclosures are provided with doors which swing close when the enclosures are removed from the record player to enclose the speakers disposed therein and swing open to permit the record player to be inserted into the speaker enclosures for storage or carrying.

**3,460,840**  
**AUTOMATIC RECORD CHANGER**  
Donald Bernard Koepke, Franklin Park, Ill., assignor, by mesne assignments, to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware  
Filed Aug. 11, 1966, Ser. No. 571,846  
Int. Cl. G11b 17/16  
U.S. Cl. 274-10 12 Claims

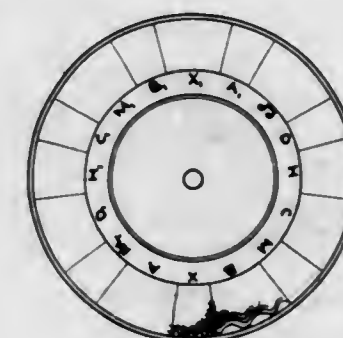
The disclosure describes a record changer characterized by its low silhouette, compact design, lightness of weight and simplicity of parts and functions, having

means to play a sole or last record a desired number of times, a removable pick-up head, an adjustable tone arm counter balance, an automatic braking mechanism so that rotation of the records is stopped just before lift-off and held until just after set-down of the tone arm, means to



indicate the record size, number of repeats and whether the machine is in manual or automatic play, means for locking the tone arm in "OFF" position when the last record is played, with or without the repeat mechanism activated, and means for manual reject, automatic reject and remote control reject of a record.

**3,460,841**  
**STYLUS AND EQUIPMENT TESTING RECORD FOR RECORD PLAYERS**  
Keith G. Caldwell, 8 Innes Road, Greenwich, New South Wales, Australia  
Filed Dec. 23, 1965, Ser. No. 516,063  
Claims priority, application Australia, Dec. 30, 1964, 53,477/64; Mar. 2, 1965, 55,822/65  
Int. Cl. G11b 3/80, 3/68  
U.S. Cl. 274-42 12 Claims

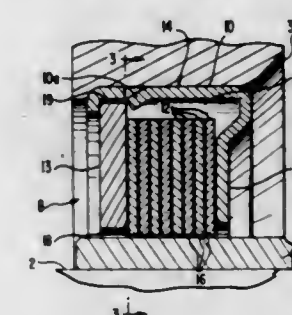


A record disc for detecting defects in record playing equipment, the disc having a playing groove which exhibits, when used with defective equipment, an interruption to the regular reflected light pattern or produces a new pattern of light reflection.

**3,460,842**  
**MULTIDISC SHAFT SEAL**  
Paul H. Pointer and Connor E. Price, Indianapolis, Ind., assignors to FMC Corporation, a corporation of Delaware  
Filed Dec. 28, 1965, Ser. No. 517,021  
Int. Cl. B61f 15/22; F16j 15/56, 15/00  
U.S. Cl. 277-2 5 Claims

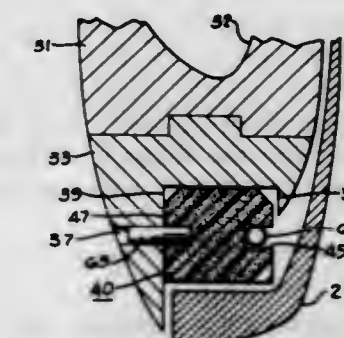
An annular oil seal for a rotating shaft subject to misalignment relative to the axis of the seal, comprising a series of thin annular sealing members of substantially

the same inside and outside diameter surrounding the rotating shaft element with which the oil seal is associated, the inside diameter of each of said sealing members being slightly larger than the outside diameter of the shaft so as to provide a small inner clearance between said members and the shaft when said members and shaft are concentric, said oil seal further comprising housing means for containing said sealing members, said



housing means comprising a guard washer having an inside diameter larger than the shaft for providing an inner annular clearance substantially greater than the inner clearance between said thin members and said shaft, said guard washer providing a positive stop to limit the maximum misalignment between the axis of the shaft and axis of the oil seal to an angle less than the angle at which said sealing members will be forced against said housing by the shaft which the seal is associated.

**3,460,843**  
**LEAKAGE-LIMITING DEVICES FOR ROTATIVE MACHINERY APPLICATIONS**  
Joseph M. Jaeger, 74 Wierimus Lane, Woodcliff Lake, N.J. 07675  
Filed Dec. 20, 1965, Ser. No. 514,887  
Int. Cl. F16j 15/48, 15/32, 15/54  
U.S. Cl. 277-26 6 Claims



A leakage-limiting device to be situated between rotative and non-rotative components of a machine. The device includes a leakage-limiting ring to surround a rotative member of the machine with clearance under static conditions. A means is provided for fixing the ring to the non-rotative member of the machine, and a means is provided for retaining this fixed relationship under static conditions. The ring has a low coefficient of friction which will prevent any damage to the rotative member if there should be engagement between the latter and the ring during starting up of the machine. On the other hand, the ring has a coefficient of thermal expansion substantially in excess of those of the materials from which the rotative and non-rotative machinery members are constructed, so that during increase of the temperature of the machine parts to their normal operating temperatures the ring will tend to expand away from the rotative member. However, the positioning and retaining means act on the ring to restrain the latter from radial and circumferential expansion during the temperature rise, and instead to constrain the ring to expand centripetally

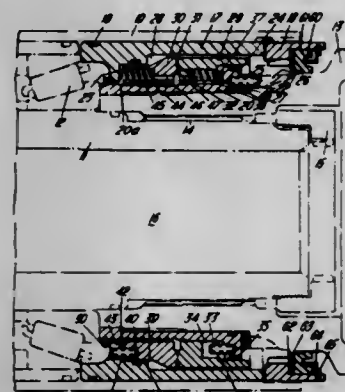


toward the rotative machine member, thus reducing the clearance with resulting decreased leakage and increased efficiency.

**3,460,844**  
**SEALS BETWEEN ROTATING PARTS**  
Frank Whittle, Walland Hill, Chagford, England  
Filed July 10, 1964, Ser. No. 381,832  
Int. Cl. F16j 15/34, 15/38, 15/54

U.S. Cl. 277—85

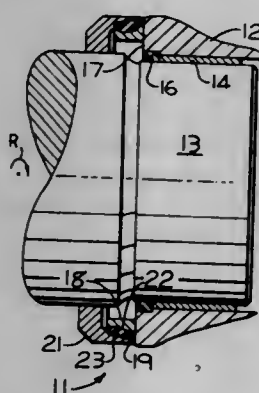
1 Claim



1. A combination of relatively rotatable first and second parts, relatively rotatable first and second sealing elements with cooperating primary sealing faces which are separable by relative axial movement of the sealing elements, means locating the elements relatively to the parts with a limited range of free axial movement of both elements and with each element restrained from rotation relative to a respective one of the parts, secondary sealing means, each including a secondary seal and a cooperating secondary sealing surface, acting between each sealing element and its respective part, the secondary surfaces being of the same radius, and low-rate springs acting axially between each sealing element and its respective part for urging the primary sealing faces into contact with one another, while permitting easy simultaneous axial displacement of the sealing elements relatively to the parts when the parts are subjected to axial shock, said two parts being an inner and an outer sleeve and each sleeve having a radial flange projecting towards the other sleeve, which flanges are axially spaced so as to form a substantially closed cavity between them, and means for retaining the sealing elements in the cavity, and means for preventing axial separation of the sleeves.

**3,460,845**  
**SEAL FOR HELICOPTER ROTOR BLADE PITCH CONTROL MECHANISM**  
Roland E. Hasselbacher, Brimfield, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California  
Filed Mar. 23, 1966, Ser. No. 536,787  
Int. Cl. F16j 15/38; B64c 27/04  
U.S. Cl. 277—92

1 Claim

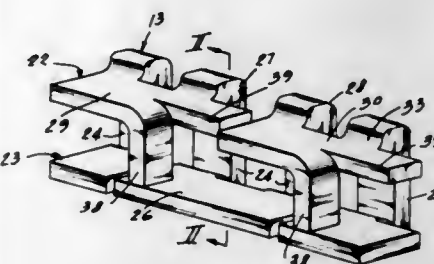


A face seal for variable pitch helicopter rotor blades having a floating seal ring associated by means of an O-ring with a retainer ring secured to the blade hub. To

maintain substantially constant face loading between the seal ring and a seal surface of an inner end of the blade, loading ramps on the seal ring and retainer ring diverge so that the face load applied to the seal ring by the O-ring decreases as increasing centrifugal force axially shifts the seal ring and tends to increase the face load.

**3,460,846**  
**PISTON RING**  
Earl O. Schmidt, Fenton, and Roy D. Anderson, Ballwin, Mo., assignors to Ramsey Corporation, St. Louis, Mo., a corporation of Ohio  
Filed Feb. 9, 1967, Ser. No. 614,854  
Int. Cl. F16j 9/06, 9/20  
U.S. Cl. 277—140

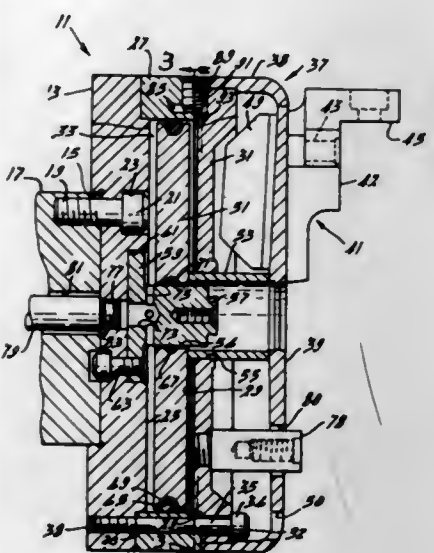
6 Claims



A piston oil ring assembly having axially spaced rail rings supported and expanded by a circumferential expander-spacer ring of substantially U-shaped cross-section having circumferentially spaced axially upstanding fingers between the legs of the U to add axial rigidity to the expander-spacer and to block the channel of the U against entry of the rail rings.

**3,460,847**  
**FIXTURE MOUNTING ASSEMBLY**  
George Hohwart, Farmington, and Paul Toth, Allen Park, Mich., assignors to N. A. Woodworth Company, Farmington, Mich., a corporation of Michigan  
Filed June 10, 1965, Ser. No. 462,970  
Int. Cl. B23b 31/10, 5/22  
U.S. Cl. 279—4

16 Claims

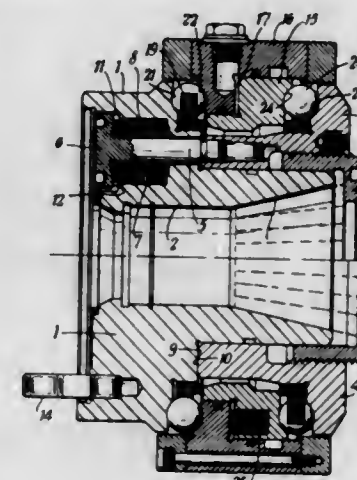


In its broader aspects, the disclosure comprises two interfitting annular parts that normally have an essentially close fit but, at the same time, are radially adjustable relative to each other for a limited distance. The disclosure has particular utility in rotatable work holding chucks and in tool or work holding clamping fixtures although it obviously can be used in many different applications and environments. In the case of work holding chucks the adjustment means of this invention is used primarily to adjust the work holding part of the chuck relative to the base or mounting portion thereof so that

a workpiece carried by the chuck will run precisely concentrically to a spindle or other part to which the base portion is attached. By reason of its unique construction, the adjustment means causes the work holding and mounting portions to snugly interfit and tightly engage each other in all adjustment positions of the parts.

**3,460,848**  
**POWER OPERATED COLLET CHUCKS**  
Patrick Rowden Brown, Guildford, England, assignor to F. Burnerd & Co. Limited, Winnall, Winchester, Hampshire, England, a British company  
Filed June 30, 1967, Ser. No. 650,451  
Claims priority, application Great Britain, Sept. 29, 1966, 43,503/66  
Int. Cl. B23b 31/20, 31/30  
U.S. Cl. 279—4

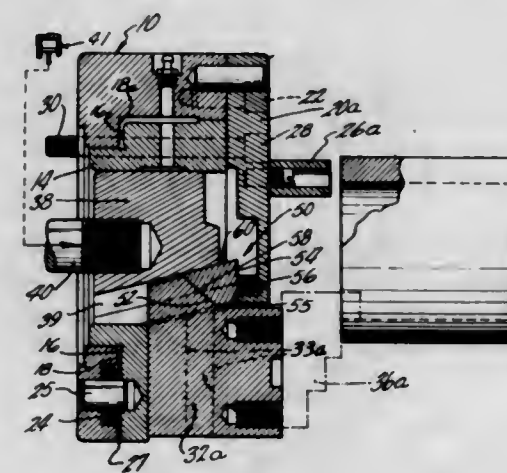
2 Claims



A power operated collet chuck having mutually movable body portions one of which is internally tapered to receive a collet and a piston and cylinder assembly around the body portions with two ball or roller bearings, one bearing between one body portion and the piston and the other bearing between the other body portion and the cylinder, the bearings acting as combined thrust and journal bearings.

**3,460,849**  
**VARIABLE FORCE CHUCK CONSTRUCTION**  
George A. Highberg, West Hartford, Conn., assignor, by mesne assignments, to The S-P Manufacturing Corporation, a corporation of Ohio  
Filed Jan. 11, 1966, Ser. No. 519,926  
Int. Cl. B23b 31/16, 5/22, 5/34  
U.S. Cl. 279—121

5 Claims

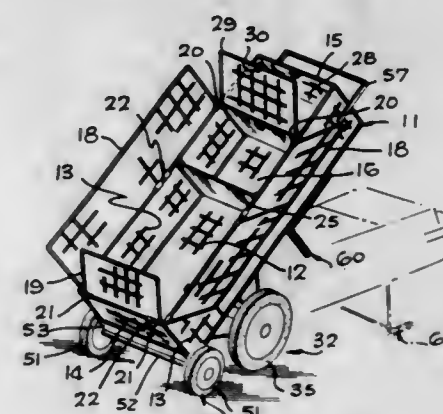


A drawbar operated chuck having an inner part on which the jaw carriers are mounted for radial movement, and an outer part in which the inner part, and its jaw carriers, are supported for limited axial movement. The

drawbar is operated by a conventional fluid cylinder, and carries a plug at its forward end for moving the jaw carriers radially in response to axial movement of the plug. The inner part is spring-biased forwardly and a workpiece can be gripped externally by retracting the drawbar rearwardly. However, when the workpiece is engaged the inner part is moved rearwardly compressing the springs to seat the workpiece against a face plate which comprises the outer portion of the chuck body. Once seated further drawbar force serves to grip the workpiece tighter between the chuck jaws. For internal gripping one embodiment utilizes mechanical wedges between forwardly facing, axially inclined, camming surfaces on the plug, and on the jaw carriers, for urging the latter rearwardly in response to forward extension of the drawbar.

**3,460,850**  
**SHOPPING CART**  
William E. Franklin, 1451 E. 56th St., Los Angeles, Calif. 90011  
Filed Apr. 10, 1967, Ser. No. 629,457  
Int. Cl. B62b 1/00, 7/04  
U.S. Cl. 280—47.2

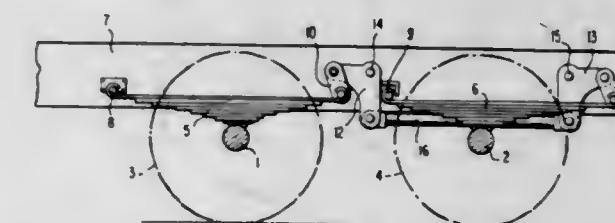
1 Claim



The application discloses a cart suitable for shopping which is provided with two sets of removable wheels and with side wall extensions that fold over the main compartment body and an auxiliary locking compartment.

**3,460,851**  
**ARRANGEMENT FOR THE EQUALIZATION OF LOADS OF TWO REAR AXLES IN VEHICLES, ESPECIALLY COMMERCIAL-TYPE MOTOR VEHICLES**  
Hermann Schrimpf, Sulzbach, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany  
Filed May 8, 1967, Ser. No. 636,722  
Claims priority, application Germany, May 10, 1966, D 50,076  
Int. Cl. B60g 5/00  
U.S. Cl. 280—104.5

2 Claims



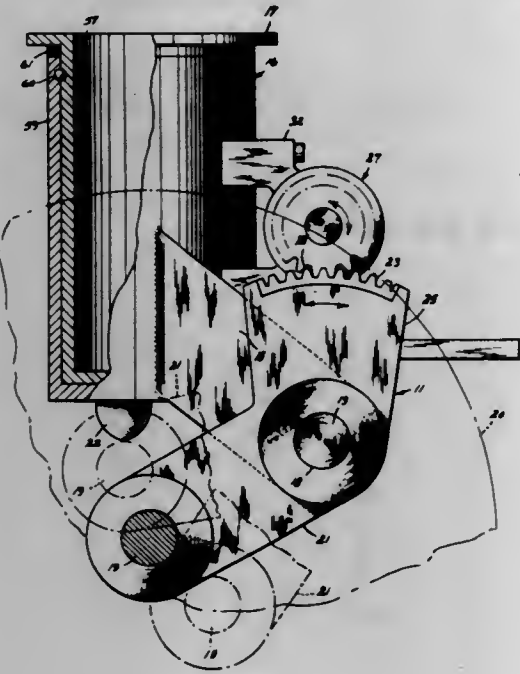
An installation for the equalization of the loads of two rear axles in vehicles, especially commercial-type motor vehicles, in which each of the two rear axles provided on each side is spring-supported with respect to the vehicle frame by means of a leaf spring whose forward end is pivotally secured to the vehicle frame while its rear end is pivotally connected by way of a shackle with a sub-



stantially horizontal leg portion of a bell crank pivotally mounted at the vehicle frame; the other leg portion of each of the two bell cranks on each side which extend downwardly are interconnected by way of a linkage and the pivot point of the rear bell crank is located forwardly of the rear end of the corresponding rear leaf spring.

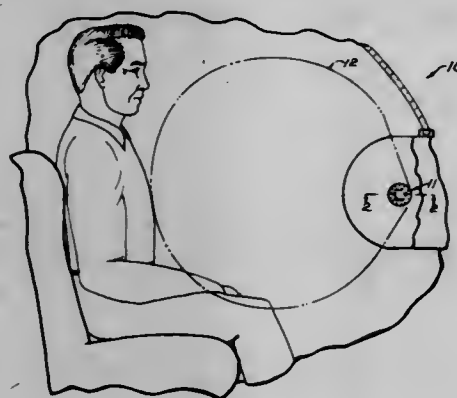
**3,460,852**  
**SUSPENSION SYSTEM**  
Richard J. Benson, 620 W. Main St.,  
Rockaway, N.J. 07866

Continuation of application Ser. No. 520,624, Jan. 14, 1966. This application Oct. 11, 1967, Ser. No. 682,703  
Int. Cl. B60g 5/00, 9/00, 11/14  
U.S. Cl. 280—124 15 Claims



A suspension system including a spring assembly which receives wheel movement as rotational movement of a shaft, said shaft having a nut mounted thereon whose linear movement is resisted by a resilient means.

**3,460,853**  
**SAFETY APPARATUS**  
Richard Chute, Huntington Woods, Mich., assignor to  
Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio  
Filed Oct. 13, 1967, Ser. No. 675,133  
Int. Cl. B60r 27/00; F17c 5/00  
U.S. Cl. 280—150 22 Claims



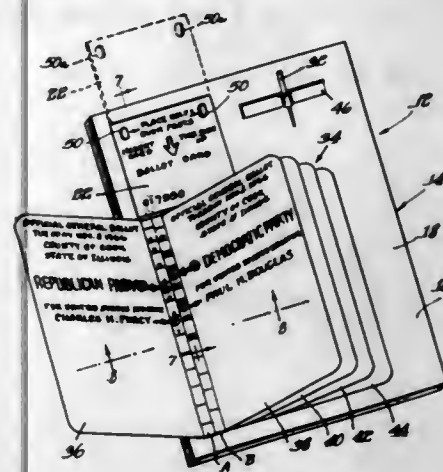
A container for pressurized fluids has a relatively thin wall portion. Means, preferably in the form of an explosive, is associated with the thin wall portion of the container and operates to effect the formation of an opening in the relatively thin wall portion to provide for release

of fluid from the container. A linear flow distributor is associated with the container and distributes the fluid flow substantially equally.

**3,460,854**  
**ABSENTEE BALLOT DEVICE**  
Wilford K. Koelling, 115 Collier Ave.,  
Bartonville, Ill. 61609  
Filed Aug. 11, 1967, Ser. No. 660,038  
Int. Cl. B42d 15/00

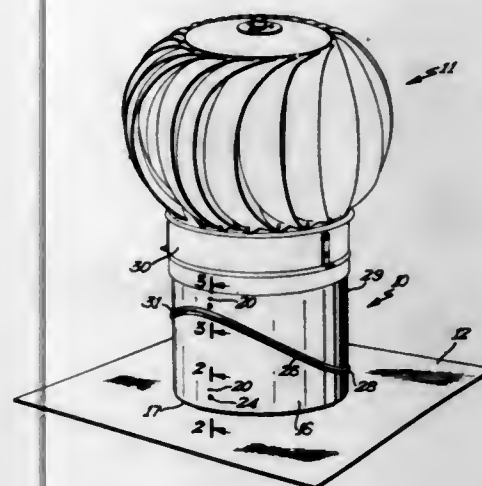
U.S. Cl. 283—5

12 Claims



The present application discloses an absentee balloting device whereby the absentee voter may indicate his choice on a record card adapted for machine processing, similar to the cards used in voting booths. To this end it is proposed to use an absentee balloting device whereby the record card to be selectively perforated may be pre-assembled in a novel manner with the printed ballots and mailed as a unit to the absentee voter. Upon receipt of the combined record card and ballot, the recipient may selectively perforate the card with facility, and return the properly perforated card by mail to the official ballot custodian.

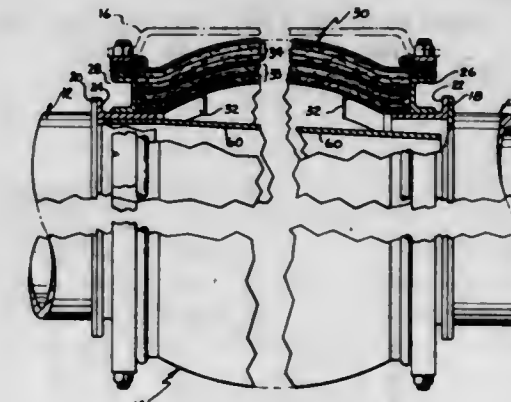
**3,460,855**  
**ANGULAR ADJUSTABLE ROOF TUBULAR COUPLING FOR MOUNTING TURBINE VENTILATOR**  
Merland C. Belden, Eden Prairie, Minn., assignor to  
Louver Manufacturing Co. Inc., Minneapolis, Minn.,  
a corporation of Minnesota  
Filed May 8, 1968, Ser. No. 727,395  
Int. Cl. E04d 13/14; E03b 7/06; E04b 5/48  
U.S. Cl. 285—44 3 Claims



An adjustable mounting structure for a turbine ventilator including a flat base plate having an opening therein, and a centrally located upturned flange circumscribing

said opening, and an annular lip integrally formed with said flange and projecting radially inwardly therefrom. Upper and lower cylindrical sections interconnected together by annular engaging elements to permit relative rotation therebetween. The lower section being telescopically positioned around the upturned flange on the base plate and releasably connected thereto by locking means, and the upper section adapted to be connected to a turbine ventilator. The upper end of the upper section and the lower end of the lower section being disposed in a plane substantially normal to the longitudinal axis of the said sections, and the annular inner engaging elements on the sections being positioned in a plane angularly disposed with respect to the longitudinal axis to permit proper positioning of the turbine ventilator.

**3,460,856**  
**EXPANSION JOINTS FOR CONDUITS**  
Wilbur Van Tine, North Plainfield, and Bernard L. Kotyuk, Manville, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York  
Continuation of application Ser. No. 335,308, Jan. 2, 1964.  
This application Sept. 2, 1966, Ser. No. 577,081  
Int. Cl. F16l 59/16, 27/12, 25/00  
U.S. Cl. 285—53 9 Claims



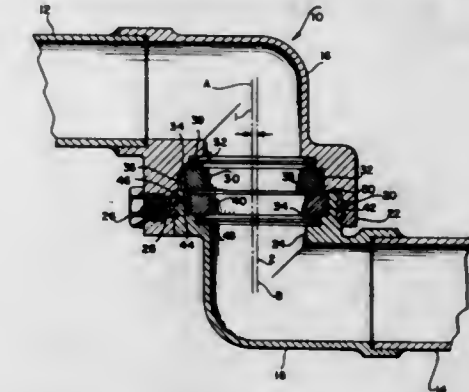
1. An expansion joint for joining, and accommodating expansion and contraction of, conduits conveying a relatively hot fluid stream, comprising:

- (a) opposing and longitudinally spaced apart metal terminal portions for securing said joint to said conduits;
- (b) an outer fabric cover of weather resistant material and forming with said terminal portions a fluid tight seal;
- (c) at least one felt formed of inorganic fibers;
- (d) foraminous metal, at least a portion of which is inwardly of said felt, in respect to said joint, and having apertures sufficiently small for said foraminous metal to form attrition deterring means for said felt;
- (e) flexible metallic support means located inwardly, in respect to said joint, of and at least partially supporting said felt; and
- (f) said cover, said felt, and said foraminous metal extending from one to the other of said terminal portions, and at least said foraminous metal and said outer cover being secured to said terminal portions.

**3,460,857**  
**HYDRAULIC SWING JOINT WITH SEALS HAVING ECCENTRIC SEALING CONTACT**  
Artemas M. Larkin, Glendale, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.  
Filed July 5, 1966, Ser. No. 562,726  
Int. Cl. F16l 17/00, 33/16  
U.S. Cl. 285—98 2 Claims

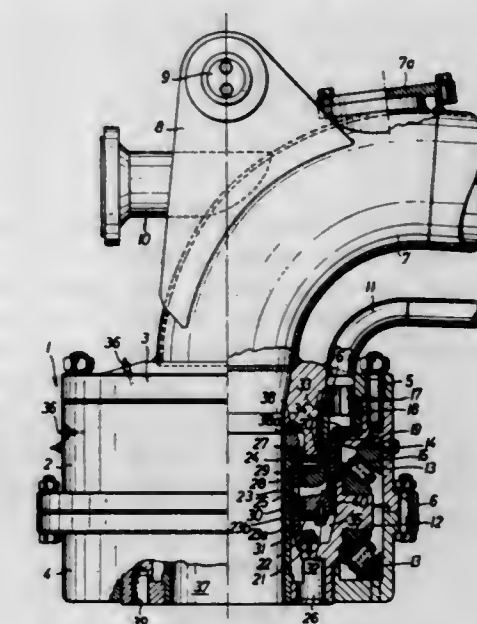
A hydraulic swing joint comprised of a fluid pressure

seal located between relatively rotating housings and having two interfacing sealing members arranged eccentrically with respect to the rotational axis of the housings. One sealing member has a narrow annular sealing edge engaging a plane sealing surface of the other sealing member.



Accordingly, as the housings are rotated, the annular sealing edge sweeps over an appreciable area of the plane sealing surface to avoid concentrating wear on the plane sealing surface and to minimize entrapment of particles of foreign matter under the sealing edge which could score or damage the sealing members.

**3,460,858**  
**BORING DEVICE**  
Paul Lentzen, Erkelenz, Rhineland, and Jakob Wolters, Bieck, Rhineland, Germany, assignors to Alfred Wirth & Co. KG., Erkelenz, Rhineland, Germany, a corporation of Germany  
Filed Feb. 9, 1967, Ser. No. 614,896  
Claims priority, application Germany, Aug. 19, 1966, M 7,064  
Int. Cl. F16l 17/00, 33/16  
U.S. Cl. 285—98 2 Claims



A boring device has a boring rod and a discharge head provided with a casing. The casing has a passage for the rinsing and a cover with an air passage. An insert member is located within the casing and has an air passage connected by a resilient tensioning sleeve with the air passage in the cover. A rotary part carried the boring rod and is engaged by two groups of seal elements, an opening between the two groups being in communication with an air passage provided in the rotary part.



### 3,460,859 DUCT COUPLING FRAME AND CORNER MEMBER

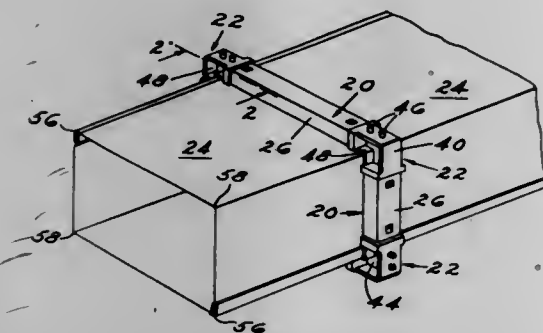
Henry M. Keating, 18945 Gilchrist,  
Detroit, Mich. 48235

Continuation-in-part of application Ser. No. 470,374,  
July 8, 1965. This application Mar. 23, 1967, Ser.  
No. 625,390

Int. Cl. F16l 55/00, 25/00

U.S. Cl. 285—319

9 Claims



In general, this disclosure relates to a coupling frame for ventilation ducts, including a plurality of channel sections joined by corner members. The coupling frame is received between and joins opposed ends of the duct sections, and may be utilized to support the duct system.

### 3,460,860 FLEXIBLE CONNECTOR STRUCTURE

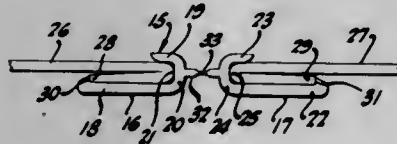
Peter P. Stevens, Jr., Point Reyes Station, Calif., assignor to Walter Landor, San Francisco, Calif.

Filed Sept. 29, 1967, Ser. No. 671,869

Int. Cl. F16b 5/00; E04c 1/34; E04d 1/36

U.S. Cl. 287—20.92

12 Claims



Flexible connector structure for joining a pair of panel members along edge portions thereof. The connector structure takes the form of an elongated, one-piece extruded-plastic component comprising a pair of lock sections respectively equipped with means for interlockingly engaging the edge portions of such panel members, and further comprising a flexible strap extending between the lock sections and defining a hinge enabling the panel members to be oriented in a variety of angular positions relative to each other.

### 3,460,861 STAPLES FOR PADLOCK

Armas Kalervo Niilola, Maasvantie 16B,  
Helsinki, Finland

Filed Aug. 30, 1967, Ser. No. 664,444

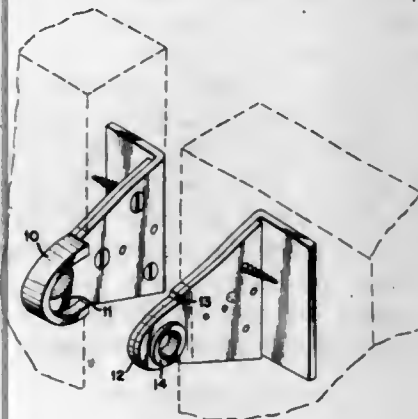
Int. Cl. E05c 19/08

U.S. Cl. 292—281

2 Claims

A pair of staples is used for a padlock, each staple or the pair consisting of two plates having hardened surfaces and firmly connected by projections carried by one plate and fitting into openings provided in the other plate and also by screws. The staples have curved projecting ends and the end of one staple is covered by a corresponding shaped flange having projecting edges and adapted to

receive the curved end of the other staple. Aligned holes for the padlock shackle are provided in these edge portions



of the two staples. The hole of said other staple carries an outwardly directed ring-shaped flange.

### 3,460,862 COUPLING DEVICE FOR CONTAINER HANDLING SYSTEM

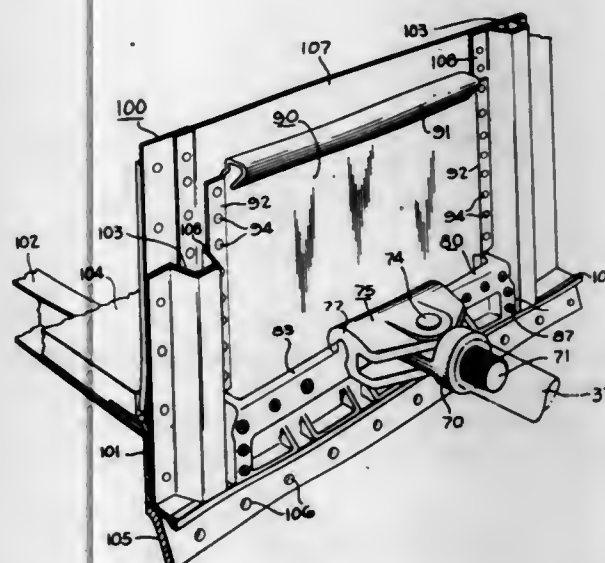
Andrew Abolins, Langhorne, Pa., assignor to Strick Corporation, Fairless Hills, Pa., a corporation of Pennsylvania

Filed June 12, 1967, Ser. No. 645,157

Int. Cl. B65j 1/10, 1/20

U.S. Cl. 294—82

8 Claims



Herein are disclosed new and improved coupling means, and container assemblies and an article handling device which embody same, for use in a system for handling container assemblies, and particularly for transferring container assemblies to and from highway carriers, railway carriers and other mobile and stationary structures. The container assemblies are either of the typical, removable-bogey, highway trailer body type, or are containers with separable chassis equipped with the customary equipment for highway transportation.

### 3,460,863 MULTIPACK CONTAINER CARRIER

Wilbur A. Schalch, Maumee, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Original application Sept. 22, 1965, Ser. No. 489,239.

Divided and this application May 2, 1968, Ser. No. 726,175

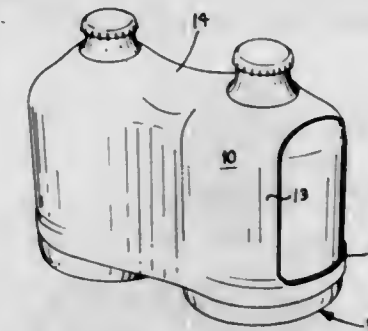
Int. Cl. B66c 1/62

U.S. Cl. 294—87.2

4 Claims

An improved multipack carrier for the unitary pack-

aging of a plurality of containers is provided for packaging two aligned rows of bottles in a unitary package.



Such package is commonly referred to as a "six-pack" carton.

### 3,460,864 COLLAPSIBLE TRUCK RACK

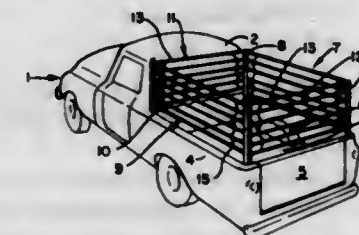
Paul L. Piercy, Louisville, Ky., assignor to Pierco, Incorporated, Louisville, Ky., a corporation of Kentucky

Filed Apr. 11, 1967, Ser. No. 629,994

Int. Cl. B60p 1/02

U.S. Cl. 296—3

9 Claims



Discloses a collapsible truck rack including: a series of sets of parallel bars, connected together by a parallel motion mechanism in the form of pivotable links and mounted in a series of vertical posts which are hinged so that in collapsed condition the posts fold longitudinally over the collapsed set of parallel bars.

### 3,460,865 CONVERTIBLE TOP

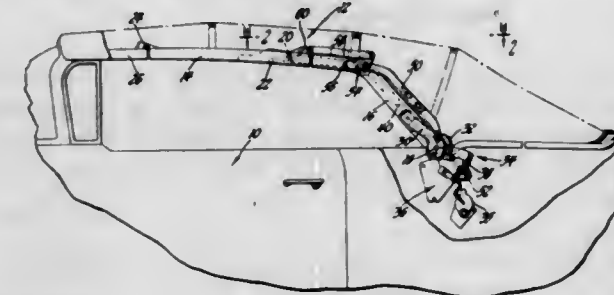
Stanley Podwys, Orchard Lake, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 4, 1967, Ser. No. 672,760

Int. Cl. B60j 7/12

U.S. Cl. 296—117

4 Claims



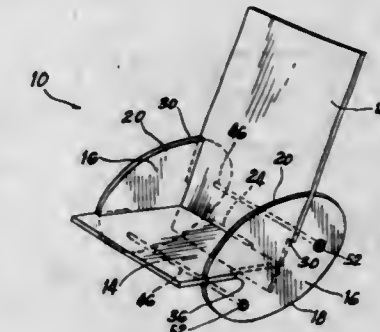
A convertible top structure for an automotive vehicle or the like includes a pair of foldable side rail assemblies swingably mounted on the body and a separate generally U-shaped center bow member being independently swingably mounted on the body and movable in unison with the side rails between raised and lowered positions. The spaced legs of the center bow include portions which nest against the rear side rail section immediately outboard thereof in top raised position, and a pair of control links each extending between a respective side rail and body pivots located outboard of the adjacent rear side rail section body pivots operate in tension to exert outboard thrust on the side rails against the center bow in top raised position to establish transverse rigidity in the top structure when in such raised position.

### 3,460,866 ROCKING CHAIR CONSTRUCTION

Abbas Kessel, 525 S. 5th St., Mankato, Minn. 56001  
Filed Sept. 21, 1967, Ser. No. 669,500  
Int. Cl. A47c 3/029, 4/02

U.S. Cl. 297—258

5 Claims



A rocking chair construction comprising a plurality of pieces formed of interfitting, individual boards. The pieces include a back board and a seat board with an opening being formed in the back board for receiving a tongue formed on the seat board to provide the desired interfitting relationship. A pair of elliptically shaped side boards define slots for respectively receiving the back board and seat board; and the side boards function to provide the rocker and arm rest portions of the chair. A pair of rods extend between the side boards to hold the entire assembly together.

### 3,460,867 MINING AND RETORTING OF OIL SHALE

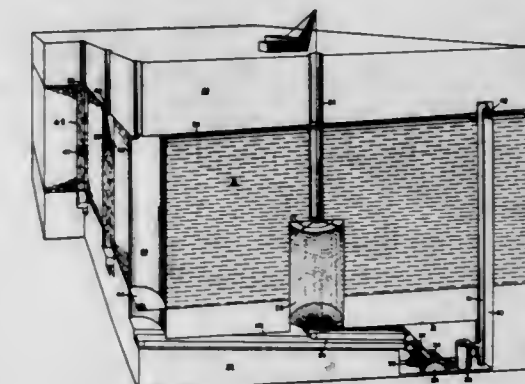
Russell J. Cameron, 5598 E. Mansfield, Denver, Colo. 80237, Irvin P. Nielsen, P.O. Box 14, Glenwood Springs, Colo. 81601, and Ernest E. Burgh, 10035 W. 29th, Denver, Colo. 80202

Filed Oct. 24, 1965, Ser. No. 504,880

E21c 41/14

U.S. Cl. 299—2

7 Claims



Oil shale is retorted in situ by drilling a pilot hole through a shale bed, pull-through mining the shale to form a retort, and retorting the shale in situ. Lean shale is mixed with richer shales to obtain uniform retorting of the adjacent shale which forms the retort, as well as retorting of the shale within the retort.

### 3,460,868 MINING MACHINE HAVING OSCILLATING CUTTING ARMS

Thomas Luksich, North Charleroi, Pa., assignor to Lee-Norse Company, Charleroi, Pa., a corporation of Delaware

Filed May 11, 1967, Ser. No. 637,707

Int. Cl. E21c 25/10

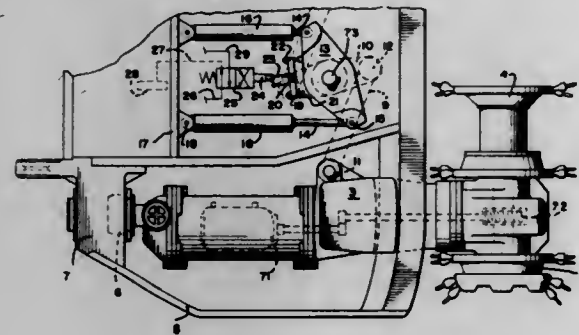
U.S. Cl. 299—71

14 Claims

A continuous mining machine using a variable-volume hydraulic pump to produce oscillation, of forwardly extending cutting arms. The cutting arms support cutting



discs which are rotated by electric motors wholly contained in the arms. The pump, a pilot-operated, camming-yoke-type, provides variable-pressure, hydraulic fluid flows of positive and negative values. A hydraulic oscillation system supplies these flows to oscillate cyl-



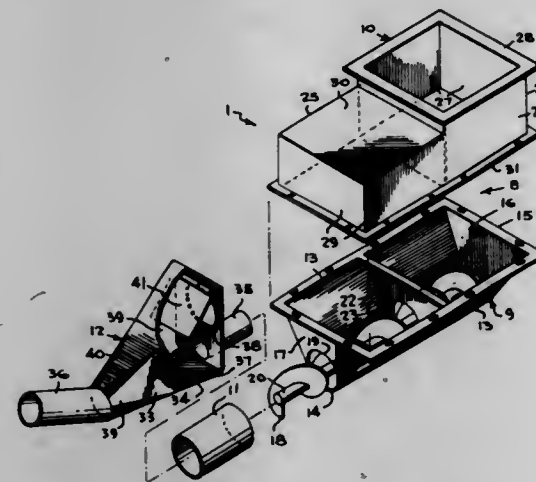
inders, which are crank-coupled to the cutter arms, in cooperative and successive cycles. Camming means, operated by the cutter arms' crank, moves a pilot valve which, in turn, controls hydraulic fluid pressures used to move the pump camming yoke back and forth in alternating "over-center" positions.

### 3,460,869 AIR LOCK

Joseph Stanley Herr, P.O. Box 1416,  
Wickenburg, Ariz. 85358  
Filed Oct. 9, 1967, Ser. No. 673,705  
Int. Cl. B65g 53/46, 53/48

U.S. Cl. 302—50

6 Claims



Air lock for introducing material into an air conveyor line while preventing blow back to a material supply container, wherein a receiver including a material chamber connected to the container outlet and a surge chamber are side-by-side with an auger running through them conveying material from the material chamber through the surge chamber to a pick-up chamber for entrainment in a conveying airstream. A gravity operated door covers the material inlet to the pick-up chamber. Pressure in the pick-up chamber is communicated to the surge chamber where it expands to prevent blow back to the material container.

### 3,460,870

#### EMPTY AND LOAD BRAKE APPARATUS

Walter B. Kirk, Pittsboro, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

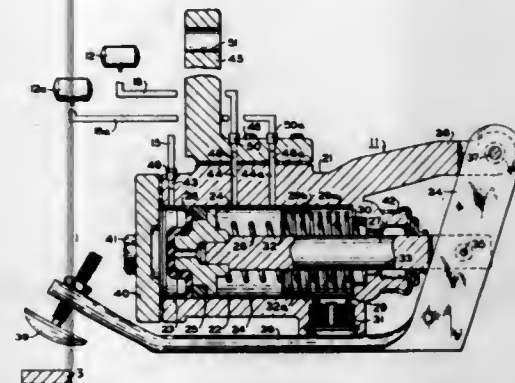
Filed Dec. 15, 1967, Ser. No. 691,037  
Int. Cl. B60t 8/18, 15/02; F15b 11/08

U.S. Cl. 303—22

3 Claims

Empty and load brake apparatus for railroad freight cars of the type having an "empty" and "load" sensing

detector valve responsive to relative positions of sprung and unsprung parts of a car truck for selectively connecting one or more volume reservoirs to the brake cylinder depending on the supply pressure during service and emergency applications when the detector valve registers



an "empty" condition for the car, to thereby control the equalization pressure resulting in the brake cylinder during service and emergency brake applications so as to insure the braking force being sufficiently low in each case to prevent wheel sliding.

### 3,460,871

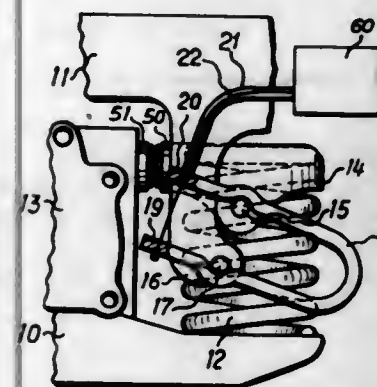
#### DEVICE FOR AUTOMATICALLY REGULATING THE BRAKE PRESSURE DEPENDING ON THE VEHICLE LOADING

Siegfried Keller, Effretikon, and Alfred Blaser, Rumlang, Switzerland, assignors to Werkzeugmaschinenfabrik Oerlikon Bührle & Co., Zurich, Switzerland  
Filed Mar. 29, 1968, Ser. No. 717,092  
Claims priority, application Switzerland, Apr. 10, 1967, 5,042/67

Int. Cl. B60t 8/22

U.S. Cl. 303—22

5 Claims



A measuring spring which comprises two connection points is provided on a vehicle braked by compressed air, particularly a railway coach or wagon. The spacing between these connection points varies according to the loading of the vehicle. This variation is transmitted to a measuring member for the automatic regulation of the brake pressure. The measuring spring consists of a U-shaped leaf spring, one arm of which is articulated by means of the one connection point to one end of the vehicle spring and the other arm of which is articulated through the other connection point to a point on the upper portion of the vehicle which point is below the end of the vehicle spring.

### 3,460,872

#### VARIABLE LOAD VALVE DEVICE

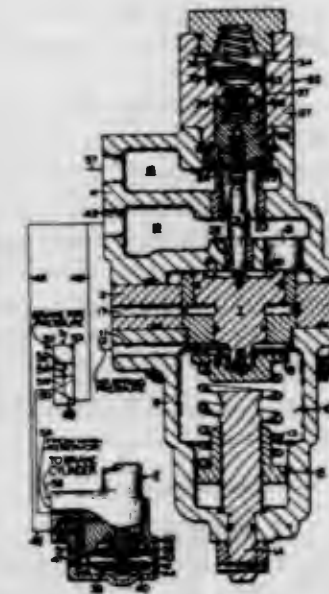
William H. Reno, Monroeville, and Richard K. Frill, Pittsburgh, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania  
Filed June 7, 1968, Ser. No. 735,252  
Int. Cl. B60t 8/18, 15/02, 11/02

U.S. Cl. 303—22

11 Claims

A variable load valve device for effecting delivery of actuating fluid to a vehicle brake cylinder at a pressure

according to a control pressure established by the vehicle operator for effecting a brake application commensurate with the degree of such actuating pressure delivered, said variable load valve device including means for limiting the degree of said actuating fluid to a maximum pressure



commensurate with the load condition of the vehicle, and being further characterized by means for automatically maintaining said maximum degree of actuating pressure, once established, but permitting the operator to selectively reduce the degree of said actuating pressure to any degree less than said maximum degree.

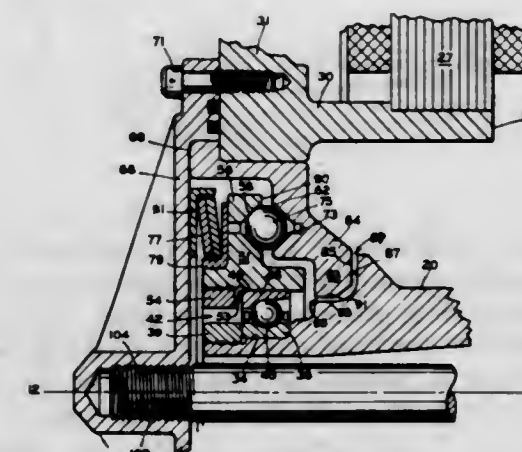
### 3,460,873

#### BEARING OVERLOAD PROTECTION MEANS

Burton W. Roney, Wayne, N.J., assignor to The Bendix Corporation, a corporation of Delaware  
Filed Oct. 26, 1967, Ser. No. 678,246  
Int. Cl. F16c 17/00, 19/50, 21/00

U.S. Cl. 308—35

17 Claims



A bearing overload protection means in which axial and radial loads in excess of the load capacity of spindle or spin bearings are diverted from the bearings through a safety bearing structure without passing through the bearings supporting a rotor, wheel or shaft. The aforementioned overload protection means includes the provision of a rotor bearing structure and a safety bearing structure, the rotor bearing structure including ball bearings biased into a bearing relationship under a relatively light spring pressure, while the safety bearing structure includes other safety balls biased into a varying relationship in conical pockets under a relatively heavy spring pressure and further includes the provision of an intermediate housing to transfer an overload from the rotor bearing structure biased under the relatively light spring pressure to the safety bearing structure biased under a relatively heavy spring pressure.

Further, in the aforementioned intermediate housing the balls of the safety bearing structure are positioned in conical pockets provided in the intermediate bearing housing plate and in a housing plate carried by the main housing and positioned in spaced relation to the intermediate housing plate. The balls of the safety bearing structure being so arranged in the aforementioned conical pockets as to cam the intermediate housing plate in an axial direction apart from the main housing supported bearing plate so as to alleviate pressure applied to the rotor bearings by a radial overload so as to prevent damage to the rotor bearings by transferring the overload to the safety bearing structure

### 3,460,874

#### SEALED BEARING

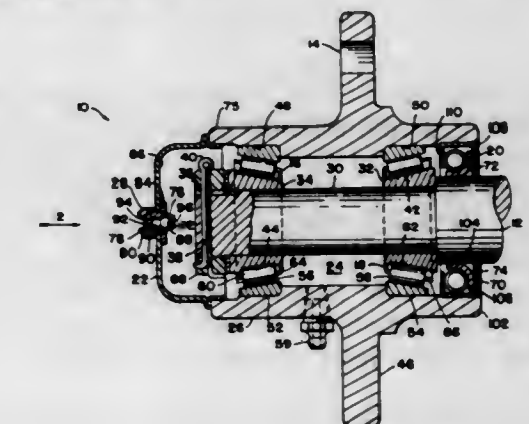
Eric W. Johnson, 2431 Pointe Tremble Road,  
Algonac, Mich. 48001

Continuation-in-part of application Ser. No. 391,382,  
Aug. 24, 1964, This application Mar. 17, 1967, Ser.  
No. 624,083

Int. Cl. F16c 1/24, 33/78, 35/08

U.S. Cl. 308—187.2

1 Claim



Sealed bearing structure including a hub, bearings mounting the hub for rotation on the end of an axle, means securing the bearings and hub to the axle, a grease fitting located centrally of the hub for introducing grease into the hub, a grease seal at one end of the hub for preventing leakage of grease between the hub and axle and for preventing water from entering the sealed bearing structure between the hub and axle on immersion of the hub and axle in water and a cover sealing the other end of the hub and extending over the end of the axle having a check valve located on the axis of rotation of the hub for permitting exit of air under pressure from the sealed bearing structure while preventing entry of water into the sealed bearing structure on immersion of the hub and axle in water.

### 3,460,875

#### SLEEVE BEARING

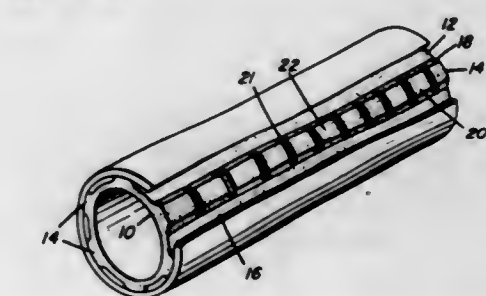
Theron R. Kelley, Mattapoisett, Mass., assignor to Tedan, Inc., West Hanover, Mass., a corporation of Massachusetts

Continuation of application Ser. No. 572,805, Aug. 16,  
1966. This application May 7, 1968, Ser. No. 727,382

Int. Cl. F16c 27/00, 33/00, 33/66

U.S. Cl. 308—238

5 Claims



A rotatable unitary sleeve bearing having outwardly facing lines of longitudinally spaced apart substantially

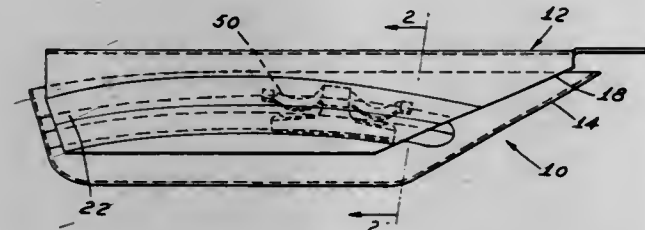


isosceles trapezoid-shaped lands radially spaced by like but reverse-shaped longitudinally extending water channels, the side walls of the lands below the spacing therebetween defining angular deflectors from the base of the channels.

### 3,460,876 ASH TRAY

Henry De Boer, Grand Rapids, Mich., assignor to F. L. Jacobs Co., Detroit, Mich., a corporation of Michigan  
Filed July 19, 1967, Ser. No. 654,640  
Int. Cl. B60n 3/08, 3/10, 3/12  
U.S. Cl. 312-246

13 Claims



There is disclosed an ash receptacle or tray for installation within an automobile dashboard, including an ash receiving receptacle body or drawer slidable from a fully retracted and enclosed position within the dashboard to a fully open position forwardly of the dashboard. A housing is provided for attachment to the dashboard or other suitable support structure within the vehicle as is conventional in the art. The drawer is slidably received within the housing for withdrawal as the need arises.

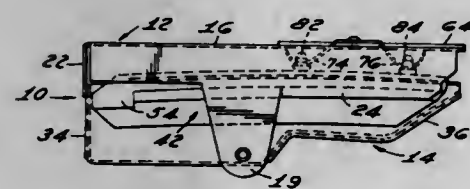
The drawer has elongated guides or tracks on each side thereof. Each track comprises a bearing surface and a guide surface which are connected and are located approximately 90° apart. The housing is provided with a resilient tension element or tensioner, made from a plastic material, opposite each track. A single mounting element connects the tension element to the housing approximately midway between the ends thereof. Each tension element is provided with resilient bearing means and guide means which are in contact with the adjacent bearing surface and the guide surface respectively.

Specifically, each resilient tension element includes a pair of elongated cantileverly supported resilient arms interconnected on their inner ends and a pair of bearing protuberances. The resilient arms contact the corresponding bearing surface of the track and urge the drawer and in particular the bearing surface thereon into contact with the guide protuberances.

### 3,460,877

ASHTRAY WITH SPRING MOUNTED ROLLERS  
Henry De Boer, Grand Rapids, Mich., assignor to F. L. Jacobs Co., Detroit, Mich., a corporation of Michigan  
Filed July 19, 1967, Ser. No. 654,645  
Int. Cl. B60n 3/08, 3/10, 3/12  
U.S. Cl. 312-246

9 Claims



The vehicle ashtray is of the drawer type. A housing is provided for attachment to the dashboard or other suit-

able support structure within a vehicle as is conventional. The drawer, which is for the reception of ashes, is slidably received within the housing for withdrawal as the need arises. The drawer has an elongated guide on each side. The housing has an anti-friction structure in engagement with the guides. The anti-friction structure may be, for example, rollers or button-like projections. Preferably, the anti-friction means are fabricated of one of the slippery plastics such as nylon.

A pair of spaced apart openings are provided in the housing in alignment with the guides on the drawer. A pair of elongated springs are secured to the housing. Each free end of each spring is in alignment with one of the openings and a portion of each free end extends into the housing toward the adjacent guide. Anti-friction means are carried on each free end of each spring in resilient engagement with a guide. The anti-friction members are located substantially within the housing but are movable through the openings and out of the housing as a result of pressure applied via the drawer.

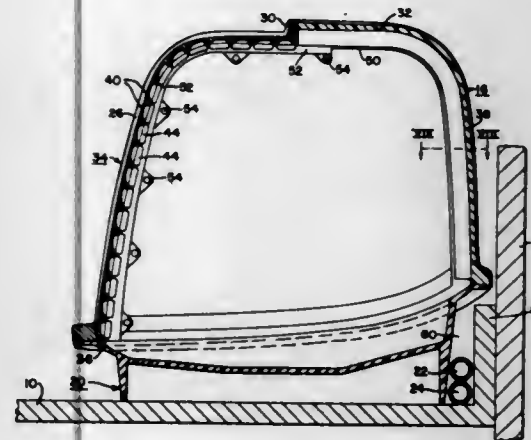
### 3,460,878

#### COUNTERTOP DISHWASHER

Carl A. Peterson and Wallace H. Appel, Columbus, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Sept. 8, 1967, Ser. No. 666,406  
Int. Cl. E06b 9/14

U.S. Cl. 312-297

5 Claims



Countertop dishwasher apparatus having a housing shaped to accommodate a tambour type door for closing the access opening provided in the front wall and the front portion of the top wall of the housing, the door sliding back to a position in front of the rear wall and below the rear portion of the top wall when access is desired, and with the exterior of the back wall being shaped to accommodate both the back splash of the countertop and to provide space to extend connecting hoses to the sink.

### 3,460,879

#### CATHODE RAY TUBES

Kenneth E. Fletcher and Alfred E. Cole, London, England, assignors to Thorn-AEI Radio Valves & Tubes Limited, London, England  
Filed June 26, 1967, Ser. No. 648,879  
Claims priority, application Great Britain, June 29, 1966, 29,248/66

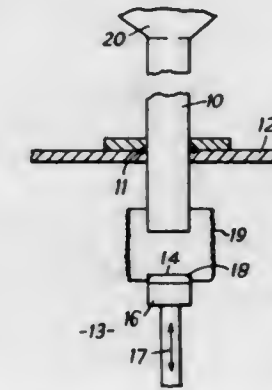
Int. Cl. H01j 9/18, 9/00; H05k 5/00  
U.S. Cl. 316-19

2 Claims

The speed of evacuation of a cathode ray tube is increased by locating the neck and the stem portions of the tube in a closed chamber, evacuating the chamber and thereby evacuating the cathode ray tube through the neck without using an exhaust tubulation, heating the adjacent

parts of the neck and stem, moving the neck and stem into engagement with one another so that they fuse

is inertially stabilized and displaced from the incoming line of sight with the reflective surface of the mirror perpendicular to the incoming line of sight. An optical deflector deflects the incoming rays to an objective lens which is



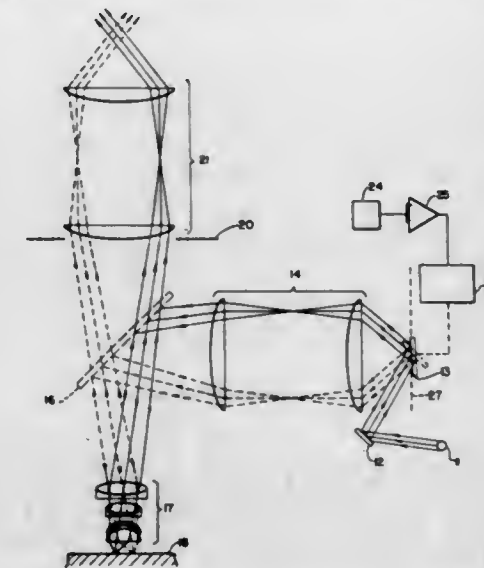
together, cooling the assembly and removing the cathode ray tube from the chamber.

### 3,460,880 POINT ILLUMINATION AND SCANNING MECHANISM FOR MICROSCOPES

Billie D. Henderson, La Habra, Calif., assignor to Beckman Instruments, Inc., a corporation of California  
Filed Dec. 18, 1964, Ser. No. 419,533  
Int. Cl. G02b 17/08

U.S. Cl. 350-6

7 Claims



There is disclosed a microscope illuminating system in which there may be provided on the stage of a microscope a point of illumination which may be as small as 1 micron and which may be scanned across the stage. A galvanic mirror is positioned adjacent the microscope ocular at the exit pupil and illuminated by a point source of preferably collimated radiation. The galvanic mirror may be driven such that the angle of incidence of the radiation on the ocular reflected from the mirror is changed. Radiation from the ocular passes the microscope objective and illuminates an area on the stage which is approximately equal to the source size divided by the magnification of the microscope system from stage to source. A dichroic or half-silvered mirror is provided such that radiation emitted or reflected from the microscope stage may be examined either visually with a second ocular or photometrically with or without the ocular.

### 3,460,881

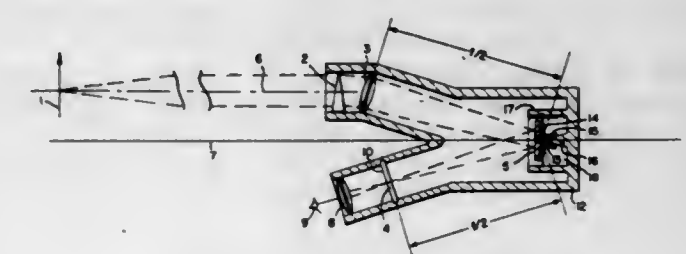
#### IMAGE STABILIZER

Lee O. Heflinger, Torrance, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio  
Filed Feb. 13, 1967, Ser. No. 615,626  
Int. Cl. G02b 23/00, 17/00, 23/02

U.S. Cl. 350-16

3 Claims

This invention pertains to an apparatus for stabilizing the image of an optical system. In the apparatus, a mirror



positioned approximately one-half its focal length in front of the mirror. The objective lens directs the incoming rays to the mirror where they are reflected at an angle to an eyepiece which is also positioned approximately one-half focal length in front of the mirror.

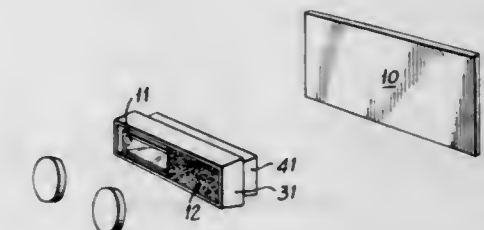
### 3,460,882

#### WIDE-ANGLE SINGLE PICTURE SYSTEM FOR VISION IN DEPTH

Ardell J. Abrahamson, 916 Almonte Ave.,  
Grand Forks, N. Dak. 58201  
Filed Oct. 23, 1965, Ser. No. 503,818  
Int. Cl. G02b 27/22

U.S. Cl. 350-144

1 Claim



A single picture pseudo-stereoscopic device comprising dual visible framing remote from said picture and closely adjacent the observer whereby said framing causes different intensity of light from said picture to reach the eyes of the observer.

### 3,460,883

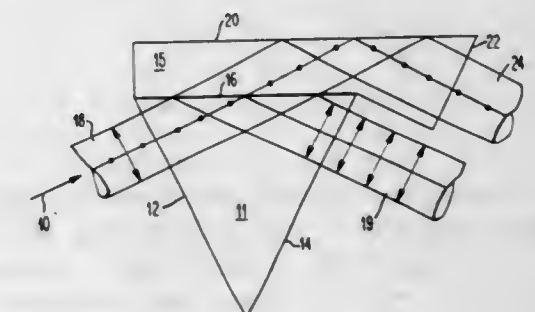
#### TOTAL INTERNAL REFLECTION DEFLECTOR

James Lipp, Kingston, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 1, 1965, Ser. No. 491,995  
Int. Cl. G02f 1/24

U.S. Cl. 350-157

3 Claims



Described is an optical device for separating beams of light containing two different orthogonal polarizations



into separate beams, each having one of the two different polarizations of light. The beams are separated by an optical device using birefringent materials with a thin isotropic material between the birefringent elements.

being such as to cause the phase shift of the light components orthogonal to the respective optic axes to change in the same direction in response to voltage changes in the same direction.

3,460,884

# ELECTRO-OPTICAL DEVICES UTILIZING THE STARK-SHIFT PHENOMENON

William R. Heller, Pound Ridge, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York  
Original application Nov. 15, 1961, Ser. No. 152,587.  
Divided and this application June 21, 1965, Ser. No. 475,034

Int. Cl. G02f 1/28, 1/36

U.S. Cl. 350-160

6 Claims



Electro-optical devices utilizing materials exhibiting the Stark-shift phenomenon having transparent electrodes located on opposite sides of the material to produce a strong electric field. Monochromatic light passing through the devices is affected by the Stark-shift of an absorption edge in the material thus affecting the transmission and/or refraction of light by the material. A prism type of device and a diffraction grating device are disclosed.

3,460,885

# POLARIZATION INDEPENDENT PHASE SHIFTER FOR OPTICAL FREQUENCIES

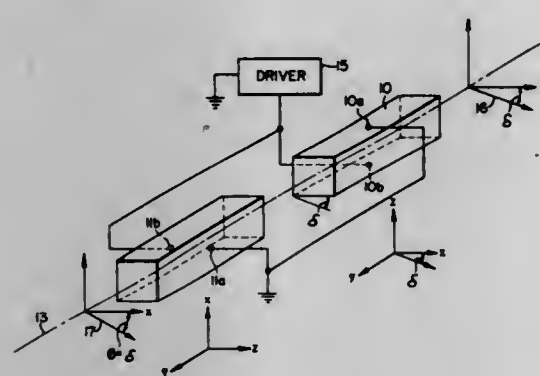
John L. Wentz, Randallstown, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 24, 1966, Ser. No. 552,448

Int. Cl. G02f 1/16

U.S. Cl. 350-160

1 Claim



An electrooptical optical phase shifting system, operating independently of the polarization of the incident light, comprising a pair of electrooptical crystals exhibiting the Pockel's effect arranged their respective optic axes perpendicular to each other and to the optical axis determined by the colinear alignment of one of each of the principal axes of the crystals, in which modulating voltages are applied along the optic axes with the relative polarities

# TELESCOPIC SYSTEM UTILIZING THREE AXIALLY ALIGNED SUBSTANTIALLY HYPERBOLIC MIRRORS

3,460,886

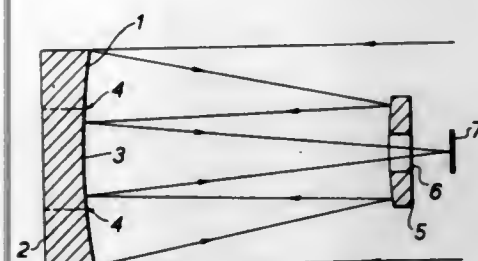
Norman J. Rumsey, Gracefield, Lower Hutt, North Island, New Zealand, assignor to New Zealand Government Property Corporation, Wellington, North Island, New Zealand, a corporation of New Zealand

Filed June 17, 1966, Ser. No. 558,496

Int. Cl. G02b 5/10

U.S. Cl. 350-294

5 Claims



An optical system especially suitable for use as an astronomical camera comprising a primary concave mirror, a secondary convex mirror and a tertiary concave mirror wherein the principle axes of the mirrors are coaxial; and supports for the mirrors, the tertiary mirror being supported without said supports obscuring light rays passing to and from the primary mirror, wherein the primary and tertiary mirrors are in substantially the same plane but have different radii of curvature.

3,460,887

# APPARATUS FOR VIEWING INTERIOR PARTS OF AN EYE AND HOLOGRAPHICALLY RECORDING PHASE AND AMPLITUDE INFORMATION RECEIVED THEREFROM

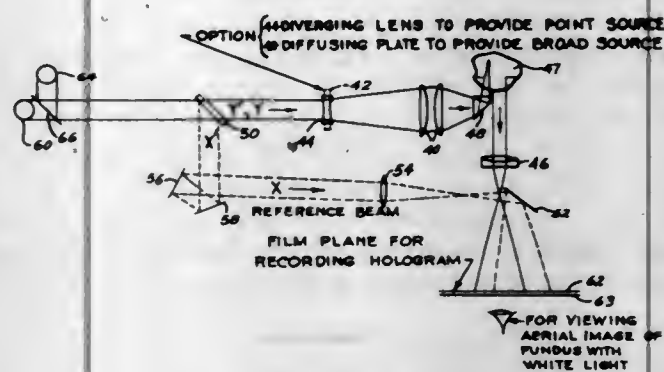
Bernard Grolman, Framingham, and Kenneth C. Lawton, Worcester, Mass., assignors, by mesne assignments, to American Optical Corporation, a corporation of Delaware

Filed Dec. 20, 1965, Ser. No. 514,973

Int. Cl. A61b 3/10

U.S. Cl. 351-7

4 Claims



Apparatus for illuminating interior portion of a human eye and for viewing an image thereof as well as recording phase and amplitude information received from said interior portion as a holographic record on film.

3,460,888

# PULL DOWN MECHANISM FOR PROJECTION MACHINE

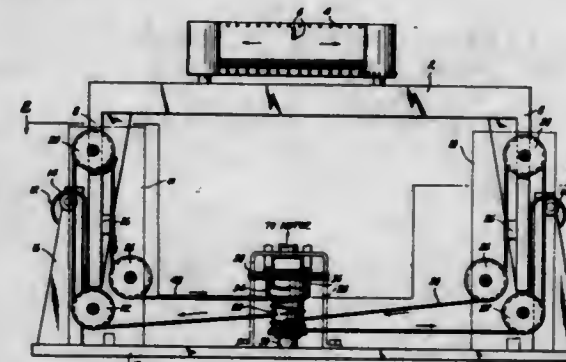
Leon W. Wells, Closter, N.J., assignor to Panopix Research Inc., New York, N.Y., a corporation of New York

Filed Apr. 12, 1967, Ser. No. 630,343

Int. Cl. G03b 41/00

U.S. Cl. 352-83

6 Claims



A motion picture projector having a vertically movable, film carrying platform urged upwardly by negator springs, and a drum and dual cable arrangement for controlling upward movement of the platform to restrain it against tilting and for pulling the platform downwardly while restraining it against tilting.

3,460,889

# MOTION PICTURE PROJECTOR

Theo Wilharm, Endersbach, Germany, assignor to Robert Bosch Elektronik und Photokino G.m.b.H., Stuttgart-Unterturkheim, Germany

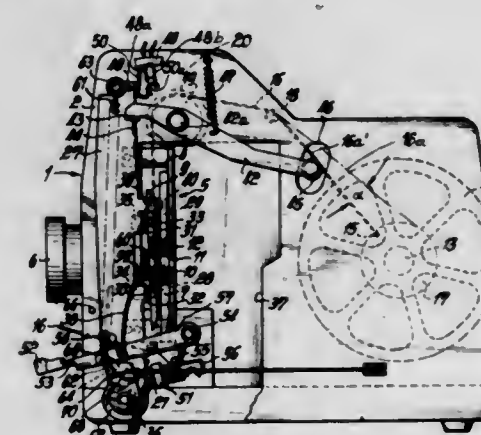
Filed Aug. 3, 1966, Ser. No. 569,886

Claims priority, application Germany, Aug. 10, 1965, B 83,213

Int. Cl. G03b 1/12

U.S. Cl. 352-124

22 Claims



A motion picture projector wherein a detector arrests the motor of the film transporting mechanism in response to movement of the trailing end of film from a tangential to a radial position with reference to the core of the supply reel. When actuated by the film the detector may also automatically trigger the rewinding of the film. The detector is disengaged from the film when at least a portion of the film is convoluted on the core.

3,460,890

# INTERLOCK MECHANISM FOR DEVICES SUCH AS SLIDE CHANGERS

Frank P. Bennett, Northbrook, Ill., assignor to GAF Corporation, a corporation of Delaware

Filed Apr. 20, 1967, Ser. No. 632,275

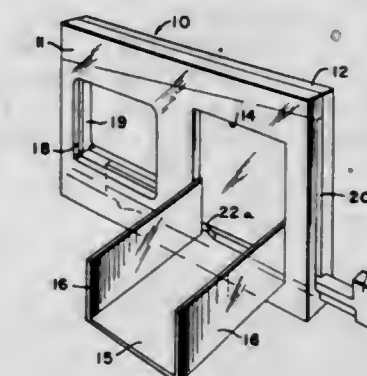
Int. Cl. G03b 23/14

U.S. Cl. 353-114

11 Claims

The support member of the slide changer includes an aperture through which images of slides may be projected or viewed. The support member also mounts a recipro-

cating slide changer slidable in opposite directions to move slides individually to and from registry with the aperture. The slide changer includes a generally U-shaped recess opening adjacent an elongated planar surface on the support member, which surface extends in parallel relation with the direction of slide changer movement and acts to support the latter for slidable movement. The recess has a central lobe defining a pair of pockets. A roller is alternately received in the pockets for rolling engagement with the aforementioned elongated surface. The configuration of the recess and its cooperation with



the roller is such that after the slide changer is moved in either direction, from an initial position, attempted retrograde or return movement of the slide changer causes binding of the roller thereby preventing such return movement until the slide changer has completed its movement in the direction of initial movement. A pair of depressions in spaced relation in the aforementioned surface permit changing of the roller from one pocket to the other thereby to permit retrograde or return movement of the slide changer after it has completed its full stroke in either direction.

3,460,891

# IDENTIFICATION CAMERA

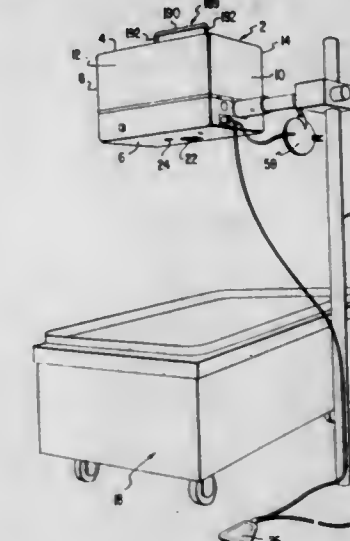
Frederick O. Bley, Alexandria, Va., and Martin Strauss, Chevy Chase, Md., assignors to First Foto, Inc., a corporation of Missouri

Filed Sept. 26, 1966, Ser. No. 581,965

Int. Cl. G03b 29/00

U.S. Cl. 355-29

15 Claims



A camera for making color identification photographs of newborn babies includes a large roll film supply and a cassette for receiving relatively short strips of exposed film. A film exposure station is located between the supply and the cassette. When an empty cassette is secured in the camera housing, means are automatically actuated for feeding the free end of the film strip from the supply roll into the cassette. At any time thereafter the cassette may be removed. The cassette releasing manipulations automatically cause an extra length of the film strip to be advanced into the cassette to assure that the last exposed frame will be located within the cassette.



cassette, automatically cause severance of the film strip leading into the cassette and automatically cause closure of the cassette to light. An opening in the camera receives an identification card bearing indicia to be reproduced on the exposed film along with the picture of the baby, and electrical control means prevent operation of the camera in the absence of a properly positioned identification card. Camera operation also is prevented in the absence of adequate flash lamp energization potential and when the cassette has been filled.

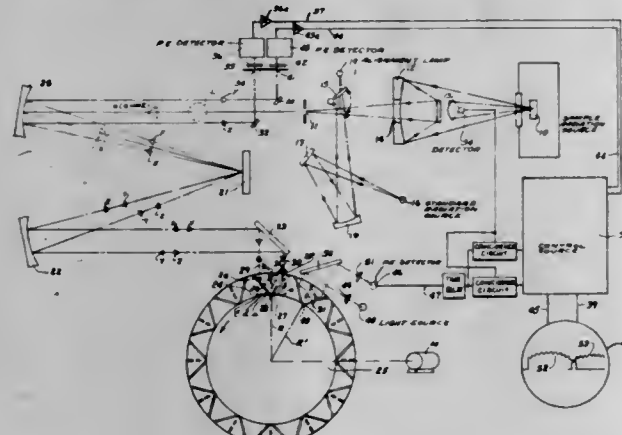
3,460,892

**RAPID SCAN SPECTROMETER THAT SWEEPS CORNER MIRRORS THROUGH THE SPECTRUM**  
Stanley A. Dolin, Flushing, N.Y., assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio

Filed May 27, 1966, Ser. No. 553,405  
Int. Cl. G01j 3/42

U.S. Cl. 356—83

10 Claims



Spectral analysis instrument having corner mirrors on a rotary scanning wheel, with an apertured baffle between the mirror members which make up each corner mirror. Radiant energy is focused by a Cassegrainian optical system on the entrance slit of a grating monochromator and is dispersed into a spectrum through which the corner mirrors scan in succession. The radiant energy reflected by the corner mirrors returns through the monochromator to a pair of exit slits, which are respectively for longer and shorter wavelength portions of the spectrum scanned. A cathode ray tube display of the scanned spectrum is synchronized with the rotation of the scanning wheel. For adjusting the instrument, a light source conjugate with the sample radiant energy source projects an image back through the Cassegrainian optical system.

3,460,893

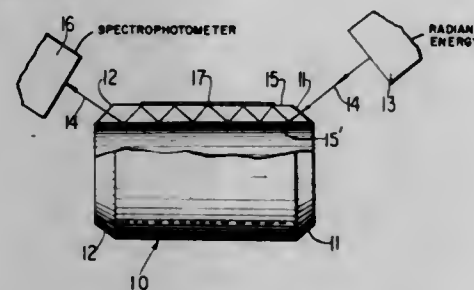
**APPARATUS FOR ANALYZING A CONTINUOUSLY MOVING STRIP BY MEANS OF ATTENUATED TOTAL REFLECTION**

Paul A. Wilks, Jr., Darien, Conn., assignor to Wilks Scientific Corporation, Norwalk, Conn., a corporation of Connecticut

Filed Sept. 15, 1965, Ser. No. 487,515  
Int. Cl. G01j 3/42

U.S. Cl. 356—96

7 Claims



An apparatus having a rotatable cylindrical element having multiple internal reflection characteristics and with

beveled ends wherein the strip of material to be analyzed is moved in contact with the cylinder as it rotates. A source of radiant energy is passed into one of the beveled ends and a spectrophotometer receives the rays of energy as they emerge from the other beveled end to produce a spectrum for continuously analyzing the material of the strip such as a web, film or ribbon.

3,460,894

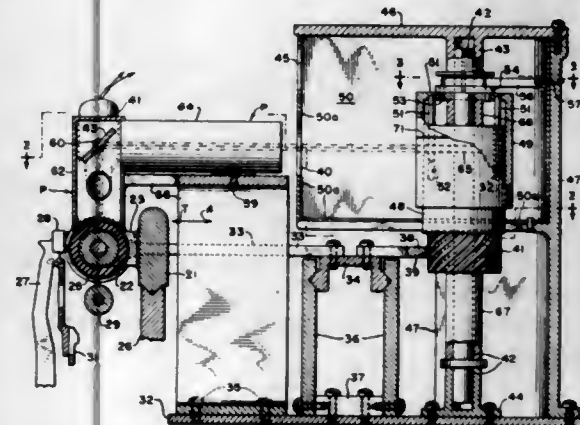
**TYPE ALIGNING MACHINE**

Sayed Khalil, Hotel Embassy, Broadway and 70th St., New York, N.Y. 10023

Filed Feb. 7, 1966, Ser. No. 525,726  
Int. Cl. G01b 9/08

U.S. Cl. 356—165

9 Claims



A device attachable to a typewriter for enabling the rapid alignment of the individual typebars thereof. The individually typed characters or symbols on the typewriter platen are projected onto a screen and compared with precisely aligned characters or symbols on the screen. The typebars of the characters not falling into alignment with corresponding characters on the screen are then manually repositioned to bring the projected characters into alignment.

3,460,895

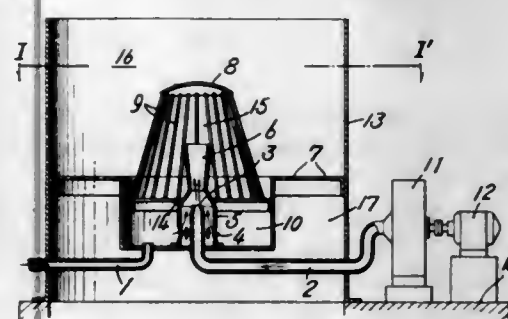
**DEVICE FOR GASIFYING AND COMBUSTING LIGHT PETROLEUM BY UTILIZING AIR UNDER PRESSURE**

Keizo Yamaguchi, 509 Shimosueyoshi-cho, Tsurumi-ku, Yokohama-shi, Kanagawa-ken, Japan

Filed Oct. 2, 1967, Ser. No. 672,228  
Int. Cl. F23d 5/00; F23i 1/00, 7/00

U.S. Cl. 431—116

2 Claims



This specification discloses a device for gasifying and cracking light petroleum, especially kerosene or light oil and directly combusting the cracked oil. The device comprises a blast type gas burner utilizing air under pressure ejected through a nozzle to introduce combustion flame. The blast type burner includes a fuel oil cracking portion for circulating combustion gas self-produced from the fuel oil so as to crack the fuel oil by means of said combustion flame and like reactions. The blast type burner also includes a burner body for introducing the oil gas thereinto from said cracking portion, a Venturi tube therein for mixing said introduced cracked oil gas

with air under pressure ejected through a nozzle within one end of said Venturi tube, and a fire bridge spaced above the Venturi tube for reversing the direction of the combustible mixture gas flow from said Venturi tube. Thus the liquid oil is gasified and subjected to thermal cracking and like reactions to form cracked gas, and said self-produced combustion flame is circulated in

the device to enable the thermally cracked gas to be more directly combusted. Furthermore, a part of the flame and the uncombusted gas, which has passed through gaps between the supporting blades of the fire bridge into a secondary chamber of the burner, is efficiently and economically combusted in the secondary combustion chamber with the aid of secondary air introduced therein.

## CHEMICAL

3,460,896

**POLYESTER FIBERS HAVING IMPROVED HYDROPHILICITY AS A RESULT OF MODIFICATION WITH PHOSPHORIC ACID, PHOSPHOROUS ACID OR PERCHLORIC ACID**

John R. Caldwell, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 14, 1964, Ser. No. 403,907

Int. Cl. D06p 3/52, 3/00

U.S. Cl. 8—115.5

4 Claims

1. A high melting crystalline linear polyester fiber material made by the process which comprises (1) coating said fibers with an essentially aqueous solution containing an inorganic acid having a dissociating constant of at least  $10^{-3}$ , of ammonium salts of such acids, or volatile amine salts of such acids, wherein said inorganic acid is phosphoric acid, phosphorous acid, or perchloric acid, (2) heating said coated fibers to form substantially dry acid coated fibers having on the surface from about 0.05 to about 5% by weight of said acid, (3) heating at 80 to 200° C. said substantially dry acid coated fibers to form polar groups on the fiber surfaces without significant alternation of the physical surface structure, and (4) washing said fibers to remove substantially all of said acid.

3,460,897

**MILD ALKALINE OXIDATION TREATMENT OF POLYACRYLONITRILE FIBERS OR FILMS TO IMPROVE FLEXIBILITY AND DYEABILITY**

Fred J. Lowes, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 292,771, July 3, 1963, which is a continuation-in-part of application Ser. No. 113,117, May 29, 1961. This application June 25, 1965, Ser. No. 467,112

Int. Cl. D06m 3/18

U.S. Cl. 8—115.4

4 Claims

The treatment of articles of polyacrylonitrile with an aqueous solution of alkali metal hydroxide and alkali-metal hypochlorite to improve flexibility, resistance to fibrillation and dyeability.

3,460,898

**PROCESS AND DEVICE FOR THE TREATMENT OF TEXTILE MATERIAL**

Hans Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to Anstalt für Patentdienst, Vaduz, Liechtenstein

Filed July 7, 1965, Ser. No. 470,077

Claims priority, application Germany, July 8, 1964, A 46,528

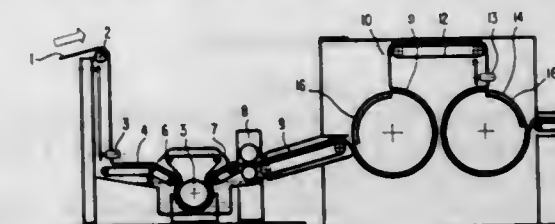
Int. Cl. D06c 1/00

U.S. Cl. 8—149.1

28 Claims

A process and apparatus for the wet treatment and drying of loose unspun textile materials wherein said material is impregnated in a folded condition on the surface of a conveying means such as a sieve drum subjected to a suction draft and introduced into a drying

chamber where the material is partially dried on the surface of a sieve drum, and stretched, for example



by conveying said material on the surface of a conveyor belt which rotates at a higher speed than the sieve drum.

3,460,899

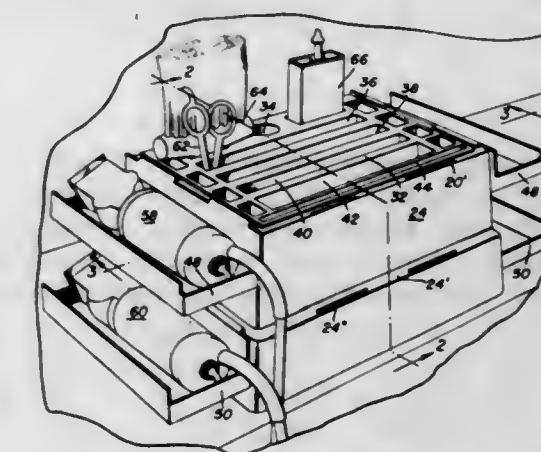
**BARBER CADDY**

Paul E. Miller, 118 Woodworth St., Sedro Woolley, Wash. 98284

Filed June 28, 1966, Ser. No. 561,200  
Int. Cl. A45d 27/46; A61l 7/00

U.S. Cl. 21—83

9 Claims



An upwardly opening receptacle including a bottom wall and upstanding side walls as well as structure for at least substantially closing a lower portion of the interior of the receptacle and supporting a plurality of tools within the confines of the receptacle side walls with at least portions of the tools in the lower closed portions of the receptacle. At least one tool supporting tray member is provided and removably supported from the receptacle exteriorly of one of the side walls thereof.

3,460,900

**METHOD OF REMOVING TITANIUM TETRACHLORIDE FROM GASES**

Iuliu Moldovan, Bucharest str. Ana Davila 47-49, Rumania, and Galina M. Grudner, Bucharest str. Romulus No. 81, Rumania

No Drawing. Filed July 22, 1965, Ser. No. 474,154

Claims priority, application Rumania, Jan. 21, 1965, 49,096

Int. Cl. B01d 47/00; C01b 9/00

U.S. Cl. 23—2

3 Claims

Process for removing titanium tetrachloride from gases which comprises contacting said gases with an aqueous solution of hydrochloric or sulfuric acid.



3,460,901

**METHOD AND APPARATUS FOR TREATING AUTOMOTIVE EXHAUST GAS**

Victor F. Massa, Berkeley Heights, and George P. Gross, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware  
Filed June 11, 1965, Ser. No. 463,157  
Int. Cl. C01b 2/14

U.S. Cl. 23—2

2 Claims

Unburned hydrocarbons and carbon monoxide pollutants emitted from automotive exhaust gases can be reduced by dispersing into the exhaust gas stream air and a combustion oxidant-initiator compound of reactive fragments of peroxide ions, peroxide radicals, hydroxyl radicals or mixtures thereof to thereby oxidize such exhaust pollutants.

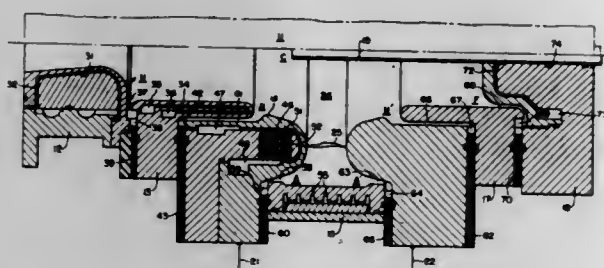
3,460,902

**PROCESS FOR HYDROGEN CYANIDE AND ACETYLENE PRODUCTION IN AN ARC HEATER HAVING A ROTATING ARC**

Chikara Hirayama, Murrysville, and Daniel A. Maniero, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Aug. 2, 1967, Ser. No. 657,867  
Int. Cl. C01c 3/04; C07c 11/24

U.S. Cl. 23—79

8 Claims



An arc heater having a rotating arc is used for the simultaneous preparation of acetylene and hydrogen cyanide by heating nitrogen gas with a hydrocarbon such as methane or natural gas. Preferably, the nitrogen is used as the gas heated by the arc and the methane is introduced into the hot nitrogen flame to be pyrolyzed thereby. The ratio of nitrogen to methane by volume is chosen to be within the range 1:1 to 2:1. The hydrogen cyanide and acetylene yields in this process are between 8 and 12% by volume for each product based on the total starting materials or feed stocks. The process minimizes carbon deposition on the electrodes and heat shields of the arc heater, thus providing greater life for the arc heater as well as increasing the efficiency of acetylene and hydrogen cyanide production.

3,460,903

**PROCESS FOR OXIDIZING METAL SALT SOLUTIONS**

Hans Holemann, Kronberg, Taunus, and Hans Georg Janzon and August Moeller, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany  
No Drawing. Filed Jan. 18, 1966, Ser. No. 521,440  
Claims priority, application Germany, Jan. 27, 1965, F 45,066

U.S. Cl. 23—87

Int. Cl. C01b 9/00

9 Claims

An improved process has been provided for oxidizing a salt solution of a metal occurring in different valence states to convert the metals from one valence state to another with oxygen or gas mixtures containing oxygen at a temperature between room temperature and the boiling point of the metal salt solution. The improvement com-

prises adding to the solution to be oxidized 0.01 to 10 grams/liter of a surface-active, non-foaming substance of the general formula



in which R' and R'' each is an aliphatic, straight chain or branched, monovalent radical of the general formula  $-C_nH_{2n+1}$  wherein n is a whole number in the range of from 3 to 10, or R'' stands for hydrogen; R<sub>1</sub> and R<sub>2</sub> each is a straight chain or branched, bivalent radical of the general formula  $-C_mH_{2m}-$  wherein m is a whole number in the range of from 2 to 6, the number of carbon atoms in radical R<sub>2</sub> is equal to or greater than the number of carbon atoms in radical R<sub>1</sub>; x is whole number in the range of from 0 to 8 and y is a whole number in the range of from 2 to 35; x and y being selected so that the atomic relationship of carbon to oxygen ranges from 2.5 to 10, and the molecular weight of said surface-active substance ranging from 100 to 2,800.

3,460,904

**PROCESS FOR THE MANUFACTURE OF METAL-CATION-DEFICIENT ZEOLITES**

Dean Arthur Young, Yorba Linda, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California  
No Drawing. Continuation-in-part of application Ser. No. 457,485, May 20, 1965. This application Jan. 15, 1968, Ser. No. 697,587

The portion of the term of the patent subsequent to May 14, 1985, has been disclaimed  
Int. Cl. C01b 33/28

U.S. Cl. 23—112  
Zeolitic alkali metal cations are rapidly and efficiently exchanged out of crystalline, aluminosilicate zeolites by subjecting such zeolites to ion exchange with ammonium salt solutions containing, at least during the latter stages of the exchange treatment, sufficient added acid to maintain a pH between about 2 and 4.5 during the exchange.

8 Claims

3,460,905

**PREPARATION OF PENTABORANE(9)**

Lawrence J. Edwards, Zellenople, and William V. Hough, Gibsonia, Pa., assignors to Mine Safety Appliances Company, a corporation of Pennsylvania  
No Drawing. Original application July 18, 1957, Ser. No. 672,573, now Patent No. 3,281,218, dated Oct. 25, 1966. Divided and this application Aug. 1, 1966, Ser. No. 569,083

Int. Cl. C01b 35/00

U.S. Cl. 23—204

32 Claims

1. That method of preparing pentaborane(9) comprising the step of contacting tetraborane with a substance of the group consisting of basic organic substituted hydrides of an element selected from group V-A and basic completely organic substituted hydrides of an element selected from group VI-A, triborane(7) adducts with said hydrides, borane adducts with said hydrides and mixtures thereof, at a temperature between 0° and 60° C., and recovering the pentaborane(9) formed.

3,460,906

**METAL HYDRIDE COMPOSITIONS AND PROCESS THEREFOR**

Arnold Lenz, Cologne-Stammheim, and Karl Hass and Hans Epler, Ranzel-Kolonie, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Trolsdorf, Germany  
No Drawing. Filed Feb. 23, 1965, Ser. No. 434,622  
Claims priority, application Germany, Feb. 22, 1964, D 43,706

Int. Cl. C01b 6/04

U.S. Cl. 23—204

6 Claims

Stable alkali or alkaline earth metal hydride compositions wherein the hydride is coated with alkali metal hydroxide are produced by suspending the hydride in oil,

combining the suspension with a melt of alkali metal hydroxide, agitating the resulting admixture for transfer of the metal hydride to the melt to form a dispersion of the metal hydride in the melt, separating the dispersion from the oil and cooling the dispersion to solidify the alkali metal hydroxide.

3,460,907

**MANUFACTURE OF COKE AND LOW CTE GRAPHITE FROM PETROLEUM DERIVED FEED MATERIALS**

Donald L. Winsett, Robinson, Ill., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio  
No Drawing. Filed July 12, 1965, Ser. No. 471,430  
Int. Cl. C01b 31/04; C10g 39/00

U.S. Cl. 23—209.1

3 Claims

The present invention comprises a process for the preparation of precursor forms of carbon which, when graphitized, have an ultimate coefficient of thermal expansion of not more than about  $5 \times 10^{-7}$  in./in./° C. average at from 20 to 100° C. which process comprises the steps of pyrolyzing a petroleum naphtha having a sulfur content of less than about 1%, an oxy compound content of from 0 to about 6%, and an aromatic content of from about 85 to about 100% by weight at a temperature of from 1000 to about 7000° F. and a pressure of at least about 10 p.s.i.g., separating out the thermal resin boiling above 500° F. which is thus formed, charging said thermal resin to a heater in which said thermal resin is heated with agitation to from 900 to about 975° F. for a length of time insufficient to form substantial amounts of solids, and thereafter, before the residue from the heating step has cooled below about 875° F., charging said heated residue to a solidification chamber so as to deposit said heated residue to a depth of not less than about 5 feet, the residue in said chamber being cooled sufficiently slowly to prevent said residue from cooling to below 700° F. in less than about 30 minutes and maintaining said residue in said chamber for a length of time sufficient to convert a substantial quantity of said residue into the above-described graphitic precursor, and thereafter cooling and recovering said precursor, and various products produced thereby.

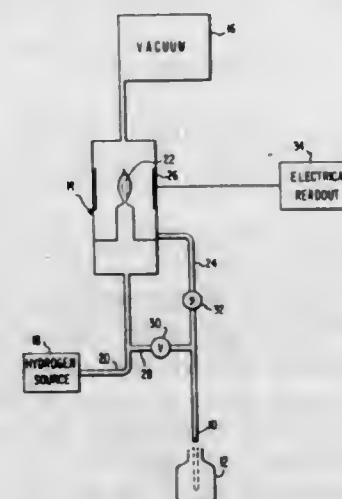
3,460,908

**SAMPLE ADMISSION SYSTEM FOR A FLAME IONIZATION CONTAMINANT DETECTOR**

Karl H. Emich, Decatur, Ill., assignor to National Distillers & Chemical Corporation, New York, N.Y., a corporation of Virginia  
Filed July 25, 1966, Ser. No. 567,675  
Int. Cl. G01n 27/62

U.S. Cl. 23—232

5 Claims



A sample admission system for a flame ionization gaseous organic contaminant detector wherein a portion of

the sample gas to be tested is mixed with the flame fuel gas prior to burning.

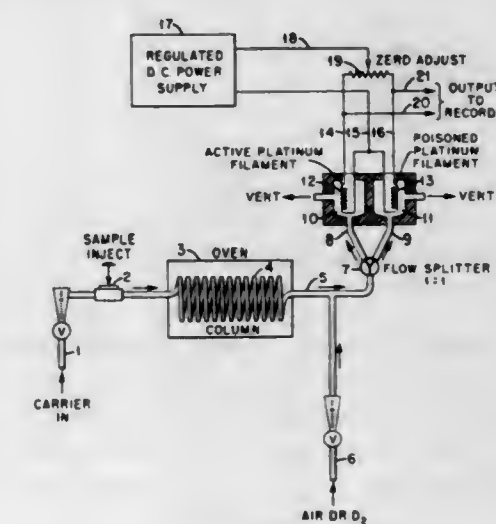
3,460,909

**CATALYTIC COMBUSTION DETECTOR FOR GAS CHROMATOGRAPHY**

Tom M. Gayle, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission  
Filed Aug. 4, 1965, Ser. No. 477,335  
Int. Cl. G01n 31/12, 31/08

U.S. Cl. 23—254

4 Claims



A thermal conductivity compensation means for a catalytic combustion detector which comprises means for dividing the input gas flow to the detector into two equal portions, means for passing a first portion of the gas over a heated active platinum filament of the detector and passing a second portion of the gas over a heated deactivated (i.e. vanadium pentoxide poisoned) platinum compensating filament. Combustion occurs only at the active filament and the thermal conductivity signals of the two filaments tend to cancel, as well as any variation in signals due to changes in power supply or ambient temperature, and the output of a bridge circuit connected to the two filaments closely represents that of combustion only.

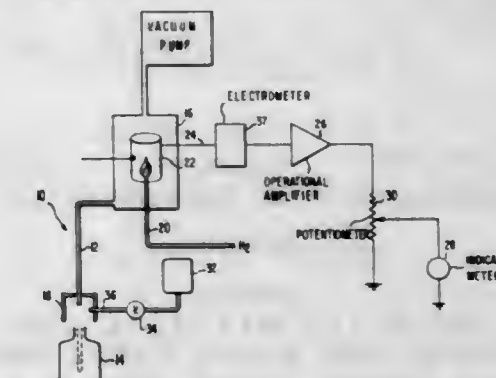
3,460,910

**SENSITIVITY CONTROL FOR GASEOUS ORGANIC CONTAMINATION DETECTOR**

Karl H. Emich, Decatur, Ill., assignor to National Distillers & Chemical Corporation, New York, N.Y., a corporation of Virginia  
Filed July 25, 1966, Ser. No. 567,575  
Int. Cl. G01n 27/62, 27/02

U.S. Cl. 23—254

4 Claims



A sensitivity control for a flame ionization gaseous organic contaminant detector wherein a standard gas can be admitted to the detection cell to permit adjustment of the indicating meter reading to the standard by means of a potentiometer in the circuit between the detector and the indicating meter.

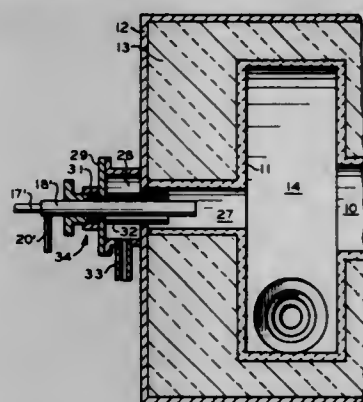


3,460,911

**APPARATUS FOR PRODUCING CARBON BLACK**  
Joseph C. Krejci, Phillips, Tex., and Murl B. Howard, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware  
Original application May 25, 1964, Ser. No. 369,876, now Patent No. 3,355,247. Divided and this application June 13, 1967, Ser. No. 645,774

Int. Cl. C10b 57/04; C09c 1/48  
U.S. Cl. 23—259.5

10 Claims



A carbon black furnace having a feed introduction chamber, a precombustion section and a reaction section, the hydrocarbon feed inlet assembly being movably positionable and adapted for multiple stream discharge in concentric relationship.

3,460,912

**PRODUCING SULFUR FROM CALCIUM SULFATE**  
Arthur M. Squires, 245 W. 104th St., New York, N.Y. 10025

Continuation-in-part of application Ser. No. 556,434, June 9, 1966. This application Aug. 21, 1968, Ser. No. 754,262

Int. Cl. C01b 17/04, 17/02

U.S. Cl. 23—224

5 Claims

In a process useful for preparing sulfur from  $\text{CaSO}_4$ ,  $\text{H}_2$  and CO from a steam-hydrocarbon catalytic reforming furnace are reacted with the  $\text{CaSO}_4$  to yield CaS and a gas enriched in steam and  $\text{CO}_2$ . The CaS is reacted with the same steam and  $\text{CO}_2$  (sometimes with an addition of further  $\text{CO}_2$ ) at a temperature below about 1300° F. and at a pressure greater than about 4 atmospheres, with removal of heat. The  $\text{H}_2\text{S}$  which results is converted to elemental sulfur. The gas-solid reactions are conducted in fluidized beds.

3,460,913

**REGENERATION OF SULFUR CONTAMINATED CATALYSTS**

James Hoekstra, Evergreen Park, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 27, 1966, Ser. No. 604,549  
Int. Cl. C01b 17/22, 17/00

U.S. Cl. 23—224

9 Claims

Catalysts which have been contaminated with sulfur can be regenerated by treatment with a sulfide solution, such as aqueous ammoniacal hydrogen sulfide.

3,460,914

**LIQUID-LIQUID EXTRACTION**

Peter Ridgway Watt, Ashted, England, assignor to Vitamins Limited, London, England, a British company

Filed Oct. 13, 1965, Ser. No. 495,609  
Claims priority, application Great Britain, Nov. 12, 1964, 46,173/64

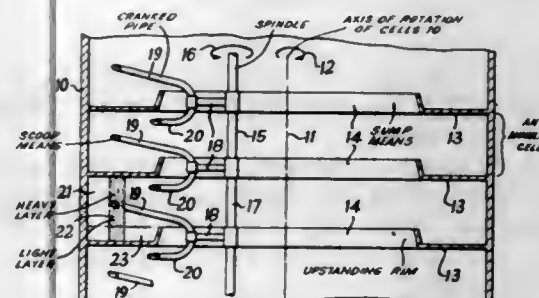
Int. Cl. B01d 11/00

U.S. Cl. 23—269

3 Claims

A liquid-liquid extractor consists of a number of annular cells rotatable about a common vertical axis, so

that two immiscible liquids rotated therein form inner and outer annular layers. Each cell has associated with it a U-shaped pipe fixed upon a vertical spindle parallel to and offset from the vertical axis of the cells. Rotation of the spindle causes the pipes to enter the respective



cells and so scoop in the inner layers of liquid, each portion of the inner layer flowing along the U-shaped pipe to the next lower cell. The cells are arranged so that each can still hold its contents when rotation ceases and the apparatus is at rest.

3,460,915

**APPARATUS FOR THE PRODUCTION OF GASES CONTAINING ACETYLENE**

Erwin Lehrer, Bad Dürkheim, and Walter Teltschik, Frankenthal, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

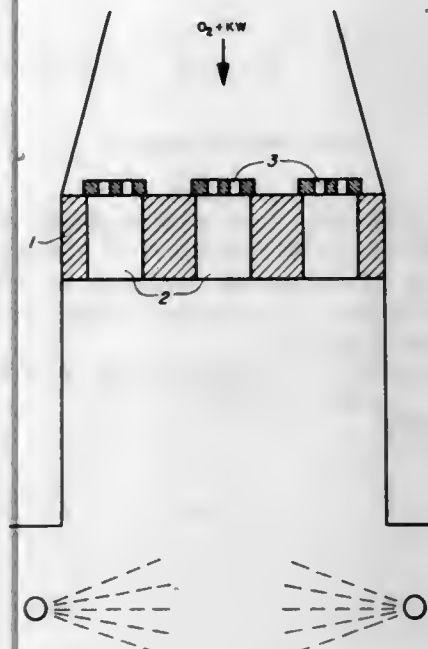
Filed July 15, 1966, Ser. No. 565,563

Claims priority, application Germany, July 30, 1965, B 83,046

Int. Cl. C07c 11/24; B01f 5/06

U.S. Cl. 23—277

5 Claims



Apparatus for producing acetylene by partial oxidation of hydrocarbons with oxygen with means to separately preheat the hydrocarbon and oxygen, means to mix the reactants and to conduct them through a diffusor chamber and a gas distributor containing parallel channels into a reaction chamber, the apparatus being provided with at least one perforated plate mounted on the diffusor side of the gas distributor to provide a plurality of holes in fluid communication with and constricting the free cross-sectional area of each of the channels on the diffusor side.

3,460,916

**EXHAUST GAS BURNERS**

Allan Aronsohn, now by change of name Allan Inovius, Storgatan 80, Angelholm, Sweden

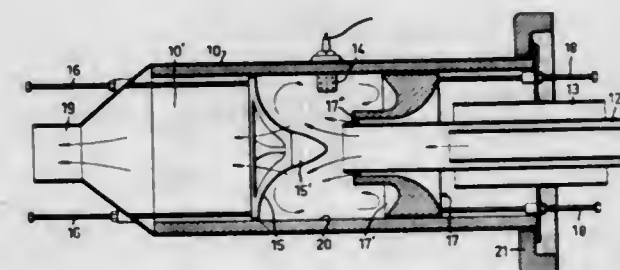
Filed July 9, 1965, Ser. No. 470,721

Claims priority, application Sweden, July 10, 1964, 8,455/64

Int. Cl. B01j 3/00

U.S. Cl. 23—288

6 Claims



Exhaust gas burner having an elongated combustion chamber for connection to an exhaust gas conduit to permit exhaust gases to flow therethrough having an exhaust gas inlet, an exhaust gas outlet and an air inlet. A liner of catalyzing material on the walls of said chamber for continuous ignition of combustible components in the supplied exhaust gases which after initiated preheating is kept warm by the combustion in the combustion chamber. A turbulator disposed in the combustion chamber dividing it into two compartments communicating with each other through the turbulator. One of the compartments being defined between said turbulator and an end wall of the combustion chamber at which the exhaust gas inlet is arranged. The other of said compartments being defined between the turbulator and an end wall of the combustion chamber at which the exhaust gas outlet is arranged. The last named compartment is a second after-burning zone. The turbulator has a nose facing the exhaust gas inlet.

3,460,917

**RECOVERY OF AMERICIUM FROM PLUTONIUM METAL USING MOLTEN SALTS**

Jack L. Long, Arvada, Colo., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Mar. 6, 1968, Ser. No. 710,728

Int. Cl. C01g 1/06; C22b 61/04

U.S. Cl. 23—325

7 Claims

A process for extracting americium from plutonium by agitating a molten mixture of plutonium containing americium with an equimolar mixture of sodium chloride and potassium chloride containing magnesium chloride wherein the salt/plutonium weight ratio is at least about 0.4.

3,460,918

**METHOD OF CHLORINATING METALS WITH CARBON TETRACHLORIDE AND CARBON DIOXIDE**

Harley A. Wilhelm and Roger M. Bergman, Ames, Iowa, assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Jan. 12, 1968, Ser. No. 697,314

Int. Cl. C01f 15/00; C22b 59/00

U.S. Cl. 23—345

7 Claims

A method of making high-purity metal chlorides by passing a gaseous mixture of carbon dioxide and carbon tetrachloride over a metal compound while heating the compound to an initial chlorination temperature of 400–475° C. for a period of time. When chlorination is complete at this temperature, the temperature is raised to one or more final chlorination temperatures above 500° C.

until the metal compound is chlorinated as a high-purity metal chloride.

3,460,919

**METHOD FOR MAKING LITHIUM BOROHYDRIDE**

Oscar F. Beumel, Jr., West Chester, William Novis Smith, Jr., Exton, and Robert F. Harris, University Park, Pa., assignors to Foote Mineral Company, Exton, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 15, 1965, Ser. No. 487,595

Int. Cl. C01b 6/14

U.S. Cl. 23—364

10 Claims

An improved method for preparing lithium borohydride comprising pre-dissolving sodium borohydride in an anhydrous mixture of an alkyl amine and an ether selected from the group of diethyl ether and tetrahydrofuran followed by the addition of lithium chloride to said solution, the amount of sodium borohydride pre-dissolved in the solvent mixture being at least one-third mol thereof per mol of lithium chloride added, and, after adding any remaining sodium borohydride required to provide essentially a 1:1 mol ratio thereof to lithium chloride, and allowing the reaction to go to completion, separating the resulting solution of lithium borohydride from precipitated sodium chloride.

3,460,920

**FILAMENT REINFORCED METAL COMPOSITES FOR GAS TURBINE BLADES**

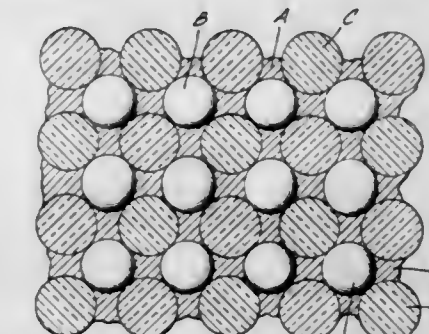
Roger A. Long, Escondido, and Rodney A. Jones, San Diego, Calif., assignors to Whittaker Corporation, Los Angeles, Calif., a corporation of California

Filed Oct. 10, 1966, Ser. No. 585,379

Int. Cl. B21h 7/16

U.S. Cl. 29—183.5

13 Claims



This patent describes a novel filament reinforced composite comprising a platinum metal group matrix phase, a dispersed hard particle phase and a reinforcing fiber phase, said composite having oxidation resistance and strength maintenance to at least 2400° F.

3,460,921

**POLYURETHANE BASE PRODUCTS AND PROCESSES**

Joseph Winkler, Hazleton, Pa., assignor, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed June 7, 1966, Ser. No. 555,705

Int. Cl. C101 7/02

U.S. Cl. 44—7

10 Claims

Process for producing thixotropic hydrocarbon gels by reaction, in the hydrocarbon, of a dissolved unsaturated semipolymer having a molecular weight of at least 1000, and being terminated with isocyanate reactive groups, with an organic polyisocyanate in the presence of a Lewis acid, and the gelled compositions produced.



**3,460,922**  
**METHOD OF PRODUCING GELLED HYDROCARBONS EMPLOYING POLYURETHANES**  
 Joseph Winkler, Hazleton, Pa., assignor, by mesne assignments, to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 544,416 and Ser. No. 544,418, Apr. 22, 1966. This application Jan. 9, 1967, Ser. No. 607,900  
 Int. Cl. C101 7/02

**U.S. Cl. 44—7** 16 Claims  
 This disclosure describes a method of increasing the viscosity of liquid hydrocarbons, especially hydrocarbon fuels, by the in situ formation of cross-linked polyurethane polymers in liquid hydrocarbons by reaction between a hydroxyl terminated semipolymer which is soluble in the hydrocarbon, a semipolymer having a molecular weight of 1,000 and a polyisocyanate.

**3,460,923**  
**FUELS CONTAINING AMINE PHOSPHATE ANTI-ICING COMPOSITIONS**  
 Casper J. Dorer, Jr., Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

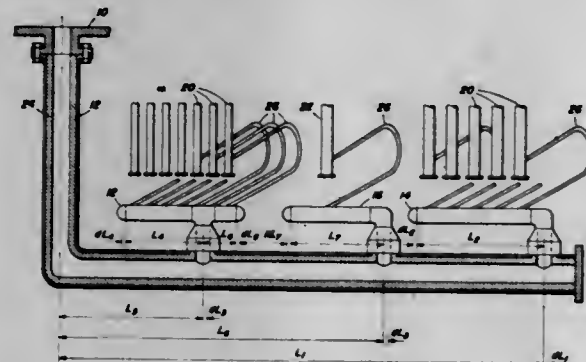
No Drawing. Filed Aug. 3, 1964, Ser. No. 387,207  
 Int. Cl. C101 1/26

**U.S. Cl. 44—72** 9 Claims  
 Compositions effective to reduce icing of gasoline are prepared by reacting a mono- or di-ester (or a mixture of mono- and di-ester) of phosphoric acid with a C<sub>2-4</sub> secondary or tertiary amine.

**3,460,924**  
**MANIFOLD SYSTEM FOR HEATERS**  
 Thomas F. O'Sullivan, Wilton, Conn., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware

Filed Mar. 14, 1966, Ser. No. 533,970  
 Int. Cl. C01j 3/82

**U.S. Cl. 48—126** 14 Claims



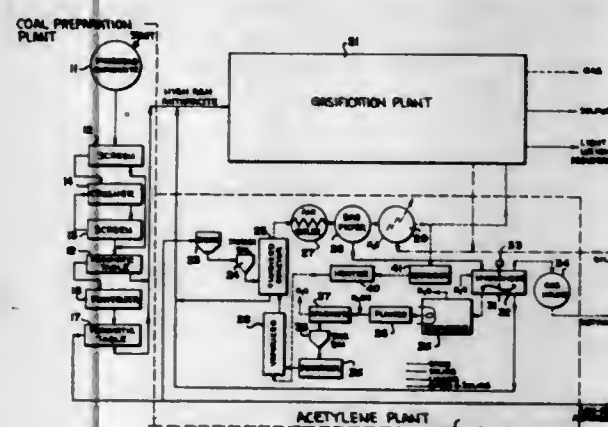
Manifold arrangement for collection of high temperature fluids from processing tubes comprised of a plurality of sub-manifolds anchored at one end to a collector manifold, the free ends of the sub-manifolds extending toward the anchored end of the collector manifold, the sub-manifolds being connected to the processing tubes through small expansion loops. The manifold assembly is capable of accommodating thermal expansion without expansion joints.

**3,460,925**  
**ANTHRACITE TO ACETYLENE CONVERSION PROCESS**  
 Maurice M. Mitchell, Jr., Wallingford, Pa., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware

Filed Feb. 18, 1965, Ser. No. 433,729  
 Int. Cl. C10h 19/00

**U.S. Cl. 48—216** 16 Claims  
 A process for gasification of solid carbonaceous fuels of low volatility, in which the solid fuel is pulverized to a

40 x 65 mesh, and the pulverized fuel then subjected to a fluidized bed reaction with and under the action of gaseous sodium oxide. Gaseous sodium carbide emanating



from the fluidized bed is collected overhead and converted to solid sodium carbide which is then hydrolyzed to form gaseous acetylene.

**3,460,926**  
**HIGH SILICA CONTENT GLASSES**  
 Edward A. Weaver, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 514,391, Dec. 16, 1965. This application July 17, 1967, Ser. No. 653,642

**U.S. Cl. 65—18** 2 Claims

In accordance with this invention there is prepared a high silica content glass of improved physical and chemical properties and characteristics, especially improved chemical inertness and thermal shock resistance, by compressing and sintering, preferably under vacuum, a glass-forming mixture containing at least 90 percent by weight highly-pure, vitreous silica previously prepared by a vapor phase decomposition process utilizing sulfur-containing organic fuels.

**3,460,927**  
**PROCESS FOR GLASS STRENGTHENING**  
 Hellmuth Georg Fischer, Toledo, and Augustus W. La Due, Maumee, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed May 25, 1966, Ser. No. 552,716  
 Int. Cl. C03c 21/00, 17/08

**U.S. Cl. 65—30** 9 Claims  
 A process of treating an inorganic glass or glass-ceramic article to improve its flexural strength by (1) heating the article containing a multivalent chemical element (preferably of an oxide) in its higher valence state, (2) contacting the surface of the article at a temperature below the strain point of the glass with a reducing material such as hydrogen to change the multivalent element such as manganese from its higher valence state to its lower valence state, it having a larger ionic radius in the lower valence state, to thereby produce a compression stress layer on the surface of the article.

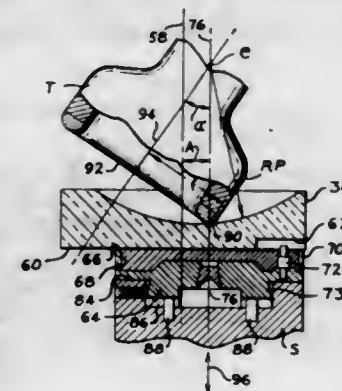
**3,460,928**  
**METHOD OF MAKING LENS MOLDS**  
 Robert E. Casco, Putnam, Conn., assignor to American Optical Corporation, a corporation of Delaware

Filed June 9, 1967, Ser. No. 644,885  
 Int. Cl. C03b 23/22

**U.S. Cl. 65—39** 10 Claims  
 A method of making glass mold pieces for casting plastic multifocal ophthalmic lenses involving the use of a flat reference surface on each mold piece in a planned sequence

of blocking steps for establishing a desired lateral offset relationship of a number of adjoining spherical casting

tor faces and the structure allows placement of the work unit at an advantageously spaced point from the back reflector parts without significant energy loss.

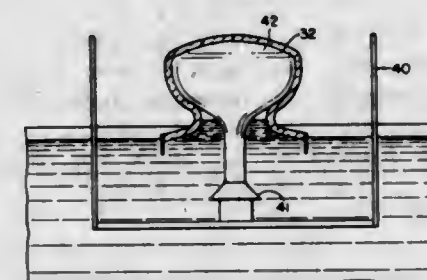


areas required to be sequentially generated into the mold piece.

**3,460,929**  
**METHOD AND APPARATUS FOR THE MANUFACTURE OF GLASS ENVELOPES**  
 Robert A. Ramey, Jr., Gainesville, Fla., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 14, 1966, Ser. No. 601,705  
 Int. Cl. C03b 15/08, 9/04

**U.S. Cl. 65—67** 3 Claims

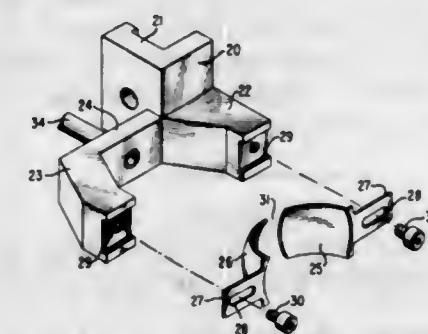


An apparatus and method for manufacture of glass envelopes in which molten glass is floated on liquid bath and the floating glass is formed into an envelope.

**3,460,930**  
**BACK REFLECTOR FOR RADIANT ENERGY GLASS-TO-METAL SEALING MEANS**  
 Edward L. Pityo, Cedar Grove, N.J., assignor to Federal Tool Engineering Co., Cedar Grove, N.J., a corporation of New Jersey

Filed June 8, 1967, Ser. No. 644,669  
 Int. Cl. C03c 27/02

**U.S. Cl. 65—155** 5 Claims

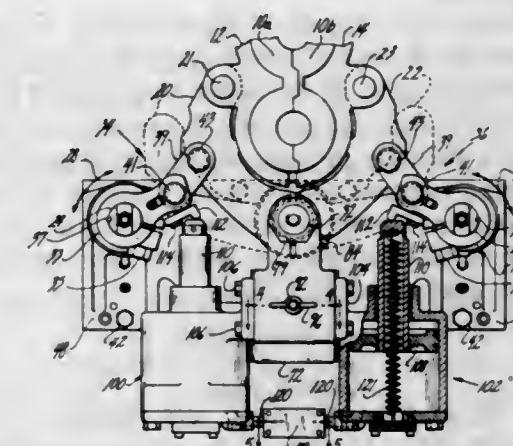


A back reflector structure particularly useful for heat sealing reed switches and the like which causes maximum concentration of radiant energy on the work unit with minimum escape or loss of useful energy. The reflector structure includes a built-in nozzle means to substantially eliminate condensing of metal oxide deposits on the independently laterally adjustable polished spherical reflector.

**3,460,931**  
**MOLD CLOSING BOOST MECHANISM FOR GLASSWARE FORMING MACHINE**  
 George E. Rowe, Wethersfield, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut

Filed Dec. 29, 1966, Ser. No. 605,925  
 Int. Cl. C03b 11/02, 9/14

**U.S. Cl. 65—313** 8 Claims

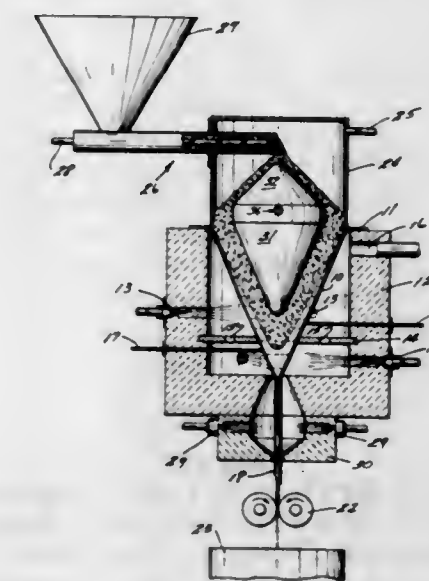


A pair of piston type pneumatic motors are mounted close to two mold holder arms for forcibly engaging the knee portions of a pair of toggle links, which pivotally move said arms, to boost said links during their closing movement. An antideflexion bracket or tie bar is also provided for stiffening the mold hinge pin upon which the mold holder arms are pivotally supported.

**3,460,932**  
**GAS FIRED FRIT MELTER**  
 George E. Keefer, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed May 17, 1966, Ser. No. 550,789  
 Int. Cl. C03b 5/32

**U.S. Cl. 65—335** 6 Claims



The melting of batch materials containing highly oxidized metals to form a frit composition is carried out in a metal melter with an inert atmosphere. The metal melter is constructed such that the products of combustion from



the gas fired burners are prevented from contacting the batch ingredients during melting or the molten frit and vertically spaced zones permitting controlled, selected temperatures are provided.

3,460,933

# METHOD OF CONCURRENTLY OPERATING FURNACES OF THE ACID OR BASIC CONVERTER TYPES

Raymond J. Demaison, Fleetwood, Mount Vernon, N.Y., assignor to Quigley Company, Inc., a corporation of New York

Continuation-in-part of application Ser. No. 424,071, Jan. 7, 1965. This application Aug. 1, 1967, Ser. No. 657,620

Int. Cl. C21b; C21c

U.S. Cl. 75—20

6 Claims

Two furnaces are operated concurrently in three different stages, A, B and C, with stage A of one furnace coinciding with stage C of the other furnace and with stage B of one furnace coinciding with the relining of the other furnace. Each furnace in stage A and in stage C is operated on a programmed schedule of a series of steel producing periods involving a plurality of consecutive heats and a series of idle periods of slightly less duration and involving no steel producing heats.

3,460,934

# BLAST FURNACE METHOD

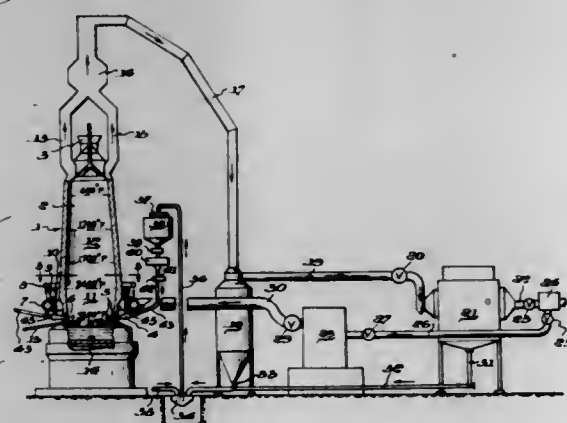
John J. Kelmar, 2205 Cypress Drive, White Oak Borough, McKeesport, Pa. 15131

Continuation-in-part of application Ser. No. 356,471, Apr. 1, 1964. This application Dec. 19, 1966, Ser. No. 602,960

Int. Cl. C22b 7/02; C21b 1/02

U.S. Cl. 75—25

9 Claims



1. The method of making steel in a blast furnace, comprising of charging the furnace from the top with iron ore and coke and limestone, continuously delivering a blast of hydrocarbon fuel and substantially pure oxygen to the hearth of the furnace, recovering the top gases issuing from the top of the furnace, recirculating at least a portion of said top gases to the hearth of the furnace and utilizing said portion to continuously inject a mixture of fine combustible solids, pulverized ore and limestone into the hearth of the furnace.

3,460,935

# METHOD OF OPERATION OF A PRESSURIZED OPEN HEARTH FURNACE ROOF

Jack R. Lythgoe and Charles G. Catherwood, Johnstown, Pa., assignors to Bethlehem Steel Corporation, a corporation of Delaware

Filed Feb. 12, 1968, Ser. No. 704,908

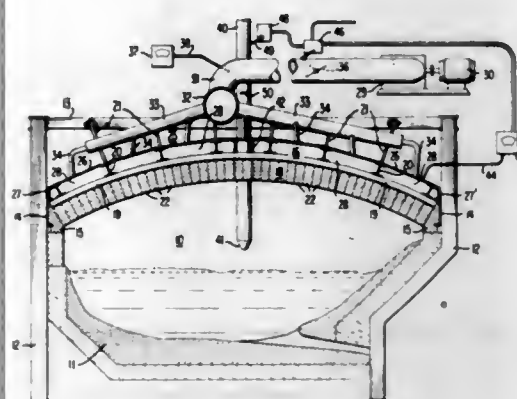
Int. Cl. C21c 5/32, 7/00; F27b 3/16

U.S. Cl. 75—60

7 Claims

A method of operating an open hearth furnace roof structure, including a refractory arch with a plurality of

air passages extending through the arch from the outer to inner surfaces, a hood mounted above the arch, and a fan in communication with the hood, which consists of continuously delivering to the hood a flow of air sufficient to maintain a positive pressure beneath the hood



and cause a continuous flow of air through the arch passages. The flow of air to the hood and through the passages is increased during the melting and refining periods of a furnace heat as compared to the flow delivered at other times.

3,460,936

# LONG CHAIN AMINE SALTS AS PLANT GROWTH REGULATORS

Walter W. Abramitis, Downers Grove, Ill., assignor, by mesne assignments, to Armour Industrial Chemical Company, a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,297

Int. Cl. A01n 5/00

U.S. Cl. 71—76

8 Claims

Long chain amine salts of organic acids, when applied as an organic solvent spray to various plants at certain times during their life or annual season cycle, effect dwarfage, improve frost resistance, control bloom and improve fruit size.

3,460,937

# METHOD FOR RECOVERING VANADIUM FROM IRON-BASE ALLOYS

Heinrich W. Rathmann, Cambridge, Ohio, assignor to Foote Mineral Company, Exton, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 31, 1967, Ser. No. 664,619

Int. Cl. C22b 55/00, 7/00

U.S. Cl. 75—84

10 Claims

A method for extracting vanadium from any iron-base alloys, for example, ferrophosphorus, by heating a molten iron-base alloy containing vanadium with an oxide having a low heat of formation and silica to form a molten alloy and slag containing the vanadium as an oxide which may be separated from the molten alloy and treated to extract the vanadium.

3,460,938

# COMPOSITIONS FOR THE METHOD OF SELECTIVELY DISSOLVING NICKEL FROM OTHER METALS

John J. Grunwald, New Haven, and Leo J. Slominski, Bristol, Conn., assignors to MacDermid Incorporated, Waterbury, Conn., a corporation of Connecticut

No Drawing. Filed June 30, 1967, Ser. No. 650,177

Int. Cl. C22b 23/04; C11d 7/32

U.S. Cl. 75—97

10 Claims

A nickel stripping composition comprising a polyphosphate, a nitro-organic compound and ammonia, modified by the inclusion of thiosulfate. The nickel stripping rate

is catalyzed by the thiosulfate, and the composition may be made more or less selective in stripping nickel in the presence of copper by varying the concentration of the thiosulfate.

3,460,939

# FREE MACHINING AUSTENITIC STAINLESS STEEL

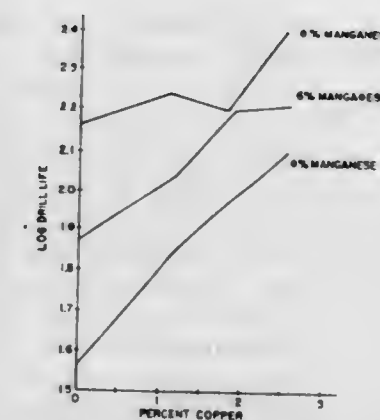
Joseph A. Ferree, Jr., Natrona Heights, Pa., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 418,991, Dec. 17, 1964. This application May 29, 1968, Ser. No. 740,807

Int. Cl. C22c 1/02, 39/54, 39/26

U.S. Cl. 75—125

6 Claims



Described herein is a method of making a free machining austenitic stainless steel and the product produced thereby. The method comprises adding alloying additions to a steel melt to produce a steel consisting essentially of from a trace up to .15% carbon, from 2% to 10% manganese, from 4% to 13% nickel, from 10% to 20% chromium, from .5% to 3% copper, from .10% to .40% sulfur, 2% max. silicon, and .10% max. nitrogen, the balance essentially iron and residual impurities, the improvement which comprises adding alloying additions, as described, to a steel melt and controlling the constituents so that the delta ferrite-forming characteristic is less than 10 according to the formula:

$$\text{delta ferrite potential} = \text{percent Cr} + 1.5 (\text{percent Si}) - .87 [30 (\text{percent C} + \text{percent N}) + \text{percent Ni} + 0.5 (\text{percent Mn}) + 0.3 (\text{percent Cu})] + 1$$

and the amount of copper does not exceed 3.85–0.18 (percent Mn–.5% S).

3,460,940

# METHOD OF PRODUCING WROUGHT HIGH PURITY STEELS BY POWDER METALLURGY

Charles Robert Talmage, 161 Bowery Road, New Canaan, Conn. 06840

Filed Mar. 9, 1967, Ser. No. 621,849

Int. Cl. B22b 1/00

U.S. Cl. 75—201

10 Claims

High purity steel is produced by powder metallurgy by starting with a mixture of carbon and substantially finely divided high purity iron-base powder containing removable volatilizable constituents. The amount of carbon added is at least sufficient to provide the desired amount of carbon in the steel. A porous compact is formed of the mixture characterized by intercommunicating pores substantially throughout the compact to allow for removal of volatiles. The compact is subjected to a cleansing treatment in a reducing environment by heating the compact at an elevated temperature sufficient to maintain the intercommunicating pores for a time sufficient to obtain a desired degree of weight loss, and then

subjecting the cleansed compact to vacuum sintering at an elevated temperature to remove residual volatiles and to densify the compact and form a sintered product in which the pores remaining are substantially non-intercommunicating. Thereafter, the high purity steel can be hot worked to produce a high purity wrought steel composition which together with about 0.1 to 2.5% carbon constitute at least about 99.5% of the total composition, the steel having a homogeneity factor of less than 2 as determined by a microprobe analyzer using the formula:

$$\sigma_{\text{obs}} = \frac{\sqrt{\epsilon(N-N^2)}}{n-1}$$

where:  $\sigma_{\text{obs}}$ —standard deviation or error observed

N—total number of counts in a time interval

$\bar{N}$ —mean average of many such counts

n—number of individual counts made.

3,460,941

# NOVEL PHOTOGRAPHIC PRODUCTS AND PROCESSES

Howard C. Haas, Arlington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Apr. 12, 1967, Ser. No. 630,191

Int. Cl. G03c 5/54; C08f 33/08; C09d 5/02

U.S. Cl. 96—29

13 Claims

In order to prevent phase separation between poly-4-vinylpyridine and a polymer having functional groups selected from the group consisting of —OH, —NH<sub>2</sub>, and —SH, the 4-vinylpyridine may be polymerized first with a vinyl aldehyde and then incorporated with said —OH, NH<sub>2</sub>, and/or —SH functional polymer to thereby chemically bond the poly-4-vinylpyridine-vinyl aldehyde copolymer thereto. A film formed from such a composition is useful as a dye image-receiving layer in a diffusion transfer image-receiving sheet.

3,460,942

# COLOR DIFFUSION TRANSFER PROCESS UTILIZING ULTRAVIOLET LIGHT ABSORBERS

Howard G. Rogers, Weston, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

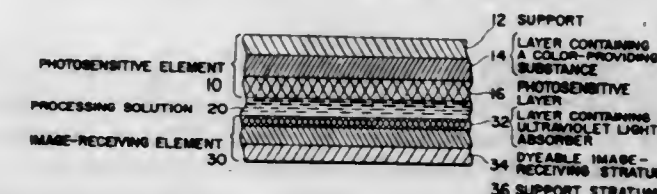
Continuation of application Ser. No. 354,963, Mar. 26, 1964, which is a continuation-in-part of application Ser. No. 786,766, Jan. 14, 1959. This application May 31, 1968, Ser. No. 744,595

The portion of the term of the patent subsequent to Dec. 18, 1979, has been disclaimed

Int. Cl. G03c 5/54, 7/00, 1/40

U.S. Cl. 96—29

4 Claims



The present invention is concerned with the protection of dye images formed by color diffusion transfer processes by effecting transfer to an image-receiving layer through an alkali-permeable polymeric layer containing a nondiffusible ultraviolet light absorber.



### 3,460,943 DIAZOTYPE MATERIALS CONTAINING MODIFIED STARCH

Walter J. Welch, Port Dickinson, N.Y., assignor to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 208,116, July 6, 1962. This application May 10, 1966, Ser. No. 548,863

Int. Cl. G03c 1/52

U.S. Cl. 96—75 4 Claims

One- or two-component diazotype materials having a base coated at 100° to 150° F. with an aqueous dispersion of nonswollen modified starch particles which do not swell below 150° F., the modified starch being prepared from cornstarch—alone or mixed with tapioca, potato, or sago starch, by treatment with a minor proportion of POCl<sub>3</sub>, PCl<sub>5</sub>, PSCl<sub>3</sub>, SbCl<sub>5</sub> or SbOCl<sub>3</sub> at pH 8–12, acidifying and filtering out the solid product—the coating composition optionally containing also a binder and a pigment such as silica, alumina, aluminum silicate and alumina-silica mixtures.

### 3,460,944 POLYMER COMPOSITIONS, STRATA AND ELEMENTS

Abraham Bernard Cohen, Springfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 363,281, Apr. 28, 1964. This application Mar. 18, 1965, Ser. No. 440,910

Int. Cl. G03c 1/80; C09d 3/74

U.S. Cl. 96—87 5 Claims

Photographic film base, photographic film, and drafting film having a substratum comprising a mixture of (1) a vinylidene chloride/alkyl acrylate or methacrylate/itaconic acid copolymer, where alkyl is 1–4 carbons, and (2) a homopolymer of an alkyl acrylate or methacrylate, where alkyl is 1–14 carbon atoms and (1) and (2) are in the respective amounts by weight of 90–60 and 10–40.

### 3,460,945 ETHYL ACRYLATE, METHYL METHACRYLATE AND ACRYLIC ACID TERPOLYMER ADHESIVE FOR POLYESTER FILM SUPPORTS AND GELATIN LAYERS

Henry S. Kolesinski, Burlington, and Peter H. Roth, Needham, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Sept. 20, 1965, Ser. No. 488,777

Int. Cl. G03c 1/80, 5/54

U.S. Cl. 96—87 13 Claims

The adhesion of a gelatinous layer to a polyester film support may be facilitated by coating said support prior to application of said gelatinous layer with a terpolymer comprising ethyl acrylate, methyl methacrylate, and acrylic acid.

### 3,460,946 IMAGE RECEPTOR SHEETS CONTAINING ORG- ANIC SILVER SALTS AND METAL ION IMAGE

Gerhard W. R. Puerckhauer, St. Paul, Burt K. Sagawa, Minneapolis, and Bruce W. Wittnebel, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Feb. 3, 1966, Ser. No. 524,843

Int. Cl. G03c 1/02

U.S. Cl. 96—94 8 Claims

Metal ion image amplifiers, such as stannous stearate, are added to image receptor sheets containing organic silver salts to provide improved image appearance and to conserve silver.

### 3,460,947 SILVER HALIDE EMULSIONS CONTAINING CHAIN-SUBSTITUTED CYANINE DYES

Geoffrey Ernest Ficken, Ilford, England, assignor to Ilford Limited, Ilford, England, a British company

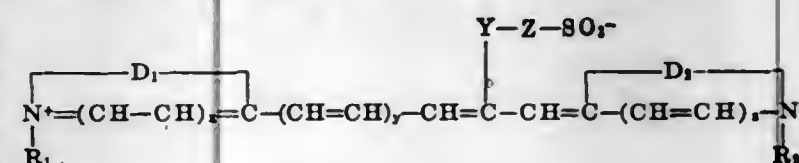
No Drawing. Filed Aug. 9, 1965, Ser. No. 478,469

Claims priority, application Great Britain, Aug. 14, 1964, 33,244/64

Int. Cl. G03c 1/10

U.S. Cl. 96—106 8 Claims

Silver halide emulsions containing at least one of the dyestuffs of the formula



wherein R<sub>1</sub> and R<sub>2</sub> are alkyl groups, Y is selected from the class consisting of oxygen and sulphur, Z is a saturated alkylene group containing up to 6 carbon atoms in the chain, each of x, y and z are selected from 0 and 1, and D<sub>1</sub> and D<sub>2</sub> are each the residue of a heterocyclic nucleus selected from the group consisting of thiazoles, oxazoles, selenazoles and their polycyclic homologues of the benzene and naphthalene series, pyridine and its polycyclic homologues, indolenines, diazoles, thiazolines and diazines.

### 3,460,948 COOKING METHOD AND PRODUCT

Lino Luigi Linteris, Demarest, and John P. McNaught, Saddle River, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed May 27, 1965, Ser. No. 459,462

Int. Cl. A23l 1/00; A23d 5/00

U.S. Cl. 99—1 5 Claims

Glyceride oils of frying food stuff including citrus oils to reduce offensive cooking odors.

### 3,460,949 METHOD OF DISTILLING WINE TO PRODUCE BRANDY SPIRIT

Vasily Markovich Maltabar, Mikhail Georgievich Uljan-kin, and Vladislav Vladimirovich Andreev, Kishinev, U.S.S.R., assignors to Moldavsky Nauchno-Issledovatel'skiy Institut Pishchevoi Promyshlennosti, Kishinev, U.S.S.R.

Filed May 17, 1965, Ser. No. 456,110

Int. Cl. C12f 3/06; C12g 3/12

U.S. Cl. 99—34 3 Claims

In order to reduce the time required for distilling wine to produce brandy, wine is preheated to a temperature of 90–95° C., superheated with pressurized live steam to a temperature of about 105° C. and cooled before distillation thereof.

### 3,460,950 METHOD FOR THE DEODORIZATION OF BEAN MILKS

Koji Fujita, Tokyo, Eisuke Sato, Nagoya-shi, and Tatsuo Moroe, Musashino-shi, Tokyo, Japan, assignors to Takasago Perfumery Company Limited, Tokyo, Japan

No Drawing. Filed Apr. 13, 1966, Ser. No. 542,239

Claims priority, application Japan, Oct. 25, 1965, 40/65,220

Int. Cl. A23c 11/00

U.S. Cl. 99—64 6 Claims

A method of deodorizing soybean milk and/or peanut milk comprising the steps of incubating soybean milk and/or peanut milk with conidiospores of an *Aspergillus* selected from the group consisting of *Aspergillus oryzae*, *Aspergillus niger*, *Aspergillus glaucus*, *Aspergillus ochraceus* and *Aspergillus versicolor* at 25–45° C. for about 2 hours with gentle agitation and then heating to kill the conidiospores.

### 3,460,951 METHOD FOR FORMING A CLOSURE FOR BOTTLES AND OTHER CONTAINERS

Edgar G. Heyl, Baltimore, Md., assignor to W. R. Grace & Company, Duncan, S.C., a corporation of Connecticut

Original application May 2, 1955, Ser. No. 505,415.

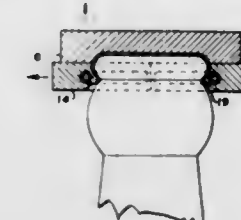
Divided and this application Aug. 4, 1967, Ser. No. 658,432

The portion of the term of the patent subsequent to

Mar. 28, 1978, has been disclaimed

Int. Cl. B67b 3/02; B65b 7/28

U.S. Cl. 99—214 10 Claims



A method for forming a closure for a container is provided wherein a sheet of heat shrinkable polymer is placed over the top of the container and a cover portion is formed from the sheet having an area overlying the open end of the container and an edge portion extending downwardly over the lip of the container to form a skirt therearound. Heat is then applied to the skirt portion to cause the skirt portion to shrink and snugly fit the coextensive external area of the container. The container may be filled before sealing and the sealed container contents may be subsequently heat treated.

### 3,460,952 ELECTROLESS COPPER PLATING

Edward B. Saubestre, Hamden, and Juan Hajdu, New Haven, Conn., assignors to Enthone, Inc., New Haven, Conn., a corporation of Connecticut

No Drawing. Filed Jan. 4, 1966, Ser. No. 518,529

Int. Cl. C09d 5/00; B44d 1/34

U.S. Cl. 106—1 18 Claims

An electroless alkaline aqueous copper plating solution comprising copper ions, a reducing agent for the copper ions, and Rochelle salt as a complexing agent for the copper ions, and wherein the Rochelle salt utilized in the plating solution is that prepared from a technical grade Rochelle salt and is substantially free of fine, predominately colloidal size particles associated with a technical grade Rochelle salt, whereby premature decomposition of the plating solution is eliminated.

### 3,460,953 PROCESS FOR DEPOSITING BRASSLIKE COATINGS AND COMPOSITION THEREFOR

Norbert C. Schwartz, Homer, N.Y., assignor to Pennsalt Chemical Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 27, 1966, Ser. No. 553,286

Int. Cl. C23b 5/36; C09d 5/00

U.S. Cl. 106—1 10 Claims

An immersion process and a composition for applying a brasslike finish to steel by immersing steel in a bath comprising copper, nickel, and tin, together with a complexing agent of the group of boric acid and citric acid, and an enhancing agent of the group of glutaric acid, succinic acid, glycolic acid, their anhydrides, and their water soluble salts.

### 3,460,954 BaO-Nb<sub>2</sub>O<sub>5</sub>-SiO<sub>2</sub> GLASS COMPOSITIONS FOR USE IN FIBER-OPTICS

John C. Young, Portuguese Bend, Calif., assignor, by mesne assignments, to The Bendix Corporation, a corporation of Delaware

No Drawing. Filed May 21, 1964, Ser. No. 369,313

Int. Cl. C03c 13/00, 3/08, 3/04

U.S. Cl. 106—54 2 Claims

Glass compositions having high refractive indices and other physical and thermal properties which make them particularly useful in the production of fiber-optics structures consist essentially of from about 5% to about 40% by weight of at least one oxide of the group consisting of Nb<sub>2</sub>O<sub>5</sub> and Ta<sub>2</sub>O<sub>5</sub>, at least 90% of the aggregate of said oxides being Nb<sub>2</sub>O<sub>5</sub>, from about 15 to about 45% by weight of BaO and from about 25% to about 40% by weight of at least one oxide of the group consisting of SiO<sub>2</sub> and B<sub>2</sub>O<sub>3</sub>, at least 70% of the aggregate of said oxides being SiO<sub>2</sub>. The compositions may also contain up to about 15% by weight of at least one oxide of the group consisting of CaO and SrO, up to about 10% by weight of at least one oxide of the group consisting of ZnO and CdO, up to about 5% by weight of at least one oxide of the group consisting of Na<sub>2</sub>O, K<sub>2</sub>O and Li<sub>2</sub>O, and up to about 36% by weight of La<sub>2</sub>O<sub>3</sub>. The compositions should be substantially free of lead and contain not more than an aggregate amount of 5% by weight of oxides of the group consisting of TiO<sub>2</sub>, ZrO<sub>2</sub>, HfO<sub>2</sub> and ThO<sub>2</sub>.

### 3,460,955 INORGANIC GLASS COATING AND METHOD FOR MAKING

Ellis John Afrola, Lynn, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Nov. 22, 1965, Ser. No. 509,158

Int. Cl. C23f 11/00; C09d 1/02

U.S. Cl. 106—74 8 Claims

An inorganic phosphate material of improved corrosion resistance and stability and useful as pigmented or unpigmented coating material is the reaction product of an aqueous mixture of phosphoric acid, chromic acid, acidic sodium silicate sol, magnesium and magnesium phosphate dibasic when the ratio of the phosphoric acid to the magnesium phosphate dibasic is at least 1. One pigmented form includes finely divided aluminum.

### 3,460,956 TITANATE PRODUCT AND METHOD OF MAKING THE SAME

Joseph Dahle, 1319 Hamilton St., Allentown, Pa. 18102

No Drawing. Continuation-in-part of application Ser. No. 366,627, May 11, 1964. This application July 19, 1968, Ser. No. 745,988

Int. Cl. C09c 1/36; C01q 23/04

U.S. Cl. 106—287 26 Claims

An alcoholic solution of an organo-soluble titanate complex is prepared by reacting a tetraalkyl titanate with more than 1.5 mols of water in the presence of up to 2 mols of lactic acid or 0.5–1.5 moles nitric acid in a lower alkanol in which the reactants and reaction product are soluble. The resulting solution may be used to produce hard transparent surface coatings and pigments of TiO<sub>2</sub> after heat curing.







ness of a glass screen having a surface crystallized layer of glass containing an in situ formed phosphor, including contacting the glass with an alkaline solution such as alkali metal hydroxide at a temperature and for a period of time sufficient to increase the cathodoluminescent brightness after the excess alkaline solution has been removed; and then removing excess alkaline solution.

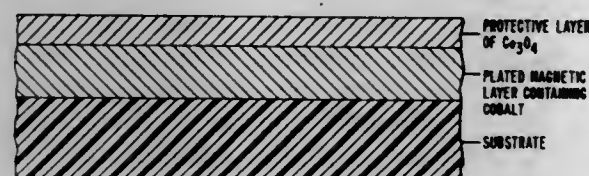
### 3,460,968 WEAR RESISTANT MAGNETIC RECORDING MEMBER

Geoffrey Bate, Poughkeepsie, John S. Judge and John R. Morrison, Wappingers Falls, and Dennis E. Speltis, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 4, 1964, Ser. No. 408,776  
Int. Cl. B44d 1/44; H01b

U.S. Cl. 117—62

7 Claims



A magnetic record member including a magnetizable cobalt containing metal or alloy portion having formed in place thereon a continuous wear resistant  $\text{Co}_3\text{O}_4$  surface by controlled oxidation of the cobalt containing portion. The method of producing a wear resistant magnetic record member by subjecting a record member having a magnetizable cobalt containing metal or alloy portion to temperatures in the range of  $40^\circ\text{C}$ . to  $150^\circ\text{C}$ . in the presence of water vapor to produce a continuous layer of wear resistant  $\text{Co}_3\text{O}_4$  in place on the cobalt containing portion.

### 3,460,969 PROCESS FOR PRODUCING MICROPOROUS COATINGS ON A TEXTILE FABRIC

Walter T. Murphy, Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 18, 1965, Ser. No. 480,815  
Int. Cl. B44d 1/44; C09d 5/04; B05c 11/02

U.S. Cl. 117—63

1 Claim

A process is provided for preparing poromeric films and coatings based on certain particular linear polyurethanes. The film spreading is done at higher temperatures than are used in the prior art and employs spreading compositions comprising the linear polyurethanes in solution, said solutions being thixotropically thickened by the addition of certain particular viscosity improving agents.

### 3,460,970 CHROMATOGRAPHIC PLATE AND METHOD OF MAKING SAME

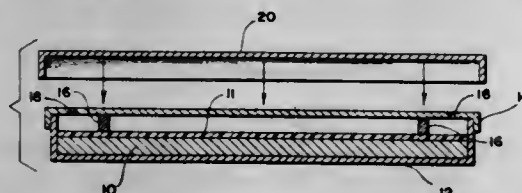
John E. Comparetto, 120 Riverside Gardens, Hackettstown, N.J. 07840

Filed June 20, 1967, Ser. No. 647,375

Int. Cl. B44d 1/40

U.S. Cl. 117—69

12 Claims



A thin-layer chromatographic plate and a method for its preparation are provided having an outer, protective coating layer superimposed on its aqueous thin-layer gel.

The protective layer is constructed of materials such as trimethylolpropane; 2,2-diethyl-1,3-propanediol; 2-methyl-1,2-propyl-1,3-propanediol; 1,3-dihydroxy-2-propanone; 4-hydroxy-4-methyl-2-pentanone; and N-acetyethanolamine. The protective layer protects the gel layer from drying and from damage in handling, and can be removed readily during equilibration of the plate.

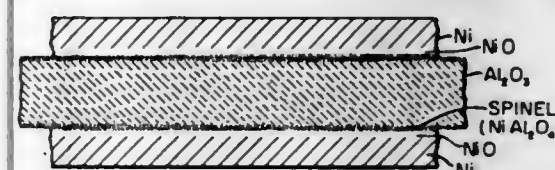
### 3,460,971 METHOD FOR THE PRODUCTION OF COMPOSITE MATERIALS AND ARTICLES PRODUCED THEREBY

Laszlo J. Bonis, Brookline, and Robert Grierson, Framingham, Mass., assignors to Ilkon Corporation, Natick, Mass., a corporation of Delaware

Filed Jan. 18, 1966, Ser. No. 521,341  
Int. Cl. B44d 1/12

U.S. Cl. 117—71

6 Claims



A method of making a metal oxide article having tightly bonded thereto a coating of a second metal. The metal oxide article may be in the form of monocrystalline fibers. The metal oxide article is first coated with the second metal as by electroless deposition; the second metal coating is then oxidized throughout its volume. The oxide coated articles are then subjected to a temperature above the spinel-forming temperature so that a spinel structure is formed between the metal oxide article and the oxide coating of the second metal. The second metal oxide coating may then be reduced so that the final article is coated with the second metal. Monocrystalline fibers so coated may be readily incorporated into a matrix of the second metal or its alloys to provide reinforced materials of great strength.

### 3,460,972 LIQUID ENCAPSULATION

Herman Nack, Columbus, Ohio, assignor, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

No Drawing. Filed Sept. 29, 1965, Ser. No. 491,413

Int. Cl. B44d 1/14

U.S. Cl. 117—72

9 Claims

This invention is a process for making capsules of a liquid core and a case that is substantially impermeable to the liquid that consists of coating a substance that is substantially compatible with the liquid with a continuous film of a material that is substantially insoluble in the liquid but which has a permeability disposed to permit the substance and the liquid to leach therethrough, contacting the coated substance with the liquid so as to leach at least a portion of the material through the porous film, and coating the film with a second material so as to reduce the liquid permeability of capsule wall.

### 3,460,973 PROCESS FOR RENDERING GLASS AND POLYESTERS ADHESIVE TO RUBBER

Pierre Hantzer and Jean Picard, Lyon, France, assignors to Societe Rhodaceta, Paris, France, a French body corporate

No Drawing. Filed June 14, 1965, Ser. No. 463,914

Claims priority, application France, June 16, 1964, 978,464; Apr. 21, 1965, 14,027

Int. Cl. B44d 1/14; C08d 13/24; C03c 25/02

U.S. Cl. 117—76

8 Claims

Glass and polyester yarns are rendered capable of adhering to rubber by coating them with an aqueous disper-

sion comprising a polyisocyanate blocked with  $\epsilon$ -caprolactam an emulsifying agent, and a rubber in latex form, and drying the coated yarns at a temperature of  $100^\circ$ – $250^\circ\text{C}$ . The lactam-blocked polyisocyanate is superior for this purpose to a phenol-blocked isocyanate in that the coated yarns can be stored for long periods with little or no loss in strength at this interface between the yarn and the rubber substrate.

### 3,460,974 METHOD OF PRODUCING CONSTANT LOW PRESSURE OF HYDROGEN IN CATHODE RAY TUBE

Aden J. King, 2202 E. Colvin St., Syracuse, N.Y. 13210

No Drawing. Filed Feb. 17, 1966, Ser. No. 528,077

Int. Cl. C03c 17/02

U.S. Cl. 117—97

2 Claims

A method of producing a constant low pressure of hydrogen in a cathode ray tube by providing a film of alkaline earth metal, such as barium and the hydride of such metal on the interior of the tube envelope.

### 3,460,975 TACK-FREE SILICONE RUBBER ARTICLES FOR MEDICAL USE

Leo F. Stebleton, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of application Ser. No. 441,375, Mar. 19, 1965. This application Nov. 15, 1965, Ser. No. 507,653

Int. Cl. B44d 1/22; C09d 3/36

U.S. Cl. 117—94

10 Claims

A process for providing tack-free silicone rubber articles which are particularly useful for medical applications which involves coating the silicone rubber article with a mixture of a titanate, a silane, and a volatile solvent. The solvent is ultimately dried and the titanate-silane coating is cured. Illustrative of the above is a mixture of methyltrimethoxysilane and tetrabutyltitanate in diethyleneglycoldimethylether. Articles so treated are rendered hydrophobic and renders the possibility of adverse body tissue reaction minimal.

### 3,460,976 CO-DEPOSITION OF BORON CONTAINING COATINGS

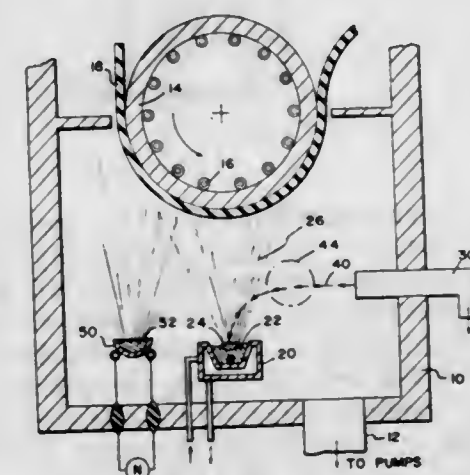
Lloyd R. Allen, Belmont, Mass., assignor to National Research Corporation, Newton, Mass., a corporation of Massachusetts

Filed Aug. 17, 1966, Ser. No. 573,002

Int. Cl. C23c 13/02, 1/08; B44d 1/34

U.S. Cl. 117—107

12 Claims



Boron coated films for structural composites reinforcement are made by co-depositing boron and a second material on a film, the second material comprising .05 to 5

atomic percent of the coating and being selected from the group consisting of aluminum, silicon, titanium, zirconium, molybdenum, iron, manganese and their oxides and nitrides.

### 3,460,977 MECHANICAL PLATING

Michael Golben, Maplewood, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Feb. 8, 1965, Ser. No. 431,211

Int. Cl. B05c 3/08; C23c 3/00

U.S. Cl. 117—109

9 Claims

In mechanical plating processes outstanding plating efficiency, uniformity, cohesion, coverage, brightness, and smoothness of the applied coating are obtained when effective amounts of certain surfactants, or blends thereof, are present. These surfactants include anionic or non-ionic dispersants such as polymerized alkyl aryl sulfonate, alkyl adducts of diphenyl oxide, molecules having a hydrophobic polyoxypropylene nucleus having hydrophilic polyoxyethylene chains attached thereto, polyoxyethylene glycol adducts of alkyl phenols, and amphoteric salts of long-chain alkyl beta-amino acids; cationic quaternary ammonium derivatives having heterocyclic hydrophilic nitrogen-containing rings and hydrophobic alkyl groups are also highly effective.

### 3,460,978 METHOD AND APPARATUS FOR COATING TEXTILE FILAMENTS

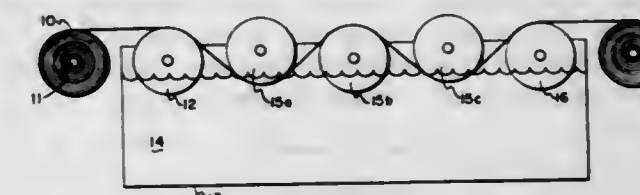
Robert E. Clayton, Westfield, and Clarence L. McGovney, Rumson, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Dec. 22, 1964, Ser. No. 420,264

Int. Cl. B05c 3/12; C03c 25/02

U.S. Cl. 117—115

4 Claims



Textile filaments are coated by passing the filaments through a series of equal, but alternately opposite bends during the passage of the filaments through a coating bath. This process thereby results in an opening-up of the filaments so as to expose all of the filaments to intimate contact with the coating bath and at the same time, undesirable twisting and breakage of the filaments are minimized.

### 3,460,979 PROCESS OF IMPREGNATING CAPILLARY MATERIALS SUCH AS WOOD, UNDER PRESSURE IN A CLOSED VESSEL

Ernest Glese, Egon Schubert, and Konrad Rienesl, Vienna, Austria, assignors to Guido Rutgers, Vienna, Austria, a corporation of Austria

Filed Mar. 21, 1966, Ser. No. 542,176

Claims priority, application Austria, Mar. 23, 1965

A 2,636/65

Int. Cl. B44d 1/26; B27k 3/08

U.S. Cl. 117—116

10 Claims

A process is disclosed for the impregnation of a capillary material, such as wood, under pressure in a closed vessel. While the contents of the vessel are maintained at a superatmospheric pressure, a gas is evolved within the capillaries which forces the impregnating liquid deeper into the article. The gas is produced by providing in the article a thermally gasifiable substance and when the impregnating liquid and gasifiable material are in contact within the capillaries the temperature is raised to thereby evolve the gas with the resultant increase in pressure.



**3,460,980**  
**PROCESS FOR THE APPLICATION OF A FURTHER CURABLE ORGANOPOLYSILOXANE TO METAL**  
 Alfred J. Burzynski, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio  
 No Drawing. Filed Dec. 3, 1965, Ser. No. 511,324  
 Int. Cl. B44d 1/36; C09d 1/82

U.S. Cl. 117—132 12 Claims  
 Process of providing a hard, wear resistant, weather resistant, chemical resistant, and easily cleaned coating on articles having a metal surface by applying to the surface a solvent-soluble, further curable, organopolysiloxane in an organic solvent and thereafter evaporating the solvent and finally curing the organopolysiloxane. The solvent-soluble, further curable, organopolysiloxane is made in a certain way by heating methyltrialkoxysilane or mixtures of methyltrialkoxysilane and phenyltrialkoxysilane in water at 50 to 80° C. for 1 to 10 hours to form a partial condensation product, heating this product at about 80° to 300° C. to remove alkanol by-product and water, and thereafter heating the product below the gel point at from about 90° to 185° C. to provide the solvent-soluble, further curable organopolysiloxane.

**3,460,981**  
**WATER REPELLENT AND/OR RELEASE TREATMENT**  
 Joseph Woodward Keil, Midland, Mich., and Clyde Lee Whipple, Stamford, Conn., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan  
 No Drawing. Continuation of application Ser. No. 461,495, June 4, 1965. This application Feb. 27, 1968, Ser. No. 708,522  
 Int. Cl. C03c 17/32

U.S. Cl. 117—135.1 14 Claims  
 A method of treating surfaces to render them water repellent and/or to facilitate the removal or release of ice therefrom by the application of certain silicone copolymers or the salts thereof thereto is disclosed. The method of this invention is particularly applicable to the treatment of airplane, ship and automobile surfaces.

**3,460,982**  
**BIAXIALLY ORIENTED POLYESTER FILM BASE HAVING A SUBLAYER OF AN ALKYL ACRYLATE/DIALLYL PHTHALATE/ITACONIC ACID**  
 Arthur Appelbaum, Highland Park, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
 No Drawing. Filed Jan. 3, 1966, Ser. No. 517,895  
 Int. Cl. B44d 1/22; C08d 13/24; C09d 3/36

U.S. Cl. 117—138.8 5 Claims  
 A film base suitable for photographic and drafting films comprising a biaxially oriented polyester film 0.0005–0.008 inch in thickness coated on at least one surface with a layer of a tricomponent copolymer of (i) methyl or ethyl acrylate, (ii) diallyl phthalate or divinylbenzene, and (iii) itaconic acid in the percentages 70–95, 3–28, and 2–20 respectively.

**3,460,983**  
**FATTY ACID BIGUANIDES AND THEIR USE FOR IMPREGNATING LEATHER**  
 Robert Biedermann, Riehen, Switzerland, assignor to Geigy Chemical Corporation, Greenburg, N.Y., a corporation of Delaware  
 No Drawing. Filed Nov. 17, 1965, Ser. No. 508,379  
 Claims priority, application Switzerland, Dec. 3, 1964, 15,623/64  
 Int. Cl. B44d 1/32; C14c 9/02

U.S. Cl. 117—142 12 Claims  
 A fatty acid biguanide produced by reacting (i) a hydrohalide of a primary aliphatic amine wherein the aliphatic radical has from 12 to 20 carbon atoms, and (ii)

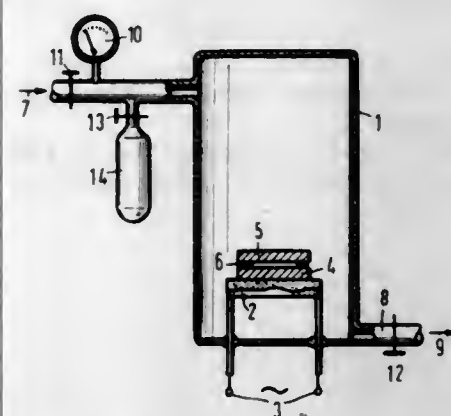
a dicyandiamide, said reactants being in the molar ratio respectively of from 1:0.8 to 1:1.5. The reaction product is then dissolved in a lower alkanol, neutralizing the reaction mixture to yield a free biguanide base, separating from the reaction solution insoluble products, adding to the separated solution from 0.5 to 2.5 equivalents, per equivalent of said amine, of aliphatic hydrocarbon carboxylic acid having from 12 to 20 carbon atoms and then recovering the resulting fatty acid biguanide from the reaction mixture. A method of imparting hydrophobic properties to leather which comprises impregnating leather with the above described fatty acid biguanide.

**3,460,984**  
**PROCESS FOR THE MANUFACTURE OF MAGNETIZABLE RECORDING LAYERS**  
 Johan Heinrich Bisschops, Berchem-Antwerp, Jozef Frans Willems, Wilrijk-Antwerp, and Willy Karel van Landeghem, St. Gillis-Waas, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company  
 No Drawing. Filed Aug. 16, 1965, Ser. No. 480,168  
 Claims priority, application Great Britain, Aug. 24, 1964, 34,491/64  
 Int. Cl. C09d 3/48; C08d 13/24; B44d 1/22

U.S. Cl. 117—161 8 Claims  
 In the manufacture of magnetic recording media, e.g. tape, in which acid-absorbing magnetizable particles are dispersed in a solvent solution containing a cross-linkable polymeric binding agent, the improvement of using a polymeric dispersing agent including lipophilic functional groups, acid groups, and hydroxyl groups whereby the polymeric dispersing agent and the polymeric binding agent can be cross-linked together. Preferably, the agents are cross-linked by means of an aldehyde or polyisocyanate curing agent.

**3,460,985**  
**GAS ETCHING FOLLOWED BY GAS PLATING**  
 Erhard Sirl, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany  
 Filed Feb. 1, 1966, Ser. No. 524,303  
 Claims priority, application Germany, Feb. 5, 1965, S 95,336  
 Int. Cl. B44d 1/18, 1/34; C23c 11/00

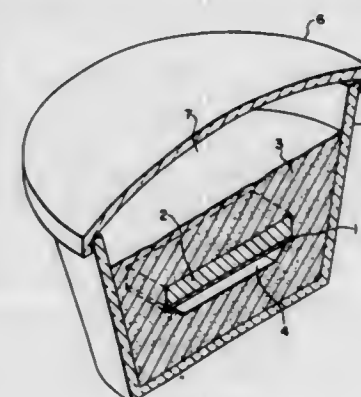
U.S. Cl. 117—213 12 Claims



Described is an improvement in the method of producing thin crystalline layers of high-purity material by a reversible chemical transport reaction of a gas mixture between a source and a substrate in a reaction vessel, comprising maintaining a temperature gradient between source and substrate and controlling the transport reaction to reverse the transport direction for selectively removing and depositing material at the substrate. The improvement comprises enforcing the selective reversal of the transport direction by changing the total pressure of the reaction gas mixture in the reaction vessel, and simultaneously maintaining a substantially constant molar mixing ratio of the gas mixture and a constant temperature

range of the reaction. For example, with silicon as the high purity material, iodine as the reaction gas and a temperature between about 1050° C. and about 1250° C., the direction of transport is reversed by changing the total gas pressure from below to above a critical value between about 15 torr and about 85 torr.

**3,460,986**  
**ACTIVATION OF PHOSPHOR FILMS**  
 Walter J. Harper, Wilkinsburg, Pittsburgh, Pa., and Edward J. Ham, Rockaway Township, White Meadow Lake, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
 Continuation of application Ser. No. 413,113, Nov. 23, 1964. This application May 15, 1968, Ser. No. 731,669  
 Int. Cl. B44d 1/18; C09k 1/12; C23c 13/04  
 U.S. Cl. 117—215 8 Claims



A method of activating an electroluminescent phosphor matrix film by placing the film in closely spaced relationship with respect to a powder of the phosphor, and then heating same. A preferred film thickness, spacing distance, means for spacing the material, and preferred firing conditions are specified for a zinc sulfide film.

**3,460,987**  
**METHOD OF COATING A CERAMIC-CARBON MATERIAL WITH GLASS AND ARTICLE**  
 Peter William McMillan and Graham Partridge, Stafford, England, assignors to The English Electric Company Limited, London, England, a British company  
 Filed Oct. 22, 1965, Ser. No. 501,973  
 Claims priority, application Great Britain, Jan. 27, 1965, 3,577/65  
 Int. Cl. B44d 1/00; C04b 35/52; H01c 7/02

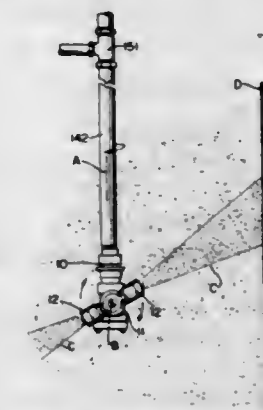
U.S. Cl. 117—219 15 Claims  
 A block of ceramic-carbon material, for use as a resistor, has its surface (except for those portions to which electrical connections are to be made) coated with an adherent layer of glass or of devitrified glass-ceramic material of certain specific stated compositions.

A process is described by which this is achieved. The coatings are electrically-insulating, are hard and firmly adherent to the ceramic-carbon blocks, and will withstand high temperatures in operation.

**3,460,988**  
**PROCESS AND APPARATUS FOR SPRAY TREATING THE BOUNDARY SURFACES OF ENCLOSURES, SUCH AS TANKS AND THE LIKE**  
 Merritt T. Kennedy, Jr., Port Washington, and John Dineen, East Northport, N.Y., assignors to Pyrate Sales, Inc., Bayside, N.Y., a corporation of Nevada  
 Filed Mar. 21, 1966, Ser. No. 535,938  
 Int. Cl. B08b 9/08

U.S. Cl. 134—1 19 Claims  
 Process and apparatus by which the walls of an enclosure, such as a tank, may be treated, as for cleaning, wherein an atmosphere of ambient aerosol fog is created

in the enclosure, and there is projected through said ambient fog and against the walls of said enclosure a fog beam, while said beam is gyrated in a direction to traverse said walls. The apparatus comprises a turret rotatable about a first axis and a sonic spray nozzle on said turret rotatable about a second axis at right angles thereto. A

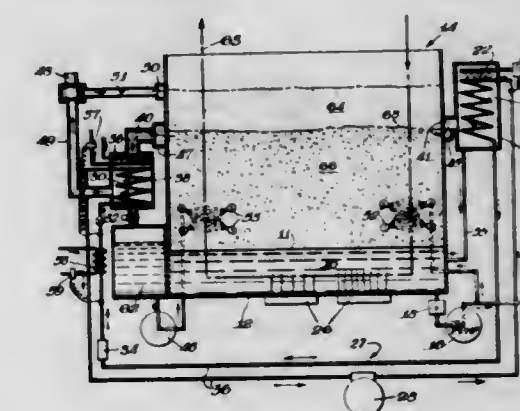


first passageway extends centrally along the first axis and along the second axis to the sonic nozzle and a second annular passageway around said first passageway concentric therewith extends along said first and second axes to the sonic nozzle, one of said passageways being adapted to conduct liquid, the other passageway being adapted to conduct a gas.

**3,460,989**  
**METHOD OF TREATING FERROUS METAL SURFACES**  
 John H. Rusch, P.O. Box 10193, Metairie, La. 70004  
 No Drawing. Filed Sept. 2, 1964, Ser. No. 394,072  
 Int. Cl. B08b 3/08, 17/00

U.S. Cl. 134—3 21 Claims  
 Treatment of ferrous metal surfaces containing scale in order to remove the latter. The procedure involves immersing the surface in an aqueous phosphoric acid solution containing a corrosion inhibitor for a period of time sufficient to dissolve the scale. Thereafter, an alkaline material is added as a buffering material to bring the pH of the solution to about 8 to 12. Thereafter, adding an oxidizing agent and allowing the solution to remain in contact with the surface to provide a scale free surface with increased passivity toward oxidation.

**3,460,990**  
**METHOD FOR CLEANING OBJECTS WITH SOLVENT**  
 Donald J. Barday, 721 16th St., Boulder, Colo. 80302  
 Original application Oct. 12, 1964, Ser. No. 403,142, now Patent No. 3,308,839, dated Mar. 14, 1967. Divided and this application Mar. 7, 1967, Ser. No. 621,266  
 Int. Cl. B08b 3/10, 3/04  
 U.S. Cl. 134—31 6 Claims



A degreasing method in which the more volatile component of a solvent liquid mixture is selectively flash evaporated from the heat emitting section of a heat pump



to generate vapor to rinse the objects washed in the solvent liquid mixture. A blanket of air vapor mixture is maintained at the top of a tank above a saturated vapor zone in turn above the solvent liquid. The air vapor blanket is maintained by continuously withdrawing some of it, condensing solvent vapor from it in the heat absorbing section of the heat pump and then returning the remaining air vapor mixture to the blanket. The condensed solvent is utilized for rinsing.

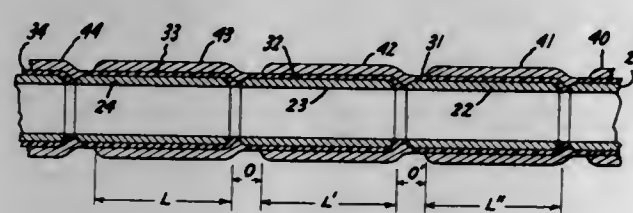
### 3,460,991 FUEL CELL WITH TUBULAR ELECTRODES AND SOLID ELECTROLYTE

Donald W. White, Jr., Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York

Continuation-in-part of application Ser. No. 465,624, June 21, 1965. This application Aug. 16, 1967, Ser. No. 661,006

Int. Cl. H01m 27/02  
U.S. Cl. 136—86

3 Claims



A high voltage fuel cell assembly in which each cell comprises inner and outer tubular electrodes and a solid tubular electrolyte sandwiched between the electrodes.

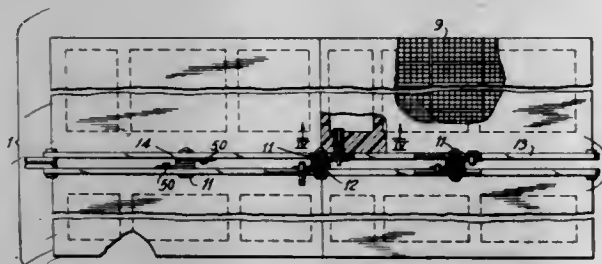
### 3,460,992 COLLAPSIBLE SOLAR PHOTOELECTRIC BATTERY

Viktor Zakharovich Avilov, Kievskaya ulitsa, 58, Vyacheslav Ivanovich Aralov, Streletskaya ulitsa, 17/19, kv. 12, Genrikh Stanislavovich Daletsky, ulitsa Akademika Komarova, 6, kv. 43, Boris Dmitrievich Ivanov, I Ostankinskaya ulitsa, 20, kv. 6, Grigory Vladimirovich Kantor, Bolshaya Gruzinskaya ulitsa 36, kv. 62, Evgeny Nikolaevich Pasternak, Bolshaya Akademicheskaya ulitsa 61/2, kv. 46, Leonard Markovich Raigorodsky, Prospect Mira, 182, kv. 19, Igor Stepanovich Schegolev, Bolotnikovskaya ulitsa 41, korpus 6, kv. 135, and Nikolai Vasilievich Shavrin, Bolshoi Kharitonovskiy per. 25/10, kv. 10, all of Moscow, U.S.S.R.

Filed May 3, 1965, Ser. No. 452,805

Int. Cl. H01l 15/04  
U.S. Cl. 136—89

9 Claims



A collapsible solar photoelectric battery having individual supporting plates with photocells on the active side of the plates, the plates being pivotally connected to each other to form an articulated "lazy-tongs" linkage. The linkage is extended and contracted by means of an electrical power drive which is coupled to the end links.

### 3,460,993 RELEASE MECHANISM FOR AUTOMATIC ACTIVATOR

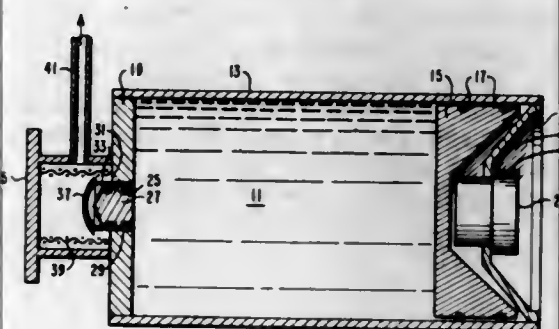
Lawrence L. Saunders and John A. Sibilla, Denver, Colo., assignors to Whittaker Corporation, Los Angeles, Calif., a corporation of California

Filed Oct. 23, 1967, Ser. No. 677,382

Int. Cl. H01m 17/00

U.S. Cl. 136—90

8 Claims



The storage container in which activator fluid is stored has an outlet tube which is sealed at its outer end by a frangible diaphragm and contains a piston held in place at its inner end by a yieldable detent to maintain a liquid seal between the fluid stored in the storage container and the diaphragm. When activating pressure is applied to the activator fluid in the container, this pressure forces the piston free of the detent to move along the tube toward the diaphragm. Fluid pressure behind the moving piston forces it through the diaphragm, breaking it and opening the outlet tube, thus permitting the discharge of the activator fluid from the container to the battery cell.

### 3,460,994 METHOD OF MANUFACTURING A CATALYTIC OXYGEN ELECTRODE FOR ALKALINE FUEL CELLS

Dexter William Smith, Birmingham, England, assignor to Joseph Lucas (Industries), Limited, Birmingham, England

No Drawing. Filed Nov. 18, 1965, Ser. No. 508,582

Int. Cl. H01m 27/10

U.S. Cl. 136—120

3 Claims

To produce a catalytic oxygen electrode for alkaline fuel cells silver powder is mixed with a salt of a metal which when alloyed with the silver produces a catalyst. The mixture is prepared into a plate, and the plate is heated to decompose the metal salt to form the free metal, and to alloy that metal with the silver powder to form a catalytic oxygen electrode.

### 3,460,995 METHOD AND DEVICE FOR DETERMINING BATTERY STATE OF CHARGE

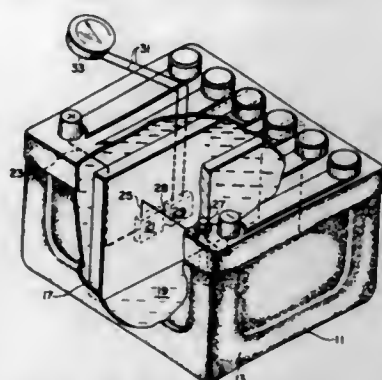
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Stanley J. Krause, Sepulveda, Calif.

Filed Sept. 15, 1967, Ser. No. 668,249

Int. Cl. H01m 45/06

U.S. Cl. 136—182

9 Claims



A state-of-charge indicator device for use with wet cell batteries having at least one light emitter and light detector

disposed adjacent to each other imbedded within a plate of the battery wherein the light emitter is selected to emit a wavelength of light which would be absorbed only by either the discharge compound formed in the plate or the charge compound formed, such that the detector which is connected to a suitable instrument will indicate the amount of light.

### 3,460,996 THERMOELECTRIC LEAD TELLURIDE BASE COMPOSITIONS AND DEVICES UTILIZING THEM

Irwin Kudman, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Apr. 2, 1968, Ser. No. 718,120

Int. Cl. H01v 1/18

U.S. Cl. 136—238

4 Claims

An N-type thermoelectric composition comprising lead telluride alloyed with germanium telluride and/or germanium selenide. The composition includes an operative amount of a conductivity modifier, such as lead iodide, germanium tetraiodide, lead bromide, germanium tetrabromide, an equimolecular mixture of lead and lead iodide, an equimolecular mixture of lead and lead bromide, an equimolecular mixture of germanium and germanium tetraiodide, and an equimolecular mixture of germanium and germanium tetrabromide.

### 3,460,997 CONTROL OF MECHANICAL PROPERTIES AND AGING CHARACTERISTICS OF FLAT ROLLED STEEL PRODUCT

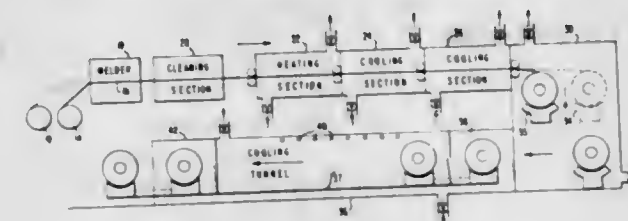
Monroe H. Kessler, Steubenville, Ohio, and Edwin J. Gebhardt, Weirton, W. Va., assignors to National Steel Corporation, a corporation of Delaware

Filed Nov. 10, 1966, Ser. No. 593,507

Int. Cl. C21d 1/74, 1/78

U.S. Cl. 148—2

12 Claims



Novel process for controlling mechanical properties and aging characteristics of flat rolled mild steel involving degassing of molten steel at an early stage in processing, at or before casting, to produce a low carbon content, preferably .02% C and below, but extending to .03% C under some circumstances. The low carbon molten steel produces a low inclusion, clean steel without a rimming action and is readily responsive to treatment for control of mechanical properties and aging characteristics.

### 3,460,998 PROCESS OF GROWING A SINGLE CRYSTAL UTILIZING DIFFERENCES IN CHEMICAL POTENTIAL

John Brian Mullin and Donald Thomas James Hurle, Malvern, England, assignors to National Research Development Corporation, London, England

Filed Mar. 26, 1965, Ser. No. 442,934

Claims priority, application Great Britain, Mar. 31, 1964, 13,164/64

Int. Cl. H01l 7/42; B01j 17/02

U.S. Cl. 148—1.6

2 Claims

1. A process for the growth of a homogeneous single crystal of a first material on a seed crystal of the first material from a charge of a second material which has

the same chemical composition as the first material but differs structurally therefrom in that it is a different polymorph thereof and thus has a different chemical potential, the process being achieved by causing a thin liquid alloy zone sandwiched between the two materials to move through the second material, and the motion of the liquid alloy zone being brought about by the difference in chemical potential between the first and second materials under the environmental conditions, said process being carried out substantially isothermally such that temperature gradients which might aid or deter the movement of the liquid alloy zone are substantially absent.

### 3,460,999 PROCESS OF PRODUCING BERYLLIUM METAL POWDERS

Simon J. Morana, Hazleton, and Walter J. Koshuba, Wyomissing, Pa., assignors, by mesne assignments, to Kaweck Beryllco Industries, Inc., Reading, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of applications Ser. No. 302,828, Aug. 19, 1963, and Ser. No. 418,578, Nov. 20, 1964. This application July 1, 1966, Ser. No. 562,078

Int. Cl. C23b 35/00; B22f 9/00

U.S. Cl. 148—6.3

9 Claims

A method of producing beryllium metal powders substantially devoid of beryllium oxide wherein the beryllium metal powders are milled in a non-halogenated hydrocarbon vehicle and subsequently the powders are separated from the vehicle. The powders can then be exposed to air under controlled conditions to produce non-pyrophoric beryllium metal powders which will not combust at normal atmospheric conditions.

### 3,461,000 METHOD FOR INHIBITING THE STAINING OF ARTICLES FABRICATED FROM ALUMINUM-COATED PRODUCTS

Richard A. Nickola, Bedford Heights, and Thomas F. Shaffer, Jr., Fairfield, Ohio, assignors to United States Steel Corporation, a corporation of Delaware

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,093

Int. Cl. C23d 7/04

U.S. Cl. 148—6.35

1 Claim

Fabricated aluminum-coated products are treated to inhibit atmospheric staining, by heating them in an oxidizing atmosphere to a temperature between 700 and 1100° F. for from 1 hour at the lower temperature to 10 minutes at the higher.

### 3,461,001 METHOD OF PRODUCING METAL BODIES WITH HEAT- AND WEAR-RESISTANT SURFACES

Gerhard Kubera, Barsinghausen, Germany, assignor to Teves-Thompson & Co., G.m.b.H., Frankfurt am Main, Germany

Continuation-in-part of application Ser. No. 393,783, Sept. 1, 1964. This application Dec. 23, 1964, Ser. No. 423,636

Claims priority, application Germany, Sept. 1, 1963, T 24,670

Int. Cl. C21d 7/13

U.S. Cl. 148—11.5

9 Claims

A method of providing a metal body, especially a poppet valve for internal-combustion engines, with a heat-resistant surface zone, the poppet valve being composed at least in the region of this zone of an alloy from the group of austenitic, ferritic and martensitic steels and cobalt-chromium or chromium molybdenum alloys containing little iron, wherein a limited or localized portion of the poppet-valve body is heated to a temperature in its melting-point range (1300° C. to 1600° C.) with an oxy-



acetylene flame supplied with 10 to 800% stoichiometric excess of acetylene to smelt (i.e. at least partially lique-



100 X MAG  
CHROMIUM-NICKEL STEEL

fy) the surface zone, and thereafter forging the smelted zone by mechanical-working techniques.

3,461,002

**HEAT TREATMENT OF FERROUS BASE ALLOYS**  
Donald P. Koistinen, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 20, 1966, Ser. No. 558,676

Int. Cl. C21d 7/00, 1/00

U.S. Cl. 148—12.4

8 Claims

A method is disclosed for eliminating the upper yield point in ferrous base alloys which display this phenomenon. In a preferred embodiment low-carbon steel is heated with electromagnetic radiation to a temperature above 320° C. but below the lower critical temperature of the material and immediately quenched in water. The upper yield point is thus eliminated and the material may be drawn or otherwise deformed without the formation of stretcher strains.

3,461,003

**METHOD OF FABRICATING A SEMICONDUCTOR STRUCTURE WITH AN ELECTRICALLY ISOLATED REGION OF SEMICONDUCTOR MATERIAL**

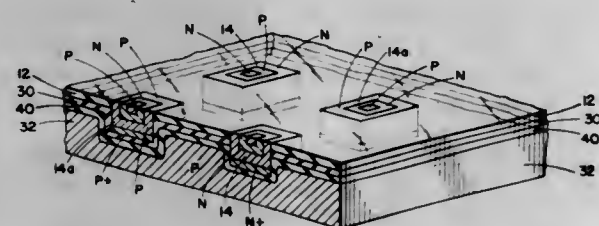
Don M. Jackson, Jr., Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Dec. 14, 1964, Ser. No. 417,919

Int. Cl. H01l 7/44; B01j 17/22

U.S. Cl. 148—175

9 Claims



1. A method of forming a semiconductor structure comprising the steps of: (a) providing a crystalline body; (b) masking a surface of said body so that a portion of the surface is exposed; (c) growing an epitaxial layer on said exposed portion of said body; (d) depositing a layer of isolating substance over said epitaxial layer; (e) forming a crystalline substrate over said layer of isolating substance; and (f) removing at least a portion of said first body.

3,461,004  
**METHOD OF EPITAXIALLY GROWING LAYERS OF SEMICONDUCTING COMPOUNDS**

Horst P. Lochner, Bayreuth, and Hans Jurgen Dersin, Ottobrunn, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany

Filed Aug. 3, 1966, Ser. No. 570,010

Claims priority, application Germany, Aug. 5, 1965, S 98,675

Int. Cl. H01l 7/36

U.S. Cl. 148—175

17 Claims

1. In the method of growing epitaxial layers of stoichiometrically composed semiconductor compounds, whose components have respectively different vapor pressures, by a chemical transport reaction comprising the steps of subjecting solid semiconductor source material at one locality in a reaction vessel to a reaction gas for converting the source material to the gaseous state and transporting it with the reaction gas to a substrate situated at a different vessel locality heated to a temperature different from that of said one locality so as to precipitate the semiconductor compound upon the substrate, the improvement which comprises adding to the reaction gas ammonia which forms a non-volatile compound with the less volatile one of the components of said semiconductor compound, whereby said added substance binds the excess amount of said one component evolving, due to the difference in vapor pressures, from the transport reaction.

3,461,005

**P-CONTACT FOR COMPENSATED P-GERMANIUM CRYSTAL**

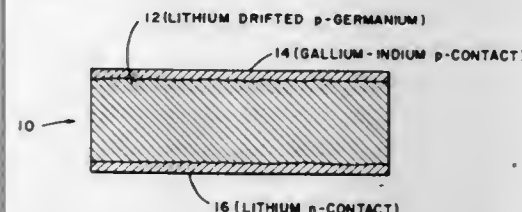
Marco A. Jamini, Brookhaven, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 1, 1967, Ser. No. 665,688

Int. Cl. H01l 7/44

U.S. Cl. 148—186

3 Claims



A p-contact and a method of making a p-contact for a lithium diffused and compensated p-germanium crystal. A gallium-indium eutectic is brushed on the surface of such a crystal from which the lithium n-contact has been removed and then heated to 400–600° C. to obtain diffusion of the eutectic into a surface layer of the crystal face to form the desired contact.

3,461,006

**GELLED PYROTECHNIC FLARE COMPOSITION CONTAINING WATER-SOLUBLE CARBOXY VINYL POLYMER RESIN**

Richard J. Fay and Philip J. Kettel, Denver, Colo., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Oct. 27, 1967, Ser. No. 678,512

Int. Cl. C06d 1/10

U.S. Cl. 149—19

3 Claims

A gelled pyrotechnic composition comprised of between 32 and 52 percent of a fuel such as methanol, between 45 and 65 percent of an oxidizing material, such as a perchlorate, and between 0.5 and 5 percent of a water-soluble carboxy vinyl polymer resin.

3,461,007

**REDUCING SENSITIVITY OF PRIMARY EXPLOSIVES TO INITIATION BY ELECTROSTATIC DISCHARGES**

William L. Schwoyer, Allentown, Pa., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

Filed Apr. 29, 1968, Ser. No. 724,896

Int. Cl. C06c 1/02; C06b 17/00

U.S. Cl. 149—27

28 Claims

The sensitivity of primary explosives to initiation by electrostatic discharges is reduced in accordance with the invention by combining therewith a small amount of a polyol polynitrate of low sensitivity, such as trimethylol-ethane trinitrate, and primary explosive compositions accordingly are provided containing a primary explosive and a polyol polynitrate of low sensitivity, such as trimethylol-ethane trinitrate, useful, for instance, as the initiating explosives in blasting caps, and for other purposes. A process also is provided for uniformly blending a polyol polynitrate with a primary explosive in particulate form, employing a solution of the polyol polynitrate in a non-gelatinizing nonsolvent for the primary explosive.

3,461,008

**METHOD AND APPARATUS FOR ETCHING PRINTED CIRCUIT BOARDS**

Lee Laurie, Jr., P.O. Box 297,

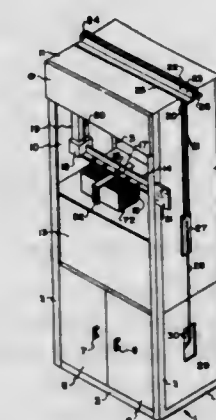
Oxford, Md. 21654

Filed Oct. 21, 1965, Ser. No. 499,273

Int. Cl. C23f 1/02; C01g 49/10

U.S. Cl. 156—3

8 Claims



In the preparation of printed circuit boards, metal clad boards with preselected areas protected against chemical attack are dipped into and out of an etching solution at a rate of about 30–45 cycles per minute. The circuit boards are preferably copper clad and the etching solution is preferably ferric chloride or nitric acid. The apparatus for effecting the method includes motor driven means driving supporting cords or cables extending over one or more pulleys and connected to a supporting bar supporting a plurality of printed circuit boards for immersion into and out of an etching bath.

3,461,009

**PROCESS OF MOLDING A TANK**

Larry L. Snyder, Lincoln, and Mervin G. Snyder, Waverly, Nebr. (both of 4620 Fremont, Lincoln, Nebr. 68504)

Filed Nov. 8, 1966, Ser. No. 592,839

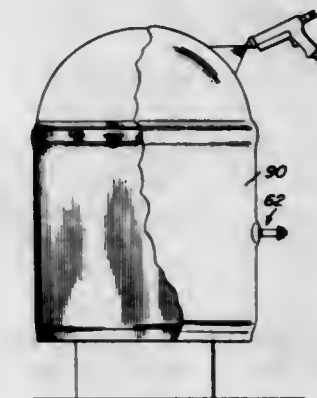
Int. Cl. B29c 13/04

U.S. Cl. 156—69

11 Claims

A seamless molded tank including an elongated generally cylindrical body sealed by a pair of opposed normally hemispherical end caps. The body and end caps are of fiber glass reinforced plastic and are internally lined with a corrosion resistant cured resinous coating. Formation of the tank involves the utilization of a collapsible

cylindrical mold as well as generally hemispherical end cap molds. The end caps are molded independently and one molded end cap is positioned on the cylindrical body mold for a molding of the body and a bonding of the end



cap thereto. The body mold is then removed and the second end cap positioned on the end of the molded body opposed from the first end cap and intimately joined thereto.

3,461,010

**METHOD OF MAKING A CLOSED FILLED PLASTIC CONTAINER**

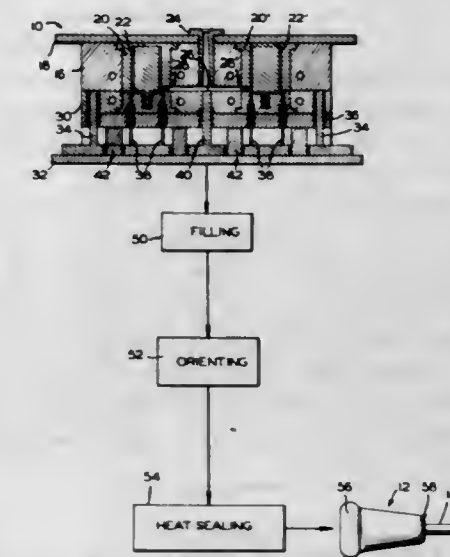
John J. Graham, Bound Brook, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

Filed Dec. 22, 1965, Ser. No. 515,694

Int. Cl. B32b 31/14; C09j 5/00

U.S. Cl. 156—145

2 Claims



In the manufacture of a closed filled generally cylindrical tubular injection molded plastic container, the container with an open end is oriented relative to a sealing station by using the molding gate mark on the container as an orientation alignment means and then open end is heat sealed at the sealing station on a diameter of the container generally coplanar with the radial plane of the gate mark.

3,461,011

**METHOD AND APPARATUS FOR WET WINDING COIL ASSEMBLIES FOR TRANSFORMERS**

Harry Forecki, Waukesha, Wis., assignor to RTE Corporation, Waukesha, Wis.

Filed Feb. 12, 1965, Ser. No. 432,157

Int. Cl. B65h 81/06; H01f 27/30

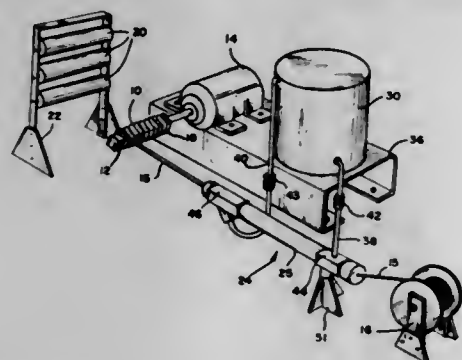
U.S. Cl. 156—171

10 Claims

A method and apparatus for winding a wire coated with a wet composition or substance onto an electrical assembly having an insulating barrier material, said composition



penetrating the barrier material in the area of the wire. The apparatus includes a flexible tubular member having a compressible seal at the inlet and a restricted orifice at



the outlet and a reservoir of organic resinous composition connected to the tube to maintain the tube filled with the composition.

3,461,012

**MANUFACTURE OF THERMOPLASTIC SHEET**  
George Leonard Wicker, Milnrow, Rochdale, England, assignor to Turner Brothers Asbestos Company Limited, Manchester, England, a British company  
Continuation-in-part of application Ser. No. 237,195, Nov. 13, 1962. This application June 15, 1965, Ser. No. 464,149

Claims priority, application Great Britain, Nov. 13, 1961, 40,520/61; June 15, 1964, 24,749/64  
Int. Cl. B32b 17/04, 23/10

U.S. Cl. 156—193 5 Claims  
1. In a method of producing a rigid thermoplastic sheet, the steps of:

- converting (1) a thermoplastic polymeric material in liquid form selected from the group consisting of solutions and emulsions and (2) loose fibres into a substantially homogeneous dough-like mass, said polymeric material being substantially rigid at room temperature and comprising at least a major proportion of a polymeric constituent based on a monomer selected from the group consisting of styrene, methylmethacrylate and acrylonitrile;
- feeding the dough-like mass into the nip between two calender bowls, one of which is heated, and gradually increasing the distance between the bowls, the mass being built up in laminations on the heated bowl; cutting the sheet thus formed on the bowl, and removing it from the bowl; allowing the sheet thus removed to cool to a rigid product.

3,461,013

**METHOD AND APPARATUS FOR SANDWICHING CORRUGATED CORE BETWEEN SKIN LAYERS**  
Lucien Victor Gewiss, Ville-d'Avray, France, assignor to Marc Wood Societe Anonyme pour la Promotion des Echanges Techniques Internationaux, Paris, France, a company of France

Filed Dec. 11, 1963, Ser. No. 329,637  
Claims priority, application France, Dec. 14, 1962, 918,692

U.S. Cl. 156—210 Int. Cl. B31f 1/22

23 Claims



A method for forming a sandwich structure in which a pair of spaced skins is provided and longitudinally ruled sheet material containing spaced transverse lines of weakness is fed between said skins in a direction transverse to

said lines of weakness so that said sheet material is progressively folded along successive lines of weakness with alternate ones of said lines of weakness contacting alternate ones of said skins. Apparatus for carrying out said method.

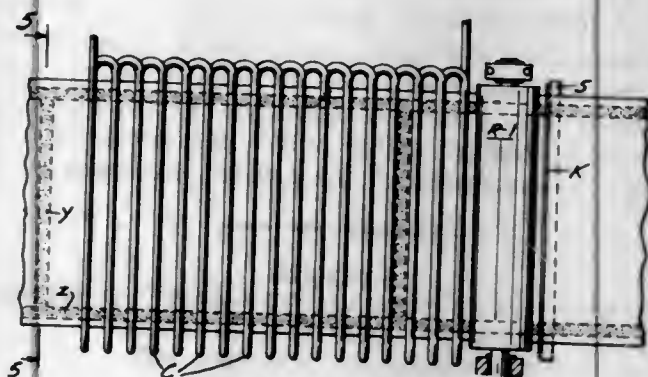
3,461,014

**MAGNETIC INDUCTION METHOD FOR HEAT-SEALING AND BONDING PREDETERMINED SEALING AREAS**

Albert L. James, Anoka, Minn., assignor of sixty percent to William C. Heller, Milwaukee, Wis.  
Filed June 11, 1964, Ser. No. 374,470  
Int. Cl. B29c 27/04, 27/02

U.S. Cl. 156—272

18 Claims



A method for heat sealing and bonding specific predetermined sealing areas of two units of material where a heat-fusible plastic surface or particle carrying heat-fusible film is employed. A deposit of fine susceptor particles selected preferably from ferromagnetic oxides is interposed between specific predetermined sealing areas of the two units of material. Thereafter, the units are brought together into opposed interfacing relation with the susceptor particles contiguous to the fusible plastic surface or carrier material. The susceptor particles between the units are subjected to a magnetic induction field which concentrates heat effect only upon the plastic material contiguous to the particles. The units of material are brought together into firm contact while the said immediate contiguous plastic material is in heated, fused state.

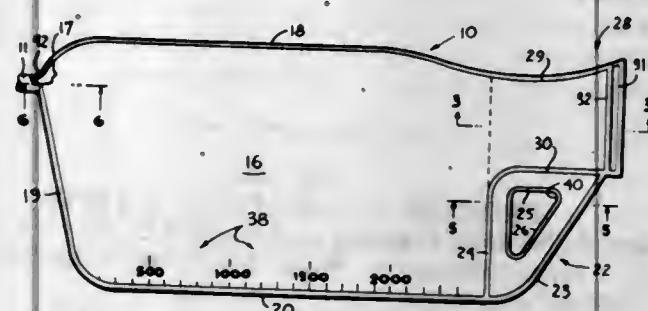
3,461,015

**METHOD FOR FORMING A FLEXIBLE PLASTIC BAG HAVING AN INTEGRAL VALVE**

Ronald L. Voller, 7043 W. Monroe St., Niles, Ill. 60648  
Original application Dec. 2, 1963, Ser. No. 327,401, now Patent No. 3,332,420, dated July 25, 1967. Divided and this application June 19, 1967, Ser. No. 660,537  
Int. Cl. B32b 31/00

U.S. Cl. 156—306

3 Claims



A process and apparatus for fabricating valved enema bags. The process comprising forming a flexible bag with a self-closing inlet to which is secured an elongated tubular outlet providing an essentially unitary bag and outlet structure. The apparatus employed in the method consists

of heat sealing devices for sealing portions of the bag and a tool for bonding the tubular outlet to the resilient bag to form a unitary structure.

3,461,016

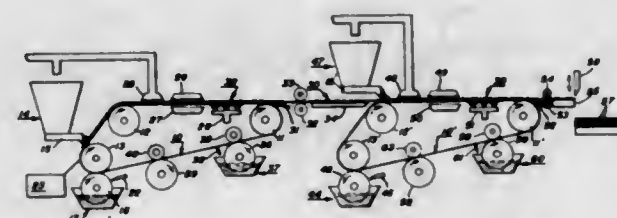
**APPARATUS FOR MAKING DECORATIVE PLASTIC ARTICLES**

Edgar W. Irving, Jr., Brookside Drive, and George R. Perkins, King George Road, R.F.D. 1, both of Bound Brook, N.J. 08805

Filed Oct. 8, 1965, Ser. No. 494,126  
Int. Cl. B29c 21/00; B29d 9/00

U.S. Cl. 156—376

8 Claims



Apparatus for forming an interstitial plastic sheet having a predetermined repetitive pattern of openings extending therethrough, which apparatus includes an endless band, an applicator roll which applies adhesive to portions of the band surface, the uncoated portions of the band surface corresponding to the defined openings, a first hopper which applies thermoplastic granules to the band to form an interstitial layer of granules adhering to the coated portions of the band, means removing excess granules, means heating the granules to their softening point, means cooling the granules to thereby fuse them together and means stripping the sheet from the band. A second hopper can be employed to apply additional granules filling the openings in the sheet, along with concomitant heating and cooling means.

3,461,017

**APPARATUS FOR THE PRODUCTION OF WELDED BAGS FROM THERMOPLASTIC TUBULAR SHEETING BY MEANS OF RADIANT HEAT**  
Friedrich Fecher, Jakob Schoenmann, and Horst Rosewicz, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

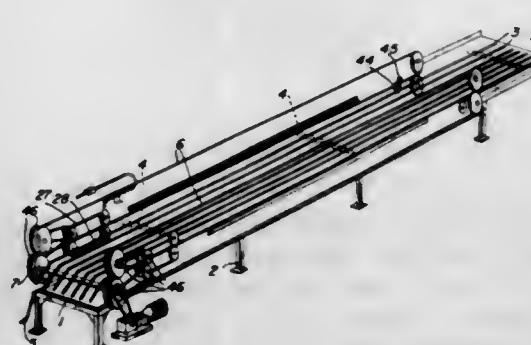
Filed Feb. 17, 1966, Ser. No. 528,227

Claims priority, application Germany, Feb. 19, 1965, B 80,601

Int. Cl. B32b 31/20

U.S. Cl. 156—380

10 Claims



Apparatus for continued production of welded bags of thermoplastic tubular sheeting embodying horizontally disposed slide rails, opposing pairs of chains on each side of and spaced laterally from the slide rails,

pressure contact members on the chains in pressure contact in the plane of the rails and between opposing guide rails, elongated radiant heating means adjacent said pairs of chains, cooling means on the guide rails, cooled steel endless tapes running horizontally in the direction of travel at the rear end and parallel to the roller chains with the middle strands of each pair of tapes in pressure contact, and spring-urged groove rollers providing shaping stations.

3,461,018

**DEVICE FOR PRINTING AND APPLYING LABELS ONTO ARTICLES**

Seiji Nagashima, Ageo-shi, Japan, assignor to Sato Kiko Kabushiki Kaisha, Tokyo, Japan

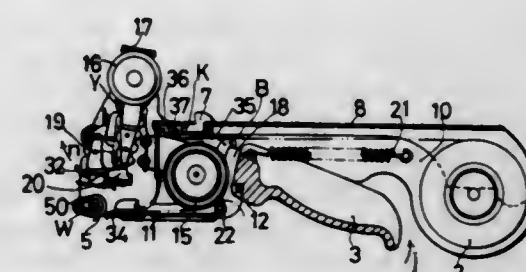
Filed Feb. 25, 1966, Ser. No. 530,203

Claims priority, application Japan, Sept. 16, 1965, 40/75,465; Nov. 17, 1965, 40/93,141, 40/93,142

Int. Cl. B41k 3/12; B41m 1/16; B32b 31/20

U.S. Cl. 156—384

7 Claims



A hand operated apparatus for delivering and applying labels to an article is provided with a device for intermittently feeding a strip of labels to a printing mechanism where the leading label of the strip is imprinted and fed to a pressing device which applies the imprinted labels onto the surface of the article. The pressing device is constituted as a pivotal frame carrying a pair of rotatable rollers on which endless belts are mounted.

3,461,019

**METHOD FOR WELDING ONE OR BOTH ENDS OF TUBE SECTIONS OF PLASTIC MATERIAL**

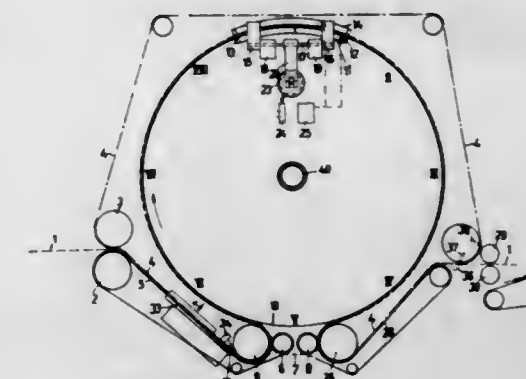
Karl-Heinz Honsel, Herforder Strasse 285, Bielefeld, Germany

Filed July 14, 1965, Ser. No. 471,809

Int. Cl. B32b 31/20

U.S. Cl. 156—464

12 Claims

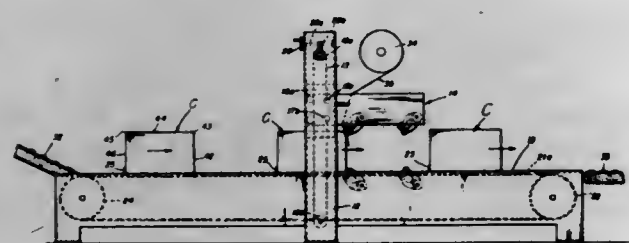


The disclosure concerns a manner of sealing tubular blanks made primarily of plastic material to produce bags which are sealed at one or both ends, where the blanks are placed transversely across a rotatable drum which has sealing stations that extend circumferentially of the drum to seal the ends of the blanks, which ends extend parallel to the sealing strips or bars.



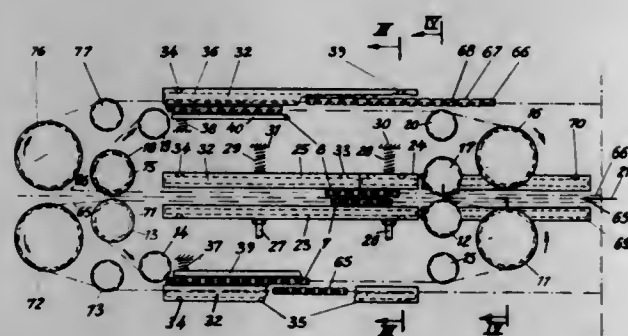
**3,461,020**  
**TAPE APPLYING MECHANISM EQUIPPED WITH TAPE TENSIONING MEANS**  
 Winton Loveland, Freeport, and Saul Warshaw, New York, N.Y., assignors to The Loveshaw Corporation, Farmingdale, N.Y., a corporation of New York  
 Continuation-in-part of application Ser. No. 139,676, Sept. 21, 1961. This application Aug. 6, 1965, Ser. No. 477,870

Int. Cl. B65b 51/06  
 U.S. Cl. 156—468 5 Claims



Mechanism to wipe gummed tape on top, bottom and end walls of traveling cartons for anchorage of flap closures. It includes two paired tape pressing means with one temporarily to hold the leading end portion of tape against the carton top wall in the vicinity of the leading top corner while the other, comprising a tape engaging roll carried by the free end of a pivoted arm, travels down in front of the leading end wall and then retracts upward to turn back over this top corner. The improvement comprises in such mechanism a finger mounted on this arm and having a nose projecting beyond the roll to engage the portion of the tape leading end draped over the leading carton end wall and to press it progressively against the latter with frictional drag as the roll is lowered in front of and out of contact with this end wall, for tensioning the tape across this corner to remove any loose loop therein. As this roll is retracted up this leading carton end wall to turn back over this top front corner the finger nose is disengaged from the tape and the roll now presses this wiped on tape end against the carton end wall.

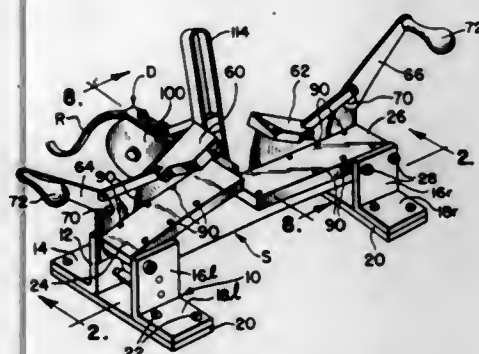
**3,461,021**  
**APPARATUS FOR COOLING AND COMPRESSING THE HOT FUSED BEADS OF PLIES OF PLASTIC MATERIAL WHICH HAVE BEEN HEAT-SEALED**  
 Friedhelm Brinkmeyer, Ladbergen, and Gerhard Fiks and Kurt Rochla, Lengerich, Germany, assignors to Windmoller & Holscher, Lengerich, Germany  
 Filed Sept. 14, 1965, Ser. No. 487,252  
 Claims priority, application Germany, Mar. 9, 1965, W 38,717  
 Int. Cl. B65b 51/18, 51/32  
 U.S. Cl. 156—498 16 Claims



Apparatus for cooling and compressing the hot fused beads of plies of plastic material which have been heat-sealed at their end edges wherein the cooling and com-

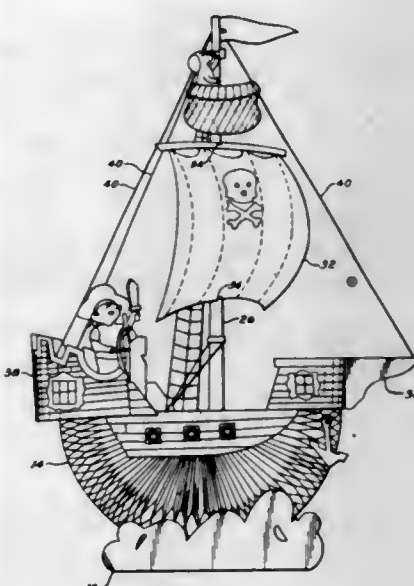
pressing members comprise chains having links provided with plates facing the workpiece in the cooling and pressing section.

**3,461,022**  
**METHOD AND APPARATUS FOR SPLICING FILM**  
 Leif G. Jorgensen, 517 W. St. Charles Road, Lombard, Ill. 60148  
 Filed May 17, 1966, Ser. No. 550,683  
 Int. Cl. B32b 31/18; G03d 15/04  
 U.S. Cl. 156—505 9 Claims



A device for splicing adjacent ends of strips of material in overlapped relation by the insertion of a piece of double-face adhesive material therebetween.

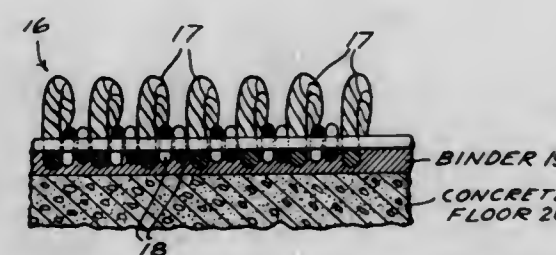
**3,461,023**  
**DECORATIVE MOTION DEVICE**  
 John Pacza, Parma, Ohio, assignor to American Greetings Corporation, Cleveland, Ohio, a corporation of Ohio  
 Filed Jan. 17, 1966, Ser. No. 521,124  
 Int. Cl. B63h 23/02  
 U.S. Cl. 161—17 4 Claims



A decorative motion device comprising a base, a rockable motion member supported on the base, the motion member including first and second stiff backing sheets, the first backing sheet foldable about a hinge line, and an elastic element formed of thin flexible leaves of sheet material interconnected to form a honeycomb structure having an expandable dimension, the element having two end surfaces perpendicular to the expandable dimension, one of the end surfaces being attached to the first backing sheet and the other of the end surfaces being attached to the second backing sheet, the attachment being on op-

posite sides of the hinge line whereby when the first backing sheet is unfolded, the elastic element is expanded arcuately about the hinge axis to define a segment of a surface of revolution, display elements mounted on the second backing sheet, and means for retaining the first backing sheet in an unfolded condition whereby the motion member is rockable on the base about the hinge line in response to oscillating expansion and contraction of opposite portions of the elastic element.

**3,461,024**  
**FABRIC FLOOR SURFACE AND FLOOR COVERING**  
 Godfrey Bloch, 38 E. 75th St., New York, N.Y. 10021  
 Filed Oct. 22, 1965, Ser. No. 501,496  
 Int. Cl. D04h 11/00; E04b 5/43; B32b 13/14  
 U.S. Cl. 161—66 12 Claims



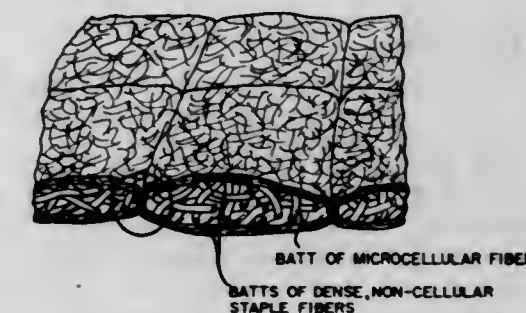
A hard fabric floor covering comprising a loop pile fabric adhered to a hard surface floor. The pile yarns are composed of a plurality of plies each of which is hard twisted in singles form. The singles ends are plied together with a stabilizing ply twist.

**3,461,025**  
**DECORATIVE FIBER GLASS PRODUCT AND PROCESS FOR MAKING SAME**  
 William L. Coleman and Joseph P. Manning, both of Jaffrey, N.H. 03454  
 Continuation of abandoned application Ser. No. 462,499, June 9, 1965. This application Dec. 6, 1966, Ser. No. 599,650  
 Int. Cl. B32b 17/04; D06m 13/34  
 U.S. Cl. 161—91 2 Claims



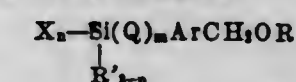
A woven, pliant, self-supporting sheet for structural or decorative panel use, the sheet being formed of translucent fiber glass roving criss-cross strands, each strand having individual color, by reason of pigments impregnated and anchored therein, at least one set of cross strands being of flattened cross section, and all intersections of the criss-cross strands being anchored to each other by the polymerization of thermoset resin pre-impregnated into the strands. The method includes the steps of forming translucent fiber glass roving soaked in a colored thermoset resin and having a predetermined shelf life, interweaving such strands with tension on the warp and then supporting the weave through an oven to polymerize the strands and bond the intersections.

**3,461,026**  
**LAMINATED FIBROUS BATT**  
 Mary Margaret Schick, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
 Filed June 23, 1966, Ser. No. 559,839  
 Int. Cl. B32b 5/26, 27/08  
 U.S. Cl. 161—154 9 Claims



1. A resilient laminar structure comprising a first batt of randomly arranged microcellular fibers and a second batt of dense, substantially non-cellular staple fibers adjacent at least one face of said first batt, said batts being mechanically joined into a coherent unit by interpenetration of the staple fibers of said second batt into said first batt, said microcellular fibers being composed of a synthetic organic polymer defining closed cells having substantially all of the polymer present as filmy elements of a thickness less than 2 microns.

**3,461,027**  
**BONDING OF THERMOPLASTIC POLYMER RESINS TO SILANE-PRIMED SILICEOUS OR METALLIC MATERIALS**  
 Edwin P. Plueddemann, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan  
 No Drawing. Filed Feb. 1, 1966, Ser. No. 523,901  
 Int. Cl. B32b 17/10, 15/08; C09j 5/02  
 U.S. Cl. 161—193 10 Claims  
 Solid materials, such as glass fibers or metal panels are coated with silanes of the formula



and partial condensates thereof, in which R is a lower alkyl radical, Ar is selected from the group consisting of divalent aryl radicals and divalent aryl ether radicals, Q is a divalent alkyl radical, m has a value of 0 or 1, X is the hydroxyl radical or a hydrolyzable group, R' is a monovalent hydrocarbon radical of no more than 12 carbon atoms, and n has a value of 1 to 3;

to improve the bonding between the solid material and an organic thermoplastic polymer, such as polystyrene.

**3,461,028**  
**PROCESS FOR MAKING PULP BY IMPREGNATING CELLULOSIC MATERIALS WITH AMMONIUM HYDROXIDE AND NITRIC ACID**  
 Everett C. Mills, Seattle, Wash., assignor, by mesne assignments, to Alscope Limited, Passaic, N.J., a corporation of Delaware  
 No Drawing. Continuation-in-part of application Ser. No. 410,727, Nov. 12, 1964. This application Feb. 1, 1968, Ser. No. 703,541  
 Int. Cl. D21c 3/16  
 U.S. Cl. 162—81 4 Claims  
 A process for making pulp characterized by the step or steps of impregnating comminuted cellulose-containing



material with an ammonium compound and an aqueous solution of nitric acid, either sequentially or concurrently, initiating an exothermic oxidation reaction between the lignins of said material and the nitric acid, and controlling the temperature of said material to not exceed about 97° C. until completion of the oxidation reaction.

**3,461,029**  
**CELLULOSIC PAPER SIZED WITH AN ALKYL ACRYLATE OR PROPIOLATE AND A POLY-ALKYLENEIMINE**

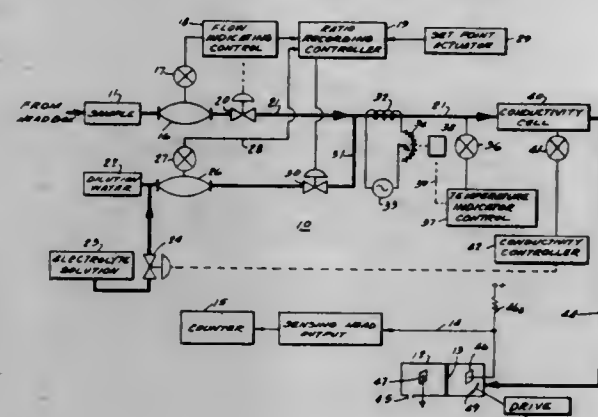
William Robert Hine, Jr., Kirkwood, and Myron J. Holm, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,209  
Int. Cl. D21h 3/46, 3/40; D21d 3/00

U.S. Cl. 162—168 11 Claims  
A composition comprising an alkyl acrylate or an alkyl propiolate and a polyalkyleneimine which is useful in the preparation of sized cellulosic paper substrates.

**3,461,030**  
**DETERMINATION OF FIBER CHARACTERISTICS IN PAPER MAKING**

Marion A. Keyes, South Beloit, Ill., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin  
Filed Oct. 22, 1965, Ser. No. 501,767  
Int. Cl. D21f 11/00

U.S. Cl. 162—198 7 Claims



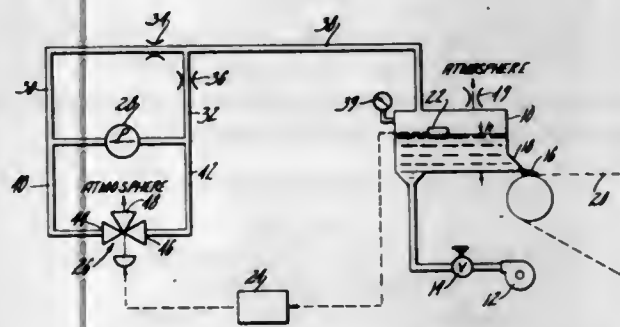
Apparatus for measuring the size of fibrous particles in paper pulp and which measures the length, cross-sectional area and volume of the fibers is disclosed. The apparatus allows measurement of fiber particle sizes to be made as a continuous process without interrupting the operation of the paper making machine. The measurements made are used to control the size of the particles being fed into the paper machine. Also, the conductivity of the paper pulp is regulated and the rate of flow through the machine is controlled.

**3,461,031**  
**APPARATUS FOR REGULATING STOCK LEVEL IN A HEADBOX**

Nicolas M. Reitzel, Boylston, Mass., assignor to Rice Barton Corporation, Worcester, Mass., a corporation of Massachusetts  
Filed Sept. 28, 1965, Ser. No. 490,893  
Int. Cl. D21f 1/02, 1/06; F04f 1/00

U.S. Cl. 162—259 6 Claims  
A device for regulating the fluid pressure in a chamber comprising a fluid pump having both its discharge and intake ends connected simultaneously, through at least partially open orifices, both to the chamber and to a constant pressure fluid reservoir, at least one of these orifices having its fluid discharge coefficient variable in response to a signal from a flow regulator to change

the chamber fluid pressure over a continuous range of pressures, thereby including the range of pressures spanning the constant pressure. The device is particularly useful for regulating the stock level in an air loaded headbox, utilizing an air pump; conveniently, the atmosphere as a constant pressure reservoir; and a stock level sensor for transmitting the appropriate signal.

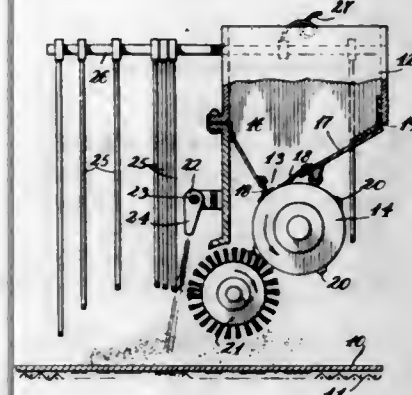


ful for regulating the stock level in an air loaded headbox, utilizing an air pump; conveniently, the atmosphere as a constant pressure reservoir; and a stock level sensor for transmitting the appropriate signal.

**3,461,032**  
**APPARATUS FOR APPLYING DRY POWDERED ADDITIVES TO PAPER ON THE FORMING WIRE USING ELECTROSTATIC ATTRACTION**

Joseph A. Lichtenberger and Theodor G. Brandts, Grand'Mere, Quebec, Canada, assignors to Consolidated Paper (Bahamas) Limited, Nassau, Bahamas  
Continuation-in-part of application Ser. No. 509,588, Nov. 24, 1965. This application July 21, 1967, Ser. No. 655,035  
Int. Cl. D21h 3/28; D21d 3/00

U.S. Cl. 162—266 4 Claims



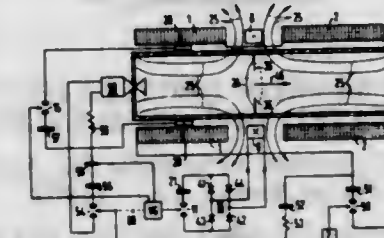
An additive material, such as a filler, size, binder or coloring agent, is applied in dry, finely powdered form to a wet paper web during its formation on a paper machine wire at a point where there is sufficient water present in the web for the material to distribute itself throughout the web but where only a minor portion of the material drains off with the water, or at a point where most of the water has drained away and effective retention of the material in the web takes place. Application of the powdered materials is facilitated by use of electrostatic attraction.

**3,461,033**  
**ELECTRICAL APPARATUS FOR ELECTROMAGNETIC CONTROL OF PLASMOIDS**

Alfred Michel and Heinrich Schindler, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany  
Filed Aug. 24, 1966, Ser. No. 574,690  
Claims priority, application Germany, Aug. 28, 1965, S 99,115  
Int. Cl. G21b 1/00

U.S. Cl. 176—3 19 Claims  
Apparatus for electromagnetic control of plasmoids includes an energizing system comprising electric circuit means connected to at least two magnetic field coils mag-

netically opposed to each other and surrounding a tubular vessel in coaxial relation thereto, capacitor means, control means for periodically causing oscillating discharges of the capacitor means and a capacitor discharge circuit

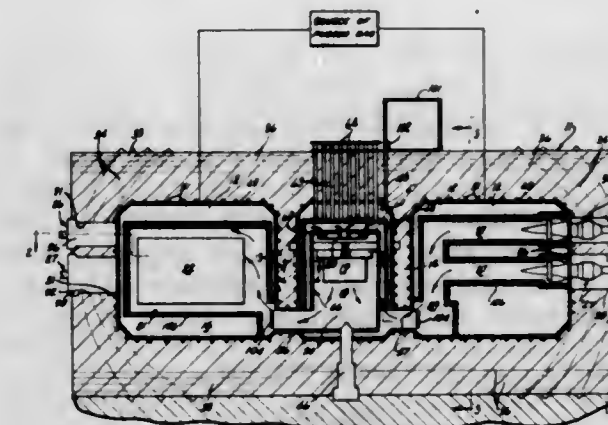


connected to the capacitor means and having an asymmetrically conducting portion which includes an induction winding coaxially surrounding the tubular vessel between the field coils.

**3,461,034**  
**GAS-COOLED NUCLEAR REACTOR**

Peter Fortescue, San Diego, Calif., assignor, by mesne assignments, to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware  
Filed Sept. 6, 1966, Ser. No. 577,204  
Int. Cl. G21d 9/00; G21c 15/00

U.S. Cl. 176—60 8 Claims



A gas-cooled nuclear reactor is described having a prestressed concrete reactor vessel defining an elongated chamber, the latter being divided into three interior compartments. A reactive core is disposed in the middle compartment, and steam generating equipment is positioned in each of the end compartments. An access port is provided in each of the end walls of the reactor to provide access to the end compartments. A biological shield is incorporated within the reactor to reduce radiation from the core in the end compartments.

**3,461,035**  
**PROCESS FOR INCREASING THE YIELD OF YEAST**

Robert S. Sellers, Huntington, Robert C. Nobel, Wantagh, and Robert A. Flitts, Huntington Station, N.Y., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Filed Nov. 13, 1963, Ser. No. 323,260  
Int. Cl. C12c 11/00

U.S. Cl. 195—83 3 Claims  
Increased yield of *Saccharomyces cerevisiae* is obtained by propagating the yeast cells in an aqueous sugar solution containing a growth-supplementing agent prepared by removing the mycelium and citric acid from a citric acid fermentation liquor.

**3,461,036**  
**TEST COMPOSITION, DEVICE AND METHOD FOR DETECTING UREA IN AQUEOUS FLUIDS**

Edward K. Harvill, deceased, late of Elkhart, Ind., by Jeanne T. Harvill, Elkhart, Ind., sole heir, legatee and devisee, and Elsie J. Shrawder, Elkhart, Ind., assignors to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana  
No Drawing. Continuation-in-part of application Ser. No. 383,996, July 20, 1964. This application June 5, 1967, Ser. No. 643,735  
Int. Cl. C12k 1/04

U.S. Cl. 195—103.5 14 Claims  
Improved test composition, device and method for detecting urea in aqueous fluids comprising urease, a pH indicator and an ammonium-ion producing buffer for controlling the pH of the test composition. The test composition is preferably incorporated with a carrier member such as bibulous filter paper.

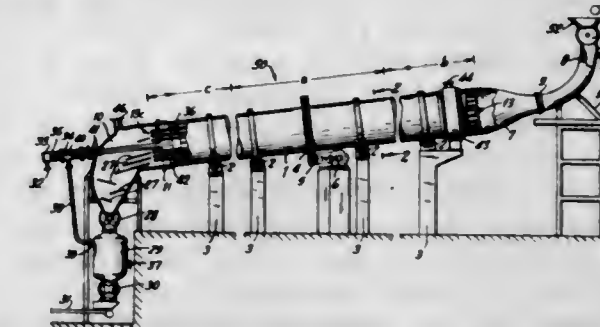
U.S. Cl. 195—103.5 14 Claims  
Improved test composition, device and method for detecting urea in aqueous fluids comprising urease, a pH indicator and an ammonium-ion producing buffer for controlling the pH of the test composition. The test composition is preferably incorporated with a carrier member such as bibulous filter paper.

U.S. Cl. 195—103.5 14 Claims  
Improved test composition, device and method for detecting urea in aqueous fluids comprising urease, a pH indicator and an ammonium-ion producing buffer for controlling the pH of the test composition. The test composition is preferably incorporated with a carrier member such as bibulous filter paper.

**3,461,037**  
**INCLINED ROTARY FURNACE**

Johannes Knappstein and Friedrich Thiersch, Recklinghausen, Germany, assignors to Firma Carl Still, Recklinghausen, Germany  
Filed July 6, 1965, Ser. No. 469,458  
Claims priority, application Germany, July 3, 1964, St 22,347  
Int. Cl. C10b 1/10, 11/00

U.S. Cl. 202—131 10 Claims

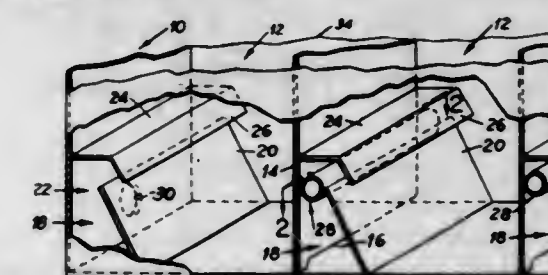


A furnace for the continuous coking of fuel includes a large rotatable tube which is supported with its axis of rotation inclined. A plurality of tubes are disposed within the next outer tube and extend axially therealong. Each of the tubes have a bore with an axially progressing groove of a configuration of the briquet to be coked. The tubes have a plurality of projections and recesses for the interengagement of adjacent tubes therewith in a gas-tight manner and the tubes are in a special relationship such that a plurality of separate axially extending passages are defined therebetween. These latter passages are for the separate flow of combustion media and air. The briquets advance through the furnace by rotation of the outside tube.

**3,461,038**  
**FLASH EVAPORATOR ADJUSTABLE VALVE VENTURI INLET**

Carlton Adolph Lind, Madison, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey  
Filed May 6, 1968, Ser. No. 726,710  
Int. Cl. B01d 1/30

U.S. Cl. 202—173 5 Claims



A stage for multi-stage flash distillation device having



a venturi entrance device in which is provided adjustable valving means for regulating the flow of incoming brine.

3,461,039

**PLURAL CONDENSER EVAPORATOR**

Roy Starmer, Peterlee, England, assignor to Applied Research and Engineering Limited, Peterlee, England, a British company

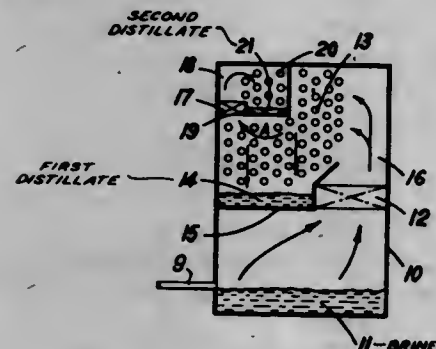
Filed Jan. 19, 1966, Ser. No. 521,679

Claims priority, application Great Britain, Jan. 29, 1965, 4,095/65

Int. Cl. B01d 3/06; C02b 1/06

U.S. Cl. 202-186

2 Claims



An evaporator for a distillation plant consisting of at least one flash evaporation chamber, a first moisture separator, first condensing means, a first condensate receiver arranged to collect condensate from the first condensing means, means to guide vapour from the evaporation chamber through the first separator to the first condensing means, a second condensing means, a second condensate receiver arranged to collect condensate from the second condensing means, and means to guide vapour which is not condensed by and passes through the first condensing means to the second condensing means, the arrangement being such that vapour which is not condensed by the first condensing means is scrubbed by condensate from the first condensing means as the vapour passes through the first condensing means.

3,461,040

**APPARATUS FOR AUTOMATIC REDUCED PRESSURE SEMI-MICRO DISTILLATION OF LIQUID DECOMPOSING AT BOILING POINT UNDER ATMOSPHERIC PRESSURE**

Mario Borbonese, Angelo De Ros and Giorgio Pifferi, Milan, Italy, assignors to Lepetit S.p.A., Milan, Italy

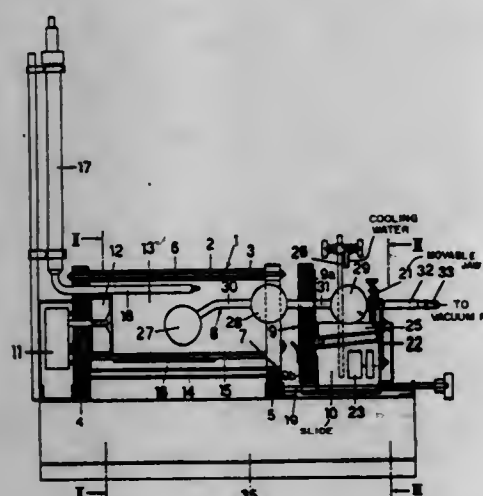
Filed Mar. 27, 1967, Ser. No. 626,304

Claims priority, application Italy, Mar. 29, 1966, 16,136/66

Int. Cl. B01d 3/14, 3/10, 3/08

U.S. Cl. 202-238

11 Claims



An apparatus is described for automatic semi-micro vacuum distillation of small quantities of liquids, particularly suitable in the case of substances which decompose

if evaporated under atmospheric pressure. The apparatus comprises three spherical bulbs slidably supported as a unit on a horizontal axis, the bulbs being in series communication with the innermost end bulb adapted to contain the distilland, the other bulbs receiving distillate fractions.

3,461,041

**VAPOR COMPRESSION DISTILLATION OF CHEMICALLY TREATED DEGASSED SALINE WATER**

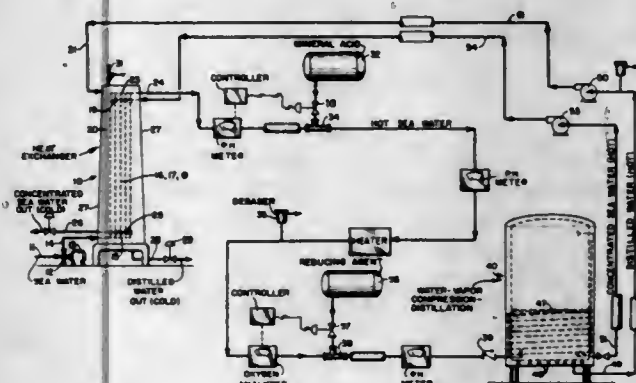
Travis C. Snyder, 1150 Aster St., Apt. 113, Baton Rouge, La. 70802

Filed May 29, 1967, Ser. No. 642,026

Int. Cl. C02b 1/06; B01d 3/34, 3/14

U.S. Cl. 203-7

6 Claims



A distillation method and apparatus for recovering fresh water from saline water wherein saline water is passed upwardly through a tower-like reservoir in indirect heat exchange with hot distillate. The hot saline water is treated with mineral acid, and the gases formed released. The resultant saline water is treated to remove dissolved oxygen, after which the hot degassed water is subjected to vapor compression distillation with isolation of distillate water and concentrated saline water.

3,461,042

**DETERMINATION OF NITROGEN**

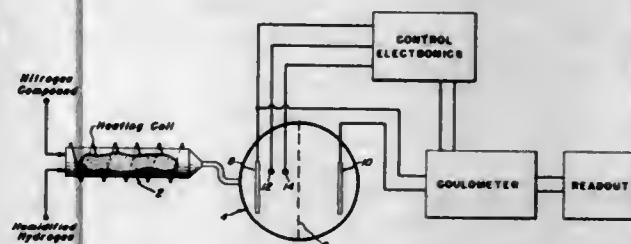
Ronald L. Martin, Glenwood, and Robert J. Flannery, Olympia Fields, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Feb. 21, 1966, Ser. No. 528,732

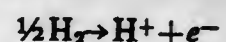
Int. Cl. B01k 1/00

U.S. Cl. 204-1

4 Claims



An apparatus and process for determining the nitrogen content of a nitrogen-containing material by catalytically converting the nitrogen to ammonia and by automatically titrating the ammonia electrochemically, in the presence of hydrogen gas, with hydrogen ions which are generated according to the equation:



3,461,043

**METHOD AND APPARATUS FOR CONTINUOUS MONITORING OF FLUORIDE EFFLUENT**

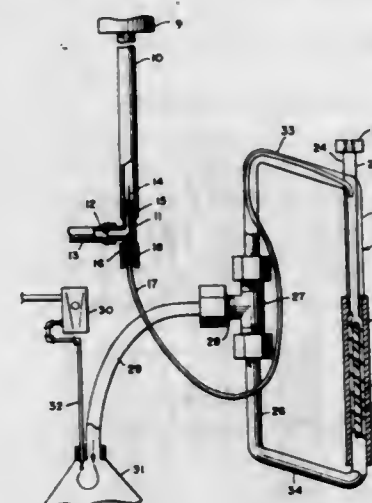
Gordon O. Guerrant, Stone Mountain, Ga., assignor, by mesne assignments, to USS Agri-Chemicals, Inc., Pittsburgh, Pa., a corporation of Delaware

Filed May 3, 1965, Ser. No. 452,610

Int. Cl. B01k 3/00

U.S. Cl. 204-1

7 Claims



Continuous monitoring of fluoride effluent by internal electrolysis is accomplished by contacting fluoride containing gas in tubing with an acid electrolyte and the electrolyte then passed through an electrolysis cell having electrodes for spontaneously generating current flow, the electrolyte being introduced by a capillary to form a film on the tubing walls and in which the fluoride is absorbed, the gas being removed and the electrolyte free of gas being passed through the cell and withdrawn, the current flow being measured.

3,461,044

**PROCESS FOR CODEPOSITING PLATINUM METAL AND A WET-PROOFING POLYMER**

Ernest H. Lyons, Jr., Marblehead, Henri J. R. Maget, Swampscott, and Richard J. Roethlein, North Reading, Mass., assignors to General Electric Company, a corporation of New York

Filed Mar. 30, 1965, Ser. No. 444,009

Int. Cl. C23b 7/00, 13/00; B01k 3/04

U.S. Cl. 204-3

7 Claims

A process is disclosed for producing an intimately blended codeposit of a platinum metal and a wet-proofing polymer. A plating bath is formed containing from 0.1 to 10 percent by weight of the platinum metal and from 0.1 to 50 percent by weight of the polymer. A substrate is immersed in the plating bath and a current of from 10 to 25 ma./cm.<sup>2</sup> is applied to the substrate with polarity being reversed at 10 to 60 second intervals. The so coated substrate may be utilized as an electrode in a cell such as a fuel cell.

3,461,045

**METHOD OF PLATING THROUGH HOLES**

Kenneth W. Franks, Northbrook, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 499,285

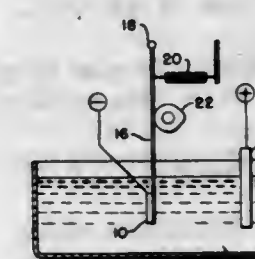
Int. Cl. C23b 7/02

U.S. Cl. 204-9

2 Claims

In electroforming a nozzle terminating in a thin-walled tube of greater length than its diameter, a hole conformed to the outside contour of the nozzle is formed through a body of wax. A thin coating of silver then is deposited on the surface of the wax and on the inside surface of the

hole. The coated mold form then is immersed in an electrolyte as a cathode, and nickel is electrodeposited onto the silver coating. The cathode mold form period-



ically is moved through the electrolyte in order to force fresh electrolyte into the restricted area of the tube to replace the electrolyte which has been spent by deposition onto the walls of the tube.

3,461,046

**METHOD AND APPARATUS FOR PRODUCING COPPER FOIL BY ELECTRODEPOSITION**

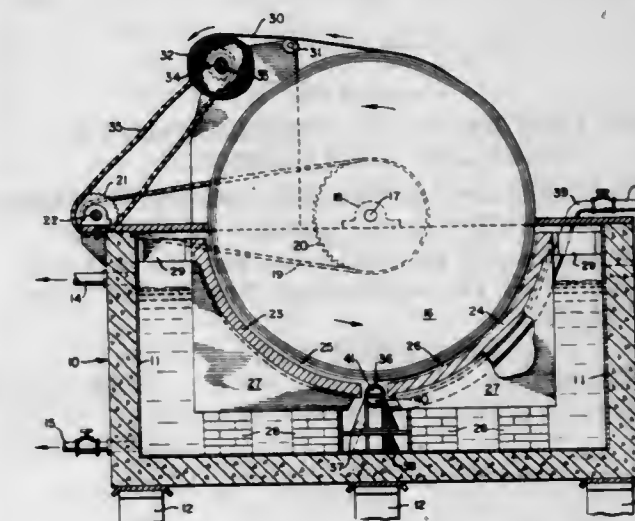
John Patrick Clancy, Adamston, N.J., assignor to The Anaconda Company, a corporation of Montana

Filed May 6, 1966, Ser. No. 548,286

Int. Cl. C23b 7/08, 7/04, 5/18

U.S. Cl. 204-13

8 Claims



Copper foil is produced by electrolytically depositing copper on a rotating titanium drum internally supported by an electrical conductive metallic structure having a greater thermal expansion characteristic than the titanium cathode drum. The supporting structure has a mating surface engaging the inner surface of the cylinder to provide an even electrical distribution on the cathodic surface.

3,461,047

**TANTALUM PURIFICATION MEANS**

Alfred L. Jenny, Columbia, S.C., assignor to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed June 18, 1965, Ser. No. 465,216

Int. Cl. C23f 17/00; C22b 51/00

U.S. Cl. 204-37

2 Claims

Method of purifying carbon containing metals of the group consisting of tantalum and niobium for use thereof as electrical components of minimal current leakage. The method comprises anodizing the metal, heating it at about 1850° C. for about 30 minutes, and then heating it at above 2100° C. for about 30 minutes.



3,461,048

**METHOD OF ELECTRODEPOSITING DUPLEX MICROCRACK CHROMIUM**

Henry Mahlstedt, Old Greenwich, Conn., and James W. Dunn, Birmingham, Robert W. Couch, Royal Oak, and Edgar J. Seyb, Jr., Oak Park, Mich., assignors to M&T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 816,371, May 28, 1959. This application Feb. 27, 1963, Ser. No. 261,526

Int. Cl. C23b 5/50, 5/46, 5/06

U.S. Cl. 204—41

19 Claims

1. A process for electrodepositing bright decorative corrosion resistant duplex chromium on a basis metal comprising (1) electrodepositing a first layer of chromium to a thickness of at least 0.25 micron from a solution having a  $\text{CrO}_3$  concentration between 150 g./l. to 525 g./l., and containing sulfate and fluoride-containing catalyst ions in an amount such that the ratio of  $\text{CrO}_3$  to that of the catalyst ions is between 110:1 and 175:1 with the sulfate ions being between 20% to 85% of the total catalyst ions, at a temperature between 32° C. and 60° C.; and then (2) electrodepositing on the first layer of chromium a layer of cracked chromium having at least 10 cracks per cm. to a thickness of at least .5 micron from a solution having a  $\text{CrO}_3$  concentration between 150 g./l. to 450 g./l., and containing sulfate and fluoride-containing catalyst ions in an amount such that the ratio of  $\text{CrO}_3$  to that of the catalyst ions is between 50:1 and 100:1 with the sulfate ions being between 20% to 85% of the total catalyst ions, at a temperature between 32° C. and 60° C.; to yield a duplex chromium deposit having a total thickness of at least 1 micron and less than about 5 microns.

3,461,049

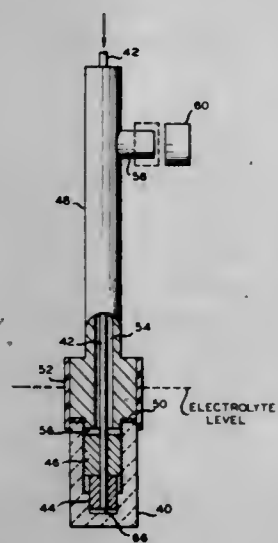
**ELECTROCHEMICAL PRODUCTION OF OXYGEN DIFLUORIDE**

William V. Childs, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
Continuation-in-part of application Ser. No. 435,255, Feb. 25, 1965. This application Nov. 2, 1967, Ser. No. 683,088

Int. Cl. B01k 1/00

U.S. Cl. 204—59

10 Claims



Oxygen difluoride is produced electrochemically by introducing an oxygen-containing gas into the pores of a porous anode in an electrolysis cell containing an essentially anhydrous liquid hydrogen fluoride electrolyte. Oxygen difluoride product is recovered from an effluent stream from said cell.

3,461,050

**PRODUCTION OF CARBONYL FLUORIDE**

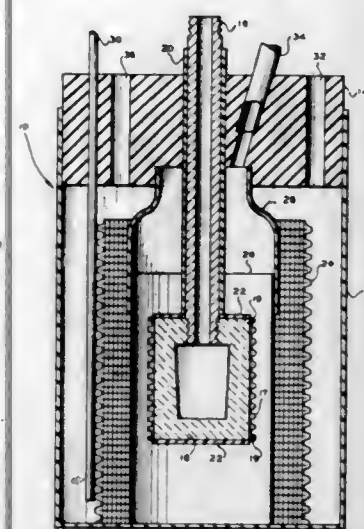
William V. Childs, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Continuation-in-part of application Ser. No. 604,814, Dec. 27, 1966. This application Nov. 2, 1967, Ser. No. 683,090

Int. Cl. B01k 1/00

U.S. Cl. 204—59

10 Claims



Carbonyl fluoride is produced electrochemically by introducing carbon monoxide into the pores of a porous anode in an electrolysis cell containing an essentially anhydrous liquid hydrogen fluoride electrolyte. Carbonyl fluoride product is recovered from an effluent stream from said cell.

3,461,051

**METHOD AND APPARATUS FOR PROTECTING WALLS OF A METAL VESSEL AGAINST CORROSION**

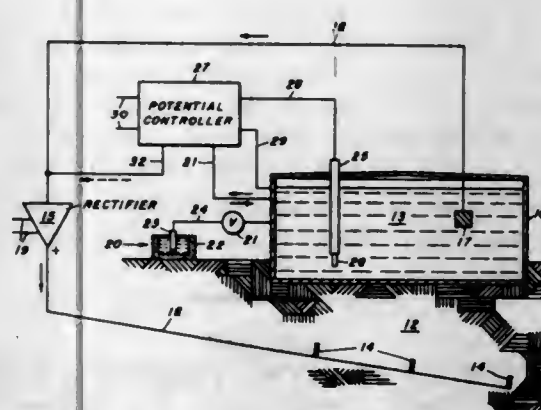
John B. Vrabie, Salem Township, Westmoreland, County, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed Feb. 18, 1966, Ser. No. 528,490

Int. Cl. C23f 13/00

U.S. Cl. 204—147

8 Claims



Method and apparatus for protecting walls of a metal vessel against corrosion. The walls are connected in an electric circuit which makes their outside surfaces a cathode and their inside surfaces an anode. Effective for vessels in contact with the ground and containing an acid or caustic solution.

3,461,052

**PROCESS FOR PRODUCING GRAFT COPOLYMERS USING RADIATION**

Alfred J. Restaino, Lawrence Township, and Weldon N. Reed, Pennington, N.J., assignors to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Application June 3, 1960, Ser. No. 33,614, which is a continuation-in-part of application Ser. No. 807,296, Apr. 20, 1959. Divided and this application Jan. 3, 1967, Ser. No. 635,275

Int. Cl. C07c 3/24; B01j 1/10; C08f 1/16

U.S. Cl. 204—159.12

2 Claims

A process for the radiation induced grafting of vinyl monomers to hydrophilic polymeric substrates, particularly polyvinyl alcohol, is disclosed. The substrate moistened with water is contacted with a fluid vinyl monomer capable of free radical catalyzed polymerization and irradiated with high energy ionizing radiation to a dosage of 2000 to  $10^6$  roentgens.

3,461,053

**PROCESS FOR DECOLORIZING SULFONATE CONTAINING DETERGENTS**

Harold L. Dimond, Ross Township, Allegheny County, and Vincent J. Pascarella, Oakmont, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed June 1, 1965, Ser. No. 460,513

Int. Cl. C07c 3/24, 3/14; B01j 1/10

U.S. Cl. 204—162

8 Claims

A process is provided for decolorizing a dry solid form detergent by subjecting the dried detergent in solid form to ultraviolet radiation to obtain a detergent having a lowered Klett number. The detergent is prepared by reacting a gaseous stream containing an inert gas and  $\text{SO}_2$  with an olefin to obtain a sulfonation product and thereafter reacting the sulfonation product with a basic reagent such as an aqueous solution of sodium hydroxide to obtain the corresponding basic reaction product of said sulfonation product.

3,461,054

**CATHODIC SPUTTERING FROM A CATHODICALLY BIASED TARGET ELECTRODE HAVING AN RF POTENTIAL SUPERIMPOSED ON THE CATHODIC BIAS**

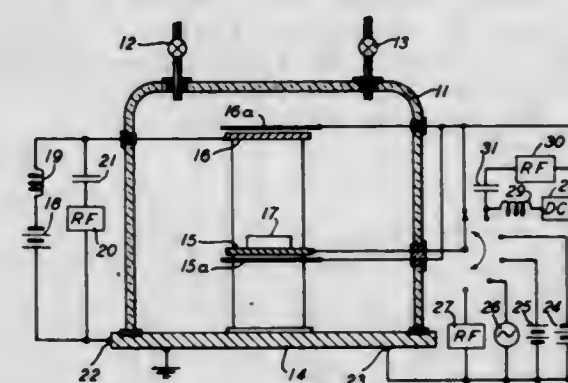
Frederick Vratny, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 24, 1966, Ser. No. 537,086

Int. Cl. C23c 15/00

U.S. Cl. 204—192

9 Claims



Enhanced deposition rates are attained during conventional cathodic sputtering or dielectric oxide reactive sputtering in a system wherein a d-c potential and RF excitation are simultaneously applied at the cathode. The resultant increased deposition rates permit operation of the process at substantially lower sputtering pressures than

employed heretofore, so avoiding an apparent source of impurities.

3,461,055

**REFERENCE ELECTRODE AND METHOD OF MAKING SAME**

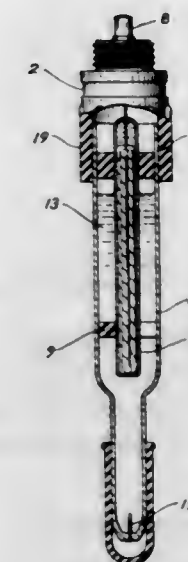
John J. J. Staunton, Oak Park, Ill., assignor to The Perkin-Elmer Corporation, Maywood, Ill., a corporation of New York

Filed Oct. 6, 1966, Ser. No. 584,837

Int. Cl. B01k 3/04

U.S. Cl. 204—195

7 Claims



An improved reference electrode is fabricated from a glass tube with a terminal wire sealed in one end of the tube and a chemical half cell solution enclosed in the tube for contact with the terminal wire. A yarn packing saturated with electrolyte is inserted through the opposite end of the tube to maintain the chemical solution in the tube and to also provide a bridge with the half cell.

3,461,056

**ELECTROLYTIC MACHINING AND GRINDING APPARATUS WITH GRAPHITE ELECTRODE**

Sachio Maeda, Kobe, and Nagao Saito, Nishinomiya, Japan, assignors to Mitsubishi Denki Kabushiki-Kaisha, Tokyo, Japan

Filed Dec. 1, 1964, Ser. No. 415,025

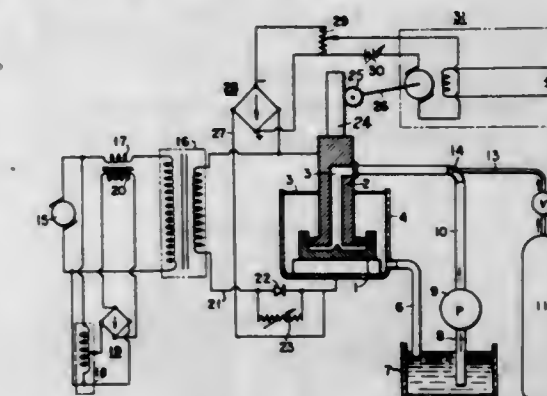
Claims priority, application Japan, Dec. 4, 1963,

38/65,235; June 1, 1964, 39/30,848

Int. Cl. B23p 1/16, 1/02; B01k 3/08

U.S. Cl. 204—224

2 Claims

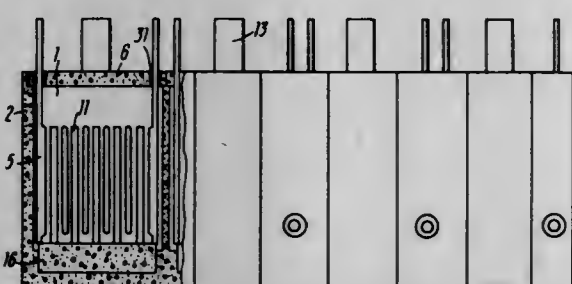


Electrolytic machining and grinding apparatus in which the electrode comprises a sintered material containing graphite or is coated with graphite and the electrolyte comprises an aqueous solution of a chloride selected from the group consisting of a chloride selected from the group consisting of sodium chloride and potassium chloride. An alternating current is applied between the electrode and the workpiece such that when the electrode acts as an



anode electrode the current is of a predetermined fraction of the magnitude of the current flowing through the electrode and the workpiece in each of the other half cycles.

**3,461,057**  
**DIAPHRAGM ELECTROLYZER FOR PRODUCTION OF CHLORINE, HYDROGEN AND ALKALIES**  
Georgy Mikirtychevich Kamarjan, Vorontsovskaja Str., 30-b, Apt. 18, Moscow, U.S.S.R.  
Filed Aug. 20, 1964, Ser. No. 390,843  
Int. Cl. C22d 1/02; B01k 3/10  
U.S. Cl. 204—258 10 Claims

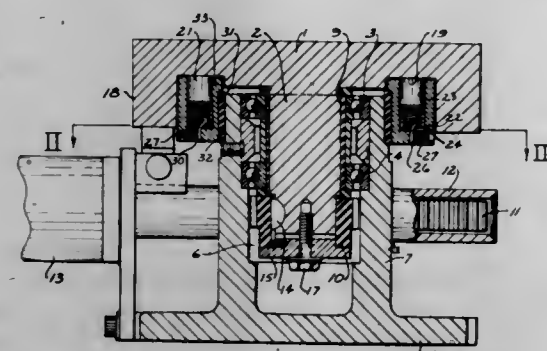


A diaphragm electrolyzer having sets of identical elementary electrolytic cells consisting of anode and cathode sets and a diaphragm. The cells are housed in a common stationary casing divided with partitions into a plurality of similar sections.

**3,461,058**  
**METHOD OF PRODUCING A COMPOSITE ELECTRODE**  
Alfred J. Haley, Jr., Westfield, and Carl D. Keith, Summit, N.J., and James E. May, Dorchester, Mass., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware  
No Drawing. Filed June 7, 1966, Ser. No. 555,670  
Int. Cl. B01k 3/06, 3/04; C23b 5/52  
U.S. Cl. 204—290 3 Claims

A composite electrode comprising a refractory metal support to which is bonded a non-porous ductile platinum group metal coating, the coating being from 0.02 to 1 mil in thickness and having a surface roughness of less than 10 microinches (RMS), and a method for producing the same are disclosed. Such anodes exhibit chlorine overvoltages at 500 amps/ft.<sup>2</sup> of between 0.5 and 1.0 volt and are particularly useful for electrochemical processes.

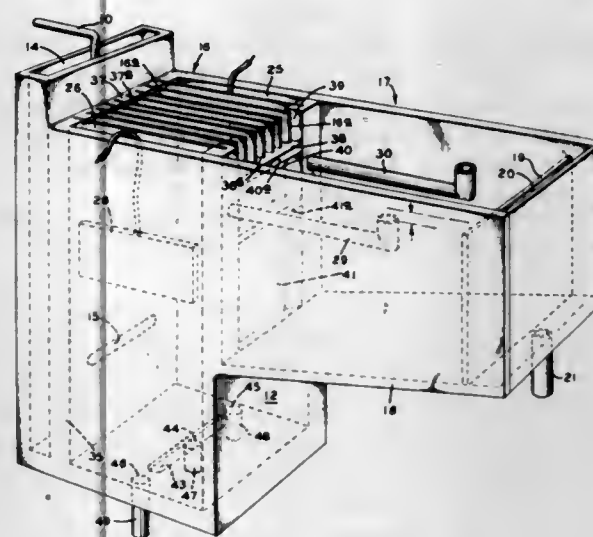
**3,461,059**  
**POWER OPERATED ELECTRO-CHEMICAL FIXTURE**  
Edward C. Krueger, Allegan, Mich., assignor to Hammond Machinery Builders, Incorporated, Kalamazoo, Mich., a corporation of Michigan  
Filed Oct. 10, 1966, Ser. No. 585,533  
Int. Cl. C23b 5/70; B01k 3/04  
U.S. Cl. 204—297 10 Claims



An electro-chemical grinding machine having an electrically conductive, rotatable table with a depending annular skirt thereon. An annular extending current con-

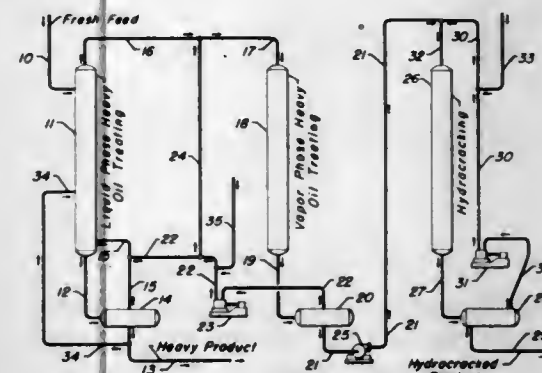
ducting brush means is arranged substantially in a circle and in sliding engagement with the lower side of the table and radially within the skirt thereof. The brush means is positioned on a brush carrier which is received within an annular recess formed in the table as defined by the depending skirt. The table skirt protects the brush means and the portion of the underside of the table contacted by the brush means from serious attack by the electrolyte.

**3,461,060**  
**DEMINERALIZATION AND ION TRANSFER APPARATUS**  
William Joseph Nellen, Little Neck, N.Y., assignor to American Machine and Foundry Company, a corporation of New Jersey  
Filed Mar. 7, 1966, Ser. No. 532,318  
Claims priority, application Great Britain, Mar. 9, 1965, 9,917/65  
Int. Cl. C02b 1/82; B01d 13/02; B01k 3/10  
U.S. Cl. 204—301 5 Claims



Gravity-type electro-dialysis apparatus for batch treatment of water to be purified has permselective membrane stack vertically arranged between pair of electrodes. A reflux tank having a bottom sloping toward the membrane stack communicates laterally with one side thereof. Inlets and outlets are so arranged that after treatment the concentrate layer can be drawn off the bottom, then the remaining supernatant dilute solution displaced up and out by raw water fed in from the bottom.

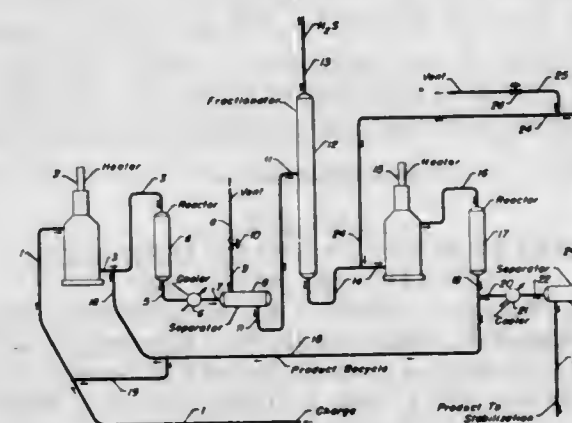
**3,461,061**  
**HYDROGENATION PROCESS**  
Laurence O. Stine, Western Springs, Robert A. Lenge-mann, Arlington Heights, and Kenneth D. Vesely, La Grange Park, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
Filed June 13, 1966, Ser. No. 557,262  
Int. Cl. C10g 23/00; C07b 1/00  
U.S. Cl. 208—57 1 Claim



Process for hydrogenating hydrocarbons wherein the feedstock is contacted first in liquid phase with hydrogen-

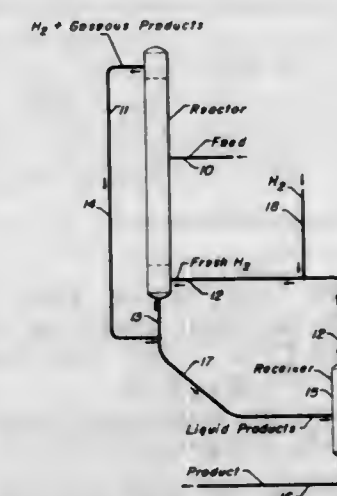
tion catalyst in one reaction zone and subsequently the lighter components of the feed are contacted in vapor phase with a hydrogenation catalyst. The invention has particular applicability to the selective hydrogenation of heavy petroleum fractions, such as those boiling substantially above about 650° F.

**3,461,062**  
**CONVERSION OF SULFUR-CONTAINING HYDROCARBONS**  
Andrew C. Hansen, Jr., Palatine, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
Filed Sept. 6, 1966, Ser. No. 577,246  
Int. Cl. C10g 37/00, 23/00, 13/02  
U.S. Cl. 208—89 9 Claims



A combination hydrorefining and hydrocarbon conversion process wherein a portion of the total conversion product is recycled to combine with the charge-stock prior to hydrorefining. The duty on the hydrorefining heater is reduced while an increase in both quantity and quality of desirable conversion product is obtained.

**3,461,063**  
**HYDROGENATION PROCESS**  
Laurence O. Stine, Western Springs, Robert A. Lenge-mann, Arlington Heights, and Kenneth Donald Vesely, La Grange Park, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware  
Filed Apr. 4, 1966, Ser. No. 539,883  
Int. Cl. C10g 23/00  
U.S. Cl. 208—143 3 Claims



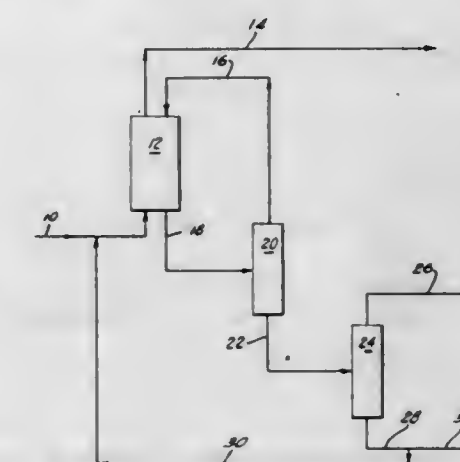
Process for hydrogenating hydrocarbon oils wherein the feedstock is contacted in a mixed liquid-vapor phase with a stationary bed of granular solid hydrogenation catalyst in the presence of hydrogen-containing gas.

**3,461,064**  
**PROCESS FOR REMOVING VANADIUM FROM CATALYSTS**

Harry A. Hamilton, Natrona Heights, Howard G. McIlvried, Pittsburgh, and Raynor T. Sebulsky, Verona, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware  
No Drawing. Filed Apr. 28, 1967, Ser. No. 634,498  
Int. Cl. B01j 11/70, 11/02  
U.S. Cl. 208—213 10 Claims

A process for removing vanadium from a vanadium-containing catalyst which involves oxidizing the catalyst, treating the oxidized catalyst with an alcohol and separating the alcohol from the catalyst. The process can be employed to treat both fixed bed and fluid catalysts which are employed in catalytic hydrocarbon conversion processes.

**3,461,065**  
**HYDROCARBON SEPARATION PROCESS EMPLOYING CRYSTALLINE ALUMINOSILICATES**  
David E. Cooper, Greenville, S.C., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware  
Filed July 3, 1967, Ser. No. 650,857  
Int. Cl. C10g 25/04  
U.S. Cl. 208—310 5 Claims



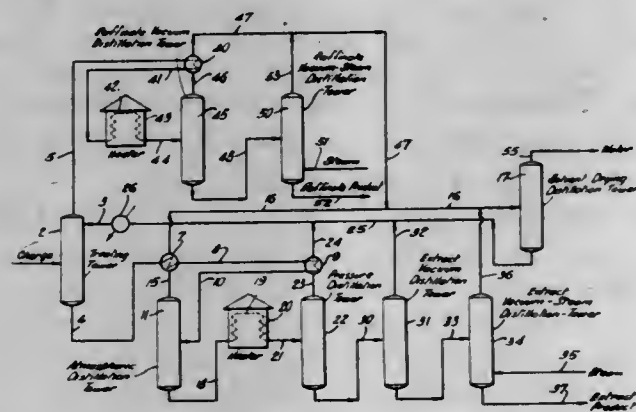
The purity of the more impure of several narrow cut straight chain hydrocarbon streams, separated as a wide cut product from a mixture of straight chain and non-straight chain hydrocarbons by means of a bed of crystalline aluminosilicates and then split into several narrow cut streams by distillation, is substantially improved by recycling and reprocessing through the bed of aluminosilicates a portion of this normally more impure of the narrow cut streams.

**3,461,066**  
**SOLVENT RECOVERY IN THE SOLVENT EXTRACTION OF HYDROCARBON OILS**  
Herbert C. Morris, Groves, and John I. Nixon, Bridge City, Tex.; Roberta L. Nixon, administratrix of said John I. Nixon, deceased, assignors to Texaco Inc., New York, N.Y., a corporation of Delaware  
Filed Dec. 23, 1966, Ser. No. 604,481  
Int. Cl. C10g 21/28, 21/20  
U.S. Cl. 208—321 9 Claims

This invention relates to an improved solvent recovery system in the solvent extraction of hydrocarbon oils with N-methyl-2-pyrrolidone. In accordance with this method,



N-methyl-2-pyrrolidone is separated from a solvent extract-mix by a series of separate distillation steps arranged



to efficiently utilize heat in the distillation and to separate solvent of controlled and low moisture content.

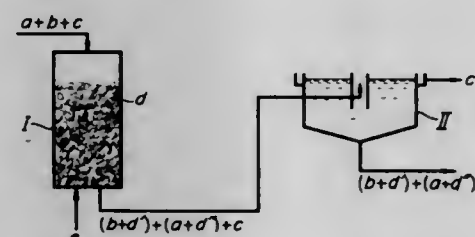
### 3,461,067 PROCESS FOR THE PURIFICATION OF SEWAGE PLANT EFFLUENT

Nobuo Matsumoto and Hidenobu Arimitsu, Tokyo, Japan, assignors to Ebara-Inflico Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Aug. 21, 1967, Ser. No. 662,051  
Claims priority, application Japan, Aug. 23, 1966,  
41/55,001

Int. Cl. C02b 1/20

U.S. Cl. 210—47



A process for the purification of effluent from sewage treatment, i.e., a sewage plant effluent, which comprises contacting the effluent with a metallic iron to convert coloring organic substances and phosphate ion, present in said effluent, into water-insoluble iron salts and removing said iron salts from the purification system, and which enables a purified water to be obtained with a stable degree of decolorization and a stable quality and will ease the subsequent softening of the same for use as industrial water.

### 3,461,068 ESTERS OF TALL OIL PITCH AND POLYOXY- ETHYLENE COMPOUNDS AND THEIR USE AS DRILLING FLUID ADDITIVES

Dixon W. Peacock, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Application Nov. 23, 1964, Ser. No. 413,316, now Patent No. 3,379,708, dated Apr. 23, 1968, which is a continuation-in-part of application Ser. No. 330,586, Dec. 16, 1963. Divided and this application Feb. 26, 1968, Ser. No. 707,980

Int. Cl. C10m 3/20; C09k 3/00

U.S. Cl. 252—8.5

5 Claims  
Esters useful as drilling mud additives for oil base and aqueous base drilling muds are formed by heating a mixture of tall oil pitch and a polyoxyethylene compound under conditions of reflux for about 1 to 3 hours or at a temperature in the range of about 130–280° C. for about 1 to 3 hours at about atmospheric pressure.

### 3,461,069 SELF-LUBRICATING BEARING COMPOSITIONS

Werner Waldhüter and Werner Rübel, Stadt Allendorf, Germany, and Graham Clough, Yorkshire, England, assignors to Deventer-Werke GmbH, Kreis Marburg, Germany, a corporation of Germany

No Drawing. Filed June 28, 1967, Ser. No. 649,487

Claims priority, application Germany, July 1, 1966,  
D 50,452

Int. Cl. C10m 7/04

U.S. Cl. 252—12

3 Claims  
Method of making a bearing or brake-lining body containing a solid lubricant (e.g., graphite) in an amount of 4 to 25% by weight, with a base-metal component consisting of copper or nickel or mixtures thereof and, possibly, lead (up to 20% by weight), tin, zinc, cobalt, manganese and/or silver, wherein 0.5 to 2% by weight of phosphorus is incorporated in the composition in the form of phosphorus-containing alloys or compounds (e.g., phosphorus copper having 15% by weight phosphorus); the powdered mass is shaped by pressing and subjected to heat treatment in an oxidizing atmosphere or an anti-oxidation blanket at a temperature between 700° and 850° C. Thereafter, a further hot or cold pressing takes place.

### 3,461,070 SODIUM NITRATE STABILIZED WITH COLLOIDAL ASBESTOS

Arnold J. Morway, Clark, N.J., and Albert J. Bodner, Watchung, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 1, 1966, Ser. No. 598,194

Int. Cl. C10m 5/26, 5/16

U.S. Cl. 252—21

1 Claim  
Colloidal asbestos stabilizes finely divided sodium nitrate so that it can be dispersed in oil to form a concentrate which can be added as a rust inhibitor to lubricating grease.

### 3,461,071 PIEZOELECTRIC CERAMIC COMPOSITION

Tsuneo Akashi, Masao Takahashi, Norio Tsubouchi, Tomeji Ohno, and Fumio Yamauchi, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed Sept. 2, 1965, Ser. No. 484,636

Claims priority, application Japan, Sept. 3, 1964,  
39/50,522; Sept. 11, 1964, 39/51,971

Int. Cl. C04b 35/36

U.S. Cl. 252—62.9

3 Claims  
Piezoelectric ceramic of the general formula



where the subscripts denote mole fractions and have the following values:  $x=0-.9$ ,  $y=.1-.6$ ,  $z=0-.65$ , and  $x+y+z=1.00$ , are improved by two coexistent additives; the first being .01 to .50 weight percent manganese monoxide (MnO) and the second selected from the group of .01 to .30 weight percent iridium dioxide ( $\text{IrO}_2$ ) and .01 to .50 weight percent chromium sesquioxide ( $\text{Cr}_2\text{O}_3$ ).

### 3,461,072 FERRIMAGNETIC MATERIAL FOR USE AT FREQUENCIES HIGHER THAN 50 MC./SEC. HAVING REDUCED LOSS FACTOR AND HIGHER QUALITY FACTOR

Gerhard Winkler, Hamburg, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, a corporation of Delaware

No Drawing. Filed Mar. 31, 1966, Ser. No. 538,992

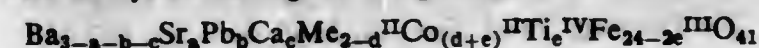
Claims priority, application Germany, May 10, 1965,  
P 36,751

Int. Cl. C04b 35/26, 35/64; H01f 1/10

U.S. Cl. 252—62.59

2 Claims  
A ferrimagnetic material for use at frequencies exceeding 50 mc./sec. having a higher resonance frequency,

a reduced loss factor ( $\tan \delta$ ) and an increased quality factor ( $\mu'Q=\mu'/\tan \delta$ ,  $\mu'$  being the initial permeability) as compared with a known material. The material consists of crystals having the composition



while the known material is the same composition without Ti. Bodies may be formed which are magnetically anisotropic and in which the basal planes of the crystals are parallel to one another.

### 3,461,073 EXOTHERMIC COMPOSITION AND METHOD OF USE

Charles J. Crowell, Jr., 335 Cascade, and Kenneth N. Tinklenau, 608 W. Palm Drive, both of Oxnard, Calif. 93030

No Drawing. Filed Sept. 29, 1966, Ser. No. 583,501

Int. Cl. C09k 3/00, 3/02, 3/18

U.S. Cl. 252—70

7 Claims  
A nontoxic exothermic chemical composition which when applied to living tissue will produce heat when mixed with water thus protecting aviators, divers and others against unsafe environmental temperature conditions.

### 3,461,074 DETERGENT COMPOSITIONS

Lawrence L. Schwalley, Whittier, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,558

Int. Cl. C11d 9/34, 7/36

U.S. Cl. 252—109

12 Claims  
Detergent compositions especially useful for forming laundry tablets. The compositions are heterogeneous mixtures of a heat-dried mixture, a nonionic synthetic detergent and alkali metal polyphosphate high in Form I. The heat-dried portion contains additional alkali metal polyphosphate which is low in Form I and an anionic synthetic detergent or soap.

### 3,461,075 POLY 2,2,2-TRIFLUOROETHYL VINYL ETHER CONTAINING ELECTROLUMINESCENT PHOSPHOR PARTICLES

John A. Manson, Murray Hill, and Howard Sorkin, Berkeley Heights, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Original application May 29, 1963, Ser. No. 284,017, now Patent No. 3,365,433, dated Jan. 23, 1968. Divided and this application Oct. 22, 1965, Ser. No. 502,571

Int. Cl. C09k 1/02

U.S. Cl. 252—301.3

3 Claims  
A composition of matter that is electroluminescent on application of alternating electric voltage is presented. Said composition comprises a solid rubbery polymer of 2,2,2-trifluoroethyl vinyl ether produced by contacting said ether with aluminosilicate sieves, and phosphor particles distributed throughout said polymer.

### 3,461,076 PROCESS FOR PREPARING PLUTONIA AQUASOLS

Milton H. Lloyd and Richard G. Haire, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Oct. 3, 1968, Ser. No. 764,958

Int. Cl. B01j 13/00; G21c 1/00; C01g 56/00

U.S. Cl. 252—301.1

3 Claims  
An improved method for preparing plutonia aquasols is provided comprising the step of aging a washed alkaline

precipitated plutonium (IV) hydroxide precipitate in an aqueous medium for a period of about 2 hours at 95° C. prior to peptization.

### 3,461,077 PHOTOSENSITIVE SLURRY AND METHOD OF PREPARING THE SAME

Yoshichika Kobayashi, Koji Yakeno, and Masanori Takagawa, Osaka, Japan, assignors to Matsushita Electronics Corporation, Osaka, Japan, a corporation of Japan

Filed Oct. 30, 1967, Ser. No. 678,875

Claims priority, application Japan, Nov. 1, 1966,  
41/72,489; Apr. 11, 1967, 42/23,772

Int. Cl. C09k 1/02, 1/52, 1/54

U.S. Cl. 252—301.3

4 Claims  
Photosensitive slurry for use in making color picture tubes and consisting of polyvinyl alcohol, ammonium dichromate and phosphor particles is improved as to chemical stability and higher sensitivity against ultraviolet rays for printing on picture tube screens, by the addition thereto of a small amount of germanium dioxide or suitable germanium dioxide-yielding compound. By this addition the photosensitivity of the slurry to ultraviolet rays is improved to attain a value as much as 2.6 times that of conventional slurries, and the slurry acquires such a stability that it can be left as long as 150 hours without impairing its chemical characteristics.

### 3,461,078 CRYSTALLINE LUMINESCENT CERAMIC MATERIALS

Frank Veres, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 216,289, Aug. 13, 1962. This application Nov. 22, 1966, Ser. No. 596,060

Int. Cl. C09k 1/10; C03c 3/04; C04b 35/14

U.S. Cl. 252—301.6

18 Claims  
This invention comprises the preparation of a luminescent ceramic composition consisting essentially of a glassy matrix containing dispersed inorganic crystals formed in situ from a homogeneous glass containing about 25 to about 60 weight percent silica, about 30 to about 60 weight percent zinc oxide, about 1 to about 7 weight percent alumina, about 1 to about 20 weight percent strontium oxide, and a small effective amount of inorganic activator, wherein the weight ratio of silica to zinc oxide plus strontium oxide ranges from about .3 to about 1.5 and wherein the total weight of the silica, zinc oxide, alumina, strontium oxide and inorganic activator ranges from about 85 to about 100 weight percent of the glass, the remaining about 15 to about 0 weight percent being other compatible inorganic glass-making ingredients.

### 3,461,079 GELLED PROPELLANT COMPOSITIONS USEFUL IN AEROSOL DISPENSERS

Irving B. Goldberg, 425 W. Aldine, Chicago, Ill. 60657

No Drawing. Filed June 11, 1964, Ser. No. 374,268

Int. Cl. C09k 3/30

U.S. Cl. 252—305

3 Claims  
A composition set in the form of a gel which is stable under conditions of temperature and pressure that render normally gaseous aerosol propellant a liquid and will free the aerosol propellant as a gas upon reduction of pressure consisting of aerosol propellant in liquid form incorporated into a soap of fatty acids having 5 to 14 carbon atoms set as a solid using oleic acid as a gelling catalyst.



3,461,080

## METHOD OF MANUFACTURE OF SULFUR FORMULATIONS

Joe C. Eller and John T. Person, Houston, Tex., assignors, by mesne assignments, to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia  
No Drawing. Filed May 31, 1966, Ser. No. 553,717  
Int. Cl. B01f 3/08

U.S. Cl. 252—363.5 4 Claims  
Finely divided sulphur formulations in solid, readily dispersible form are produced by homogenizing an incipient emulsion of molten sulphur in an aqueous solution of an alkali metal lignosulphonate and drying the emulsion to produce a dry powder.

3,461,081

## STABILIZING AGENT FOR A HALOGEN CONTAINING SYNTHETIC RESIN CONSISTING OF A BASIC INORGANIC ACID SALT OF LEAD, CADMIUM OR CALCIUM

Yujiro Sugahara, Taketoshi Yamada, Yoshibumi Noshi, and Shyoji Matsuo, Tsuruoka-shi, Japan, assignors to Mizusawa Kagaku Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan  
No Drawing. Filed June 18, 1965, Ser. No. 465,190  
Claims priority, application Japan, July 17, 1964, 39/40,137

Int. Cl. B01j 1/16; C08f 45/56; C08g 51/56  
U.S. Cl. 252—400 11 Claims  
A process for the preparation of a stabilizer for halogen-containing synthetic resin and a stabilizer so produced which process comprises adding a finely divided metallic salt stabilizing agent to a molten metallic soap, mixing them to form a mixture wherein all the particles of the stabilizing agent are coated with continuous phase of metallic soap and converting the mixture to particulate form.

3,461,082

## METHOD FOR PRODUCING CARBONIZED LIGNIN FIBER

Sugio Otani, Kiryu-shi, and Yoshihiko Fukuoka, Bunjiro Igarashi, and Kesao Sasaki, Takasaki-shi, Japan, assignors to Nippon Kayaku Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan  
No Drawing. Filed Oct. 4, 1965, Ser. No. 492,878  
Claims priority, application Japan, Oct. 10, 1964, 39/57,534

Int. Cl. C01b 31/07  
U.S. Cl. 252—421 11 Claims  
A method is provided for producing carbonized fiber. A fiber produced from lignin obtained by the chemical treatment of woody material is subjected to carbonizing treatment.

3,461,083

CRYSTALLINE  $TiCl_3$  AND METHOD OF PREPARING SAME

Luciano Luciani and Gianfranco Corsi, Ferrara, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy  
No Drawing. Filed Nov. 21, 1966, Ser. No. 595,638  
Claims priority, application Italy, Nov. 25, 1965, 26,105/65

Int. Cl. B01j 11/12  
U.S. Cl. 252—429 6 Claims  
The present invention relates to a process for the preparation of a crystalline composition of  $TiCl_3$  for use in catalytic systems to effect low pressure polymerization of alpha-olefins. More particularly, this invention deals with an improvement in the process of making  $TiCl_3$  involving activation by grinding of crystalline  $TiCl_3$  compositions, obtained by reduction of  $TiCl_4$  with metallic aluminum, in the presence of a metallorganic compound wherein the metal is from Group II or III of the Periodic Table.

3,461,084

## CUPRIC CHLORIDE-ALUMINA CATALYST

Tao Ping Li, Texas City, Tex., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
No Drawing. Filed Nov. 10, 1965, Ser. No. 507,222  
Int. Cl. B01j 11/78; C07b 9/00; C01b 7/04  
U.S. Cl. 252—441 1 Claim

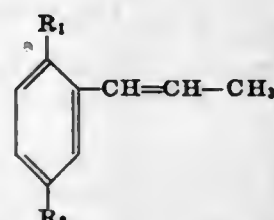
An improved method for preparing catalysts containing a cupric salt such as cupric chloride as the active catalytic agent in combination with activated alumina which comprises dry mixing the anhydrous cupric salt and activated alumina and heating the mixture at a temperature of at least 350° C. for a period of at least 3 hours.

3,461,085

## PERFUME COMPOSITION CONTAINING STYRENE DERIVATIVES

Hans Jacques Toet, Jan Theodor Marie François Maessen, and Leendert Maarten van der Linde, Naarden, Netherlands, assignors to N.V. Chemische Fabriek Naarden, Naarden, Netherlands  
No Drawing. Filed June 9, 1966, Ser. No. 556,279  
Claims priority, application Netherlands, June 14, 1965, 6507579

Int. Cl. C11b 9/00; A61k 7/00  
U.S. Cl. 252—522 2 Claims  
A perfume composition uses



as an olfactory ingredient in a perfume carrier.  $R_1$  is methyl or ethyl and  $R_2$  is branched or nonbranched alkyl having 3–5 carbon atoms. The preferred species of ingredient in the carrier is  $\beta$ ,2-dimethyl-5-isopropyl styrene.

3,461,086

## POLYETHER URETHANE FOAMS FROM CERTAIN HETERIC POLYETHERS

Riley F. Mogford and Carl C. Thurman, Jr., Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed Mar. 5, 1964, Ser. No. 349,750  
Int. Cl. C08g 22/14, 22/44

U.S. Cl. 260—2.5 1 Claim  
Flexible polyurethane foams having improved tensile strength and elongation are prepared using heteric polyethers which are the condensation product of a glycerine-propylene oxide adduct and a mixture of propylene oxide and ethylene oxide which are in the ratios of between 92/8 and 70/30.

3,461,087

## METHOD OF MAKING A FOAMABLE POLYMER AND FOAMABLE COMPOSITION OBTAINED THEREFROM

James E. Pritchard, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
No Drawing. Filed Dec. 15, 1965, Ser. No. 514,142  
Int. Cl. C08d 13/10; C08f 47/10

U.S. Cl. 260—2.5 8 Claims  
A more uniformly foamed polymer is obtained when the temperature control agent is first mixed with the polymer, thereafter the dispersing agent is added to the mixture of control agent and polymer, and finally the foaming agent is added.

3,461,088

## PRODUCTION OF EXPANDED PLASTICS MOLDINGS

Erhard Stahnecker, Ziegelhausen, and Johannes Grohmann, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany  
No Drawing. Filed July 8, 1966, Ser. No. 563,697  
Claims priority, application Germany, July 10, 1965, B 82,776

Int. Cl. C08f 47/10  
U.S. Cl. 260—2.5 2 Claims

A process for reducing the cooling time in the production of expanded styrene polymer moldings. In the process, styrene polymer beads which have been or are being pre-expanded are coated with an organic compound having a boiling point of more than 95° C. and a softening point of not more than 120° C. Where the coating takes place during or subsequent to the pre-expansion step rather than prior to pre-expansion the cooling time needed in the production of expanded styrene polymer moldings is substantially reduced. This is true even though only from 0.01 to 2% of the organic compound is used based on the weight of the styrene polymer.

3,461,089

## CROSS-LINKED ACRYLIC ACID POLYMER ADMIXED WITH POLYETHYLENE GLYCOL

Normand E. Brindamour, Worcester, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey  
No Drawing. Original application Apr. 21, 1964, Ser. No. 361,537, now Patent No. 3,379,554. Divided and this application Nov. 6, 1967, Ser. No. 704,194  
Int. Cl. C08f 37/00, 45/34

U.S. Cl. 260—17.4 2 Claims  
Coatings for tablets and other individual solid medicinal dosage forms are disclosed comprising a water-soluble acrylic acid polymer cross-linked with polyallyl sucrose and admixed with polyethylene glycol.

3,461,090

## COATING USING WAX, SURFACTANT, AND FILM FORMER

Harold L. Haynes, Granville, Ohio, Gerald E. Rammel, North Attleboro, Mass., and Albert R. Morrison, Newark, Ohio, assignors to Owens-Corning Fiberglass Corporation, a corporation of Delaware  
No Drawing. Filed May 13, 1966, Ser. No. 549,813  
Int. Cl. C08h 8/10; D06m 15/04

U.S. Cl. 260—17.4 6 Claims  
An aqueous protective coating material for glass fibers, a method of producing same, and glass fibers produced by the method, wherein a melted paraffin wax having a melting point below approximately 130° F. is mixed with a mixture of polyoxethylene sorbitan monostearate and sorbitan monostearate in a ratio to give an HLB between 8 and 16. This mixture is blended with water at a temperature above 150° F. and dispersed in an aqueous starch dispersion at a temperature above 150° F. and then homogenized and applied to the glass fibers at a temperature above 150° F.

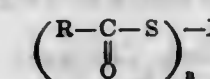
3,461,091

## STABILIZED HALOGEN CONTAINING POLYMERS

Walter Stamm, Tarrytown, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 586,045, Oct. 12, 1966. This application Jan. 12, 1967, Ser. No. 608,751

Int. Cl. C08f 45/62, 45/58  
U.S. Cl. 260—23 21 Claims  
High molecular weight halogen containing polymeric compositions exhibiting a high degree of stability con-

taining a stabilizing amount of a stabilizing compound having the formula



wherein R is a hydrocarbyl group containing from 3 to about 21 carbon atoms, n is an integer having a value of from 1 to 2, X is selected from the group consisting of hydrogen, ammonium, alkali metal, alkaline earth metal, and acyl moieties having a hydrocarbyl essentially hydrocarbon residue and containing from about 1 to about 17 carbon atoms inclusive. These stabilizers have proven to be particularly effective in the polyvinyl chloride resin compositions. Included among the preferred stabilizers is thiolauroic anhydride, thiololeic anhydride, thiolbenzoic anhydride and thiolstearic anhydride. An additionally preferred stabilization system for such resins, include combinations of such materials as zinc stearate and thiolstearic acid. It is similarly preferred that the resins contain a small but effective amount of an epoxidized stabilizer such as an epoxidized fat.

3,461,092

## SOLID PARTICULATE PRINTING INK COMPOSITION AND PROCESS FOR PRODUCING SAME

Augustus L. Story, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio  
No Drawing. Filed Aug. 23, 1965, Ser. No. 481,896  
Int. Cl. C08g 41/02, 51/52; C09d 11/12

U.S. Cl. 260—28 4 Claims  
1. A printing ink composition, said composition being in solid particulate form and consisting essentially of a pigment and a carrier, wherein the carrier consists essentially of an exudative wax selected from the group consisting of animal, vegetable, and mineral waxes and a polyamide resin, wherein said resin has an acid value of about 3 to 5, an amine value of 1 to 8.5 and a specific gravity of about 0.92 to about 0.99, and wherein the ratio of the wax to the polyamide resin in said composition is from about 1 to 14 to about 1 to 75.

4. A process for producing a scuff-resistant solid, particulate printing ink comprising intimately dry blending at least one pigment, a polyamide resin having an acid value of about 3 to 5, an amine value of 1 to 8.5 and a specific gravity of about 0.92 to about 0.99, and an exudative wax selected from the group consisting of animal, vegetable and mineral waxes, wherein the ratio of the wax to the polyamide resin is from about 1 to 14 to about 1 to 75, followed by hot milling the intimately blended composition and then pulverizing the milled composition to a fine powder.

3,461,093

## INTERPOLYMERS OF CASTOR OIL AND VINYL MONOMERS

William Thomas Walton and Edward Julius Holzrichter, Chicago, Ill., assignors to PRA Laboratories, Inc. (Paint Research Associates), Chicago, Ill., a corporation of Illinois  
No Drawing. Filed Nov. 22, 1965, Ser. No. 509,162  
Int. Cl. C08f 15/40, 21/04, 37/16

U.S. Cl. 260—21 7 Claims  
An interpolymer formed of a vinyl monomer having functional hydroxyl or carboxyl groups, a hard vinyl monomer, such as styrene, and castor oil. The castor oil is interpolymerized with the other ingredients. The functional vinyl monomer is added in amounts sufficient to provide adequate functional sites for curing reactions, and the castor oil is added in amounts sufficient to impart a desired degree of pliability to the finished cured film. Thermosetting copolymers are formed from a major portion of the formed interpolymer, and a minor portion of an aminoplast thermosetting resin. The thermosetting copolymer with solvents leads to coating compositions.



### 3,461,094 PROCESS FOR THE MANUFACTURE OF IMPROVED REINFORCED PIPE AND OTHER ARTICLES

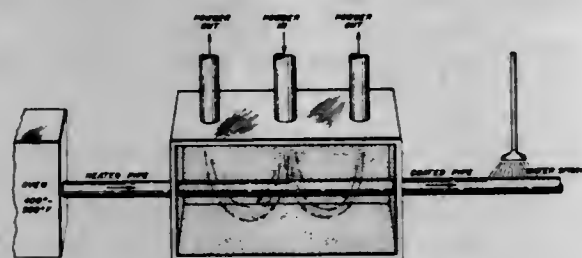
Ludwig Wesch, Heidelberg, Germany, assignor to Mancar-Trust, Vaduz, Lichtenstein, a firm  
No Drawing. Filed July 5, 1967, Ser. No. 651,126  
Int. Cl. C08k 1/84; C08g 51/10, 53/14

U.S. Cl. 260—41 10 Claims  
A process and the products obtained thereby which comprises preparing high tensile strength fiberglass reinforced plastics and resins by incorporating also specially treated fillers therein; the manufacture of pipe, plates, and the like is especially contemplated.

### 3,461,095 EXTRACORDINATE SILICONE COMPLEXES AS CURING AGENTS FOR EPOXY RESINS

Edwin P. Plueddemann and Harold L. Vincent, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Delaware  
Continuation-in-part of application Ser. No. 358,504, Apr. 9, 1964. This application Nov. 16, 1964, Ser. No. 412,590  
Int. Cl. C08g 30/10; C09d 3/58

U.S. Cl. 260—47 34 Claims

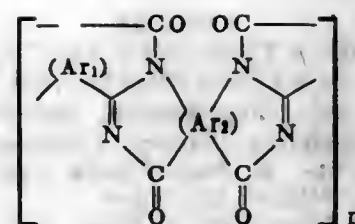
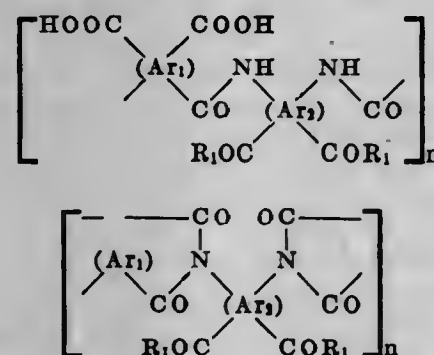


The use of extracordinate silicon complexes as curing agents for epoxy resins is disclosed. These complexes can be used in conjunction with anhydrides. One particularly interesting use for the compositions is in the coating of pipelines.

### 3,461,096 HETEROCYCLIC POLYMERS OF IMPROVED THERMAL STABILITY CONSISTING OF POLYISOINDOLOQUINAZOLINE DIONES AND ANALOGS THEREOF

Guy Rabilloud, Bernard Sillion, and Gabriel de Gaude-maris, Grenoble, France, assignors to Institut Français du Pétrole, des Carburants, et Lubrifiants, Ruell-Malmalson, Hauts-de-Seine, France  
Filed Oct. 28, 1966, Ser. No. 590,374  
Claims priority, application France, Oct. 28, 1965, 36,603

U.S. Cl. 260—47 14 Claims  
As heterocyclic polymers exhibiting high thermal stability and particularly applicable for the production of laminates and the like, there are provided polymers of the following structural formulae:



wherein:

Ar<sub>1</sub> and Ar<sub>2</sub> are aromatic radicals having two pairs of ortho-positioned free valences, and  
R<sub>1</sub> is —NH<sub>2</sub> or —OR, where R is a monovalent hydrocarbon.

### 3,461,097 POLYCARBONATES OF THE BISPHENOL OF DICYCLOPENTADIENE

Robert J. Cotter, Bernardsville, Francis N. Apel, Nutley, and Louis B. Conte, Jr., Newark, N.J., assignors to Union Carbide Corporation, a corporation of New York  
No Drawing. Original application Feb. 24, 1964, Ser. No. 347,335, now Patent No. 3,419,624, dated Dec. 31, 1968. Divided and this application Feb. 16, 1967, Ser. No. 633,314  
Int. Cl. C08g 17/13; C07c 39/14

U.S. Cl. 260—47 5 Claims  
Polycarbonates of the bisphenol of dicyclopentadiene, having useful physical properties, can be prepared by the interfacial polymerization of the corresponding dichloroformate in aqueous sodium hydroxide-methylene chloride mixture.

### 3,461,098 POLYCARBONATES OF THE BISPHENOL OF CYCLOHEXADIENE

Robert J. Cotter, Bernardsville, Francis N. Apel, Nutley, and Louis B. Conte, Jr., Newark, N.J., assignors to Union Carbide Corporation, a corporation of New York  
No Drawing. Original application Mar. 27, 1964, Ser. No. 355,461, now Patent No. 3,408,407, dated Oct. 29, 1968. Divided and this application Aug. 30, 1967, Ser. No. 672,667  
Int. Cl. C08g 22/16, 17/13

U.S. Cl. 260—47 5 Claims  
Polycarbonates of the bisphenol of cyclohexadiene have been prepared. These polymers exhibit useful physical properties including high glass transition temperatures, tensile strengths and tensile moduli.

### 3,461,099 AMINO-ETHYLATED NOVOLAKS

Thaddeus M. Muzyczko, Melrose Park, Samuel Shore, Roselle, and Jerome A. Martin, Chicago, Ill., assignors to The Richardson Company, Melrose Park, Ill., a corporation of Ohio  
No Drawing. Filed Nov. 4, 1966, Ser. No. 591,985  
Int. Cl. C08g 5/18, 33/08

U.S. Cl. 260—59 8 Claims  
Polymeric amines produced by reacting a novolak having a plurality of phenolic OH groups and an imine such as propylene imine. These products are useful for such purposes as epoxy curing agents and corrosion inhibitors.

### 3,461,100 CONDENSATION PRODUCTS OF ALDEHYDES OR KETONES WITH DIAMINES AND MONOAMINES

Jimmie S. Payne, Jr., and Pete D. Gardner, Austin, Tex., assignors to Tracor, Inc., Austin, Tex., a corporation of Texas  
No Drawing. Filed July 2, 1964, Ser. No. 380,041  
Int. Cl. C08g 9/04, 15/00

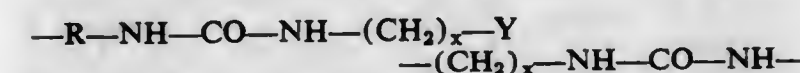
U.S. Cl. 260—72 15 Claims  
A polymeric material for use as a protective coating,

which is insoluble in water but soluble in a common aliphatic hydrocarbon solvent, can be produced by condensing an aldehyde or ketone (formaldehyde) with a diamine (hexamethylene-diamine) in organic medium while continuously removing by-product water.

### 3,461,101 SPANDEX FIBERS HAVING SEGMENTS CONTAINING AT LEAST TWO TERTIARY NITROGEN ATOMS

Harald Oertel and Heinrich Rinke, Leverkusen, and Friedrich-Karl Rosendahl, Leverkusen-Schlebusch, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany  
No Drawing. Filed May 21, 1965, Ser. No. 457,850  
Claims priority, application Germany, May 23, 1964, F 42,968

Int. Cl. C08g 22/08, 22/04 1 Claim  
U.S. Cl. 260—75 9 Claims  
Polyurethane elastomers and particularly fibers, are prepared by reacting an NCO-preadduct from a diisocyanate and an essentially linear polyhydroxy compound having terminal hydroxyl groups and a molecular weight of from about 500 to about 5000 with an organic nitrogen containing chain extender compound wherein the elastomer molecule contains a repeating unit having at least two tertiary nitrogen atoms of the formula



where R is an aromatic bivalent radical, Y is a divalent radical containing two tertiary amino groups, x is an integer of from 1 to 4, the tertiary nitrogen being present in an amount of from 20 to 100 milliequivalents per kg. of polyurethane elastomer.

### 3,461,102 FIBERS FROM ELASTOMERIC POLYURETHANES CONTAINING TERTIARY AMINO GROUPS

Harald Oertel and Heinrich Rinke, Leverkusen, Fritz Moosmüller, Dormagen, and Friedrich-Karl Rosendahl, Leverkusen-Schlebusch, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany  
No Drawing. Filed Aug. 17, 1965, Ser. No. 480,493  
Claims priority, application Germany, Aug. 19, 1964, F 43,788

Int. Cl. C08g 22/16, 22/04 10 Claims  
U.S. Cl. 260—75 10 Claims  
Synthetic elastic filaments having improved dyeability with anionic dyestuffs are prepared by reacting a polyhydroxy compound, an excess of an organic diisocyanate and a chain extending agent selected from diamines, hydrazine, dihydrazides and mixtures thereof, the reaction being conducted in the presence of dihydric alcohol containing tertiary amino groups and spinning a solution thereof into filaments.

### 3,461,103 WATER DISPERSIBLE POLYURETHANE PLASTICS PREPARED FROM CYCLIC COMPOUNDS

Wolfgang Keberle, Bergisch-Neukirchen, Dieter Dieterich, Leverkusen, and Otto Bayer, Burscheid, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany  
No Drawing. Filed Sept. 24, 1965, Ser. No. 490,117  
Claims priority, application Germany, Sept. 26, 1964, F 44,077

Int. Cl. C08g 23/20 7 Claims  
U.S. Cl. 260—75 7 Claims  
Water dispersible polyurethane plastics prepared by

reacting a polyurethane having a molecular weight of about 5,000 to about 2,000,000 with an organic compound having a cyclic ring of 3 to 7 ring members and then reacting the resulting product with a base to form a salt of said polyurethane.

### 3,461,104 FUEL-RESISTANT POLYURETHANES BASED ON POLYESTERS OF POLYHALOPOLYHYDROMETHANO-NAPHTHALENE CARBOXYLIC ANHYDRIDE

Floyd D. Stewart, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York  
No Drawing. Filed June 23, 1967, Ser. No. 648,219

Int. Cl. C08g 22/10 9 Claims  
U.S. Cl. 260—75 9 Claims  
Polyurethanes, which are relatively impermeable to high aromatic content fuel, are prepared by reacting an organic diisocyanate with hydroxyl-terminated polyester, polyether or polyacetal, a hydroxyl-terminated polyester of a 1,2,3,4,9,9-hexachloro 4a,5,6,7,8a-octahydro-1,4-methano-naphthalene-6,7-dicarboxylic acid anhydride and an aliphatic diol.

### 3,461,105 REMOVING ORGANIC ACCELERATORS FROM VULCANIZED ELASTOMERS

Roy S. Anderson, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware  
No Drawing. Filed Aug. 9, 1966, Ser. No. 571,173

Int. Cl. C08d 13/24; C08c 17/26 10 Claims  
U.S. Cl. 260—75 10 Claims  
Organic accelerators utilized in the preparation of vulcanized synthetic elastomers are removed from the elastomers by contacting the elastomers with a carboxylic acid. Removal of these accelerators, especially thiazole accelerators, reduces skin irritation by the elastomer.

### 3,461,106 POLYURETHANE FIBERS

Harald Oertel and Heinrich Rinke, Leverkusen, Wilhelm Thoma, Cologne-Filtard, and Friedrich-Karl Rosendahl, Leverkusen-Schlebusch, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany  
No Drawing. Filed May 21, 1965, Ser. No. 457,800  
Claims priority, application Germany, May 23, 1964, F 42,970

Int. Cl. C08g 22/04, 22/06 11 Claims  
U.S. Cl. 260—75 11 Claims  
Segmented polyurethane elastomers having improved dyeability containing a repeating unit and having at least one carboxylic acid hydrazide grouping and at least one tertiary amino group. The polyurethane elastomers being prepared by reacting a substantially linear NCO terminated prepolymer with a chain extending agent containing at least one carboxylic acid hydrazide group and at least one tertiary amino group alone or in mixture with other chain extending agents, said reacting being effected in an inert polar organic solvent. Elastic fibers are prepared from the obtained polyurethane elastomer solution by known spinning processes.



### 3,461,107 PROCESS FOR MAKING A POLYAMIDE AND PRODUCT

Robert A. Hayes, Cuyahoga Falls, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 7, 1966, Ser. No. 599,722

Int. Cl. C08g 31/00, 20/08

U.S. Cl. 260—78

9 Claims

The method and composition resulting from addition of a low molecular weight alkyl ortho silicate to monomeric lactam of amino acid to form, upon polymerization, an exceptionally high molecular weight polyamide of improved viscosity.

The polyamide so prepared has utility in molding and extrusion grade materials, such as bearings and pipe made with conventional extrusion apparatus.

### 3,461,108 PROCESS OF FORMING COPOLYMERS OF MALEIC ANHYDRIDE AND AN ALIPHATIC OLEFIN HAV- ING SIX CARBON ATOMS

William J. Heilman, Allison Park, and David M. Jenkins, Verona, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Oct. 14, 1965, Ser. No. 496,136

Int. Cl. C08f 3/48, 15/00, 45/30

U.S. Cl. 260—78.5

12 Claims

Maleic anhydride and an aliphatic olefin having six carbon atoms, such as hexene-1, are copolymerized in the presence of a free radical catalyst and a solvent comprising a saturated dihalogenated aliphatic liquid hydrocarbon having from one to five carbon atoms, such as propylene dichloride. Enough solvent is employed to solubilize not only the reactants but also the copolymer products. The product is precipitated in a filterable particulate solid form by admixing the product with a non-solvent for the copolymer, such as n-heptane.

### 3,461,109 PROCESS FOR THE POLYMERIZATION OF CONJUGATED DIENES

Robert A. Hinton and Donald D. Norwood, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 9, 1964, Ser. No. 409,758

Int. Cl. C08d 1/04, 1/32; C08f 1/08

U.S. Cl. 260—83.7

8 Claims

Polymerization reaction carried out in a reaction zone and vapors formed therein are condensed and returned to the reaction medium without removal of the vapors from the reaction zone.

### 3,461,110 PROCESS FOR PRODUCING POLYOLEFIN POLYMERS

Billy D. Rice, Pasadena, and William P. Stadig, Houston, Tex., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed June 2, 1965, Ser. No. 460,850

Int. Cl. C08f 1/32, 1/08

U.S. Cl. 260—93.7

16 Claims

Polymerization of an unsaturated hydrocarbon having the formula  $R-CH=CH_2$ , wherein R is selected from an alkyl radical having from 1 to 6 carbon atoms, a phenyl radical, and an alkyl substituted phenyl radical, in the presence of 0.01 percent to 10 percent by weight of a hydrocarbon additive having 3 to 5 carbon atoms, the additive being substantially inert to the unsaturated hydrocarbon and the catalyst.

### 3,461,111 COPPER-CONTAINING PYRAZOLONE MONOAZO DYESTUFFS

Ernst Hoyer and Fritz Meininger, Frankfurt am Main, and Walter Noll, Bad Soden, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 26, 1967, Ser. No. 641,492

Claims priority, application Germany, June 4, 1966,

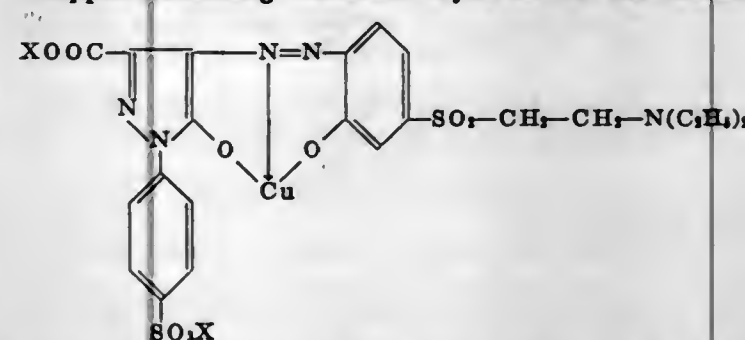
F 49,399

Int. Cl. C09b 45/18

U.S. Cl. 260—147

1 Claim

Copper-containing monoazo dyestuff of the formula



wherein X represents a hydrogen or an alkali metal atom, and process for its preparation.

**3,461,112**  
**AZOBIS(2,2',4,4',6,6'-HEXANITROBIPHENYL)**  
Darrell V. Sickman, Washington, D.C., and Mortimer J. Kamlet, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Dec. 27, 1965, Ser. No. 516,706

Int. Cl. C07c 107/04; C06b 9/00

U.S. Cl. 260—205

9 Claims

1. The compound azobis(2,2',4,4',6,6'-hexanitrobiphenyl).

2. A process for producing the compound of claim 1 which comprises:

- reacting 3-chloro-2,2',4,4',6,6'-hexanitrobiphenyl, an alkali metal salt of a weak acid and hydrazine to produce an alkali metal salt of 3,3'-dipicryl-2,2',4,4',6,6'-hexanitrohydrazobenzene, and
- oxidizing the product of step (a) to produce azobis(2,2',4,4',6,6'-hexanitrobiphenyl).

### 3,461,113 PROCESS FOR RECOVERING FLAVIN-ADENINE DINUCLEOTIDE

Masao Tanaka, Machida-shi, Nobuo Nakamura, Itabashi-ku, and Seigo Takasawa, Machida-shi, Tokyo-to, Japan, assignors to Kyowa Hakko Kogyo Company Limited (Kyowa Hakko Kogyo Kabushiki Kaisha), Tokyo-to, Japan, a body corporate of Japan

No Drawing. Filed Oct. 27, 1966, Ser. No. 589,790

Claims priority, application Japan, Dec. 23, 1965,

40/78,888

Int. Cl. C07d 51/50, 51/52

U.S. Cl. 260—211.3

15 Claims

A process of recovering flavin-adenine dinucleotide from crude aqueous solutions by means of phenolic cation exchange resins.

### 3,461,114 PROCESS FOR THE PREPARATION OF VITAMIN B<sub>12</sub> COENZYME AND DERIVATIVES THEREOF

Masuo Murakami, Kozo Takahashi, Jun Matsumoto, and Hidenori Iwamoto, Tokyo, Japan, assignors to Yamaguchi Pharmaceutical Co., Ltd., Tokyo, Japan

No Drawing. Filed Sept. 29, 1967, Ser. No. 671,598

Claims priority, application Japan, Oct. 1, 1966,

41/64,637

Int. Cl. C07d 55/62; A61k 25/02

U.S. Cl. 260—211.7

5 Claims

Vitamin B<sub>12</sub> coenzyme is obtained in high yield by re-

acting a thiol complex of more than 2 mols of thiol and 1 mol of cobalamin with a 5'-tosyladenosine (e.g. 2',3'-O-isopropylidene-5'-tosyladenosine) as alkylating agent (5'-deoxyadenosylating agent) under basic conditions.

### 3,461,115 PROCESS FOR THE MANUFACTURE OF WATER- SOLUBLE MACROMOLECULAR COMPOUNDS CONTAINING HYDROXYL GROUPS

Franz Schwarzer, Wiesbaden, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden-Bleibach, Germany

No Drawing. Filed Aug. 25, 1964, Ser. No. 392,030

Claims priority, application Germany, Aug. 27, 1963,

K 50,656

Int. Cl. C08b 11/08; 13/00

U.S. Cl. 260—232

2 Claims

This invention relates to a process for the preparation of a macromolecular compound containing hydroxyl groups which is soluble in water without forming lumps, which process comprises treating the compound in the solid state with about 0.05 to 5 percent by weight of an aliphatic dicarboxylic acid containing 2 to 8 carbon atoms, or a salt or an ester thereof.

### 3,461,116 MERCAPTO-PHENOXYMETHYL-PENICILLINS

Helmut Nahn, Kelkheim, Taunus, Adolf Oppermann, Hofheim, Taunus, Hinrich Hoffmann, Kelkheim, Taunus, Max Kornlein, Frankfurt am Main, and Heinz Oppinger, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 10, 1964, Ser. No. 381,914

Claims priority, application Germany, July 13, 1963,

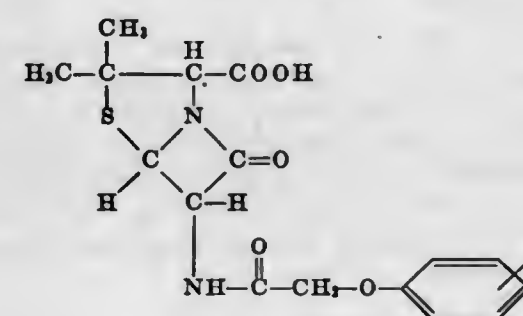
F 40,226

Int. Cl. C07d 99/22; A61k 21/00

U.S. Cl. 260—239.1

7 Claims

Mercapto-phenoxyethyl-penicillins of the formula



in which R is alkyl mercapto, alkenyl mercapto, phenyl-alkenyl mercapto, piperidyl mercapto, pyridyl mercapto, phenyl mercapto, substituted phenyl mercapto, naphthyl mercapto, substituted naphthyl mercapto, diphenyl mercapto, and phenyl alkyl mercapto.

### 3,461,117 3 $\alpha$ ,20 - DIACETOXY - 16 $\beta$ - LOWER ALKYL - 17(20)- OXIDO-PREGNANE-11-ONE AND INTERMEDI- ATE IN THE PREPARATION THEREOF

Richard Rausser, Union, and Eugene P. Oliveto, Glen Ridge, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 673,141, July 22, 1957. This application Aug. 18, 1960, Ser. No. 50,314

Int. Cl. C07c 173/00, 169/36

U.S. Cl. 260—239.55

4 Claims

3. 3 $\alpha$ ,20-diacetoxy-16 $\beta$ -lower alkyl-17(20)-oxido-pregnane-11-one.

### 3,461,118 3 $\beta$ -TETRAHYDROFURANYLOXY- AND 3 $\beta$ -TETRA- HYDROPYRANYLOXYESTRA - 4,9(10) - DIENES AND -4,9(10),11-TRIENES, THEIR PREPARATION AND INTERMEDIATES THEREOF

John A. Edwards, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Continuation-in-part of application Ser. No. 528,363, Feb. 18, 1966. This application Oct. 17, 1966, Ser. No. 591,371

Int. Cl. C07c 173/00; A61k 17/00

U.S. Cl. 260—239.55

16 Claims

Novel 3 $\beta$ -tetrahydrofuranly and 3 $\beta$ -tetrahydropyranylyl ethers of  $\Delta^{4,9(10)}$ -diene and  $\Delta^{4,9(10),11}$ -triene steroids of the estrane series containing optional substitution at positions C-7, C-17 $\beta$ , C-17 $\alpha$ , and C-18 which compounds are anabolic and progestational agents and processes for the preparation of such compounds.

### 3,461,119 STEROIDO - 9 $\alpha$ - HALOGEN - 11 $\beta$ - HYDROXY-[17 $\alpha$ , 16 $\alpha$ -d]-2' - ALKOXYAZOLINES OF THE PREG- NANE SERIES

Giangiacomo Nathansohn and Giorgio Winters, Milan, Italy, and Emilio Testa, Vacallo, Tessin, Switzerland, assignors to Lepetit S.p.A., Milan, Italy

No Drawing. Filed Dec. 30, 1966, Ser. No. 606,015

Claims priority, application Great Britain, Jan. 11, 1966, 1,257/66; July 11, 1966, 31,056/66; Sept. 29, 1966, 43,628/66

Int. Cl. C07c 173/10; A61k 27/00

U.S. Cl. 260—239.55

7 Claims

The invention relates to steroido-9 $\alpha$ -halogen-11 $\beta$ -hydroxy-[17 $\alpha$ ,16 $\alpha$ -d]-2'-alkoxyazoline of the pregnane series which have been found to possess antiinflammatory and hormone-like activity.

### 3,461,120 N-[(1-PIPERIDYL)-LOWER-ALKYL]-N-[(3-, 2-, AND 1-INDOLYL)-LOWER-ALKYL] AMINES

Bernard L. Zenitz, Colonie, and Donald Craig Behn, Schock, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 457,196, May 19, 1965, which is a division of application Ser. No. 193,310, May 8, 1962. This application Sept. 27, 1965, Ser. No. 490,699

Int. Cl. C07d 57/00, 27/56; A61k 27/00

U.S. Cl. 260—240

17 Claims

New N-[(1-piperidyl)-lower-alkyl]-N-[(3-, 2-, and 1-indolyl)-lower-alkyl]amines having useful hypotensive, monoamine oxidase inhibitory, and coronary dilator activities.

### 3,461,121 PRODUCTION OF N-ACYLETHIONIMIDES

Harry Distler, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Jan. 12, 1967, Ser. No. 608,740

Claims priority, application Germany, Jan. 20, 1966,

B 85,474

Int. Cl. C07d 95/00

U.S. Cl. 260—243

8 Claims

This invention relates to N-acyl ethionimides which have not hitherto been described and which are obtained by reacting carbyl sulfates derived  $\alpha$ -olefins with nitriles, if desired in the presence of inert solvents. The carbyl sulfates may be prepared from sulfur trioxide and  $\alpha$ -olefins in situ. The N-acyl ethionimides yield carboxylic acid amides and  $\alpha,\beta$ -unsaturated sulfonates on hydrolysis. The N-acyl ethionimides are suitable for the production of unsaturated sulfonic acids from which polymers are pro-



duced which can be used as flocculating agents or thickeners.

**3,461,122**  
**NAPHTHO[2,1-e][1,2,4]THIA DIAZINE**  
**1,1-DIOXIDES**

Peter H. L. Wel, Upper Darby, and Stanley C. Bell, Narberth, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 12, 1967, Ser. No. 637,927  
Int. Cl. C07d 93/08; A61k 27/00

U.S. Cl. 260—243 10 Claims

The present invention is concerned with 2H-naphtho[2,1-e][1,2,4]thiadiazine-7-sulfonamide 1,1-dioxides; 4H-naphtho[2,1-e][1,2,4]thiadiazine-7-sulfonamide 1,1-dioxides; and 3,4-dihydro-2H-naphtho[2,1-e][1,2,4]thiadiazine-7-sulfonamide 1,1-dioxides which are pharmacologically active as diuretics.

**3,461,123**  
**1H-IMIDAZO[4,5-b]PYRAZIN-2-ONES AND**  
**PROCESSES FOR THEIR PREPARATION**

James H. Jones, Blue Bell, and Edward J. Cragoe, Jr., Lansdale, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 12, 1968, Ser. No. 721,065  
Int. Cl. C07d 57/24; A61k 27/00

U.S. Cl. 260—250 9 Claims

1H-imidazo[4,5-b]pyrazin-2-ones are described which are substituted on the pyrazine ring with a mercapto or hydroxy group and the thio-ethers and ethers thereof and optionally substituted on one or more of the remaining available positions. These compounds are prepared principally by diazotization of a 3-aminopyrazinoic acid hydrazide, followed by heating of the intermediate azide. Certain of the substituted compounds are prepared by standard substitution reactions on the preformed 1H-imidazo[4,5-b]pyrazin-2-ones. The products have utility as antihypertensive agents with a moderate amount of diuretic and saluretic activity.

**3,461,124**  
**STERIODS OF THE 3,4-DIAZA-Δ<sup>1,4</sup>-ANDROSTADIENE SERIES**

Seymour D. Levine, North Brunswick, N.J., assignor, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 1, 1965, Ser. No. 492,320  
Int. Cl. C07d 101/00

U.S. Cl. 260—250 14 Claims

Steroidal compounds are disclosed which compounds are of the 3,4-diaza-Δ<sup>1,4</sup>-androstadiene series. Intermediates are also described. The final products are physiologically active steroids which possess anti-androgenic activity.

**3,461,125**  
**PROCESS FOR PREPARING CHLOROALKYL**  
**THIAZOLES, PYRIMIDINES AND PYRIDINES**

Janos Kollonitsch, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of applications Ser. No. 269,862, Apr. 2, 1963, and Ser. No. 293,149, July 5, 1963. This application Jan. 11, 1965, Ser. No. 424,817

Int. Cl. C07d 91/32, 51/36, 31/26

U.S. Cl. 260—251 10 Claims

Chloroalkyl thiazoles, pyridines and pyrimidines are obtained by chlorinating the corresponding alkyl thiazole, pyridine and pyrimidine in a strongly acidic medium and in the presence of a free radical initiating catalyst.

**3,461,126**  
**2-ALKANOYL-11-PIPERAZINO-DIBENZOCYCLO-**  
**HEPTADIENE DERIVATIVES**

Jean Clement Louis Fouche, Bourg-la-Reine, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed Jan. 16, 1967, Ser. No. 609,308  
Claims priority, application France, Jan. 25, 1966, 47,172

Int. Cl. C07d 51/70; A61k 27/00

U.S. Cl. 260—268 2 Claims

The invention provides new 2-alkanoyl-substituted 11-piperazino-dibenzo[a,d]cycloheptadienes and their salts having interesting pharmacodynamic properties on the central nervous system as, e.g. neuroleptics, sedatives and antidepressants.

**3,461,127**  
**PREPARATION OF PYRIDINES**

John Edward Colchester, Runcorn, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Sept. 3, 1965, Ser. No. 485,082  
Claims priority, application Great Britain, Sept. 10, 1964, 37,117/64

Int. Cl. C07d 31/08

U.S. Cl. 260—290 8 Claims

There is provided a process for the manufacture of pyridine or substituted pyridines by interacting a glutaraldehyde or a precursor thereof in the liquid phase with an ammonium salt in the presence of a quinone.

**3,461,128**  
**PROCESS FOR PRODUCING N:N'-DILOWER**  
**ALKYL-4:4'-BIPYRIDYLUM SALTS**

John Edward Colchester and John Hubert Entwistle, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed May 18, 1966, Ser. No. 550,965  
Claims priority, application Great Britain, May 28, 1965, 22,773/65

Int. Cl. C07d 31/22, 31/02

U.S. Cl. 260—296 18 Claims

There is provided a process for the production of an N:N'-disubstituted 4:4'-bipyridylum salts by the interaction of an N:N'-disubstituted tetrahydro-4:4'-bipyridyl with a carbon compound containing a labile halogen atom wherein the labile halogen atom is attached to carbon by a bond of dissociation energy less than about 70 kcal./mole. The process will produce salts which are useful as herbicides.

**3,461,129**  
**4-ALKOXY (AND 4-CYCLOALKOXY) -3-OXAZO-**  
**LINES HAVING HALOGENATED HYDROCAR-**  
**BON SUBSTITUENTS IN THE 2- AND 5-POS-**  
**ITIONS**

William J. Middleton, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 435,734, Feb. 26, 1965, which is a division of application June 8, 1966, Ser. No. 555,974. This application May 4, 1967, Ser. No. 636,019

Int. Cl. C07d 85/36

U.S. Cl. 260—307 5 Claims

Claimed are 4-alkoxy (or -cycloalkoxy) -3-oxazolines having selected halogenated hydrocarbon substituents in the 2- and 5-positions, e.g., 4-methoxy-2,2,5,5-tetrakis (trifluoromethyl)-3-oxazoline. They are useful as solvents for highly fluorinated polymers to yield solutions suitable for rendering paper and fabrics oil- and water-repellant.

**3,461,130**  
**QUINONE DERIVATIVES OF IMIDAZOLES AND**  
**PYRAZOLES**

Siegfried Petersen, Leverkusen, Heinrich Gold, Cologne-Stammheim, and Ekkehard Grundmann and Lieselotte Jühling, Wuppertal-Elberfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 28, 1965, Ser. No. 451,639

Claims priority, application Germany, Apr. 29, 1964, F 42,749

Int. Cl. C07d 49/18, 49/36

U.S. Cl. 260—309 4 Claims

Binuclear quinones such as 1,2 or 1,4 naphthoquinones, or 5,8-diketoquinolines, substituted in the quinoid ring by the group —NH lower alkylene-R, in which R represents a pseudoaromatic heterocyclic radical, such as a diazole ring, are prepared having selective action against certain tumors experimentally produced in animals.

**3,461,131**  
**PROCESS FOR PREPARING 2-SUBSTITUTED**  
**CYCLOHEPTIMIDAZOLE DERIVATIVES**

Genshun Sunagawa, Nobuo Soma, Junichi Nakazawa, and Mitsuo Watatani, Tokyo, Japan, assignors to Sankyo Company Limited, Chyuo-ku, Tokyo, Japan

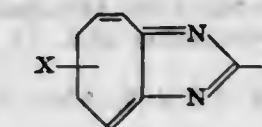
No Drawing. Filed Sept. 8, 1965, Ser. No. 485,913

Claims priority, application Japan, Sept. 14, 1964, 39/52,520

Int. Cl. C07d 49/38

U.S. Cl. 260—309 2 Claims

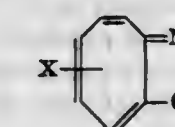
A process for preparing a compound having the formula



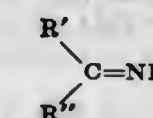
wherein X represents hydrogen, lower alkyl, phenyl, halogen, nitro, or lower alkoxy, and Y represents unsubstituted or substituted amino, lower alkoxy, lower alkylthio, or a group of the formula



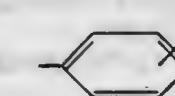
in which y represents hydrogen, lower alkyl, halogen, nitro, hydroxy, dialkylamino, with lower alkyl in each substituent, or lower alkoxy, which comprises reacting a compound having the formula



wherein X is as defined above and R represents lower alkyl, with a compound having the formula



wherein R' represents an unsubstituted or substituted amino, lower alkoxy, lower alkylthio, or a group of the formula



wherein y has the same meaning as defined above, and R'' represents amino, or R' and R'' jointly may be imino substituted with alkyl or aryl. In "lower alkyl," "lower alkoxy," etc., the expression "lower" is intended to mean 1-5 C-atoms. The compounds produced are known and have been found to be valuable intermediates

in the synthesis of efficient analgesics and anti-inflammatory agents.

**3,461,132**  
**NOVEL TIN COMPLEXES**

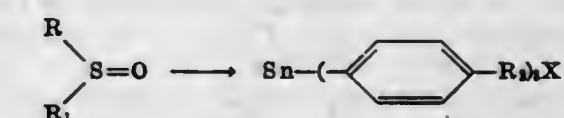
Ludwig Schröder, Klaus Thomas, and Dietrich Jerchel, Ingelheim am Rhein, Germany, assignors to C. H. Boehringer Sohn, Ingelheim am Rhein, Germany, a limited partnership

No Drawing. Filed Aug. 11, 1965, Ser. No. 478,997  
Claims priority, application Germany, Aug. 20, 1964, B 78,197

Int. Cl. C07f 7/22; C07d 65/18, 63/10

U.S. Cl. 260—327 27 Claims

Tin complexes of the formula



wherein

X is an anion of an acid selected from the group consisting of organic and inorganic acids,

R and R<sub>1</sub> are selected from the group consisting of aliphatic hydrocarbon radicals of 1 to 6 carbon atoms, aromatic and araliphatic radicals whose aromatic rings may be substituted with at least one substituent selected from the group consisting of halogen, nitro, alkyl, alkoxy, acyloxy, mono- and dialkylamino and

R and R<sub>1</sub> together with the sulfur atom represent a saturated or unsaturated, mono- or polynuclear ring which may contain a further heteroatom, and R<sub>2</sub> is selected from the group consisting of hydrogen or halogen.

The invention also relates to pesticides and their use.

The tin complexes of Formula I possess an excellent antimicrobial activity, particularly bacteriostatic and fungistatic activity with little or no phytotoxicity, and an algicidal and molluscicidal activity. For example, they are effective against *Staphylococcus aureus* SG 511, *Canad. albicans*, *Asperg. niger*, etc. They are useful for protecting plants against infection such as *Phytophthora infestans* or *Cercospora beticola*, or as impregnating agents for textiles, synthetics, paints, ship-bottoms, etc., and may be used with known antimicrobial agents to increase their selectivity, their effective breadth and/or their compatibility.

**3,461,133**  
**THIOPARABANIC ACID DERIVATIVES**

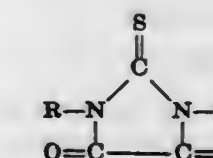
Paul J. Stoffel, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 20, 1965, Ser. No. 488,746

Int. Cl. C07d 49/30; A01n 9/22

U.S. Cl. 260—309.5 7 Claims

Compounds of the formula



wherein R is selected from the class of aliphatic hydrocarbon consisting of alkyl having up to 12 carbon atoms, alkenyl having up to 12 carbon atoms, alkynyl having up to 12 carbon atoms, and the said hydrocarbon moieties containing substituents selected from the group consisting of chloro, cyano and alkoxy wherein the alkyl moiety has up to 4 carbon atoms, have utility as phytotoxicants.



3,461,134

## IMIDAZOLIDINE DERIVATIVES

Andrew Harper Dinwoodie, Dalry, Godfrey Fort, Ardrossan, and James McAllan Cormack Thompson, Seamill, Scotland, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy  
No Drawing. Filed Feb. 23, 1967, Ser. No. 619,512  
Claims priority, application Great Britain, Mar. 14, 1966, 11,170/66

Int. Cl. C07d 49/34; C06b 15/02, 15/00

U.S. Cl. 260—309.7 17 Claims

Organic difluoramine compounds which are 1,2-bis[4,5-(difluoramino)-2-oximidazolidin-3-yl]-1,2-bis(difluoramino)ethanes. A lower alkyl, trinitro lower alkyl, difluoramino lower alkyl or lower acyl group may be present in the 1-position of the oximidazolidine ring. The new compounds are useful energetic constituents of high-energy propellant compositions. They may be prepared by reaction of a 1,2-bis(4,5-dihydroxy, -dialkoxy or -diacyloxy-2-oximidazolidin-3-yl) ethane-1,2-diol, 1,2-alkoxyethane or -1,2-acyloxyethane, which may contain an alkyl, trinitroalkyl or acyl group as defined above or a lower alkoxyalkyl group in 1-position of the oximidazolidine ring, with difluoramine in an inert atmosphere and in the presence of an acidic condensing agent.

3,461,135

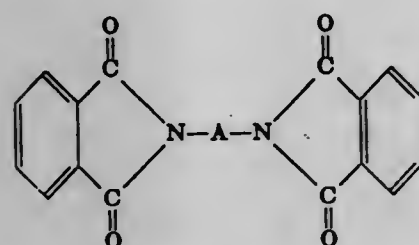
## PHTHALIMIDO-SUBSTITUTED PERFLUORO-AROMATIC COMPOUNDS

Rex B. Gosnell, San Diego, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California  
No Drawing. Filed June 29, 1966, Ser. No. 561,395

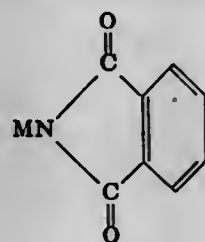
Int. Cl. C07f 1/00; C07d 27/70

U.S. Cl. 260—326 2 Claims

This patent describes novel compounds having the formula



by reacting compounds of the formula



with compounds of the formula



wherein A is a para divalent perfluoroaromatic group and M is an alkali metal. These compounds may be converted to para diamines of the formula



by reaction with hydrazine. These diamines are intermediates in the preparation of perfluorinated aromatic diisocyanates. The perfluorinated aromatic diisocyanates are directly useful as fungicides and are also reactive with active hydrogen compounds to yield polymers of unusual thermal stability and oxidizer resistance.

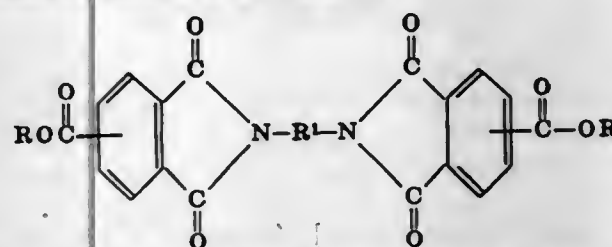
## DIIMIDE-DIESTERS OF TRICARBOXYLIC ANHYDRIDES

Gerfried Pruckmayr, Wilmington, Del., and Claus Victorius, Media, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Filed Oct. 31, 1966, Ser. No. 590,469

Int. Cl. C07d 27/70

U.S. Cl. 260—326 3 Claims

A diimide-diester of the formula



wherein R is aryl and R<sup>1</sup> is a divalent radical containing 2-20 carbon atoms which is a useful intermediate that can be further reacted to form, for example, a polyamide-imide polymer.

3,461,137

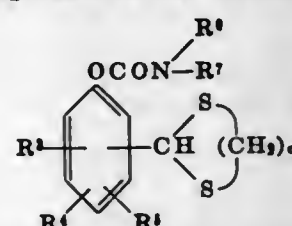
## SULFUR-CONTAINING CARBAMATE INSECTICIDES

Edward D. Well, Lewiston, and Hans L. Schlichting, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York  
No Drawing. Original application Feb. 19, 1963, Ser. No. 259,755, now Patent No. 3,349,115, dated Oct. 24, 1967.

Divided and this application Oct. 23, 1967, Ser. No. 688,293  
Int. Cl. C07d 73/00; A01n 9/12

U.S. Cl. 260—327 3 Claims

Insecticidal compounds of the formula



wherein R<sup>1</sup>, R<sup>4</sup> and R<sup>5</sup> are either hydrogen, lower alkyl or lower alkoxy, R<sup>6</sup> is hydrogen or lower alkyl, R<sup>7</sup> is a lower alkyl substituent and n is from 1 to 4. The insecticidal compounds are made by reaction of the corresponding substituted or unsubstituted aldehyde with the appropriate thiol in a suitable solvent in the presence of hydrogen chloride, after which the product is converted to the carbamate by reaction with an isocyanate, usually in the presence of a suitable catalyst, such as a strong tertiary amine or an organo tin salt.

3,461,138

## ACETALS OF p-MENTHANE-DIOL-3,8 AND p-MENTHENE-1-DIOL-3,8 AND METHOD OF PREPARING SAME

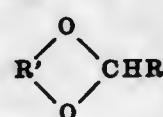
Yves Rene Naves and Paul Albert Ochsner, Geneva, Switzerland, assignors to The Glvaudan Corporation, New York, N.Y., a corporation of New Jersey  
No Drawing. Filed Oct. 16, 1964, Ser. No. 404,517

Claims priority, application Switzerland, Oct. 21, 1963, 12,891

Int. Cl. C07d 15/00; A61k 7/00

U.S. Cl. 260—340.3 11 Claims

A family of new cyclic acetals is disclosed. These compounds have the formula:



wherein R' is a bivalent terpenic moiety selected from



and



the dash lines denoting that the 3 and 8 position carbon atoms have unsatisfied valences, which positions, in the first formula given above, are each linked to an O, and R is a member selected from the group consisting of H, an alkyl radical having from 1 to 7 carbon atoms, and an alkylene radical having from 1 to 7 carbon atoms.

Among specific compounds disclosed are the acetals of p-menthane-diol-3,8 and acetaldehyde; the formal of p-menthane-diol-3,8; an acetal of p-menthene-1-diol-3,8; an acetal of p-menthane-diol-3,8 and isovaleric aldehyde; and an acetal of p-menthane-diol-3,8 and benzaldehyde.

The new acetals are useful as perfume and flavor materials.

3,461,139

## DEHYDRATION OF BENZOPHENONE 3,4,3',4'-TETRACARBOXYLIC ACID TO BENZOPHENONE 3,4,3',4'-TETRACARBOXYLIC DIANHYDRIDE

Peter G. Cooper, Penn Township, Allegheny County, Philippe A. Michelson, Pittsburgh, and Clarence R. Murphy, Allison Park, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware  
Filed May 16, 1967, Ser. No. 638,992

Int. Cl. C07c 51/56

U.S. Cl. 260—346.3 9 Claims

Benzophenone tetracarboxylic acid is converted to benzophenone tetracarboxylic dianhydride by the application of heat. The highest temperature at which the dehydration can occur in the solid state is about 390° F. Theoretically, a 60° F. increase in temperature during solid state dehydration increases the dehydration rate by about a factor of 5. Unexpectedly, increasing the temperature in the 60° F. range from the solid state dehydration temperature of 390° F. to the molten state dehydration temperature of 450° F. increases the drying rate by a factor of nearly 100. However, temperatures which are sufficiently high to melt the dianhydride cause severe color degradation with excessive time from white or yellowish-white to tan or brown due to partial breakdown of the product. This color degradation limits the utility of the dianhydride product as a co-linking agent for epoxy resins. The surprising observation has been made that when a benzophenone tetracarboxylic dianhydride which is apparently discolored by the high temperatures required for molten state dehydration is cooled and granulated, the granulation operation results in a reversion of color from tan or brown to white or yellowish-white.

3,461,140

## PRODUCTION OF ETHYLENE OXIDE

Eckart Titzenthaler, Oberhausen, Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Mar. 10, 1965, Ser. No. 438,725

Claims priority, application Germany, Mar. 12, 1964, B 75,876

Int. Cl. C07d 1/14

U.S. Cl. 260—348.5 3 Claims

Production of ethylene oxide from ethylene and oxygen at elevated temperature in presence of silver catalyst containing compound of group II of Periodic System and compound of aluminum and/or boron.

3,461,141

## 1-AMINO-4-CYCLOPENTADIENYLAMINO-2-ANTHRAQUINONE SULFONIC ACIDS

Fritz Graser and Hans Klefer, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

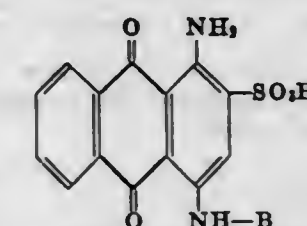
No Drawing. Filed June 1, 1966, Ser. No. 554,303

Claims priority, application Germany, June 10, 1965, B 82,345

Int. Cl. C09b 1/28

U.S. Cl. 260—371 5 Claims

An anthraquinone dye of the formula



wherein B is a dimeric or trimeric cyclopentadienyl group which may be substituted by one additional amino group on a secondary carbon atom in a position non-adjacent to the —NH— bridge. The dyes are particularly useful for dyeing linear polyamide textile materials.

3,461,142

## 3-DESOXY-PREGNENES

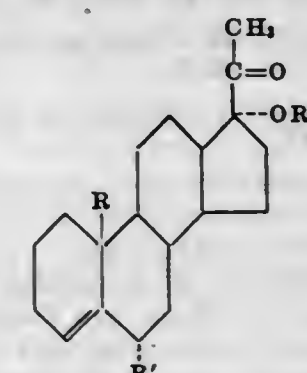
Fred A. Kincl, Mexico City, Mexico, assignor, by mesne assignments, to Syntex Corporation, a corporation of Panama

No Drawing. Filed Oct. 26, 1960, Ser. No. 65,022

Int. Cl. C07c 169/34, 169/36, 169/30

U.S. Cl. 260—397.4 15 Claims

1. A compound of the following formula:



wherein R is hydrogen; R<sup>1</sup> is selected from the group consisting of methyl and fluorine and R<sup>3</sup> is selected from



the group consisting of hydrogen and a hydrocarbon carboxylic acyl group of less than 12 carbon atoms.

3,461,143

# PRODUCTION OF SULFAGUANIDINE

Pandurang Krishnacharya Nargund, Bulsar, India, assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 555,269, June 6, 1966. This application June 27, 1968, Ser. No. 740,455

Int. Cl. C07c 143/80

U.S. Cl. 260-397.7

8 Claims

Pharmaceutical grade sulfaguanidine as its hydrate is produced by reacting sodium or potassium cyanamide with p-acetylsulfanilyl chloride in water at pH 8 to 11; isolating and drying the sodium or potassium sulfanilyl cyanamide, then reacting with an ammonium salt, in the presence of anhydrous ammonia and a lower alkanol, at 120° C. to 250° C.; then distilling off the alkanol, and recrystallizing the product from water. Sulfaguanidine is a therapeutic agent, and may also be used as an intermediate for the production of other therapeutic agents, such as sulfamethazine.

3,461,144

# NOVEL 16 $\beta$ -ALKYL-17-OXYGENATED STEROIDS AND PROCESSES

David Taub, Metuchen, Norman L. Wendler, Summit, and Harry L. Slates, Madison, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Original application Mar. 19, 1958, Ser. No. 722,390. Divided and this application Mar. 1, 1960, Ser. No. 11,983

Int. Cl. C07c 167/10, 167/26, 169/34

U.S. Cl. 260-397.45

2 Claims

1. The process which comprises reacting 3 $\alpha$ -lower alkanoyloxy-16-lower alkyl - 16-pregnene - 11,20-dione with a peroxidic oxidizing agent to produce 16 $\beta$ -lower alkyl - 16 $\alpha$ ,17 $\alpha$ -epoxy - 3 $\alpha$ -hydroxypregnane - 11,20-dione, and reacting the latter compound with hydrogen to form 16 $\beta$ -lower alkyl - 3 $\alpha$ ,17 $\alpha$ -dihydroxy-pregnane-11,20-dione.

3,461,145

# $\Delta$ 14-PREGNEN-3,21-DIOL-20-ONE-21 ACYLATES AND PROCESS FOR PREPARING THEM

Werner Haede, Hofheim, Taunus, Kurt Radschelt, Kelheim, Taunus, Werner Fritsch, Neuenhain, Taunus, Ulrich Stache, Hofheim, Taunus, and Heinrich Rutschig, Bad Soden, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Feb. 28, 1967, Ser. No. 619,204

Claims priority, application Germany, Mar. 23, 1966, 48,737

Int. Cl. C07c 169/36, 167/28

U.S. Cl. 260-397.47

2 Claims

$\Delta$ 14-pregnene-3,21-diol-20-one-21-acetates such as  $\Delta$ 5, 14-pregnadiene-3 $\beta$ ,21-diol-20-one-21 acetate and  $\Delta$ 14-allo-pregnene-3 $\beta$ ,21-diol-20-one-21-acetate, useful as intermediates in the synthesis of cardenolides. Method of making these compounds from  $\Delta$ 14,16-pregnadiene- or  $\Delta$ 5,14,16-pregnatriene-3-ol-20-one-acylates by hydrolysis, etherification with dihydropyran, reduction of the 16,17-double bond and of the 20-oxo group, reoxidation of the resultant hydroxy group to 20-oxo, hydrolysis of tetrahydropyranyl ether groups, and acetoxylation.

3,461,146

# METAL-ORGANIC COMPOUNDS

John Harry Wallace Turner, Chapel-en-le-Frith, and Samuel Edward Harson, Culcheth, near Warrington, England, assignors to Hardman & Holden Limited, Manchester, Lancashire, England, a British company

No Drawing. Continuation-in-part of application Ser. No. 331,911, Dec. 19, 1963. This application Jan. 26, 1968, Ser. No. 700,741

Claims priority, application Great Britain, Dec. 24, 1962, 48,570/62

Int. Cl. C07f 7/00, 7/04, 3/00

U.S. Cl. 260-414

12 Claims

Metal-organic compounds are prepared by reacting an alkoxide of a tetravalent element, e.g., silicon, titanium, tin, hafnium and zirconium with a carboxylate of a divalent metal, e.g., a salt of two carboxylic acids having together from 10 to 28 carbon atoms, or a basic salt. The resulting compounds contain at least one divalent metal and at least one tetravalent element, the divalent and tetravalent atoms being linked together through oxygen atoms and their remaining valencies being occupied by carboxylic acid radicals and hydrocarbonoxy radicals.

3,461,147

# ORGANO-ZINC COMPOUNDS AND PROCESSES OF MAKING SAME

Jan G. Noltes, Bunnik, Netherlands, assignor to International Lead Zinc Research Organization, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 12, 1966, Ser. No. 520,101

Claims priority, application Netherlands, Jan. 14, 1965, 6500454

Int. Cl. C07f 3/06

U.S. Cl. 260-429.9

3 Claims

Organo-zinc compounds having the formula  $RZnXY_2$ , or  $RZnXCZXY_2$ , wherein R and Y represent certain aliphatic or aromatic groups, X and X' trivalent nitrogen, phosphorous, or arsenic, and Z is oxygen or sulfur; as well as a method for preparing such compounds by reacting the compounds  $R_2Zn$  with  $HXY_2$ ; or by reacting compounds  $RZnXY_2$  with an aliphatic or aromatic isocyanate or isothiocyanate.

3,461,148

# ORGANOSILICON COMPOUNDS AND THE METHOD OF MANUFACTURING URETHANE FOAM BY THE USE OF THE SAID COMPOUNDS

Kihachi Tamura, Musashino-shi, and Isao Nakajima and Kaname Inoue, Tokyo, Japan, assignors to Shin-Etsu Chemical Industry Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Jan. 29, 1964, Ser. No. 341,123

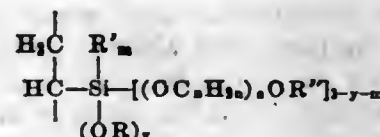
Claims priority, application Japan, Jan. 29, 1963, 38/3,960; Jan. 31, 1963, 38/4,970, 38/4,971; Feb. 1, 1963, 38/5,069

Int. Cl. C07f 7/18

U.S. Cl. 260-448.8

6 Claims

1. A polyoxyalkylene polyvinylsilane having the following structural unit:



wherein R and R' are independently selected from the group consisting of alkyl and aryl radicals, R'' is selected from the group consisting of hydrogen, alkyl and aryl radicals, m and y are integers of from 0 to 2,  $y+m < 3$ , n is an integer of from 2 to 4, and  $z > 1$ .

3,461,149

# ISOCYANATE PROCESS

William Baptist Hardy, Bound Brook, and Robert Putnam Bennett, Bridgewater Township, Somerset County, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 421,682, Dec. 28, 1964. This application July 1, 1965, Ser. No. 468,934

Int. Cl. C07c 119/04

U.S. Cl. 260-453

8 Claims

A process of preparing an isocyanate which comprises reacting, in the presence of a catalyst consisting essentially of a noble metal and a Lewis acid, carbon monoxide and an aromatic or heteroaromatic nitro compound in amounts of at least three moles of carbon monoxide per nitro group, said reaction being conducted under substantially anhydrous, hydrogen-free, superatmospheric pressure conditions, and at an elevated temperature below that at which the starting materials and the product isocyanate decompose.

3,461,150

# PROCESS FOR THE OXIDATION OF OLEFIN-AMMONIA MIXTURES TO UNSATURATED NITRILES

James L. Callahan, Cuyahoga County, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Original application Jan. 8, 1963, Ser. No. 250,008, now Patent No. 3,197,419, dated July 27, 1965. Divided and this application Jan. 11, 1965, Ser. No. 435,107

Int. Cl. C07c 121/02; C07b 3/00; B01j 11/22

U.S. Cl. 260-465.3

7 Claims

A process is provided for the oxidation of olefin-ammonia mixtures to unsaturated nitriles, such as propylene-ammonia to acrylonitrile, and isobutylene-ammonia to methacrylonitrile, using catalysts composed of oxides of antimony and iron.

3,461,151

# URETHANE CONTAINING ISOCYANATES

Günter Oertel, Cologne-Flittard, and Hans Holtschmidt, Leverkusen-Steinbüchel, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Nov. 22, 1965, Ser. No. 509,159

Claims priority, application Germany, Nov. 21, 1964, F 44,495

Int. Cl. C07c 119/04

U.S. Cl. 260-471

11 Claims

Isocyanate compounds containing at least one N-disubstituted urethane group are prepared by reacting a primary amine containing at least one N-disubstituted group with phosgene.

3,461,152

# MEPHENESIN ACETYSALICYLATE

Joseph Pouget, Paris, France, assignor to Drolit et Pharmacie, Paris, France, a corporation of France

No Drawing. Continuation of application Ser. No. 405,574, Oct. 21, 1964. This application May 6, 1968, Ser. No. 727,026

Claims priority, application France, Oct. 24, 1963, 951,612

Int. Cl. C07c 69/86; A61k 27/00

U.S. Cl. 260-474

1 Claim

An analgesic anticontractant and local anesthetic for superficial application in the region of the contraindication, composed of or containing mephenesin acetylsalicylate.

3,461,153

# ORGANIC ESTERS STABILIZED WITH AN ALKALI METAL AND AN ORGANIC PHOSPHITE

Clarence E. Tholstrup and Sarah J. Rush, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 19, 1965, Ser. No. 473,234

Int. Cl. C07c 65/82, 65/80

U.S. Cl. 260-475

3 Claims

Organic esters free from acid hydrogen atoms which are subject to discoloration at elevated temperatures containing from about 0.25 p.p.m. to 1000 p.p.m. of alkali metal atoms and from about 0.1 p.p.m. to 200 p.p.m. of phosphorus atoms.

3,461,154

# PREPARATION OF PHTHALIC ACID ESTERS

Pierre Yves Andre Lafont, Sainte-Foy-Les-Lyon, and Henri Francois Albert Menand, Saint-Fons, France, assignors to Rhone-Poulenc S.A., Paris, France, a corporation of France

No Drawing. Filed July 6, 1965, Ser. No. 469,901

Claims priority, application France, July 8, 1964, 981,115

Int. Cl. C07c 69/82

U.S. Cl. 260-475

9 Claims

Bis(hydroxyalkyl)phthalates are prepared by reacting a phthalic acid with an alkylene oxide in the presence of a tertiary phosphine catalyst.

3,461,155

# BIS( $\omega$ -SUBSTITUTED PERFLUOROACYL) PEROXIDES

David E. Rice, Minneapolis, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

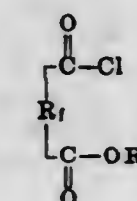
No Drawing. Filed Jan. 18, 1965, Ser. No. 426,395

Int. Cl. C07c 73/02

U.S. Cl. 260-479

15 Claims

Bis( $\omega$ -carboxyl ester perfluoroacyl) peroxides are provided as well as substituted perfluoroacyl chloride intermediates of the formula



which are converted to said bis-peroxides by reaction with metal peroxides. The substituted perfluoro acyl chlorides in turn are prepared by reacting perfluorinated diacid chlorides with water or an alcohol.

3,461,156

# PROCESS OF PREPARATING ESTERS

William L. Fierce, Crystal Lake, Ill., assignor to Union Oil Company, Los Angeles, Calif., a corporation of California

No Drawing. Filed Sept. 24, 1965, Ser. No. 490,111

Int. Cl. C07c 67/00, 69/14

U.S. Cl. 260-491

6 Claims

A process for producing carboxylic acid esters comprising reacting the acid with an organic halide in the presence of an alkali metal hydroxide and in a mutual solvent consisting of dimethylformamide, dimethylsulfoxide or mixtures of the two. The mutual solvent may also comprise about 10 to 25 percent by volume of water. The products find utility as solvents, as monomers for formation of resins, as plasticizers in resin preparation, as vehicles for enamels and paints, etc.



3,461,157

**PROCESS FOR THE OXIDATION OF OLEFINS WITH A PLATINUM GROUP METAL CATALYST**  
Kenneth L. Olivier, Placentia, and William D. Schaeffer, Pomona, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed May 27, 1966, Ser. No. 553,454  
Int. Cl. C07c 67/00; B01j 11/04

U.S. Cl. 260—497 15 Claims  
In the oxidation of olefins in a liquid reaction medium comprising a platinum group metal catalyst and a redox agent, the improved method of regenerating the catalyst by removing a portion of the reaction medium, separating a tarry fraction from the medium, contacting the tarry fraction with oxygen in a combustion chamber and returning the inorganic ash product to the reaction zone.

3,461,158

**PROCESS FOR PREPARING SORBIC ACID AND ITS SALTS**

Lothar Hörnig, Frankfurt am Main, and Hermann Neu, Neu-Isenburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany  
No Drawing. Filed Nov. 16, 1965, Ser. No. 508,154  
Claims priority, application Germany, Dec. 1, 1964, F 44,575

Int. Cl. C07c 51/00, 51/09

U.S. Cl. 260—501.1 7 Claims  
An improvement in a process for preparing sorbic acid and its salts by reacting crotonaldehyde and ketene to form a polyester, mixing the polyester with a catalyst and an inert solvent, heating the mixture to a temperature of 150° to 300° C. to thermally split the polyester and produce a distillate containing sorbic acid and recovering sorbic acid or a salt from the distillate is disclosed. The improvement comprises carrying out the splitting of the polyester in the presence of a secondary or tertiary aliphatic or alicyclic amine which boils at a temperature above 100° C. at atmospheric pressure.

3,461,159

**PROCESS FOR PREPARING ALKENE-SULFONATES**

Heinz Wendt, Kelkheim, Taunus, and Heinz Schmitz, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany  
No Drawing. Filed Apr. 6, 1965, Ser. No. 446,069  
Claims priority, application Germany, Apr. 8, 1964, F 42,551

Int. Cl. C07c 139/00, 139/08

U.S. Cl. 260—513 5 Claims  
A process has been provided for producing alkene sulfonates having 6 to 22 carbon atoms by sulfonating  $\alpha$ -olefins with gaseous sulfur trioxide and hydrolyzing with an alkali metal hydroxide the sulfonated product by introducing it directly into an alkali metal hydroxide solution which solution contains an excess of alkali metal hydroxide at all times during the hydrolysis, the hydrolyzing solution showing an alkali reaction during hydrolysis.

3,461,160

**PREPARATION OF DICARBOXYLIC ACIDS**  
Eugene Dennis Wilhoit, Orange, Tex., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Filed Apr. 28, 1966, Ser. No. 545,833

Int. Cl. C07c 51/20, 51/32

U.S. Cl. 260—533 13 Claims  
A process for the oxidation of cyclic olefins to dicarboxylic acids such as 1,12-dodecanedioic acid which com-

prises contacting the olefins in a liquid phase reaction system comprising aqueous nitric acid and a catalyst which is a combination of osmium and vanadium at a temperature in the range 50 to 150° C. with an oxygen pressure in a range of 1–7 atmospheres.

3,461,161

**WATER-SOLUBLE TETRACYCLINE DERIVATIVES**

Werner Rogalski and Helmut Wahlig, Darmstadt, and Ludwig Hepding, Darmstadt-Eberstadt, Germany, assignors to E. Merck A.G., Darmstadt, Germany  
No Drawing. Filed Nov. 15, 1966, Ser. No. 594,402  
Claims priority, application Germany, Nov. 20, 1965, M 67,332

Int. Cl. C07c 103/19; A61k 21/00

U.S. Cl. 260—559 1 Claim  
N-[(1-carbamoyl-3-methylthiopropyl)aminomethyl]-tetracycline and pharmaceutically acceptable acid addition salts thereof exhibit high water solubilities and are especially valuable for parenteral administration.

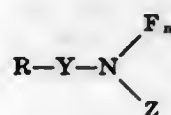
3,461,162

**PERFLUORINATED IMINES AND AMINES**

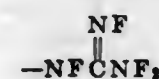
Robert J. Koshar, Lincoln Township, Washington County, and Donald R. Husted, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 19,111, Mar. 31, 1960. This application Mar. 30, 1961, Ser. No. 99,632

Int. Cl. C07c 119/00, 129/08, 17/10

U.S. Cl. 260—564 4 Claims  
1. A fluorinated oxidant compound selected from the group of compounds having the formula:

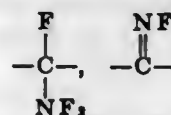


wherein R is a member of the group consisting of  $-\text{NF}_2$ ,  $-\text{NFCF}_3$ ,  $-\text{NFCF}_2\text{NF}_2$ ,  $-\text{NFCF}=\text{NF}$ ,  $-\text{NFCF}(\text{NF}_2)_2$ ,

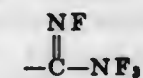


$=\text{NF}$ ,  $=\text{N}-\text{CF}_3$ ,  $=\text{NCF}_2\text{NF}_2$ ,  $=\text{NCF}=\text{NF}$  and  $=\text{NCF}(\text{NF}_2)_2$

radicals; Y is a linking radical of the group consisting of



and  $=\text{C}=\text{radicals}$ ; Z is a member of the group consisting of  $-\text{F}$ ,  $-\text{CF}_2\text{NF}_2$ ,  $-\text{CF}=\text{NF}_2$ ,



and  $-\text{CF}(\text{NF}_2)_2$  radicals; n is an integer from zero to one; R is a divalent radical only when Y is a linking radical of the group consisting of  $=\text{C}=\text{ and$



and n is zero when Y is  $=\text{C}=\text{.$

3,461,163

**SYNTHESIS OF DIMETHYL DIALLYL AMMONIUM CHLORIDE**

Jerry E. Boothe, Pittsburgh, Pa., assignor, by mesne assignments, to Calgon Corporation, a corporation of Delaware  
No Drawing. Filed Mar. 16, 1967, Ser. No. 623,558

Int. Cl. C07c 85/04, 87/46; C08f 3/86

U.S. Cl. 260—567.6 15 Claims  
A process for the synthesis of high purity dimethyl diallyl ammonium chloride is disclosed. The dimethyl diallyl ammonium chloride is prepared from allyl chloride, dimethyl amine and inorganic alkalis. Greatly increased purity may be obtained in the final product if a low allyl chloride concentration and a high dimethyl amine concentration are maintained for as long as possible during the reaction, while, at the same time, maintaining the pH within the range of 12 to 14. The pure dimethyl diallyl ammonium chloride may be polymerized to much higher molecular weight polymers than the prior art impure monomers could produce.

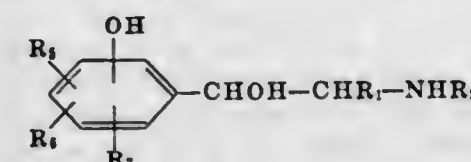
3,461,164

**1-HYDROXY-2-AMINO-1-PHENYL-ALKANES AND THE SALTS THEREOF**

Karl Schulte and Wolfgang Fruhstorfer, Darmstadt, Heinrich Muller, Pfungstadt, Hans Friebe, Darmstadt-Eberstadt, Hans Joachim Enekel, Darmstadt, and Josef Gillissen, Eschollbrücken, Germany, assignors to E. Merck Aktiengesellschaft, Darmstadt, Germany  
No Drawing. Filed Apr. 27, 1964, Ser. No. 364,355  
Claims priority, application Germany, Apr. 25, 1963, M 56,597; May 25, 1963, M 56,960

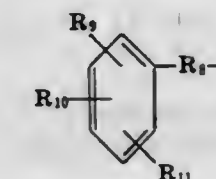
Int. Cl. C07c 91/18

U.S. Cl. 260—570.6 22 Claims  
1. A member selected from the group consisting of a compound and a physiologically compatible, non-toxic acid addition salt thereof, said compound being of the formula



wherein

R<sub>1</sub> is selected from the group consisting of hydrogen and alkyl of 1–4 carbon atoms;  
R<sub>2</sub> is selected from the group consisting of hydrogen, alkyl of 1–6 carbon atoms, hydroxyalkyl of 2–3 carbon atoms, phenoxyalkyl of 7–11 carbon atoms, and a radical of the formula



wherein

R<sub>3</sub> represents alkyl of 1–5 carbon atoms;  
R<sub>9</sub>, R<sub>10</sub> and R<sub>11</sub> are each selected from the group consisting of hydrogen, hydroxy, methoxy, ethoxy, and two of R<sub>9</sub>, R<sub>10</sub> and R<sub>11</sub> forming methylene dioxy;  
R<sub>8</sub> represents tertiary alkyl of 4–6 carbon atoms; and  
R<sub>6</sub> and R<sub>7</sub> are each selected from the group consisting of hydrogen, methyl and ethyl, and with the provision that when both R<sub>6</sub> and R<sub>7</sub> are hydrogen, the phenolic hydroxy group is in other than the 4'-position.

3,461,165

**ORTHO SUBSTITUTED TRIARYL TERTIARY AMINES**

Cecil L. Frye, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan  
No Drawing. Filed Feb. 11, 1966, Ser. No. 526,721

Int. Cl. C07c 87/50, 87/64

U.S. Cl. 260—571 10 Claims

Tertiary amines of the formulae R<sub>3</sub>N and



in which each R is an aryl or substituted aryl radical and R' is an arylene or substituted arylene radical, and all of the R and R' radicals have a hydroxy or alkoxy substituent ortho to the tertiary nitrogen atoms, are disclosed. These compounds can be used as antioxidants, chelating agents and for making thermally stable polymers.

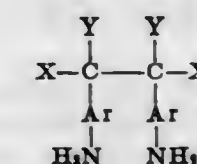
3,461,166

**COORDINATION COMPOUNDS OF ALKALI METAL HALIDES AND RACEMIC DIARYL DIAMINES**

Nicasio P. Marullo, Clemson, S.C., assignor to Research Corporation, New York, N.Y., a nonprofit corporation  
No Drawing. Filed Mar. 10, 1966, Ser. No. 533,245

Int. Cl. C07c 87/50

U.S. Cl. 260—579 4 Claims  
Solid alkali metal coordination compounds of water soluble alkali metal salts of monobasic acids and racemic diamines are made by contacting an aqueous solution of the alkali metal salts with a solution of a racemic diamine compound of the formula



wherein Ar in an aryl ring, X is alkyl and Y is alkyl or hydrogen, the X's being different from the Y's. The formation of the new coordination compounds provides a method for the separation of alkali metal from alkaline earth metals.

3,461,167

**PROCESS FOR MAKING HEXAMETHYLENE-DIAMINE FROM ADIPONITRILE**

Oscar R. Buehler, George P. Keister, and Joseph F. Long, Victoria, Tex., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Sept. 19, 1967, Ser. No. 668,919

Int. Cl. C07c 85/12, 87/14

U.S. Cl. 260—583 10 Claims  
Hydrogenation of adiponitrile to hexamethylene-diamine in the presence of ammonia and hydrogenation catalyst is conducted in a plurality of reaction zones arranged in series, with the ammonia present in the first reaction zone of the series being passed serially to each subsequent reaction zone.

3,461,168

**SYNTHESIS OF BROMOTHIOPHENOLS**

Robert J. Laufer, Pittsburgh, Pa., assignor to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Aug. 8, 1966, Ser. No. 570,715

Int. Cl. C07c 149/34

U.S. Cl. 260—608 7 Claims  
In the synthesis of bromothiophenols wherein a brominated diphenyl disulfide is first made from a thiophenol and then reduced to the bromothiophenol, the improvement in the step of making the brominated diphenyl di-



sulfide which consists in conducting the bromination of an ortho-methylated phenol by hydrogenation is improved diphenyl disulfide in the presence of benzene.

3,461,169

# SOLVENT EXTRACTION OF POLYMERIC GLYCOLS USING ACETONITRILE

Burns Davis and Herbert Ralph Lyon, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

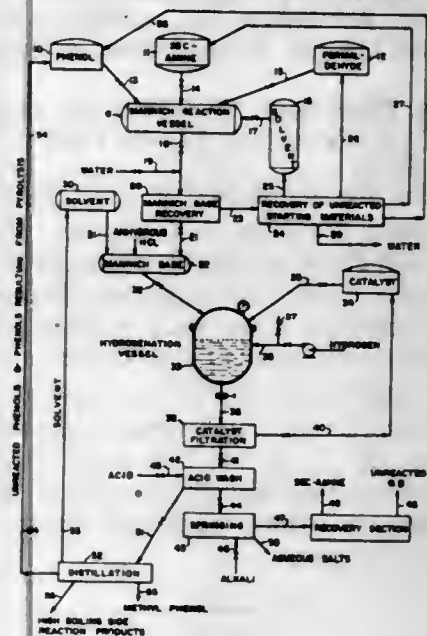
No Drawing. Filed July 28, 1967, Ser. No. 656,646

Int. Cl. C08f 1/94

U.S. Cl. 260—611

8 Claims

Polymeric glycol having a number average molecular weight of 600–12,000 such as poly(tetramethylene ether) glycol is extracted with acetonitrile to remove a lower molecular weight fraction containing molecules having a molecular weight below about 1,500. A repetitive batch type extraction process is useful, or the acetonitrile and polymeric glycol can be continuously contacted utilizing concurrent or countercurrent flow, or one phase can be passed through the other phase while it is retained in the extraction zone.



by first converting the Mannich base to its hydrochloride.

3,461,170

# HYDROXYLATION OF AROMATIC COMPOUNDS

Louis Schmerling, Riverside, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Nov. 8, 1965, Ser. No. 506,850

Int. Cl. C07c 37/00, 39/00

U.S. Cl. 260—613

9 Claims

Nuclear hydroxylation of a nuclearly substituted aromatic compound by treating the compound with  $H_2O_2$  in the presence of substantially anhydrous HF at a temperature of  $-10^\circ$  to  $100^\circ$  C.

3,461,171

# PROCESS FOR THE MANUFACTURE OF PARA-FORMALDEHYDE

Rolf Schumacher, Berlin, Germany, assignor to Karl Fischer, Apparate- u. Rohrleitungsbau, Berlin-Borsingwalde, Germany

Filed May 19, 1967, Ser. No. 639,671

Int. Cl. C07c 47/04

U.S. Cl. 260—615.5

1 Claim

The continuous rectification of aqueous formaldehyde solutions under reduced pressure, to produce paraformaldehyde therefrom, is carried out in two stages wherein the formaldehyde solution is fed to a first rectifying column operated at a pressure of 100–150 mm. Hg or higher, and the resulting vapor mixture is fed to a second column operated at considerably lower pressure of about 20–30 mm. Hg to yield a strongly concentrated paraformaldehyde product.

3,461,172

# HYDROGENATION OF ORTHO-PHENOLIC MANNICH BASES

Edward P. Previc, Gainesville, Fla., assignor to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Delaware

Continuation-in-part of application Ser. No. 325,243, Nov. 21, 1963. This application Nov. 22, 1966, Ser. No. 600,344

Int. Cl. C07c 37/10, 37/12

U.S. Cl. 260—621

5 Claims

The conversion of an ortho-phenolic Mannich base to

3,461,173

# PREPARATION OF SUBSTITUTED o-NITROPHENOLS

Henry J. Peterson, Wilmington, Del. assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Nov. 12, 1963, Ser. No. 323,069

Int. Cl. C07c 37/00, 79/26

U.S. Cl. 260—622

4 Claims

1. Method for preparing mono-chlorinated o-nitrophenols which comprises contacting a mono-chlorine substituted nitrobenzene with powdered potassium hydroxide wherein the weight ratio of powdered potassium hydroxide to halogen substituted nitrobenzene is in the range of from 2:1 to 25:1 at a temperature in the range of  $0^\circ$  C. to  $100^\circ$  C. for a period of time in the range of 0.1 hour to 72 hours, whereby the mono-chlorine substituted nitrophenol is converted to the mono-potassium salt of mono-chloronitrophenol, adding water to the reaction mass at a temperature in the range of  $0^\circ$  C. to  $50^\circ$  C., acidifying the resulting solution and thereafter separating and recovering said mono-chlorinated o-nitrophenol product.

3,461,174

# PROCESS FOR PREPARING 2,5-DICHLORO-4-BROMOPHENOL

Delbert L. Hanna, Oak Park, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,312

Int. Cl. C07c 39/27

U.S. Cl. 260—623

10 Claims

A process for the production of 2,5-dichloro-4-bromophenol which comprises hydrolyzing 1,4-dibromo-2,5-dichlorobenzene.

3,461,175

# PREPARATION OF 2,6-DI-TERT-BUTYLPHENOL

Metro D. Kulik and Robert J. Laufer, Pittsburgh, Pa., assignors, by mesne assignments, to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Delaware

Filed July 28, 1965, Ser. No. 475,514

Int. Cl. C07c 37/14, 39/06

The portion of the term of the patent subsequent to Dec. 24, 1985, has been disclaimed

U.S. Cl. 260—624

1 Claim

The preparation of 2,6-di-tert-butylphenol from 2-tert-butylphenol by first butylating the 2-tert-butylphenol to form a product containing 2,6-di-tert-butylphenol, 2,4-di-tert-butylphenol and 2,4,6-tri-tert-butylphenol, and then

selectively reconverting the 2,4-di-tert-butylphenol and 2,4,6-tri-tert-butylphenol contained in the product to 2-tert-butylphenol for recycling to the butylation step.

3,461,176

# PURIFYING ALCOHOLS BY DEHYDRATING POLYHYDRIC ALCOHOLS CONTAINED THEREIN

Allan J. Lundeen and Charles M. Starks, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed June 30, 1966, Ser. No. 561,719

Int. Cl. C07c 29/24

U.S. Cl. 260—643

7 Claims

Polyols in admixture with primary mono-alcohols prepared by the oxidation of aluminum alkyls followed by hydrolysis are selectively dehydrated by contacting said alcohols in vapor state with a neutral oxide of a Group III-B element at  $200^\circ$  to  $500^\circ$  C. to give a product free of polyols.

3,461,177

# PROCESS TO CONVERT NORMAL-HEXANE TO NAPHTHENES

E. O. Box, Jr., and Harold J. Hepp, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 681,562, Nov. 8, 1967, which is a continuation-in-part of application Ser. No. 615,078, Feb. 10, 1967. This application Dec. 26, 1967, Ser. No. 693,192

Int. Cl. C07c 5/18, 5/30

U.S. Cl. 260—673.5

2 Claims

Alkanes, cycloalkanes, arylalkanes, and certain substituted alkanes, and particularly n-butane and n-hexane, diluted with steam, are dehydrogenated (in a single stage or in two stages) in the absence of free  $O_2$  at high conversion and selectivity to less saturated compounds with a catalyst composite including one or more metals of the platinum group and nickel deposited on a support such as alumina, silica, or a Group II aluminate spinel which is alkalinized with an alkali or alkaline earth metal compound such as  $K_2CO_3$  or BaO to impart a pH of at least 8 to the composite. Normal-hexane over 0.5% Pt on zinc aluminate for 24.6% conversion per pass at 70 p.s.i.g.,  $1010^\circ$  F., and 12.9 steam-to-hexane mol ratio yielded 24% lighter than  $C_5$  (including  $CO_2$  and  $H_2$ ), 31%  $C_6$  olefins, 30.5% benzene, and 14.7% naphthenes.

3,461,178

# PREPARATION OF NITROALKANES FROM ALKYL NITRATES AND ALKALI METAL NITRITES

Gustave Bryant Bachman, Lafayette, Ind., and Neil W. Connon, Rochester, N.Y., assignors to Purdue Research Foundation, Lafayette, Ind., a corporation of Indiana

No Drawing. Filed Dec. 18, 1967, Ser. No. 691,203

Int. Cl. C07c 79/04

U.S. Cl. 260—644

10 Claims

A process for preparing nitroalkanes by reacting a primary or secondary alkyl nitrate and an alkali metal nitrite in the presence of an inert solvent.

3,461,179

# METHOD OF PREVENTING THE FORMATION OF POPCORN POLYMER OF CHLOROPRENE

Akio Oshima, Kobe, Shinichi Sakurai, Takasago, and Tetsuo Matsuo, Kobe, Japan, assignors to Kanaguchi Chemical Industry Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed July 6, 1967, Ser. No. 651,385

Claims priority, application Japan, Sept. 7, 1966, 41/53,980

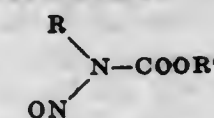
Int. Cl. C07c 17/42, 101/12, 21/20

U.S. Cl. 260—652.5

5 Claims

Method of preventing the formation of popcorn poly-

mer of chloroprene by adding to chloroprene monomer, a compound having the formula



where R, R' represent alkyl radicals, and retaining the mixture in a nitrogen atmosphere.

3,461,180

# HALOGENATION OF ETHYLENE BY CONTACT WITH AQUEOUS CUPRIC-CUPROUS CHLORIDE SOLUTION

Heinz Heinemann and Kenneth D. Miller, Jr., Princeton, N.J., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Continuation-in-part of application Ser. No. 199,329, June 1, 1962. This application Jan. 9, 1964, Ser. No. 336,776

The portion of the term of the patent subsequent to Oct. 26, 1982, has been disclaimed

Int. Cl. C07c 17/04

U.S. Cl. 260—659

9 Claims

1. The process for chlorinating ethylene which comprises contacting ethylene at a temperature between about  $139^\circ$  C. and about  $180^\circ$  C. with an aqueous solution of cupric-cuprous chloride wherein the total copper concentration is maintained between 5.5 moles per liter and saturation and the cupric chloride mole fraction is maintained between 0.74 and 0.985.

3,461,181

# PROCESS FOR HYDROGENATION

Masaki Sato and Tadashi Miyata, Kamakura-shi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Jan. 25, 1967, Ser. No. 611,582

Claims priority, application Japan, Jan. 27, 1966, 41/4,315; Nov. 4, 1966, 41/72,356, 41/72,358

Int. Cl. C07c 5/10, 5/14

U.S. Cl. 260—667

6 Claims

A process for hydrogenating a nucleus of an aromatic compound, which comprises contacting the aromatic compound e.g. benzene and hydrogen with a novel hydrogenating catalyst at a temperature of  $50$ – $300^\circ$  C. The catalyst comprising 2–60% by weight of Ni, Fe, Co, or Cu, 2–80% by weight of sodium fluoride or fluoride of alkaline earth metal, and 12–96% by weight of silica or alumina.

3,461,182

# PRODUCTION OF HIGH PURITY CYCLOHEXANE

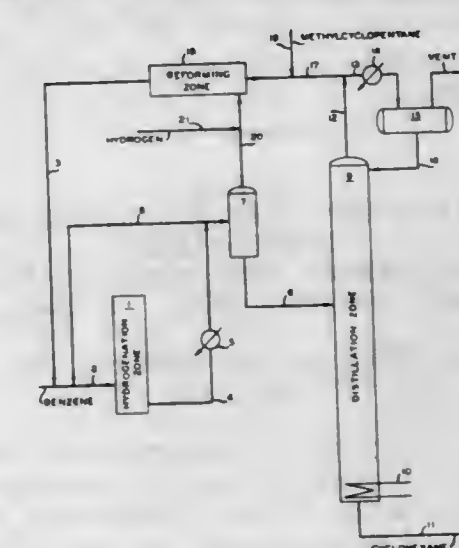
Lewis E. Drehman, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed May 1, 1967, Ser. No. 634,952

Int. Cl. C07c 5/10, 5/14

U.S. Cl. 260—667

5 Claims



Benzene is separated from a mixture containing cyclo-



hexane by distilling the mixture in the presence of methylcyclopentane. Also, an integral process whereby benzene is hydrogenated to cyclohexane in the presence of methylcyclopentane which forms an azeotrope with benzene in the hydrogenation effluent and benzene is separated from cyclohexane by distillation. Additional methylcyclopentane is added to the azeotrope passing overhead from the distillation step, the combined stream is reformed to convert the methylcyclopentane therein to benzene and the reformat is recycled to the hydrogenation step.

3,461,183

**CATALYTIC DEHYDROGENATION PROCESS**  
Harold J. Hepp and E. O. Box, Jr., Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 615,078, Feb. 10, 1967. This application Nov. 8, 1967, Ser. No. 681,562

Int. Cl. C07c 5/18, 5/30

U.S. Cl. 260—680

11 Claims

Alkanes, cycloalkanes, arylalkanes, and certain substituted alkanes, and particularly n-butane, diluted with steam, are dehydrogenated (in a single stage or in two stages) in the absence of free  $O_2$  at high conversion and selectivity to less saturated compounds with a catalyst composite including one or more metals of the platinum group and nickel deposited on a support such as alumina, silica, or a Group II aluminate spinel which is alkaliized with an alkali or alkaline earth metal compound such as  $K_2CO_3$  or  $BaO$  to impart a pH of at least 8 to the composite. Catalysts using platinum group metals are found to have longer life on-stream when prepared from compounds of these metals having no nonvolatile radicals.

3,461,184

**PROCESS FOR THE PRODUCTION OF OLEFIN CODIMERS FROM ALKYL ALUMINUM CHLORIDES**

Russell G. Hay, Gibsonia, and John G. McNulty and William L. Walsh, Glenshaw, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 15, 1966, Ser. No. 601,866  
Int. Cl. C07c 3/18, 3/56, 11/00

U.S. Cl. 260—683.15

16 Claims

The process comprises treating an alkyl aluminum chloride with a first olefin having at least three carbon atoms in the molecule to form a monoaddition product thereof in the presence of a titanium chloride. After deactivation or removal of the titanium chloride, the addition product is transalkylated with a second olefin having at least two carbon atoms in the molecule, said first and second olefins having a different number of total carbon atoms per molecule. The resultant codimer olefin has a carbon number equal to the carbon number of the alkyl substituent on said alkyl aluminum chloride plus the carbon number of said first olefin.

3,461,185

**HEAT ACTIVATED CURABLE ORGANOSILICON COMPOSITION**

Eric D. Brown, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Jan. 10, 1968, Ser. No. 696,706  
Int. Cl. C08g 31/10, 31/22

U.S. Cl. 260—825

10 Claims

A curable organosilicon composition of an organosilicon polymer containing at least two monovalent hydrocarbon radicals having aliphatic unsaturation, an organosilicon compound having at least two silicon-bonded hydrogen atoms, a platinum catalyst and tetramethylguanidine carboxylate is stable at room temperatures but cures

when heated. The organosilicon composition is curable to rubbers and resins.

3,461,186

**RAPID-CURING RESIN COMPOSITIONS**  
Francis R. Gallano, Prairie Village, and Robert W. Hill, Leawood, Kans., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Nov. 2, 1966, Ser. No. 591,435  
Int. Cl. C08f 29/00; C08g 37/32, 37/34

U.S. Cl. 260—850

6 Claims

Rapid-curing resin compositions for use in making transparent, glossy durable coatings, particularly on paper-board cartons, comprise, for example, a combination of a styrene-methacrylaldehyde-alkyl methacrylate interpolymers, urea-formaldehyde, or a melamine-formaldehyde aminoplast resin and a benzenedicarboxylic acid polyester resin. A substantial proportion of aldehyde substituent groups in the interpolymers assures rapid curing characteristics.

3,461,187

**GRAFT COPOLYMERS OF POLYCARBONATE ON AN ADDITION POLYMER BACKBONE**

James E. Cantrill, Lenox, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 2, 1965, Ser. No. 511,243

Int. Cl. C08g 17/14, 39/10

U.S. Cl. 260—873

4 Claims

Graft copolymers of aromatic polycarbonates on a polymeric backbone are prepared by polymerizing the polycarbonate in the presence of a polymer of an ethylenically unsaturated monomer having pendant carbonate precursor groups such as hydroxyl, carboxyl or amine. A preferred polymer backbone is a butyl methacrylate-hydroxyl ethyl methacrylate copolymer.

3,461,188

**POLYBLEND PREPARED BY POLYMERIZING VINYL MONOMERS IN THE PRESENCE OF CROSS-LINKED RUBBER**

Massimo Baer, Longmeadow, Mass., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,904

Int. Cl. C08f 29/50, 29/56, 41/10

U.S. Cl. 260—878

10 Claims

Disclosed herein is a process for the mass polymerization of certain monomers in the presence of unsaturated rubbers. These rubbers are cross-linked after phase inversion occurs yielding products, also claimed, having improved physical and mechanical properties, such as impact strength.

3,461,189

**PROCESS FOR PREPARING SULFENYL CHLORIDES AND ORGANIC THIONOPHOSPHORUS CHLORIDES**

Roger M. Nagel, Pennington, N.J., assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 28, 1965, Ser. No. 505,457

Int. Cl. C07f 9/20, 9/52; C07c 145/00

U.S. Cl. 260—986

9 Claims

Process for preparing organic sulfur- and phosphorus-containing acid chloride and sulfenyl chlorides by the reaction of a sulfur- and phosphorus-containing ester with sulfuryl chloride. The sulfenyl chloride is a useful chemical intermediate, e.g., it may be reacted in situ with olefinic compounds to form chlorothioethers. The chlorothioethers are useful as extreme pressure additives for lubricating compositions.

3,461,190

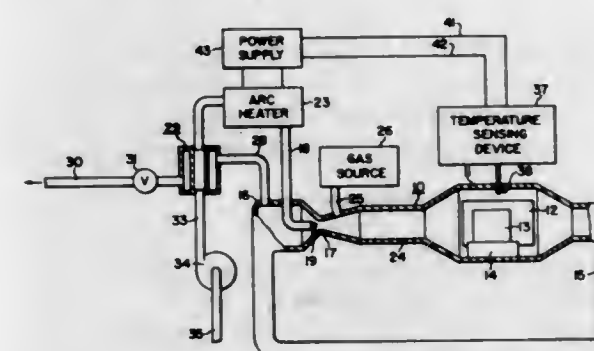
**METHOD OF AND APPARATUS FOR ESTABLISHING AND MAINTAINING AN ATMOSPHERE CONTROLLED AS TO PRESSURE, TEMPERATURE, GAS CONTENT AND RATE OF GAS FLOW, AND CLOSED AND SEMI-CLOSED ARC HEATER LOOP APPARATUS FOR USE THEREIN**

George A. Kemeny, Franklin Township, Westmoreland County, and Peter F. Klenast, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Original application Aug. 20, 1964, Ser. No. 390,898, now Patent No. 3,371,189. Divided and this application July 24, 1967, Ser. No. 666,529

Int. Cl. F27b 21/00; F23i 9/04; F24h 3/14  
U.S. Cl. 263—52

10 Claims



A gas is compressed at a desired rate, and the compressed gas heated to a desired temperature. A closed path is provided for the flow of the heated gas to provide an atmosphere in which metal may be worked, and a large portion of the gas is recycled through the closed path, while a relatively small portion is removed from the closed path at a rate sufficient to maintain substantially constant pressure and gas flow conditions. The method may include the additional step of admitting other gas to the closed path to provide a gas mixture, and may include the further step of utilizing heat from the removed portion to preheat the gas to be compressed and further heated.

3,461,191

**ELASTIC INSULATING BODIES OF INORGANIC FIBER MATERIAL AND METHOD OF PRODUCING SUCH BODIES**

Ralph David Dale, Shamley, Green, Surrey, England, assignor, by mesne assignments, to Protex Corporation Limited, New Nassau, Bahama Islands, a corporation of the Bahama Islands

No Drawing. Filed Sept. 17, 1965, Ser. No. 488,235

Int. Cl. B29d 27/04

U.S. Cl. 264—41

16 Claims

An elastically compressible dry foam material is made by dispersing fibrous asbestos in a liquid, foaming the dispersion, molding the foamy dispersion, and then drying it at 40 to 100° C. Subsequent tempering above 200° C. results in a bulk-elastic material of 0.002 to 0.3 g./cm.<sup>3</sup> specific gravity which is heat and sound insulating, non-flammable and chemically stable.

3,461,192

**APPARATUS AND METHOD FOR OBTAINING TEST CORES**

Joseph R. Di Stasio, 710 Shore Road,

Spring Lake Heights, N.J. 07762

Filed Dec. 22, 1966, Ser. No. 603,878

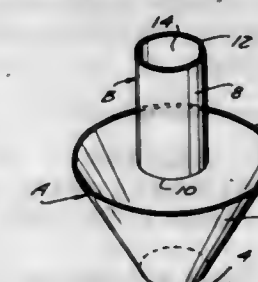
Int. Cl. E04b 1/16; B28b 7/34

U.S. Cl. 264—31

16 Claims

Obtaining test cores set in situ from concrete floors or the like by using inner and outer members of different

shapes, the inner member being essentially cylindrical and producing the test core and the outer member having



outwardly and upwardly flaring sides and facilitating the removal of the test core from the floor.

3,461,193

**NOVEL PROCEDURE FOR STARTING THE FLASH-EXTRUSION OF EXPANDABLE RESIN COMPOSITIONS**

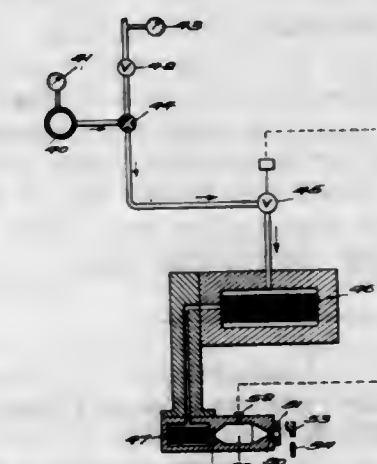
Robert John Gillard, Richmond, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Jan. 4, 1967, Ser. No. 607,304

Int. Cl. B29f 3/06

U.S. Cl. 264—53

2 Claims



In flash extrusion of foams, sponges and plexifilamentary strands a polymer solution at high temperature and pressure is extruded into a region of reduced pressure, resulting in flashing of the solvent and solidification of the polymer. In starting up, inert gas under pressure is supplied to the enclosed path between the solution supply valve and the extrusion orifice to prevent premature flashing of the solvent and solidification of the polymer.

3,461,194

**METHOD AND MEANS FOR CASTING SYPHON-JET TYPE TOILET BOWLS**

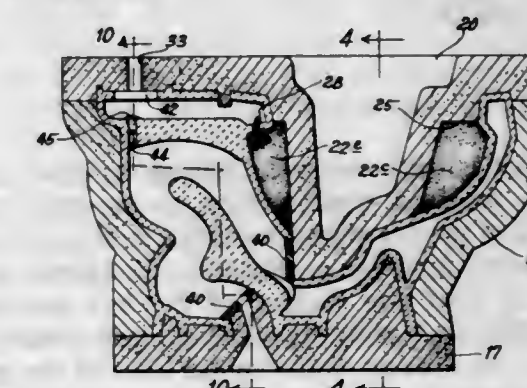
Fred C. Alexander, New Castle, Pa., assignor to Universal Rundle Corporation, New Castle, Pa., a corporation of Delaware

Filed Apr. 17, 1967, Ser. No. 631,279

Int. Cl. B28b 1/26; B29c 1/12; B22c 9/22

U.S. Cl. 264—86

9 Claims



A method and mold for casting syphon-jet type toilet bowls wherein the bowl is cast complete, including flush-

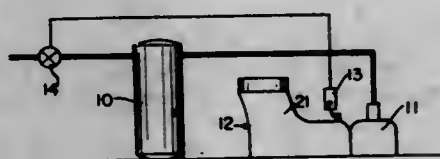


ing ring, in a single operation without any of the usual stick-ups, characterized by the use of small separate core pieces disposed adjacent to the cast ring and carrying flexible tenuous elements which form the usual discharge passages in the cast ring.

### 3,461,195 SPRAYING METHOD AND APPARATUS TO LUBRICATE PUNCH SURFACES OF TABLETTING MACHINES

Carlo Sebastiani, Viale Astronomia 5, Rome, Italy  
Filed Apr. 19, 1966, Ser. No. 543,701  
Claims priority, application Italy, June 4, 1965, 12,363/65

Int. Cl. B29b 1/02; B29c 1/04  
U.S. Cl. 264—109 6 Claims

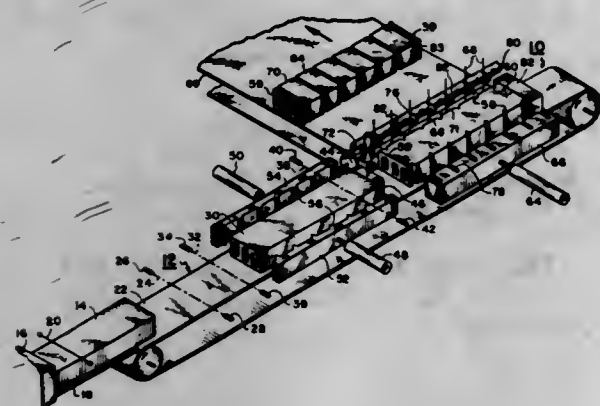


A lubricating apparatus for applying lubricating powder to the punches of a single station tableting machine operating in timed relation with the feed chamber of the machine to apply the lubricating powder to the lower punch before the compression space is filled with the tablet forming blend and to the top of the tablet forming blend in the compression space after the blend has been fed into the compression space.

### 3,461,196 METHOD FOR THE MANUFACTURE OF BRICK AND TILE

Arnold G. Bowles, 7 Elm St., Warren, Pa. 16365  
Original application Mar. 19, 1964, Ser. No. 354,498, now Patent No. 3,350,757, dated Nov. 7, 1967. Divided and this application Sept. 14, 1967, Ser. No. 667,753

Int. Cl. B28b 11/16  
U.S. Cl. 264—148 5 Claims



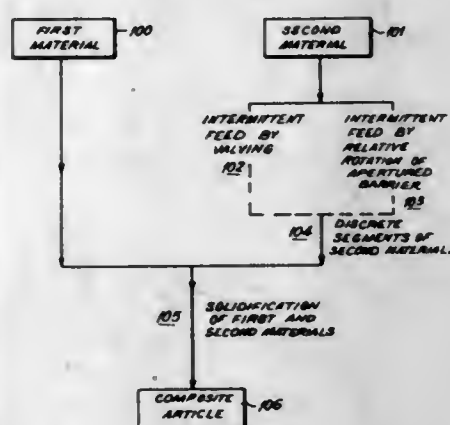
Method for cutting segments having at least one cut edge with a recessed configuration to prevent breaking and chipping of the cut edge comprising cutting a bar from a clay column, forming a plurality of spaced parallel grooves in at least one surface of the bar and moving the bar relative to a plurality of stationary cutting wires having the same spacing as the center lines of the grooves to substantially bisect the grooves and to cut the bar into segments having at least one edge with said recessed configuration.

### 3,461,197 METHOD FOR PRODUCING COMPOSITE ARTICLES

Jerome H. Lemelson, 8B Garfield Apartments, Metuchen, N.J. 08840

Continuation-in-part of application Ser. No. 651,749, Apr. 9, 1957. This application Mar. 22, 1963, Ser. No. 267,262

Int. Cl. B29f 1/12; B29c 9/00  
U.S. Cl. 264—172 5 Claims

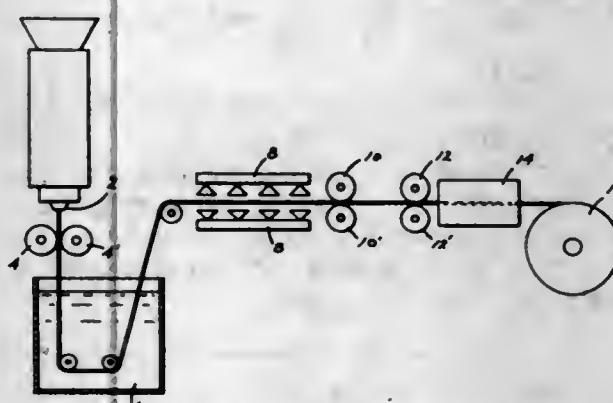


A method for making composite, shaped articles, involving feeding a first fluent material through an orifice into an adjacent mold or die, while simultaneously intermittently feeding discrete portions of a second fluent material through a number of orifices disposed concentrically of the first and into the adjacent mold or die, the second material thus forming an array of discrete filamentary segments dispersed in and contiguous with the first material as it passes into the mold or die.

### 3,461,198 METHOD OF PREPARING UNIAXIALLY ORIENTED, FLAT PROPYLENE-ETHYLENE COPOLYMER ARTICLES

Daniel J. Ryan, Chester, Pa., and John J. Armstrong, Jr., Pennsauken, N.J., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

Filed May 27, 1965, Ser. No. 459,175  
Int. Cl. D01d 5/10, 5/12; D01f 7/06  
U.S. Cl. 264—178 3 Claims

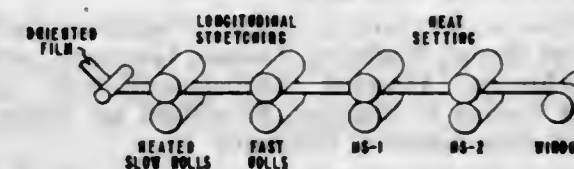


A uniaxially oriented, high tenacity packaging strap comprising a resinous, substantially isotactic copolymer of at least 95 wt. percent of propylene and at least 0.5 wt. percent ethylene, and a method for its manufacture, are disclosed herein.

### 3,461,199 PROCESS FOR IMPROVING DIMENSIONAL STABILITY OF TENSILIZED POLYESTER FILM

David Robert Campbell, Florence, S.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed May 3, 1966, Ser. No. 547,161  
Int. Cl. B29c 25/00  
U.S. Cl. 264—289 2 Claims



Asymmetrically biaxially oriented polyethylene terephthalate film is heat-set in two stages, the heat-setting temperature in the second stage being at least 5° C. below the heat-setting temperature of the first stage.

### 3,461,200 PROCESS FOR THE RECOVERY OF POLYARTHRITIS ANTIGEN

Hartwig Mathies, Haselweg 3, Ottobrunn, near Munich, Germany

No Drawing. Continuation-in-part of application Ser. No. 300,182, Aug. 6, 1963. This application Aug. 17, 1966, Ser. No. 572,928  
Claims priority, application Germany, Aug. 14, 1962, M 53,892  
Int. Cl. A61k 23/00

U.S. Cl. 424—101 7 Claims  
A process is provided for recovering RA-factor from serum in which  $\gamma$ -globulin RA-factor agglutinate, precipitated by means of a flocculating agent, is treated by means of a pharmaceutically acceptable buffer solution of pH ranging from about 7.8 to 9.1 at a temperature of about 62° C. to 66° C. for a time sufficient to form a supernatant solution containing said RA-factor without substantially adversely affecting its activity. The solution is separated from the precipitate by centrifuging, while the solution is maintained at the temperature, the RA-factor then being recovered from the supernatant solution.

### 3,461,201 GRANULAR PESTICIDAL COMPOSITIONS CONTAINING A FINELY DIVIDED CARBON SUCH AS GRAPHITE

William J. Champion, 12439 S. 69th Court, Palos Heights, Ill. 60463

No Drawing. Filed Feb. 15, 1965, Ser. No. 432,829  
Int. Cl. A01n 17/08, 9/36

U.S. Cl. 424—125 5 Claims  
Granular pesticidal compositions comprising a pesticidal material as, for instance, aldrin or dieldrin, and a carrier therefor, such as attapulgite granules, said granules being coated with a small percentage of graphite whereby the presence of the compositions on a surface may be readily observable to the naked eye.

### 3,461,202 COMPOSITION AND PROCESS

Homer L. Robson, Hamden, Conn., and Roy H. Hodges, Welling, England, assignors to Olin Mathieson Chemical Corporation

Filed July 28, 1966, Ser. No. 568,380  
Int. Cl. C02b 1/36; A61l 13/00  
U.S. Cl. 424—149 6 Claims  
Available chlorine in a body of water is stabilized against the decomposing action of sunlight by adding to the body of water suitable amounts of cerium ion and a sequestrant therefor.

### 3,461,203 METHOD FOR PREVENTING PUERPERAL PARESIS

Nils E. Ringarp, Tvaaker, Sweden, assignor to Aktiebolaget Leo (A/B Leo), Halsingborg, Sweden  
No Drawing. Filed Dec. 28, 1964, Ser. No. 421,625  
Int. Cl. A61k 27/00

U.S. Cl. 424—153 9 Claims  
Method for the prophylactic treatment of animals against parturient paresis comprising orally administering to said animals an effective quantity of a composition comprising an aqueous solution of calcium chloride in a non-toxic physiologically acceptable gel carrier having a viscosity of at least 100 centipoises in a plurality of doses, each daily dose comprising at least about 25 grams of calcium chloride, given within a period beginning approximately two weeks before parturition and ending approximately seven days after parturition, the majority of said total dosage being given before parturition.

### 3,461,204 METHOD OF TREATING HEPATIC ENCEPHALOPATHY

Johannes Bircher, Zurich, Switzerland, assignor, by mesne assignments, to U.S. Phillips Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 20, 1967, Ser. No. 632,193  
Int. Cl. A61k 27/00

U.S. Cl. 424—180 3 Claims  
Reduction in symptoms of hepatic encephalopathy by the oral administration of lactulose.

### 3,461,205 PROCESS OF EXTRACTING PROTEINS FROM POTATOES

Viktor Mansfeld, Josef Hladovec, and Zdenka Horakova, Prague, Czechoslovakia, assignors to Spofa Sdruzeni Podniku pro Zdravotnickou Vyrobu, Prague, Czechoslovakia

No Drawing. Continuation-in-part of application Ser. No. 189,721, Apr. 24, 1962. This application Apr. 20, 1966, Ser. No. 543,796

Claims priority, application Czechoslovakia, Apr. 26, 1961, 2,576/61  
Int. Cl. C07g 7/022; A61k 27/00

U.S. Cl. 424—195 15 Claims  
1. A method of preparing a substance having anti-phlogistic properties, comprising the steps of  
(1) extracting pulped raw potatoes with water containing alkali metal hydroxide in an amount sufficient to maintain a pH of between 8 and 9, so as to form a slightly alkaline aqueous extract including dissolved proteinaceous material derived from said pulped potatoes;  
(2) acidifying said extract to a pH of between 2 and 3, thereby causing formation of a precipitate;  
(3) removing said precipitate from the residual extract;  
(4) adjusting the pH of the thus obtained residual, precipitate-free extract to between 4.3 and 4.8, thereby causing formation of another precipitate;  
(5) separating the last formed precipitate from the residual extract;  
(6) adding to the thus-obtained precipitate-free residual extract a salt which is soluble therein and capable of salting out a dissolved proteinaceous fraction of said extract so as to precipitate said proteinaceous fraction;  
(7) recovering the thus precipitated proteinaceous fraction;  
(8) dissolving the thus recovered proteinaceous fraction in a dilute aqueous solution of an ammonia salt maintained at a pH of between 2 and 3;



- (9) passing the thus-obtained solution containing said recovered proteinaceous fraction through a column of neutral anhydrous aluminum oxide;
- (10) adjusting the pH of the effluent from said column to between 3 and 4;
- (11) adding to the thus adjusted effluent a salt soluble therein and capable of salting out a proteinaceous fraction from said effluent, so as to precipitate said proteinaceous fraction;
- (12) recovering the last formed precipitate;
- (13) dissolving the recovered precipitate in water;
- (14) indirectly heating the last formed solution at boiling water bath temperature so as to precipitate a protein fraction therefrom;
- (15) separating the thus precipitated protein fraction from said solution;
- (16) dialyzing the thus-formed precipitate-free solution against distilled water; and
- (17) dehydrating the thus-formed precipitate-free solution,
- thereby obtaining a residue consisting of said substance having antiphlogistic properties.

3,461,206

# COMPOSITIONS CONTAINING A SULFANILAMIDE AND A 2,4-DIAMINO-5-(2',4',5'-TRISUBSTITUTED-BENZYL)PYRIMIDINE

Max Hoffer and Milan Mitrovic, Nutley, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 410,793, Nov. 12, 1964. This application June 2, 1965, Ser. No. 460,834

Int. Cl. A61k 27/00

U.S. Cl. 424-229

20 Claims

Compositions comprising a 2,4-diamino-5-(2',4',5'-trisubstitutedbenzyl)pyrimidines and a sulfanilamide such as sulfadimethoxine, sulfaquinoxaline or sulfamethoxazole are described. The aforementioned compositions are useful as antiseptic and antibacterial agents.

3,461,207

# 16 $\alpha$ -CHLORO-1,4-PREGNADIENE COMPOSITIONS AND PROCESS FOR TREATING INFLAMMATORY CONDITIONS

Robert D. Birkenmeyer, Comstock Township, Kalamazoo County, and Fred Kagan, Barney J. Magerlein, and William P. Schneider, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 202,403, June 14, 1962. This application Aug. 6, 1965, Ser. No. 477,967

The portion of the term of the patent subsequent to June 16, 1981, has been disclaimed

Int. Cl. A61k 17/06

U.S. Cl. 424-243

6 Claims

16 $\alpha$ -chloro-1,4-pregnadiene compounds prepared in solid and liquid unit dosage form for oral, topical, and parenteral administration and process for the treatment of inflammatory conditions.

3,461,208

# INDOMETHACIN COMPOSITIONS

Charles A. Winter, Blue Bell, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 328,578, Dec. 6, 1963, which is a continuation-in-part of application Ser. No. 131,093, Aug. 14, 1961. This application Nov. 1, 1966, Ser. No. 591,113.

Int. Cl. A61k 17/16, 27/00

U.S. Cl. 424-243

2 Claims

Dexamethasone (or a like anti-inflammatory adrenocortical steroid is combined with indomethacin (or a like

anti-inflammatory indole) in a single pharmaceutical dosage form to make it possible to administer a smaller amount of the steroid.

3,461,209

# SEED PROTECTANT COMPOSITIONS CONTAINING MIXTURES OF 3,3,4,4-TETRACHLOROTETRAHYDROTHIOPHENE WITH OTHER FUNGICIDES

Heinz Frensch and Helmut Goebel, Frankfurt am Main, and Kurt Hartel, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 483,314, Aug. 27, 1965. This application Aug. 23, 1966, Ser. No. 574,310

Claims priority, application Germany, Sept. 1, 1964, F 43,873; Jan. 17, 1966, F 48,190

Int. Cl. A01n 21/00, 9/12

U.S. Cl. 424-274

13 Claims

Seed protectant composition containing, as the active ingredients, a mixture of (A) 3,3,4,4-tetrachlorotetrahydrothiophene-1,1-dioxide with (B) pentachloronitrobenzene, tetrachloronitrobenzene, tetramethylthiuramdisulfide, N - trichloromethylmercapto - tetrahydrophthalimide, hexachlorobenzene, manganese ethylene-bis-dithiocarbamate, zinc ethylene-bis-dithiocarbamate or a combination thereof, components A and B being present in a weight ratio of 1:1 to 1:10.

3,461,210

# REDUCTION OF INTRAOCULAR PRESSURE

Spencer M. Fossel, Morristown, N.J., assignor to Unimed, Inc., Morristown, N.J.

No Drawing. Continuation-in-part of application Ser. No. 496,170, Oct. 14, 1965. This application July 20, 1967, Ser. No. 654,715

Int. Cl. A61k 27/00

U.S. Cl. 424-312

7 Claims

This invention relates to the reduction of intraocular pressure and more particularly to the treatment of patients, for example those suffering from glaucoma or preoperatively to reduce intraocular tension prior to cataract surgery, e.g. intracapsular cataract extraction so as to facilitate the operative procedure, by the administration to the patient requiring the reduction of intraocular pressure of certain new and safe osmotic agents which have this effect. The agents of the present invention can be administered orally for the reduction of intraocular pressure, and these agents are marked by a high degree of effectiveness and complete lack of toxicity and lack of undesired side effects.

3,461,211

# LIPOTROPIC COMPOSITIONS AND THEIR ADMINISTRATION

Jean-Louis Auguste Delarue and Rene Louis Fallard, Paris, France, assignors to Laboratoires Torade, Paris, France, a French society

No Drawing. Filed Jan. 19, 1965, Ser. No. 426,690

Claims priority, application France, Jan. 24, 1964, 961,420

Int. Cl. A61k 27/00; C07c 101/12

U.S. Cl. 424-316

2 Claims

The internal salt of carboxymethyl 2-hydroxyethyl dimethyl ammonium hydroxide exhibits lipotropic activity when administered orally to animals and humans. The substance lowers the cholesterol level and the total fatty acid content in the liver.

3,461,212

# TREATMENT OF HYPERCHOLESTEROLEMIA WITH THE MESO FORMS OF 3,4-DI(SUBSTITUTED PHENYL)-3,4-HEXANEDIOL

Emil Kaiser, Flossmoor, and Joseph D. Fisher, Chicago Heights, Ill., assignors to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware

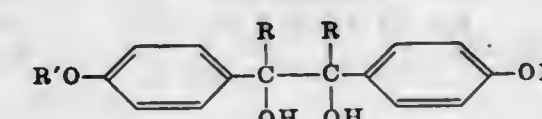
No Drawing. Filed July 26, 1965, Ser. No. 474,985

Int. Cl. A61k 27/00

U.S. Cl. 424-340

9 Claims

For the treatment of hypercholesterolemia, there is administered parenterally to a patient in a dosage effective for lowering the serum cholesterol level a compound having the structure:



3,461,214

# ARC WHEEL ELECTRODE

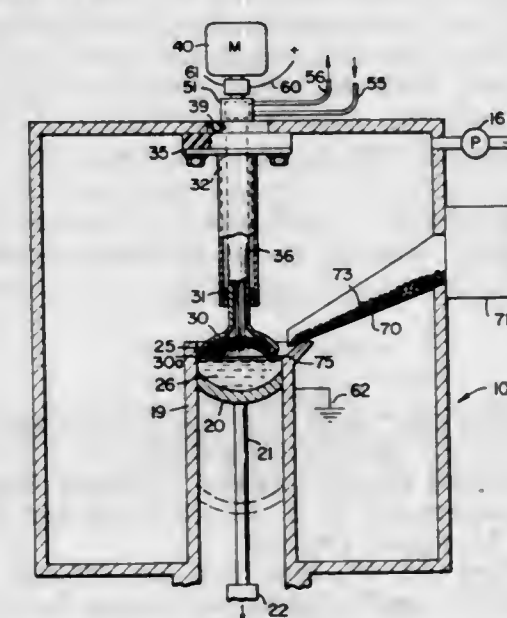
Max P. Schlienger, 19 Rollingwood Drive, San Rafael, Calif. 94901

Continuation-in-part of application Ser. No. 695,937, Jan. 4, 1968. This application Oct. 4, 1968, Ser. No. 765,216

Int. Cl. H05b 7/08

U.S. Cl. 13-18

6 Claims



A nonconsumable arc furnace electrode in which the electrode is formed of a cooled wheel-like member which is rotated in a plane parallel to the surface of the melt or workpiece about an axis over the melt or workpiece to continuously change the surface portion of the periphery of the wheel-like electrode from which an arc between the electrode and melt or workpiece originates while simultaneously providing a radiation shield over the melt or workpiece.

3,461,215

# ELECTRIC INDUCTION FURNACE

Jean Reboux, 91 Savigny-sur-Orge, France, assignor to Commissariat a l'Energie Atomique, Paris, France

Filed Mar. 27, 1967, Ser. No. 626,291

Claims priority, application France, Apr. 5, 1966, 56,436

Int. Cl. H05b 5/12, 9/02

U.S. Cl. 13-27

5 Claims

The high-frequency induction furnace comprises an

in the meso form and where R is an ethyl group and R' is a group selected from a hydrogen and a lower alkyl group.

3,461,213

# 1,1-DIFLUORO-2,2-DICHLOROETHYL DIFLUOROMETHYL ETHER OR AN ANESTHETIC AGENT

Ross C. Terrell, Summit, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 3, 1966, Ser. No. 583,948

Int. Cl. A61k 13/00; C07c 43/12

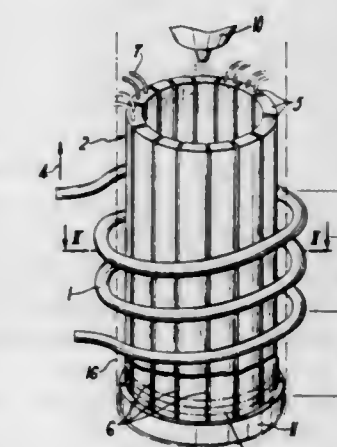
U.S. Cl. 424-342

2 Claims

This application discloses the novel compound 1,1-difluoro-2,2-dichloroethyl difluoromethyl ether having the formula  $\text{CHF}_2\text{OCF}_2\text{CHCl}_2$ . The compound is prepared by fluorination of the corresponding dichloromethyl ether using fluorinating agents in the presence of pentavalent antimony salts or tetravalent halides as fluorination catalysts. The precursor dichloromethyl ether is prepared by chlorination of the methyl ether. The novel ether has useful anesthetic properties and is a useful solvent.

## ELECTRICAL

electric inductor coil having a number of turns, a sheath which is coaxial with said coil and which is in direct contact with the material to be melted, said sheath being made up of a plurality of identical longitudinal conducting elements of tubular shape which are cooled by a circu-



lation of fluid and separated by electrically insulating refractory material; a device for supplying the furnace with material to be melted which is in a divided state; and means for supplying the inductor coil with radio-frequency current.

3,461,216

# APPARATUS FOR TEMPERATURE MEASUREMENT IN VACUUM MELTING AND CASTING INSTALLATIONS

Leonard S. Taylor, Sheffield, England, assignor to G. L. Willan Limited

Filed Aug. 30, 1967, Ser. No. 664,370

Claims priority, application Great Britain, Sept. 3, 1966, 39,480/66

Int. Cl. F27d 7/06, 19/00

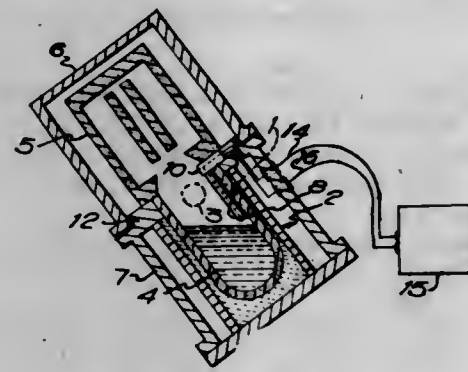
U.S. Cl. 13-31

3 Claims

Apparatus for taking the temperature of molten metal in a vacuum melting furnace comprises mounting a thermocouple at one end of the furnace, disposing the furnace during melting in an attitude in which the metal will not



nace to bring the molten metal into contact with the thermocouple.



nace to bring the molten metal into contact with the thermocouple.

3,461,217

# PIANO KEYBOARD TYPE ELECTRONIC MUSICAL INSTRUMENT HAVING A BASS PEDAL AND SINGLE CONTINUOUS KEYBOARD

Masuo Omura, Hirakata-shi, Takao Orita, Suita-shi, and Masahiro Kosaka, Hirakata-shi, Japan, assignors to Matsushita Electric Industrial Co. Ltd., Osaka, Japan

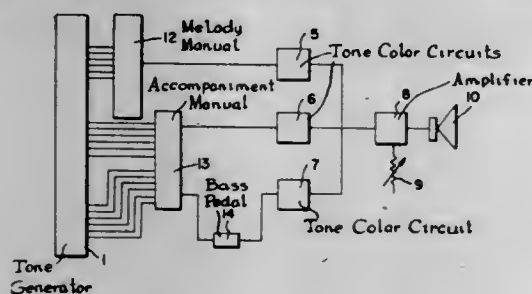
Filed Oct. 6, 1966, Ser. No. 584,737

Claims priority, application Japan, June 27, 1966, 41/42,483, 41/42,484

Int. Cl. G10h 3/00

U.S. Cl. 84-1.08

27 Claims



This invention relates generally to a keyboard type electronic musical instrument, and more particularly to a piano keyboard type electronic musical instrument in which an accompaniment manual keyboard is capable of controlling the production of bass tones having a pitch lower by one or two octaves than that of conventional accompaniment tones, the instrument including bass pedal means for further controlling the production of bass tones produced in response to actuation of the accompaniment manual keyboard, so as to occasionally sound bass tones rhythmically.

3,461,218

# CRYOGENIC A.C. CABLE

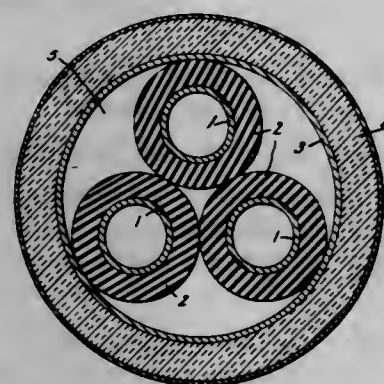
Theodor A. Buchhold, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Mar. 31, 1966, Ser. No. 539,089

Int. Cl. H01b 7/34, 9/06

U.S. Cl. 174-15

3 Claims



A cryogenic or superconducting A.C. cable comprises three insulated thin-walled carrying tubes made of high

electrical conductivity metal through which cryogenic liquid is pumped, the return flow being through an enclosing thermally insulated larger pipe. To reduce losses, each current carrying tube has a surrounding concentric shielding tube in which currents are induced, and the three concentric tubes are connected together electrically to produce a neutral external magnetic field and to center the tubes.

3,461,219

# ELECTRIC CABLES

John Derrick Endacott, Sidcup, Kent, and Anthony John Manktelow, Snodland, Kent, England, assignors to British Insulated Callender's Cables Limited, London, England

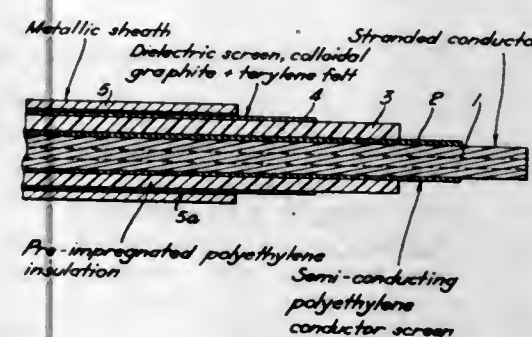
Filed Apr. 27, 1966, Ser. No. 545,693

Claims priority, application Great Britain, Apr. 30, 1965, 18,326/65

Int. Cl. H01b 7/02, 3/18

U.S. Cl. 174-25

9 Claims



During the manufacture of a high voltage electric power cable having a solid dielectric of plastics material, the dielectric is pre-impregnated with a cable gas, for example nitrogen, at an elevated temperature and pressure. Subsequently, and until the cable is installed and put into service, at least the major part of the dielectric remains fully impregnated with the gas. The cable is for use in an installation of the kind in which cable gas at a pressure above atmospheric is maintained in contact with the dielectric. Solid plastics bodies for use as dielectric in joints in the installation can be pre-impregnated in the same way.

3,461,220

# WIRING SECTION FOR AN ELECTRICAL WIRING SYSTEM

Arthur Shepherd Hukin, Cobham, England, assignor, by mesne assignments, to F. C. Blackwell and Company Limited, Liverpool, England

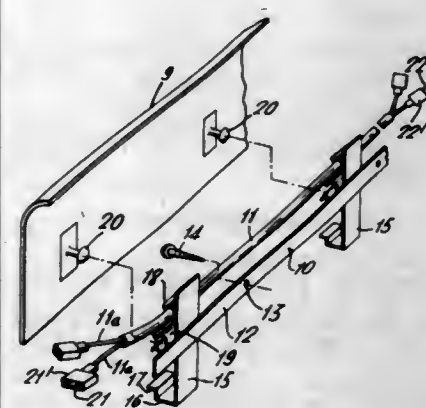
Filed Oct. 10, 1966, Ser. No. 585,527

Claims priority, application Great Britain, Oct. 27, 1965, 45,441/65

Int. Cl. H02g 3/04, 3/10

U.S. Cl. 174-48

5 Claims



The present invention concerns a wiring section for a building wiring system built up of a number of modular sections arranged end to end. The wiring section com-

prises a preterminated insulated conductor wire extending from end to end of the section for releasable connection with complementary terminals of a conductor wire of an adjacent section. The conductor wire is mounted in a plurality of lead support means spaced longitudinally of the electrical conductor and secured at spaced intervals to a mounting strip arranged to hold the lead support means in predetermined spaced relation. A cover member or skirting section is releasably secured to the mounting strip so that the cover member or skirting section may be moved without distributing the wiring in the support means.

3,461,221

# ELECTRICAL CONNECTOR FOR FLAT CONDUCTOR CABLE

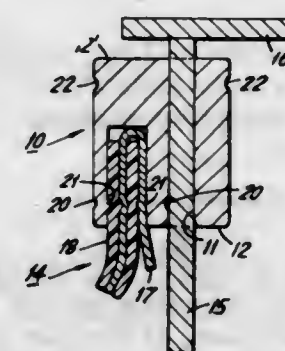
Philip J. Herb, North Branch Station, N.J., assignor to Thomas & Betts Corporation, a corporation of New Jersey

Filed Nov. 3, 1967, Ser. No. 680,536

Int. Cl. H02g 15/08; H01r 5/10

U.S. Cl. 174-84

10 Claims



The connector has a slot sized to receive a folded over conductor end of a flat conductor cable along with an insulated portion of the cable. Also, the connector has a bore sized to pass over a post of a bus bar. The connector is deformable so as to be initially crimped about the slot to the flat conductor cable and subsequently crimped about the bore to the post to form an electro-mechanical connection.

3,461,222

# INSULATED BUS BARS

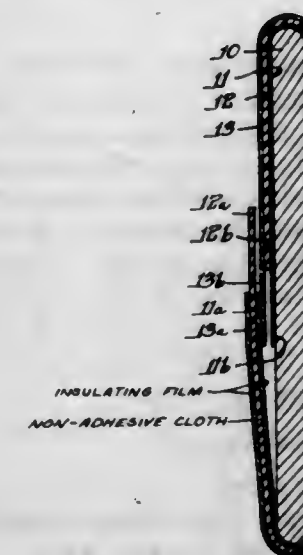
George N. Jorgensen, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed May 22, 1967, Ser. No. 640,067

Int. Cl. H01b 7/02

U.S. Cl. 174-117

10 Claims



An assembly of insulated flat bus bars for feeder bus duct, each bus bar being wrapped in a composite sleeve consisting of two layers of polyester film separated by

a layer of non-adhesive varnished glass cloth, and a plurality of the so insulated bus bars being stacked and spirally wound with tape without additional insulation between pairs of adjacent bus bars.

3,461,223

# IMAGE TRANSLATION SYSTEM EMPLOYING OPTICAL FIBERS

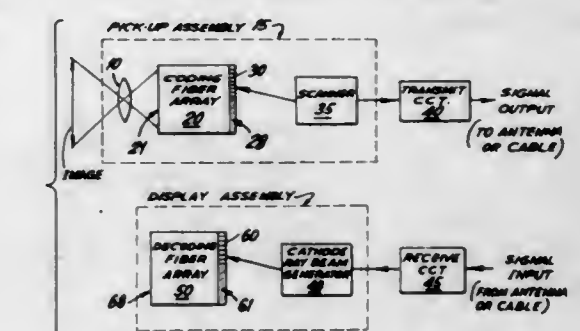
Roger L. Wilcox, Box 534, Amagansett, N.Y. 11930

Filed July 6, 1966, Ser. No. 563,197

Int. Cl. H04n 1/46, 9/00; G02b 5/14

U.S. Cl. 178-5.2

13 Claims



A color video transmission system includes an array of optical fibers at a transmitter and receiver, with the two arrays being characterized by inverse spatial transformations between image entrance and exit faces thereof. A plane of cyclically recurring primary color filters is connected to the exit face of the transmitter fiber array, and a corresponding plane of cyclically recurring primary color emitting phosphors is optically coupled to the entrance face of the receiver array. Electronic line scanning is employed to stimulate the phosphors in accordance with the image pattern present at the filter plane. An image is thereby produced at the exit plane of the receiver fiber array which closely corresponds to the image impinging upon the entrance face of the optical fibers at the transmitter.

3,461,224

# GAMMA CORRECTION CIRCUIT FOR FIELD SEQUENTIAL COLOR TELEVISION

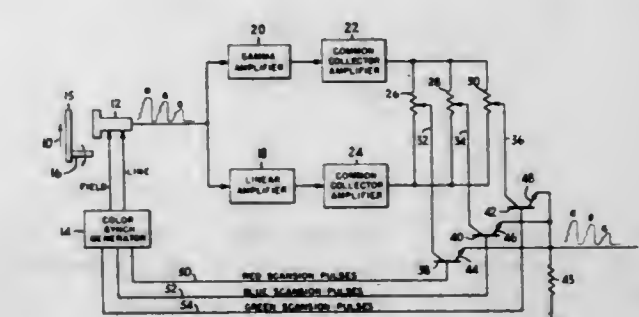
Renville H. McMann, Jr., Stamford, Conn., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York

Filed Apr. 22, 1966, Ser. No. 544,574

Int. Cl. H04n 5/38, 5/44

U.S. Cl. 178-5.4

5 Claims



As described herein, a gamma correction circuit for field sequential color television signals includes a linear



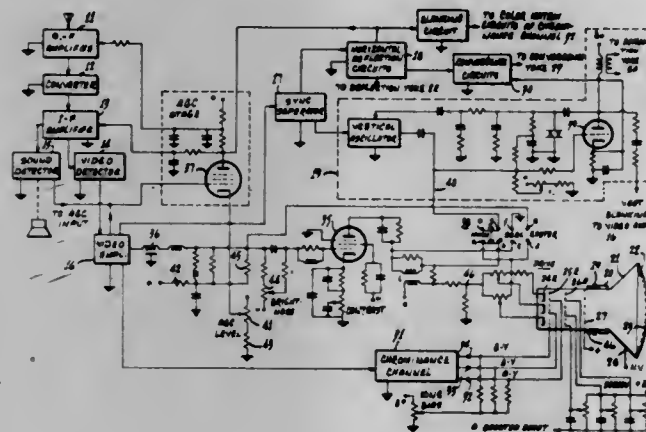
amplifier and a gamma amplifier which produce, respectively, distortionless and exponential reproductions of the input color signals. The gamma corrected and linear reproductions of the color signals are then applied to a mixing amplifier wherein the signals are mixed appropriately to produce properly balanced color signals. Keying signals are thereafter utilized to transmit selectively the balanced color signals.

### 3,461,225 SERVICE AID FOR COLOR TELEVISION RECEIVER

Paul Edward Crookshanks and Robert Dale Altmanshofer, Indianapolis, Ind., assignors to RCA Corporation, a corporation of Delaware  
Filed May 23, 1966, Ser. No. 552,026  
Int. Cl. H04n 5/38, 5/44

U.S. Cl. 178-5.4

7 Claims



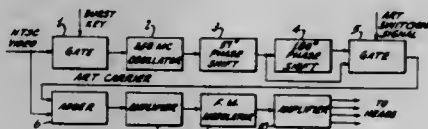
A color television receiver is provided with a service switch including "NORMAL," "SERVICE" and "RASTER" positions, the latter being provided for purity and grey scale tracking adjustment and checking. In the "RASTER" position, an AGC stage is operated so as to cut off R-F and I-F amplifiers in the receiver so as to produce a blank raster and blanking signals. The brightness of the raster is variable for grey scale tracking.

### 3,461,226 COLOR CORRECTION SYSTEMS FOR VIDEO TAPE RECORDERS

Peter Swift Carnt, Herrliberg, Switzerland, assignor to RCA Corporation, a corporation of Delaware  
Filed Oct. 22, 1965, Ser. No. 501,212  
Int. Cl. H04n 5/38, 1/46, 9/00

U.S. Cl. 178-5.4

10 Claims



There is disclosed a system for correcting phase errors in television signals, which are particularly troublesome in color television tape recording. A reference carrier with particular phase characteristics is added to the color signal before recording. On playback, an error signal is generated in view of the particular phase characteristics of the reference carrier for providing compensation of the line to line phase deviations of the video information.

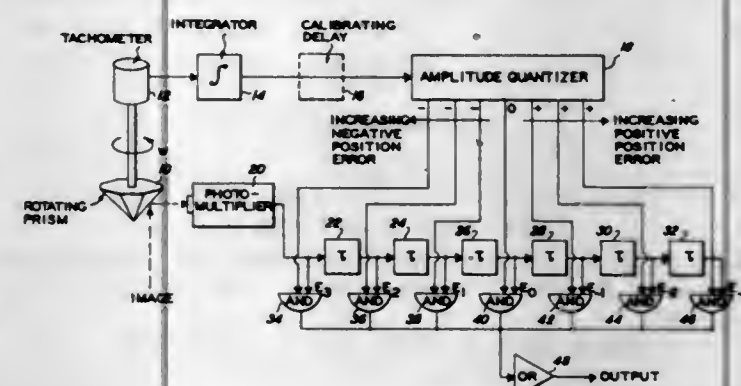
### 3,461,227 MECHANICAL JITTER EQUALIZER

Donald A. Perreault, Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 28, 1966, Ser. No. 590,356  
Int. Cl. H04n 7/00, 3/00, 3/16

U.S. Cl. 178-6

7 Claims



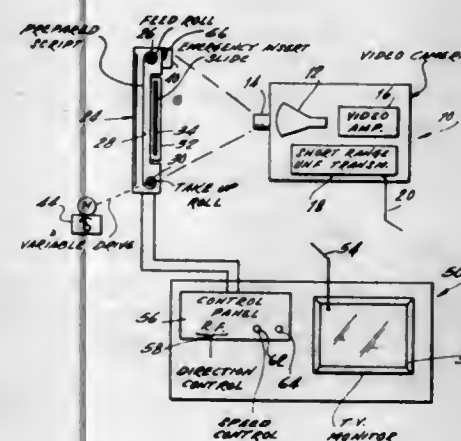
This invention relates to error compensating systems and, more particularly, to apparatus for electrically correcting signal jitter caused by mechanical perturbations in data scanning devices.

### 3,461,228 TELEPROMPTING SYSTEM UTILIZING SHORT RANGE TRANSMISSION TV

Jack Bookman, 38 Cypress Lane, Orangeburg, N.Y. 10962  
Filed Apr. 18, 1968, Ser. No. 722,229  
Int. Cl. H04n 7/18, 7/02

U.S. Cl. 178-6

4 Claims



A prompting device comprising an information screen with a video camera focused on said screen which has a prepared script in the screen and means for movably mounting the prepared script in the information screen past the video camera. A slide holding means mounted in front of the screen with the prepared script being visible through the slide holding means so that when necessary a slide can be inserted in the slide holding means between said camera and said prepared script, so as to immediately transmit the information contained on the slide to all of the prompting devices.

### 3,461,229 ELECTRO-OPTICAL REPRODUCTION METHOD

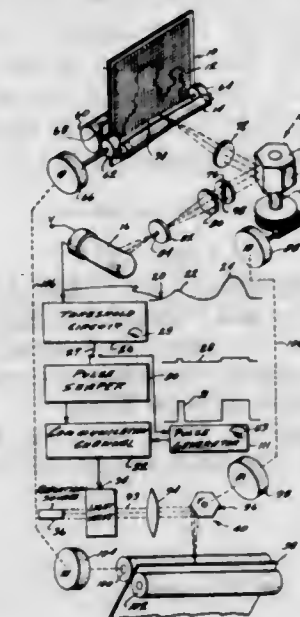
Jess Oppenheimer, 549 Morena Ave., Los Angeles, Calif. 90049  
Filed Aug. 17, 1965, Ser. No. 480,300  
Int. Cl. H04n 5/26

U.S. Cl. 178-6.6

11 Claims

Apparatus for rapidly converting continuous-tone im-

ages into representative half-tone images by scanning through a screen to dissect the image into elemental dots.



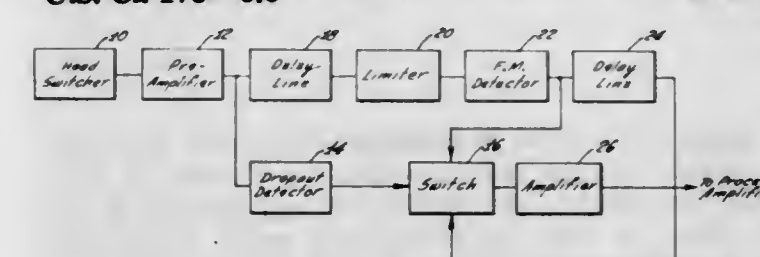
A recording beam may fuse thermoplastic ink, etch a metal plate, or burn a stencil.

### 3,461,230 DROPOUT COMPENSATOR WITH DELAYED RESPONSE

Frederick J. Hodge and Ralph R. Barclay, Camarillo, Calif., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware  
Filed Nov. 10, 1965, Ser. No. 507,210  
Int. Cl. H04n 5/76; H03d 3/24

U.S. Cl. 178-6.6

19 Claims



The present invention is directed to a dropout compensator which includes a dropout detector to provide for a detection of a reduction in amplitude of a frequency modulated video signal and wherein the dropout detector includes means for delaying the production of the control signal and with an actual inhibiting of such production until the detected reduction in amplitude is below a predetermined level for a particular period of time. This delay in the production of the control signal insures that the dropout is not due to noise or some other type of amplitude variation but is actually a true dropout. The present invention also includes a specific detector circuit that provides for this delay of the production of the control signal by charging a first capacitor through a previously charged second capacitor. The particular delay that is included in the dropout detector circuit should be at least 0.8 microsecond.

### 3,461,231 INFORMATION TRANSMISSION SYSTEM AND METHOD

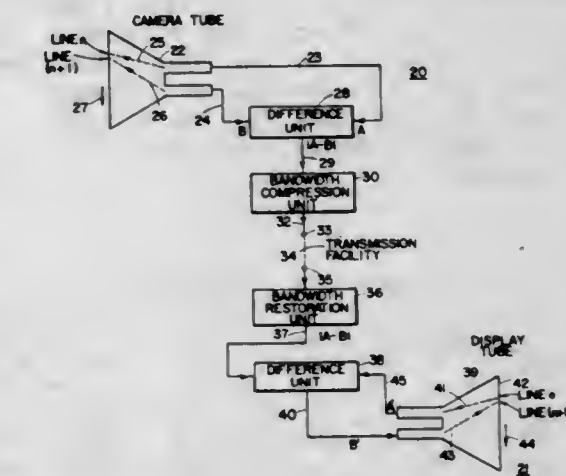
Robert V. Quinlan, Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland  
Filed Nov. 16, 1964, Ser. No. 411,288  
Int. Cl. H04n 3/28, 7/00

U.S. Cl. 178-6.3

32 Claims

An information transmission system and method usable in a television system or data transmission system, which

analyzes redundancy in two directions in order to increase the potentiality for time-bandwidth compression. In the television form of the system, a dual beam camera tube is provided with rectilinear scanning for simultaneously generating first and second video signals in response to two adjacent scanning lines, respectively, each line of the input optical image thus being scanned twice with the second video signal thus being duplicative of the first video signal but delayed therefrom by the duration of one scanning line. The first and second video signals are compared and a third video signal is generated in response to any amplitude difference between the first and second video signals, thus increasing the redundancy of the third video signal over the redundancy of the first and

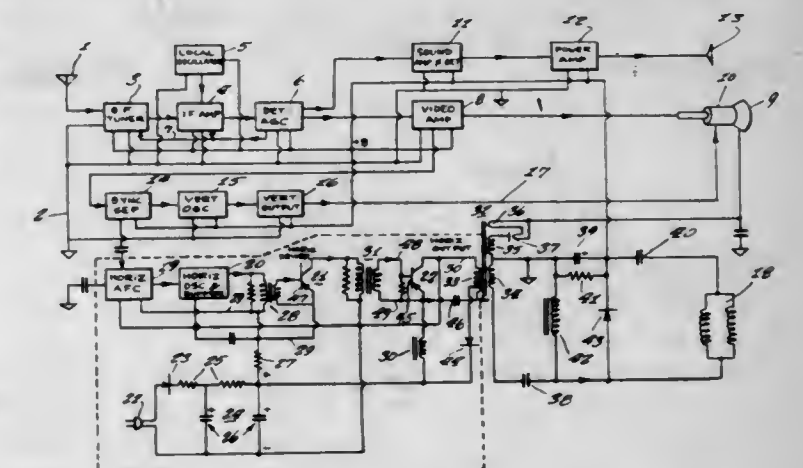


second video signals considered individually. The third video signal is transmitted and received, conventional time-bandwidth compression and restoration being employed in the transmission and reception process. A display tube is provided with rectilinear scanning for displaying a fourth video signal in successive scanning lines. A fifth video signal is generated duplicative of the fourth video signal but delayed therefrom by the duration of one of the scanning lines, as by combining the display tube with a camera tube which scans the displayed image one line behind the displayed line. The received third video signal is simultaneously compared with the fifth video signal to generate the fourth video signal in response to an amplitude difference between the received third and fifth video signals.

### 3,461,232 POWER SYSTEM FOR TELEVISION RECEIVERS

Karl R. Wendt, Box 282, Boulder Heights, Colo. 80302  
Filed July 1, 1966, Ser. No. 562,293  
Int. Cl. H04n 3/16, 5/38; H01j 29/70  
U.S. Cl. 178-7.3

6 Claims



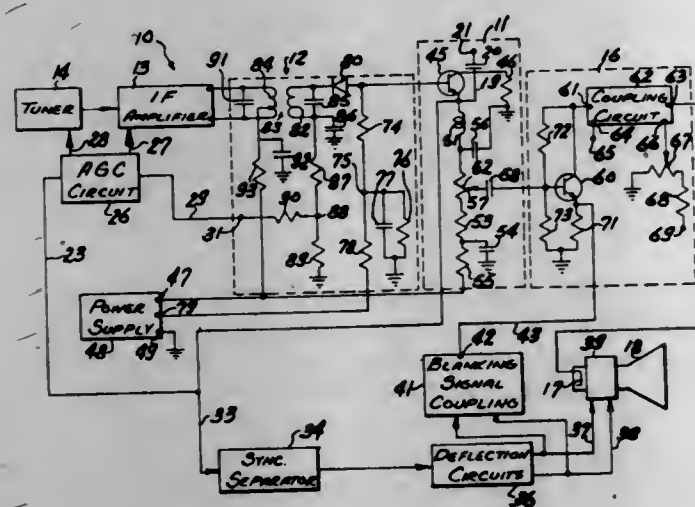
A television receiver power supply of the transformerless type is provided wherein the usual shock hazard associated with that type of supply has been eliminated.



Isolation of the chassis from either side of the power line is effected by deriving from the horizontal output transformer the necessary "B" potential for operating the various stages of the television receiver. The primary of the output transformer and the associated components for energizing the primary winding, including the transformerless power supply connected to the AC line, are completely insulated from the receiver chassis. Thus by having the horizontal output transformer supply "B" power in addition to its normal functions, the low frequency line transformer can be omitted without creating a shock hazard.

3,461,233

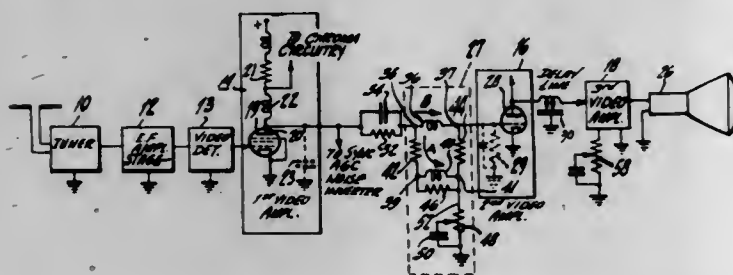
**TELEVISION VIDEO DETECTOR CIRCUIT**  
George A. Kent, Fort Wayne, and Richard J. Waring, Auburn, Ind., assignors to The Magnavox Company, Fort Wayne, Ind., a corporation of Delaware  
Filed Aug. 22, 1966, Ser. No. 574,070  
Int. Cl. H04n 3/16, 5/38  
U.S. Cl. 178-7.3 8 Claims



The circuit minimizes white clipping over a wide range of received signal strengths by applying a forward bias to the detector diode with two components, one of relatively fixed magnitude dependent on the voltage at the base of the video driver transistor and one with variable magnitude dependent on a level produced by the automatic gain control circuit.

### 3,461,234 CONTINUOUS VIDEO PEAKING CONTROL CIRCUIT

John F. Slusarski and John A. Konkel, Indianapolis, Ind., assignors to RCA Corporation, a corporation of Delaware  
Filed May 20, 1966, Ser. No. 551,666  
Int. Cl. H04n 5/44  
U.S. Cl. 178-7.5 8 Claims

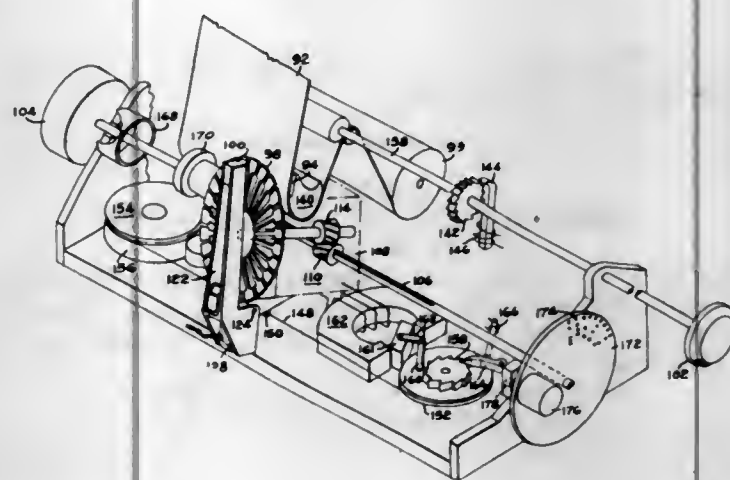


A peaking control circuit has a series peaking coil coupled between the source of video signals and a video load. An inductor and a resistor are connected in series

between the source of signals and ground, the resistor having an adjustable tap to which a terminal of a capacitor is connected. The capacitor having another terminal connected to said resistor. The capacitor and inductor are series resonant near the low end of the frequency range of the video signals. By varying the setting of the tap, the amount of peaking in the signal applied to the input of the amplifier may be continuously varied.

3,461,235

**DATA TRANSMISSION SYSTEM AND PRINTER**  
Frederick P. Willcox and Newland F. Smith, New Canaan, Conn., assignors, by direct and mesne assignments, to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Aug. 17, 1965, Ser. No. 480,334  
Int. Cl. H04l 15/34, 17/16  
U.S. Cl. 178-25 23 Claims



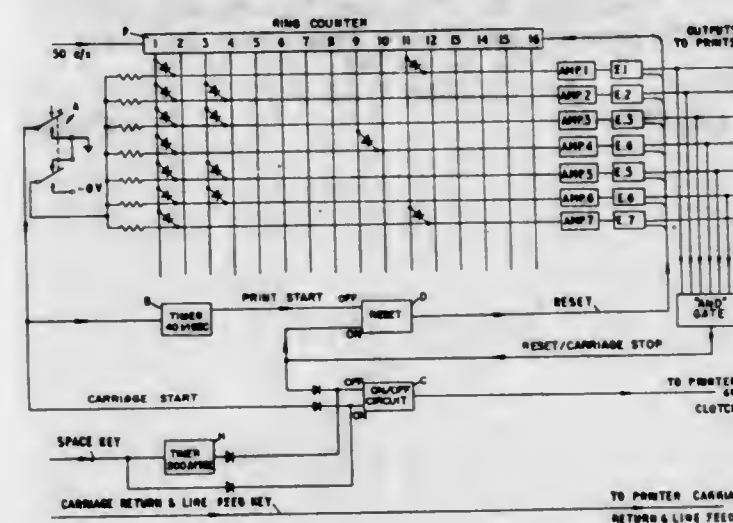
A single type wheel is continuously rotated at a constant speed, with the typefaces in a given plane. A writing line on paper is just outside of and parallel to the given plane. A code signal indicates which typeface is under a print hammer. When the code signal corresponds to the desired typeface, the print hammer is actuated, printing a character. Then the type wheel is stepped to the next print position.

3,461,236

**CONTROL CIRCUITRY FOR MATRIX PRINTER**  
Kenneth George Rumsey, Ilford, Essex, and Michael John Greasby, London, England, assignors to The Exchange Telegraph Company Limited, London, England, a British company  
Filed July 11, 1966, Ser. No. 564,326  
Claims priority, application Great Britain, July 12, 1965, 29,505/65  
Int. Cl. H04l 15/24, 15/34, 17/16  
U.S. Cl. 178-30 5 Claims

Control circuitry for a matrix printer comprises two-state circuits controlling operation of respective printing members and each is switchable between two conditions to determine the beginning and end, respectively, of the print-out of each character portion by the associated member; a diode matrix whose output leads are connected to respective two-state circuits; a ring counter connected to pulse the matrix input leads consecutively; and switching circuitry to bias a combination of pairs of matrix diodes for each different character, each such pair being associated with an output lead and one of the pair operating, on receiving a pulse from the associated input lead, to switch the two-state circuit associated with its output lead to one condition, signifying commencement of a print-out of a particular character portion, and the other

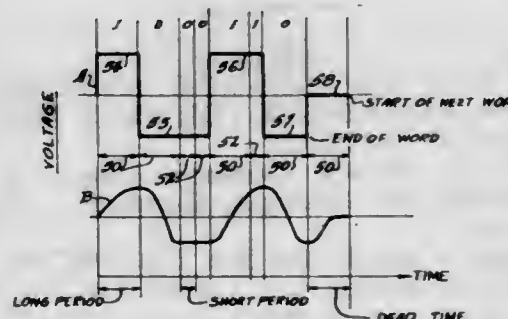
element of the pair operating, when subsequently pulsed, to switch the two-state circuit to its second condition



signifying the end of the print-out of the character portion, thereby providing a proportional print-out.

3,461,237

**METHOD OF ENCODING BINARY DIGITAL DATA**  
Forrest O. Salter, Glen Ellyn, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission  
Filed Feb. 20, 1967, Ser. No. 618,284  
Int. Cl. H04l 15/04  
U.S. Cl. 178-68 6 Claims



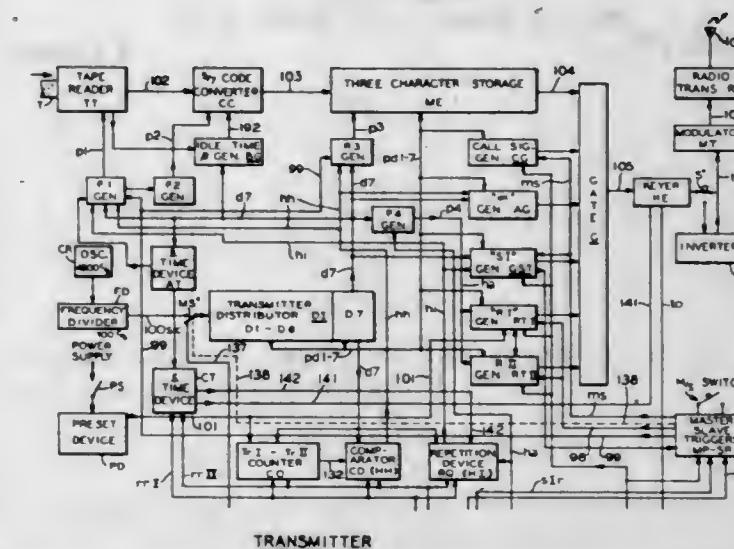
A method of encoding successive digits of a binary sequence into a sequence of two voltage levels which have one of two time durations depending upon the binary values of successive digits.

### 3,461,238 SIMPLEX TELECOMMUNICATION SYSTEM WITH AUTOMATIC ERROR DETECTION AND CORRECTION

Hendrik Cornelis Anthony van Duuren, Wassenaar, and Christiaan Johannes van Dalen and Herman da Silva, Voorburg, Netherlands, assignors to De Staat der Nederlanden, ten Deze Vertegenwoordigd Door de Directeur-Generaal der Posten, Telegrafie en Telefonie, The Hague, Netherlands  
Continuation-in-part of application Ser. No. 94,337, Mar. 8, 1961. This application Nov. 28, 1966, Ser. No. 597,353  
Claims priority, application Netherlands, June 15, 1960, 249,457; June 23, 1960, 253,005  
Int. Cl. H04l 25/02  
U.S. Cl. 178-69 25 Claims

A simplex (one-way traffic at a time) telecommunication system with automatic error detection and correction which comprises storing and transmitting alternately num-

bered I and II spaced blocks of signals, testing each signal in each block received, and sending back to the transmitting station signals corresponding to the numbers I and II in the spaces between the blocks, so that if a num-

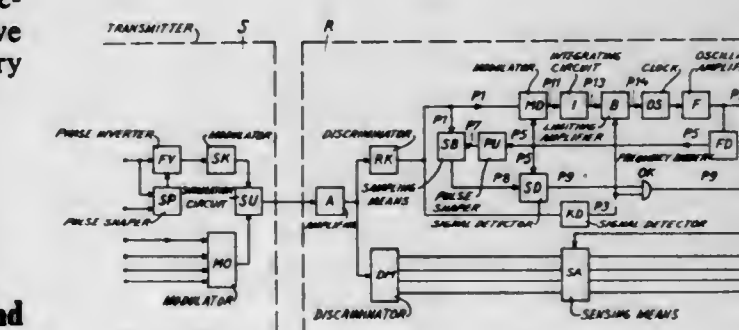


ber II is received back after a number I block has been transmitted, the next block II is transmitted, but if a number I is received back after a number I block has been transmitted, then the number I block must be retransmitted.

3,461,239

**METHOD OF TRANSMITTING MESSAGE SIGNALS  
THROUGH A CLOCK PULSE CHANNEL IN A  
DATA TRANSMISSION SYSTEM**

Walter Herbert Erwin Wildt, Bandhagen, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden  
Filed Feb. 8, 1966, Ser. No. 525,967  
Claims priority, application Sweden, Mar. 11, 1965, 3,158/65  
Int. Cl. H04l 7/04, 5/22  
U.S. Cl. 178-69.5 8 Claims



A multiple-channel data transmission system for transmitting data from a transmitter to a receiver has a clock pulse channel transmitting clock pulses for synchronizing a clock device in the receiver with a clock device in the transmitter, the clock device in the receiver sampling clock pulse signals in the data transmission signals. The clock pulse signals are also used for transmitting data and further for preventing that the clock device in the receiver falls out of synchronism with the clock pulse signals when the clock pulse signals are modulated by data signals.

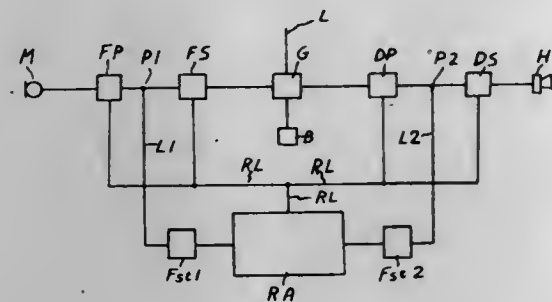


3,461,240

**AMPLIFIER WITH TWO SEPARATE CHANNELS**  
Owe Lindgren, Farsta, Sweden, assignor to Aktiebolaget Gylling & Co., Stockholm, Sweden, a corporation of Sweden

Filed Nov. 7, 1966, Ser. No. 592,504  
Claims priority, application Sweden, Dec. 16, 1965, 16,306/65

Int. Cl. H04m 1/02; H04b 3/20  
U.S. Cl. 179—1



A dual amplifier with automatic control connected between two separate amplifying channels one of which is fed from a microphone and the other of which feeds to a loudspeaker, the coordinated system being connected to an input output signal carrier such as a telephone line. The amplifier control circuits are responsive to signal voltages applied to the loudspeaker channel for decreasing amplification in the microphone amplifier channel. The control provides that the microphone channel will never be totally blocked and if input signals are applied to the microphone channel the control enables amplification through the microphone channel to override amplification in the loudspeaker channel.

3,461,241

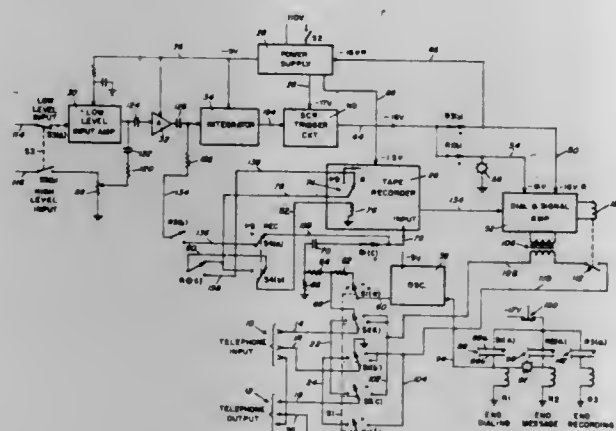
**RECORDER CONTROLLED AUTOMATIC DIALING AND MESSAGE REPORTING SYSTEM**

John L. Menke, Barnesville, Md. 20703

Filed July 7, 1966, Ser. No. 563,442

Int. Cl. H04m 11/04

U.S. Cl. 179—5



An alarm system for monitoring a variety of input signals and energizing a recorder in response to an alarm signal. The recorder provides a dialing signal to automatically place a telephone call to a preselected number, then transmits a prerecorded message concerning the nature and location of the alarm. Detector means may provide response to sounds, which sounds may be recorded and transmitted upon completion of the prerecorded message.

3,461,242

**TIME DIVISION SWITCHING SYSTEM**

Hiroshi Inose and Tadao Saito, Tokyo, Japan, assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

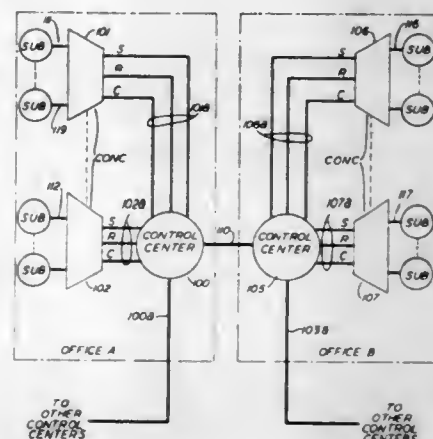
Filed Aug. 18, 1965, Ser. No. 480,635

Claims priority, application Japan, Feb. 24, 1965, 40/10,202

Int. Cl. H04j 3/02, 3/12

U.S. Cl. 197—15

9 Claims



A time division communication system is disclosed in which a plurality of independent control centers each serve a plurality of line concentrators. A connection is completed between two lines associated with different control centers through time slot interchange devices in each control center. This arrangement overcomes blocking in large systems by permitting the two lines to be connected to their associated control centers in different time slots.

3,461,243

**CIRCUIT FOR IMPULSE-WISE ENERGY TRANSMISSION, ESPECIALLY FOR TIME MULTIPLEX EXCHANGE SYSTEMS**

Hans Höschler, Munich, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany

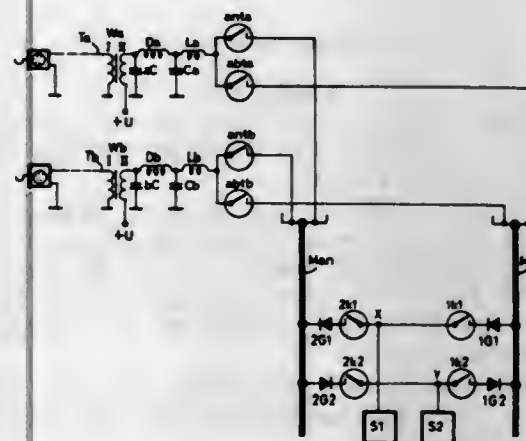
Continuation of application Ser. No. 362,780, Apr. 27, 1964. This application Apr. 1, 1968, Ser. No. 718,009

Claims priority, application Germany, Apr. 29, 1963, S 84,994

Int. Cl. H04j 3/02

U.S. Cl. 179—15

22 Claims



A switching circuit comprising line storers and diodes enabling a single multiplex bar to transmit pulses in both directions.

3,461,244

**DELTA MODULATION SYSTEM WITH CONTINUOUSLY VARIABLE COMPANDER**

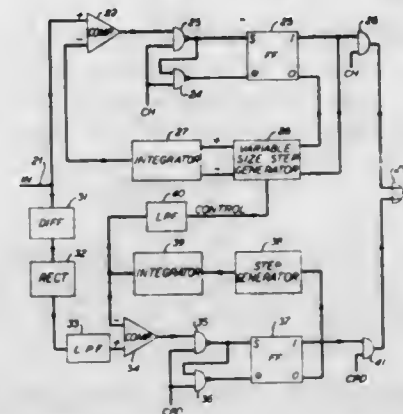
Stephen J. Brollin, Bronx, N.Y., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Aug. 16, 1966, Ser. No. 572,823

Int. Cl. H04i 1/00, 3/00; H04b 1/00

U.S. Cl. 179—15

5 Claims



A digital message transmission system which employs the type of differential pulse code modulation known as delta modulation, with a compander incorporated in the modulator-demodulator circuitry.

3,461,245

**SYSTEM FOR TIME DIVISION MULTIPLEXED SIGNALS FROM ASYNCHRONOUS PULSE SOURCES BY INSERTING CONTROL PULSES**

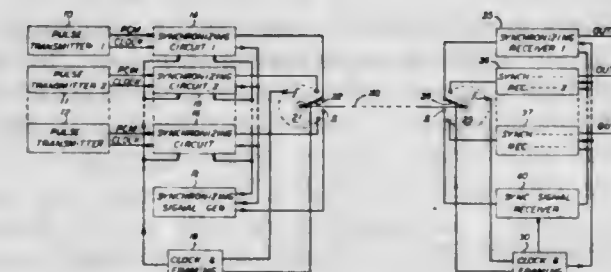
Virgil I. Johannes, Plainfield, and Richard H. McCullough, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 9, 1965, Ser. No. 507,008

Int. Cl. H04j 3/16, 3/18

U.S. Cl. 179—15

12 Claims



Pulse signals from a plurality of unsynchronous sources are time division multiplexed on a high speed transmission line by inserting control signals into each signal so as to raise each signal to a common repetition rate. The presence and location of the control pulses are transmitted by codes in a signal bit of the high speed frame, thereby minimizing the amount of channel space that must be used for signaling.

3,461,246

**REVERTIVE CALL CIRCUIT**

Gerhard O. K. Schneider, Rochester, N.Y., assignor to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware

Filed July 22, 1966, Ser. No. 567,156

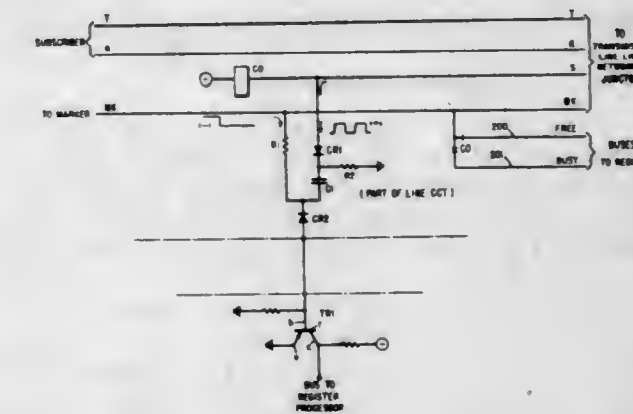
Int. Cl. H04m 3/56

U.S. Cl. 179—17

14 Claims

In a telephone communication system, a revertive call circuit with means for generating an output signal in response to simultaneous receipt of a fixed polarity mark-

er signal applied to a called party line circuit and pulses applied to a calling party line circuit, the output signal



being indicative of the existence of a revertive call in the telephone switching equipment.

3,461,247

**MONITORING APPARATUS EMPLOYING MAGNETIC SENSING DEVICES**

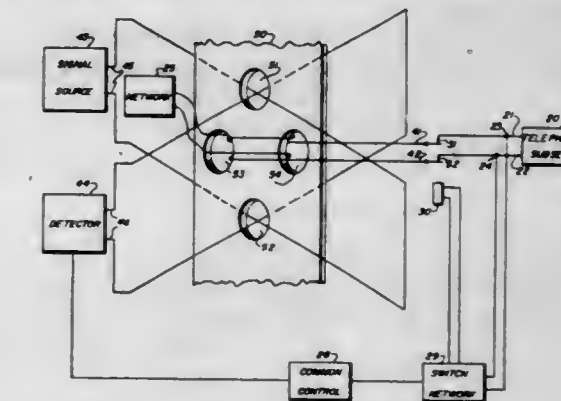
John G. Van Bosse, Park Ridge, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Jan. 27, 1966, Ser. No. 523,365

Int. Cl. H04m 3/22

U.S. Cl. 179—18

3 Claims



A sensing device for use in a line circuit system, which has a saturable magnetic element of a unitary piece of linear ferrite material with at least two mutually perpendicular pairs of apertures therein. First and second conductive loops, which thread one of the pairs of apertures are connected to a signal source and a detector circuit, respectively, to couple the signal source to the detector circuit, with the ferrite material in the vicinity of the apertures acting as the coupling medium. A third loop, connected to a circuit being monitored, is wound on the magnetic element and through the other pair of apertures so that the first and second loops are orthogonal to the third loop. Whenever current of a predetermined magnitude flows in the circuit, the element becomes saturated and the signal source and detector circuit are effectively decoupled.

3,461,248

**VIDEO TAPE EDITING UTILIZING PHOTOELECTRIC MEANS**

Richard Kane, 410 Glenway Road,

Philadelphia, Pa. 19118

Filed June 20, 1963, Ser. No. 289,334

Int. Cl. G11b 5/02

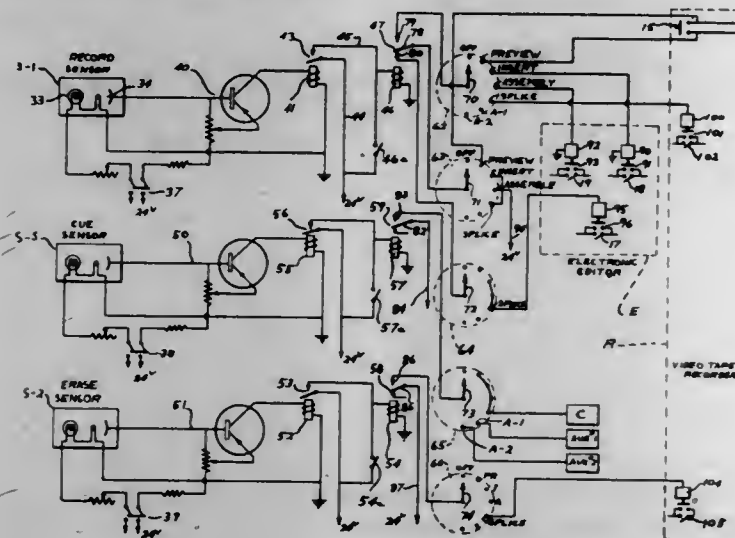
U.S. Cl. 179—100.2

12 Claims

A method and apparatus for editing of video tape recordings. A physical, visible, effaceable mark is manually put on the tape at the position where editing is to be accomplished and a photoelectric sensing means is used



to detect the interruption by the effaceable mark of a light beam reflected by the tape. The signal produced by the extensive, high conductivity flanged non-ferrous metal part, constructed with the centers of gravity of the ferrous



detection of the mark is used to initiate the recording of further information on the tape.

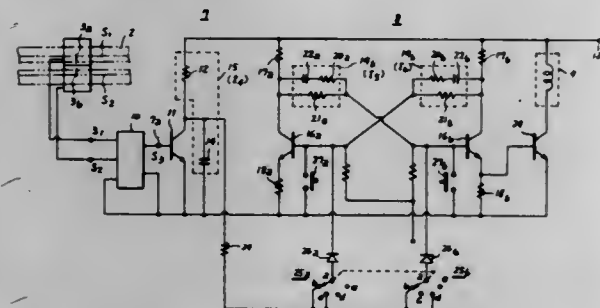
**3,461,249**  
**MULTI-TRACK TAPE DRIVE SYSTEM FOR REVERSING TAPE TRAVEL AFTER CESSATION OF INTELLIGENCE SIGNAL OUTPUT FROM ALL CHANNELS**

Yoshiaki Kamoji and Shokichi Nakamura, Tokyo, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan

Filed Feb. 7, 1966, Ser. No. 526,661  
Claims priority, application Japan, Feb. 9, 1965,  
40/7,382, 40/7,383  
Int. Cl. G11b 5/48

U.S. Cl. 179—100.2

7 Claims



A magnetic reproducing system for a multi-track record tape in which each track is scanned by a separate head, the outputs of the heads being fed to a mixer which provides a control signal whenever at least one of the heads supplies a signal thereto, in combination with control means which respond to the control signal to reverse the direction of movement of the drive motor, and a time delay means between the mixer and the control means which operates to delay the reversal of the drive means for a predetermined time interval after cessation of an output from the mixer.

**3,461,250**  
**ELECTRICAL CONDUCTOR BARS**  
Roy F. Dehn, Wickliffe, Ohio, assignor to McNeil Corporation, Akron, Ohio, a corporation of Ohio  
Continuation-in-part of application Ser. No. 610,580, Jan. 30, 1967, which is a division of application Ser. No. 494,187, Oct. 8, 1965, which in turn is a continuation-in-part of application Ser. No. 313,959, Oct. 4, 1963. This application May 29, 1968, Ser. No. 733,054  
Int. Cl. B60m 1/34

U.S. Cl. 191—22

8 Claims

Electrical conductor bars each comprised of a longitudinal high-strength T-shaped ferrous metal part and a co-

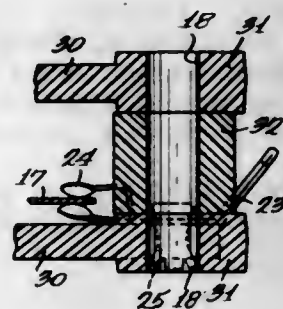
metal and non-ferrous metal parts close together to reduce thermal distortion.

**3,461,251**  
**MULTIPOSITION ROTARY ELECTRIC SWITCH**

Kenneth C. Allison, 1546 S. Shore Drive, Crystal Lake, Ill. 60014  
Filed Mar. 8, 1968, Ser. No. 711,647  
Int. Cl. H01h 19/58, 21/78, 9/00

U.S. Cl. 200—11

2 Claims



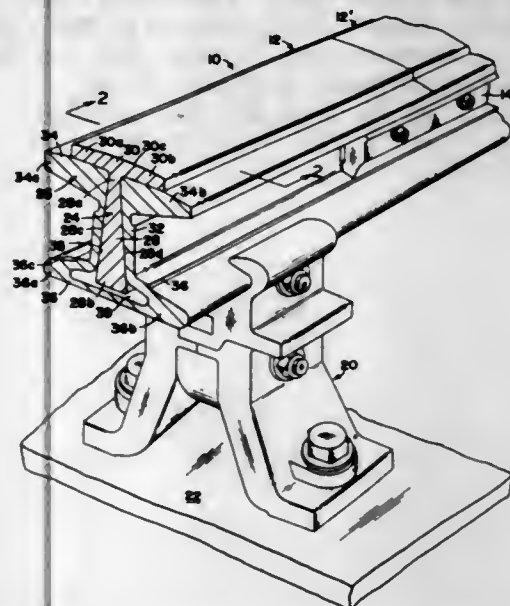
A multisection multicontact rotary switch assembly as disclosed herein includes a molded stator body having contact members secured thereto via flat type rivets which have interfitting engagement with rivet receiving openings in the stator only when a plane drawn centrally of the faces of the rivet coincides with a plane containing the axis of the stator and extending radially of the stator. Strut mounting openings at diametrically opposed areas of the stator within the confines of a continuous circular band like area containing the rivet accepting openings each is bordered by an insulating collar formed integrally with the stator. The wall portions of said collars measured circumferentially of said band like area is greater than the distance between said collar and either of the rivet receiving openings flanking the collar.

**3,461,252**  
**MULTIPOSITION SLIDE SWITCH**  
Joseph M. Vananzi, Meadowbrook, Pa., assignor to Continental-Wirt Electronics Corporation, Philadelphia, Pa., a corporation of Pennsylvania  
Filed Feb. 7, 1968, Ser. No. 703,672  
Int. Cl. H01h 15/06

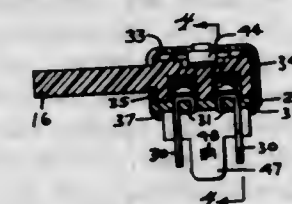
U.S. Cl. 200—16

4 Claims

A multiposition, multicircuit slide switch having a contact assembly, contact bridges held captive within and shiftable with a slider made of insulating material, a switch housing and a depending detent pressure spring held captive thereto. The spring is disposed in a slot through the housing top wall, and the depending detent



of the spring seats in a detent receiving depression formed in the slider body top wall when the slider is in particular position between other possible left shifted and right



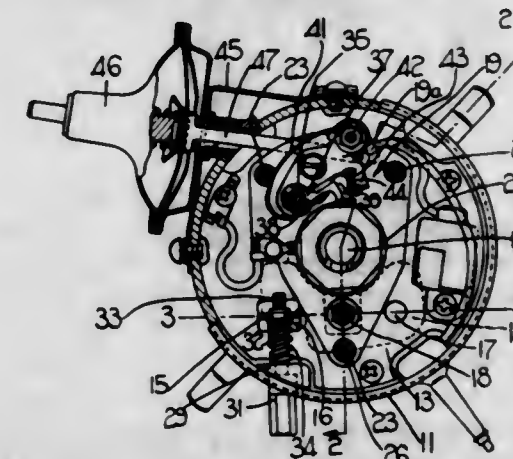
shifted switch positions, the detent being cammed up and out of the slider depression and bearing on the slider top wall when the slider is shifted to any other position to frictionally hold the slider at such other position.

**3,461,253**  
**IGNITION DISTRIBUTOR ADJUSTABLE FROM THE EXTERIOR OF THE CASING**  
William Harold Cooksey, Walsall, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed May 11, 1967, Ser. No. 637,655  
Claims priority, application Great Britain, June 13, 1966,  
26,245/66; Feb. 14, 1967, 7,007/67  
Int. Cl. H01h 19/02

U.S. Cl. 200—22

9 Claims



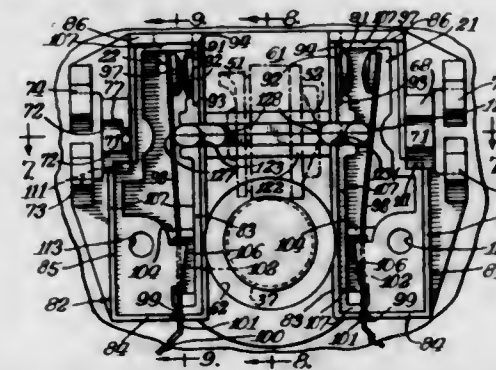
An ignition distributor for a road vehicle including a contact breaker assembly having fixed and movable contacts, there being provided means whereby the maximum gap between said contacts can be adjusted from the exterior of the casing.

**3,461,254**  
**LIMIT SWITCH CONTROL HAVING SWITCH MOUNTING MEANS**  
David R. Jacobs, Bluffton, Ind., assignor to Franklin Electric Co., Inc., Bluffton, Ind., a corporation of Indiana

Filed Feb. 27, 1967, Ser. No. 618,764  
Int. Cl. H01h 3/16, 9/02

U.S. Cl. 200—47

7 Claims



This disclosure deals with a limit switch control for a drive unit which includes a power output shaft. The control includes two cams which are connected by a worm-

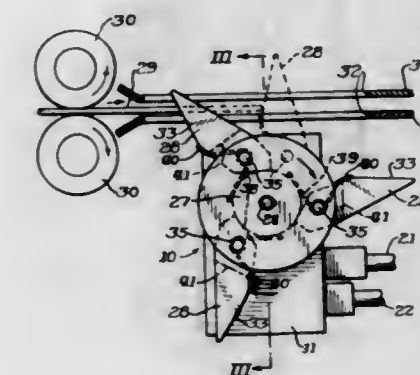
gear arrangement to be rotated by the power output shaft. Two plungers are located to be moved by the two cams, and each plunger actuates a limit switch upon movement thereof. The control further includes a molded case which houses and supports the cams, plungers and switch parts of the drive unit.

**3,461,255**  
**FLIPPER ARM ASSEMBLY FOR SENSING SWITCHES WITH BACKING OFF MOVEMENT**  
Daniel D. Call, Mount Prospect, Ill., assignor to Bell and Howell Company, Chicago, Ill., a corporation of Illinois

Filed Aug. 7, 1967, Ser. No. 658,721  
Int. Cl. H01h 3/16

U.S. Cl. 200—61.42

12 Claims



A switch for sensing travelling sheets has flipper arms which are yieldably mounted on a rotary operator to avoid thrusting into a preceding sheet when an overlappingly related succeeding sheet drives an arm which is still in engagement with the preceding sheet.

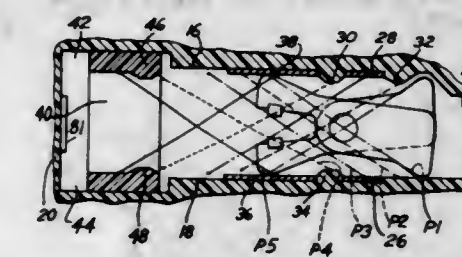
**3,461,256**  
**SELECTOR SWITCH WITH ADJUSTABLE CAMMING MEANS PROVIDING A PROGRAMMED SWITCH ACTION**

Kenneth K. Ferryman, Jr., St. Clair Shores, Mich., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan

Filed Nov. 13, 1967, Ser. No. 682,301  
Int. Cl. H01h 9/06

U.S. Cl. 200—61.88

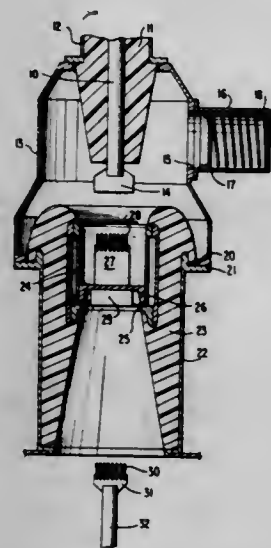
10 Claims



An improved selector switch for activating the start, ignition and backup circuits in an automobile. The selector switch is attached to the steering column and is actuated by the gear selector lever of the automobile. The gear selector lever drives a carrier which is slidably mounted in the switch housing. The carrier has a number of contacts mounted thereon which close or open the different circuits as the gear lever causes the carrier to change positions. Various positioned cams on the inside of the selector switch housing cause the contacts to open and close at programmed positions. An adjustable cam is provided which permits program adjustment of selector switch contact positions for each individual automobile.

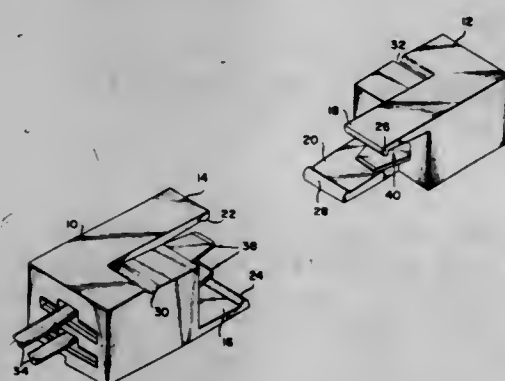


**3,461,257**  
**MOVABLE PISTON MEANS FOR RETAINING FLUID IN ELECTRICAL COUPLING DEVICE**  
 Gerhard Brockhaus, Heiligenhaus Bezirk, and Gunter Leonhardt and Heinz Weber, Ratingen, Germany, assignors to Calor-Emag Elektrizitäts-Aktiengesellschaft, Ratingen, Germany  
 Original application May 26, 1965, Ser. No. 458,982, now Patent No. 3,374,331, dated Mar. 19, 1968. Divided and this application Oct. 16, 1967, Ser. No. 683,424  
 Claims priority, application Germany, May 27, 1964, C 32,984  
 Int. Cl. H01h 33/68, 33/82; H01r 13/70  
 U.S. Cl. 200—150 4 Claims



The invention relates to a high tension coupling having a fixed electrical contact in a closed chamber filled with a fluid insulation, a movable piston carrying another electrical contact and arranged in said chamber to retain the fluid therein. Externally of the chamber there is provided a reciprocable element which carries a still further electrical contact which upon movement thereof relative to the other contacts engages and moves the piston-carried contact whereupon all of the respective contacts are brought into engagement.

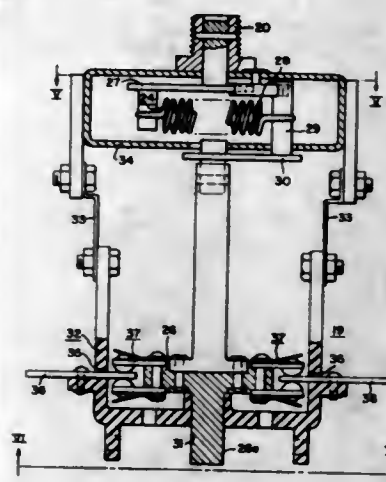
**3,461,258**  
**POSITIVE PRESSURE CAM TYPE CONNECTOR ASSEMBLY AND HOUSINGS THEREFOR**  
 Bernard Edward Shlesinger, Jr., Annandale, Va., assignor to AMP Incorporated, Harrisburg, Pa.  
 Filed Feb. 16, 1967, Ser. No. 616,616  
 Int. Cl. H01h 3/00; H01r 13/54  
 U.S. Cl. 200—153 29 Claims



An electrical conductor assembly which includes a pair of mating members which have an open first position and a closed second position; a pair of passageways in the assembly; a pair of cam surfaces in the assembly and a chamber adjacent the cam surfaces when the members are in the second position; a flexible conductor mounted in each of the passageways and extending a distance beyond

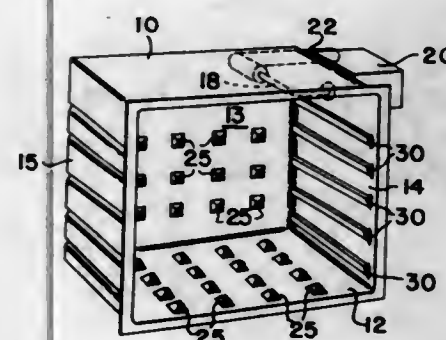
the end of its passageway greater than the length of the cam surface; the flexible conductors when the mating members are in closed position extending into the chamber and having a primary and a secondary axis; the cam surfaces being in line with the primary axis of the conductors when the mating members are in the first and second positions; and said conductors being in engagement with each other when the mating members are in the second position; and the end of each conductor when the mating members are in the second position having their secondary axis different from their primary axis and parallel to and spaced from the primary axis.

**3,461,259**  
**SPRING CONTACT-FINGER CONSTRUCTION**  
 Merrill G. Leonard, Brookfield Township, Trumbull County, Ohio, and Robert J. Manes, Wheatland, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
 Filed Jan. 22, 1968, Ser. No. 699,593  
 Int. Cl. H01h 1/50  
 U.S. Cl. 200—170 8 Claims



A switch is provided having an improved contact-finger construction with spring characteristics, such that the contact finger does not leave the cooperable blade-shaped contact with the result that no welding occurs. By having the spring characteristics related to the contact-finger mass, there results an absence of separation between the interface contact surfaces, so that welding is substantially eliminated.

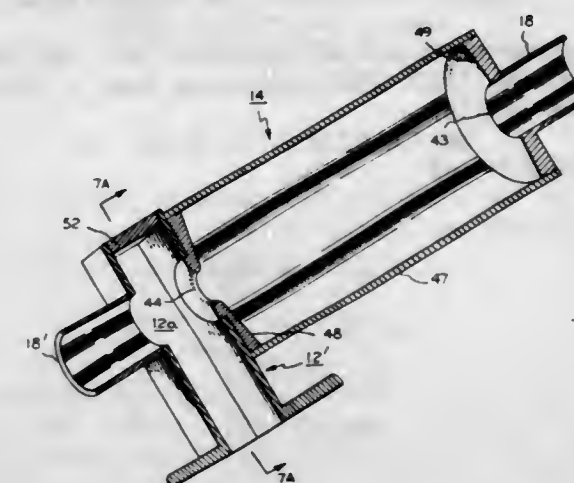
**3,461,260**  
**MICROWAVE OVEN**  
 Robert D. Bremer, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware  
 Filed May 16, 1966, Ser. No. 550,336  
 Int. Cl. H05b 9/00, 9/06  
 U.S. Cl. 219—10.55 2 Claims



A microwave oven enclosure comprising top, bottom, rear and side wall members of electro-conductive material defining a cavity adapted to receive a body to be

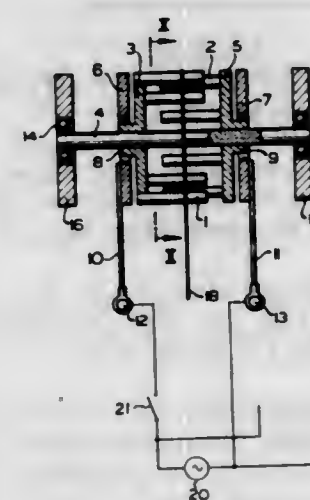
heated by microwave energy introduced into the cavity. A plurality of microwave energy reflective protuberances are arranged to project into the cavity for the purpose of varying the mode pattern of the microwave energy introduced into the cavity.

**3,461,261**  
**HEATING APPARATUS**  
 Richard W. Lewis, Wilmington, Del., and Jerome R. White, San Carlos, Calif., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
 Filed Oct. 31, 1966, Ser. No. 590,917  
 Int. Cl. H05b 9/06  
 U.S. Cl. 219—10.55 12 Claims



A resonant cavity microwave dielectric heating apparatus operating in the  $TM_{01n}$  mode, where  $n$  is an integer in the range of 0-5, comprising an elongated cylindrical chamber provided with a waveguide propagating the electric (E) field of microwave power substantially parallel to the axis of the chamber, the waveguide additionally incorporating an iris to maintain resonance within the chamber during operation as a dielectric heater for material transported axially of the chamber.

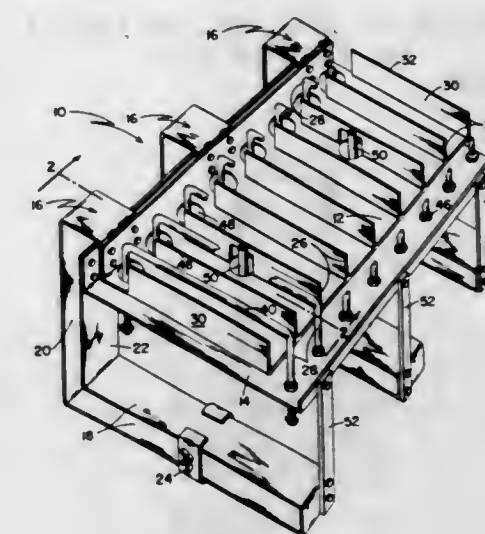
**3,461,262**  
**ELECTRIC THREAD DRYER**  
 Paul Artur Waldemar Jurschewitz, 43 Rue du Poteau, Paris, 18e, France  
 Filed Sept. 2, 1966, Ser. No. 576,980  
 Int. Cl. H05b 5/02  
 U.S. Cl. 219—10.61 5 Claims



Thread-drying apparatus wherein two parallel metallic disks, rotatable about a common axis, are provided with respective sets of peripherally spaced conductor rods, the two rods being interlaced to define a polygonal drum profile; the two disks and their respective rods are capacitively

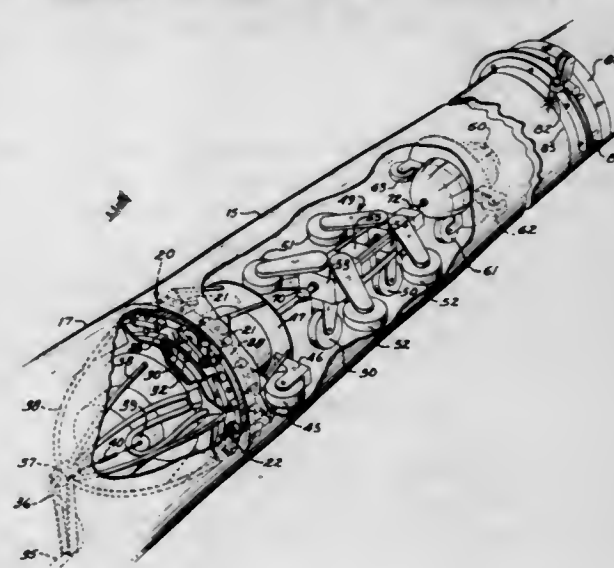
energized to develop a high-frequency field across adjoining rods for drying filamentary material wrapped around the drum.

**3,461,263**  
**RADIO FREQUENCY HEATING APPARATUS**  
 Joshua G. D. Manwaring, Needham, Mass., assignor to Radio Frequency Co., Inc., Medfield, Mass., a corporation of Massachusetts  
 Filed July 31, 1967, Ser. No. 657,294  
 Int. Cl. H05b 9/04, 9/06, 5/00  
 U.S. Cl. 219—10.81 4 Claims



A stray field electrode comprising first and second parallel electrically conductive plate electrodes spaced one above the other, and a plurality of parallel conductive electrode elements arranged in two series extending transversely of the plate electrodes. Each electrode of the first series comprises a sheet metal member mounted on the first plate electrode with a longitudinal edge surface of the member parallel thereto. Each electrode of the second series is mounted on the second plate electrode and includes a rod portion parallel and adjustable to the second plate electrode.

**3,461,264**  
**METHOD AND APPARATUS FOR WELDING GIRTH JOINTS IN PIPE LINES**  
 Jerome W. Nelson and Eugene F. Sims, Houston, Tex., assignors to CRC-Crosc International, Inc., a corporation of Oklahoma  
 Filed Jan. 12, 1967, Ser. No. 608,872  
 Int. Cl. B23k 9/02  
 U.S. Cl. 219—60 15 Claims



A method and apparatus is designed for forming internal pass girth welds in pipe lines by inserting a combination holding clamp-welding system inside the pipe at



the joint and forming a weld around the interior surface to secure the pipes together. Preferably a gas shielded consumable electrode welding process is employed, but other processes such as non-consumable (tungsten) electrode or electron beam arc welding techniques may be used. The job may subsequently be completed by additional welding passes on the outside.

3,461,265

## ORBITAL WELD HEAD

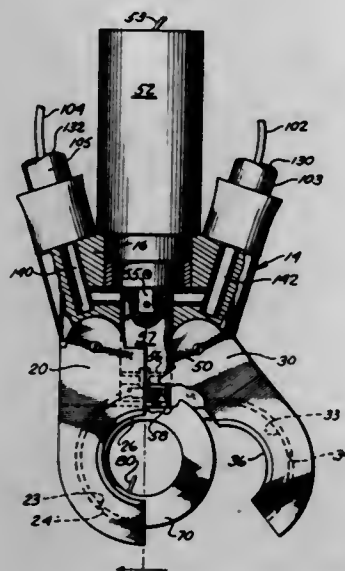
Lloyd W. Spiro, Canoga Park, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed Jan. 17, 1967, Ser. No. 609,873

Int. Cl. B23k 9/02

U.S. Cl. 219—60

9 Claims



An orbital weld head having split clam shells which when closed together enclose a rotor ring gear in which an electrode is mounted. The ring gear and shells are kept in intimate electrical and mechanical engagement and are formed on their adjacent peripheries with grooves that define a circular plenum chamber for conducting purge gas. The gas is discharged through skew apertures in the ring to create a protective envelope around the weld area.

3,461,266

## FLEXIBLE SHAFT CUTTING METHOD EMPLOYING WORK-IN-CIRCUIT ELECTRICAL FUSION

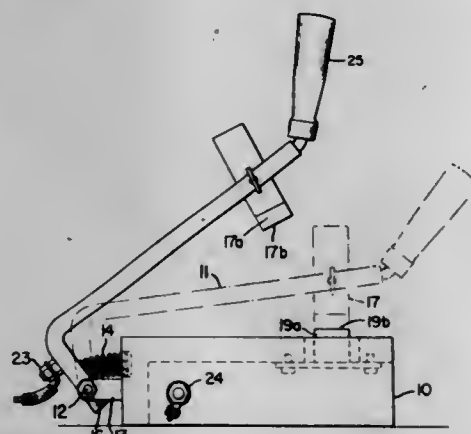
Walter F. Kita, Jr., 1105 Carmelita Ave., Burlingame, Calif. 94010

Filed June 22, 1966, Ser. No. 559,609

Int. Cl. B23p 1/00

U.S. Cl. 219—68

1 Claim



A method for severing flexible shaft cores of the type having at least two layers of helicoidally wound wire strands. The core is inserted between two electrical con-

ductor members having substantially parallel and relatively sharp cutting edges, these members being connected to a source of current. The edges are pressed against the sides of the outer core layer in diametrically opposite regions whereby current passes through the strands of wire to cause rapid heating and fusion of the wires in the region between the edges of the conductor members whereby the edges penetrate the fused region. Pull is applied along the length of the core to aid severance as the conductor members penetrate the fused region.

3,461,267

## QUICK-CHANGE TOOL FOR ELECTRICAL-EROSION MACHINING OF AN ARCuate OPENING

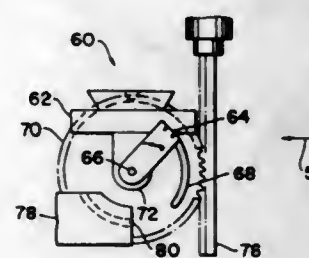
Thomas J. O'Connor, 100 Morgan Road, Ann Arbor, Mich. 48104

Continuation-in-part of application Ser. No. 504,971, Oct. 24, 1965. This application Jan. 8, 1968, Ser. No. 696,283

Int. Cl. B23k 9/16; B23p 1/00

U.S. Cl. 219—69

4 Claims



A tool for use with electrical machining apparatus to enable the cutting of arcuate holes through a conducting workpiece is disclosed. The tool includes means for rapidly and accurately securing the tool to the electrical machining apparatus, means for securing an arcuate electrode to the tool and means for moving the arcuate electrode in a circular path responsive to the spark gap between the electrode and workpiece. In one embodiment the means for moving the arcuate electrode includes a servo motor directly connected to the means for securing the electrode to the tool. In a second embodiment the means for moving the arcuate electrode includes a gear connected to the means for securing the electrode to the tool and rack means responsive to the spark gap between the workpiece and electrode engaged with the gear for rotation of the gear.

3,461,268

## KINETIC DEPOSITION OF PARTICULATE MATERIALS

Kiyoshi Inoue, 182 3-chome, Tomagawayoga-machi, Setagaya-ku, Tokyo-to, Japan

Continuation-in-part of application Ser. No. 574,056, Aug. 22, 1966. This application Apr. 10, 1967, Ser. No. 629,633

Claims priority, application Japan, Jan. 24, 1967, 42/6,382; Feb. 16, 1967, 42/12,856

Int. Cl. B23k 9/02

U.S. Cl. 219—76

22 Claims

Method of and apparatus for the high-energy-rate deposition of particulate materials upon a receiving surface whereby the particles are propelled against the receiving surface with sufficiently high kinetic energy to effect bonding between the particles and the surface. The high-kinetic-energy propulsion of the particles is effected by impulsive spark discharge. Apparatus for the repeated propulsion of unit masses of such particles whereby a belt having a series of encapsulated particle masses is passed intermittently between the discharge source and

surface, the belt forming one of the discharge electrodes. A method of making such belt whereby the particles are

3,461,270

## TUBULAR WELDING ELECTRODE

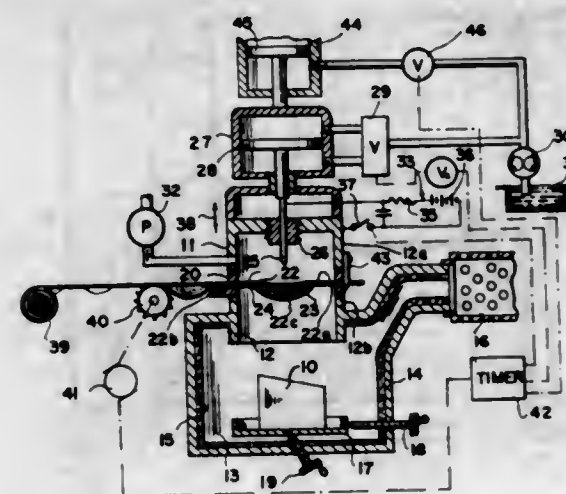
Donald M. Patton, Cleveland Heights, Ohio, assignor to The Lincoln Electric Company, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 6, 1966, Ser. No. 519,059

Int. Cl. B23k 35/22, 35/04

U.S. Cl. 219—146

12 Claims



deposited between metallic foils, at least one of which consists of a material adapted to coat the substrate and form a bonding layer for the particles.

A tubular welding electrode particularly intended for out-of-position welding, wherein the ingredients in the inside of the tube contain, in addition to the usual slagging agents, metal additives and/or metal fill, a hydrocarbon and, in some cases, a carbohydrate.

3,461,269

## MODIFIED WATER COOLED TORCH

Allan Ernest Stevens, Wokingham, William G. Hill, London, and David John Aldous, Surbiton, Surrey, England, assignors to Foster Wheeler Corporation, Livingston, N.J., a corporation of New York

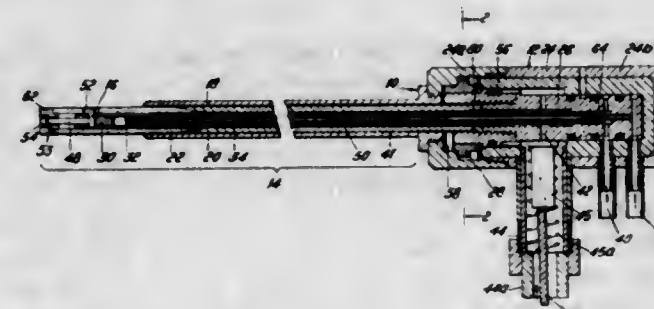
Filed June 15, 1966, Ser. No. 557,653

Claims priority, application Great Britain, June 18, 1965, 25,901/65

Int. Cl. B23k 9/12

U.S. Cl. 219—125

6 Claims



An inert gas shielded non-consumable electrode arc welding torch for internal welding of a tube to a tube sheet having a support body and a stem rotatably extending from said body and projected within the bore of the tube, and an electrode supported at the end of the stem. The stem having an elongated bi-material outer sleeve of a tube of a non-brittle and non-warping material supported for rotation from said body and extending short of the region of said electrode and a substantially shorter length, coaxial, and coextending same cross-sectional sized ceramic sleeve in the region of said electrode. The support body directing through the stem coolant, current and inert gas supply. One end of the non-brittle tube and one end of the shorter ceramic sleeve tube, opposed to the said one end of the non-brittle tube, being reversely beveled. The beveled portion of the short ceramic sleeve tube end can then be axially centered and inserted within the beveled portion of the non-brittle tube end, so as to be axially aligned, centered and secured to the support tube by a bolt and nut arrangement extending from the end of the stem. The bolt and nut arrangement including a ceramic end cap also clamps the welding electrode and at the same time it secures and clamps the sleeve tube axially to the support tube.

3,461,271

## AUTOMATIC HEAT SEALING MECHANISM FOR PACKAGING MACHINES

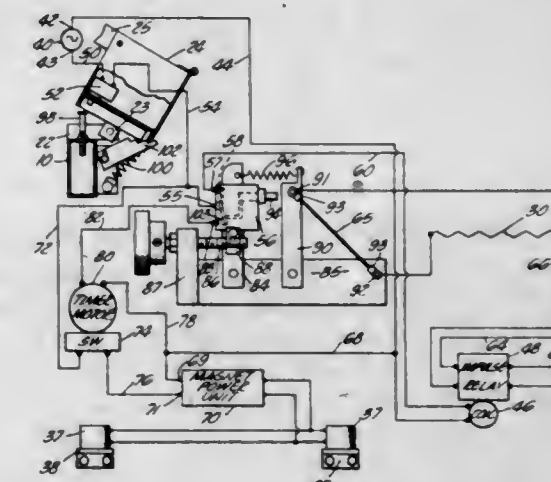
Herbert L. Reitzes, Beverly Hills, Calif., assignor to Quickpak Machinery Corp., Los Angeles, Calif., a corporation of California

Filed Mar. 21, 1967, Ser. No. 624,852

Int. Cl. H05b 1/00, 3/02; B65b 9/12

U.S. Cl. 219—243

7 Claims



A heat sealing mechanism for packaging machines in which an article is packaged within a plastic film, employing a heating element which is impressed against the plastic film together with a control device for automatically maintaining the pressure of the heating element against the film, controlling the heating and cooling cycles of said element and then releasing the heating element from the film.

3,461,272

## ELECTRO-THERMAL LOGIC APPARATUS

Hans G. Hirsbrunner, South Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Sept. 18, 1967, Ser. No. 668,509

Int. Cl. H05b 1/02

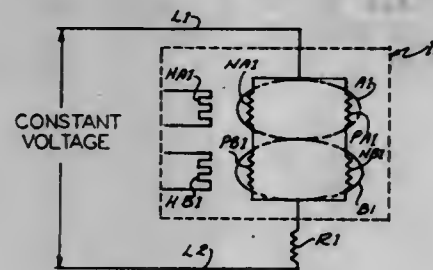
U.S. Cl. 219—505

10 Claims

Various logic gates are disclosed which employ thermistors in various combinations to switch the state of ener-

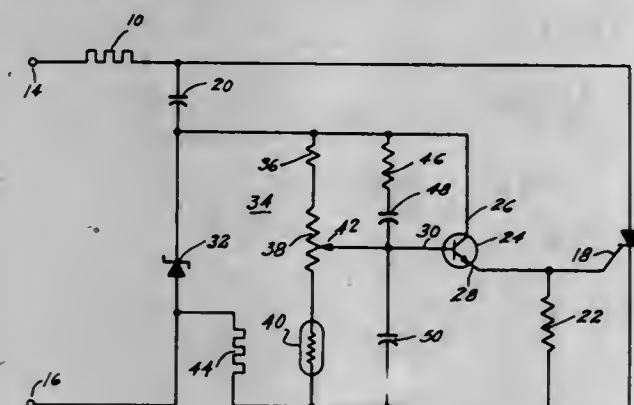


gization of an electrical load in response to predetermined combinations of input signals. The input signals are in the form of heat applied to various ones of said thermistors.



By thermally coupling thermistors of opposite temperature coefficient types so-called exclusive OR gate and so-called X gate functions are provided.

**3,461,273**  
**SOLID STATE CIRCUIT FOR CONTROLLING THE TEMPERATURE OF AN ELECTRIC APPLIANCE SUCH AS A BLANKET**  
Carrel Hilton Dykes, Bay Springs, Miss., assignor to Northern Electric Company, Chicago, Ill., a corporation of Delaware  
Filed Aug. 24, 1966, Ser. No. 574,624  
Int. Cl. H05b 1/02  
U.S. Cl. 219—501 16 Claims



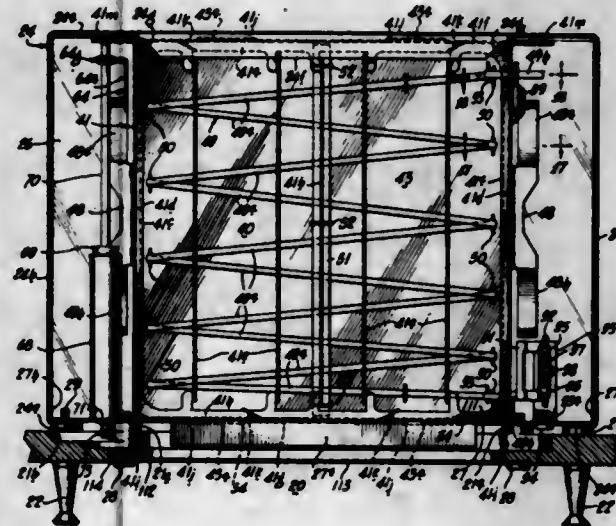
A solid state circuit for controlling the conduction of current for an electric heater as used in blankets which has an SCR connected in series with a blanket heater and which has its control electrode connected to a biasing circuit comprising a capacitor and resistor in parallel with the voltage source and the biasing signal is controlled by a switching element such as a transistor which is biased by a voltage divider comprising a resistor and a thermistor. A voltage reference diode is connected in series with a capacitor across the voltage terminal to regulate the amplitude of the voltage on the circuit.

The circuit provides a circuit which switches within a relatively small fraction of a cycle of the alternating current voltage after a zero crossing and thus eliminates radio frequency interference which is common with electric blankets.

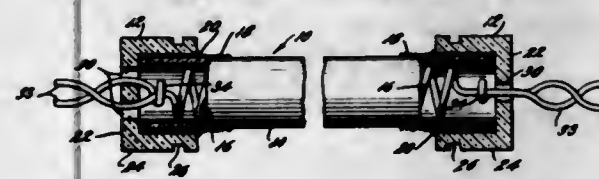
**3,461,274**  
**ELECTRIC FOOD TOASTER**  
James T. Williams, Downers Grove, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois  
Original application Oct. 22, 1965, Ser. No. 502,645, now Patent No. 3,392,663, dated July 16, 1968. Divided and this application July 12, 1967, Ser. No. 652,777  
Int. Cl. H05b 3/26; A47j 37/08  
U.S. Cl. 542—219 7 Claims

An electric toaster with a heating element having a resistance wire which zigzags across one face of an insulating form. A staple is positioned at the end of each wire span to hold the wire to the form. Glass side walls

of the toaster housing are held in position by spring biasing means.

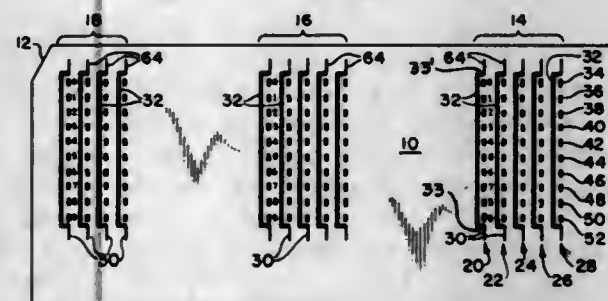


**3,461,275**  
**INFRARED QUARTZ HEATER**  
Richard R. Poole, Norwalk, Conn., assignor to Pyrotel Corporation, Mamaroneck, N.Y., a corporation of New York  
Filed Jan. 26, 1968, Ser. No. 700,763  
Int. Cl. H05b 3/10  
U.S. Cl. 219—553 10 Claims



The quartz heater of the present invention comprises a coiled electrical resistance wire inside a quartz tube and capped at each end by an end cap. The coils may have a variable pitch, to generate less radiant heat energy at the center of the heater than adjacent the end caps. The cemented juncture of the end caps and quartz tube has a metallic filler mesh interposed between the tube and the end cap; the filler mesh is believed to lower the failure rate of the quartz heater. The terminus of resistance wire itself extends through the base of each end cap and is formed into the terminal leads for the quartz heater.

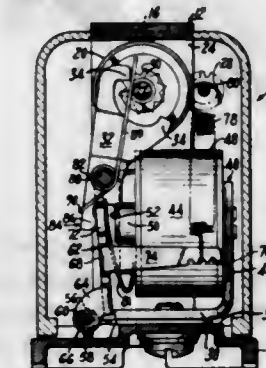
**3,461,276**  
**REUSABLE DATA CARD**  
Pasquale F. J. Recca, Bergenfield, N.J., assignor to The Western Union Telegraph Company, New York, N.Y., a corporation of New York  
Filed Oct. 20, 1965, Ser. No. 498,229  
G06k 19/00  
U.S. Cl. 235—61.12 1 Claim



A data storage card has a plurality of straight conductive members spaced apart and extending transversely across the card. Adjacent each member and parallel

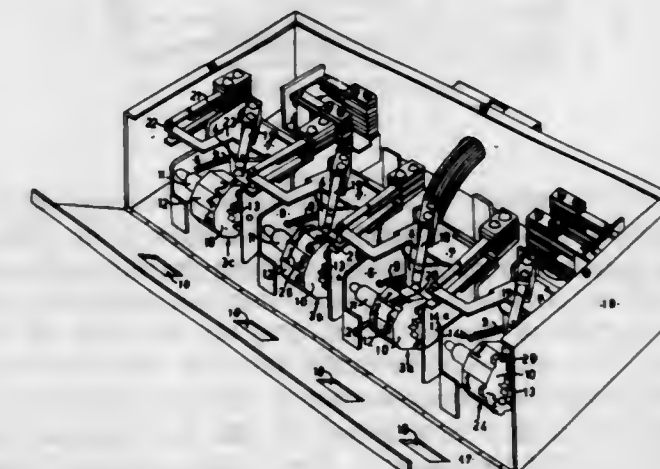
thereto is a column of short, spaced, conductive, data storage elements. Connected to opposite ends of each straight member are conductive bridge elements. Connected to the bridge elements are short conductive terminals disposed in alignment with the column of short data storage elements.

**3,461,277**  
**MAGNETIC COUNTER**  
James P. Barrett, West Hartford, Conn., assignor to Veeder Industries Inc., a corporation of Connecticut  
Filed Mar. 8, 1966, Ser. No. 532,788  
Int. Cl. G06f 7/46, 7/40  
U.S. Cl. 235—92 10 Claims



A magnetic counter is provided with an electromagnetic drive mechanism including a clapper spring-biased away from the electromagnet and an independent verge carrying a pair of drive pawls and having a separate drive spring for indexing the counter wheel upon movement of the clapper during energization of the electromagnet.

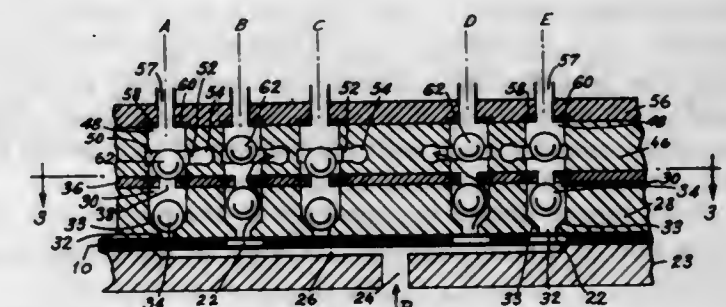
**3,461,278**  
**AGGREGATING DEVICE FOR USE IN ELECTRICAL TOTALISATORS AND THE LIKE**  
Roy Ernest Wells, Seaford, New South Wales, Australia, assignor to Electra Totalisators Pty. Limited, Lidcombe, New South Wales, Australia, a corporation of New South Wales  
Filed June 2, 1966, Ser. No. 554,778  
Int. Cl. G06f 7/385; G06g 7/14  
U.S. Cl. 235—92 8 Claims



1. An aggregating device for summing the stakes wagered on a contestant with an electrical totalisator in which all money values are expressed in terms of a basic unit, said device comprising rotatable stepping counters each for displaying in turn the numerals of a respective decimal digit of the progressively summated total, individual input circuits for the counters, means for receiving on individual lines signals representative of the basic unit and different products of the basic unit, the second lowest signalled value being double the basic unit and the higher signalled values being a decimal product of the immedi-

ately lower value, operating windings for each counter, means responsive to a full rotation of a counter to pulse once the winding of the next higher order counter, means for counting each signal received representative of the basic unit value, means responsive to each 2 count of the counting means to pulse once the counter of the lowest digit of the summated total whereby each of said digital counters counts in even numbers to double its normal summing capacity, and means for providing an indication to an operator when a counter is positioned between the numerals of 9 and 20 so that a mental addition may be made to the numeral indicated by the next higher digit to obtain the summated total.

**3,461,279**  
**DEVICE FOR PNEUMATIC OR HYDRAULIC READ-OUT AND STORAGE OF INFORMATION FROM PERFORATED INFORMATION CARRIERS**  
Klemens Maurer, Gasstrasse 51, Solingen, Germany  
Filed Oct. 15, 1965, Ser. No. 496,447  
Claims priority, application Germany, Nov. 21, 1964, S 94,284  
Int. Cl. G06k 7/02  
U.S. Cl. 235—61.11 13 Claims



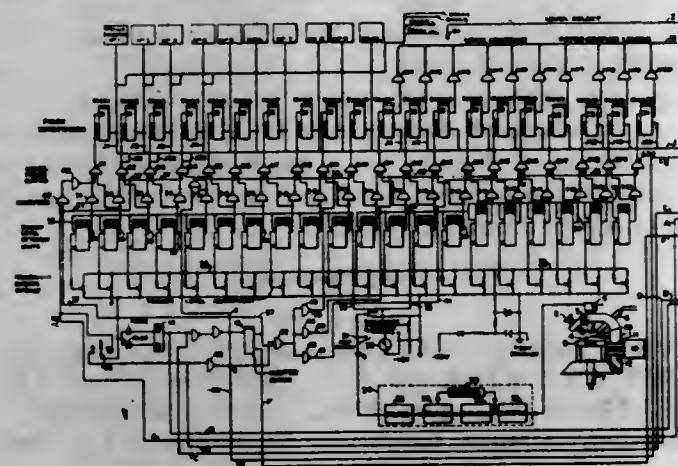
A fluid readout and storage device has a cavity within which there is a floating body in the form of a ball. At each end of the cavity are valve seats surrounding end openings, while centrally located in the cavity is a lateral opening. Air is blown through perforations in a tape or card, which perforations register with the cavity lower end opening through a check valve which air passes out the lateral opening to raise the floating body above the lower seat. Thereafter air under pressure is introduced into the lateral opening, closing the check valve and holding the floating body against the upper seat. At stations where there are no perforations in the tape the floating body remains on its lower seat. The position of the floating bodies thus stores the information as to where there were perforations in the tape and where there were not. This stored up information is read out electrically by the floating body bridging electrical contacts at the seats.

**3,461,280**  
**AUTOMATIC MICROSCOPIC ELECTRONIC DATA ACCUMULATOR**  
Leonard P. Vltt, Irwin, and Robert M. Kendig, Trafford, Pa., assignors to Femco, Inc., Irwin, Pa., a corporation of Pennsylvania  
Filed Sept. 23, 1965, Ser. No. 489,553  
Int. Cl. G06f 7/38; G06g 7/12  
U.S. Cl. 235—92 8 Claims

The automatic microscopic electronic data accumulator of this disclosure reads a time controlled optical signal through a microscope scanning a subject to obtain a reading of the character of the subject. This light variant signal is simultaneously converted to a comparative voltage level signal of computer magnitude which with a timing pulse rate of predetermined frequency is subjected to detecting point counters for predetermined signal voltage levels through binary logic units in the circuit.



The binary logic units are progressively biased to operate specific classifying units corresponding to the predetermined voltage levels of the signal to distinguish the different characters and combinations produced by the optical signal relevant to time.



The classifying units registering time counts on gate pulse counter units through their corresponding gate pulse units at their predetermined signal levels and time periods indicated in the original optical and corresponding voltage level signals. Thus the registered time counts on the gate pulse counter units actually measure size as well as number that appeared in the original optical signal when scanning the subject. This scanning and measuring of size as well as number of the characteristics of the subject is substantially simultaneous with the tacking of the optical signal, being within a part of a microsecond.

Each binary output is connected to the next lower gate pulse unit as a counting inhibitor level of the latter.

3,461,281

**TRANSFER DISABLING MECHANISM**

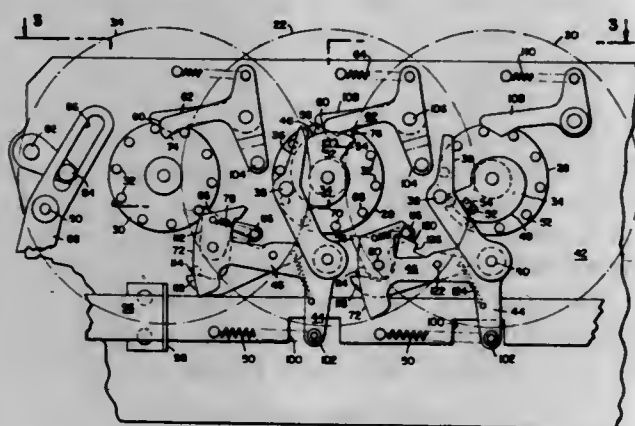
Leif J. Sundblom, Castro Valley, Calif., assignor to Rockwell Manufacturing Company, Statesboro, Ga., a corporation of Pennsylvania

Filed Feb. 1, 1967, Ser. No. 613,364

Int. Cl. G06c 15/42

U.S. Cl. 235-144

5 Claims



In a pinwheel-type transfer mechanism for a counter, the pinwheels are freed for resetting purposes and then reengaged with the transfer mechanism while the transfer finger is disabled by a latch arrangement so that no transfer entry is made on the higher-order pinwheels following the reset operation.

3,461,282

**OPERATING ILLUMINATOR**

Miguel Martinez, Baltimore, Md., assignor to The Johns Hopkins University, a corporation of Maryland

Filed Aug. 19, 1966, Ser. No. 573,573

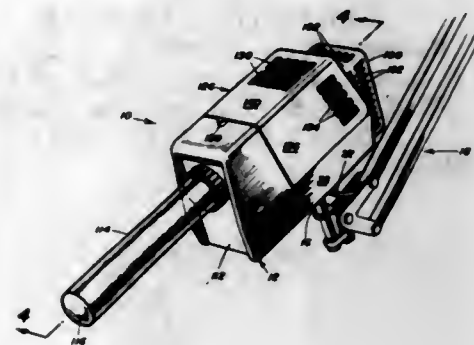
Int. Cl. A61b 1/06; F21v 13/04

U.S. Cl. 240-41.15

4 Claims

A spot light especially designed for operating room use. A high intensity lamp is enclosed in a force-ventilated

housing along with condenser lenses. For compactness the fan motor is situated at the rear and on-axis with the light beam. A concave mirror is mounted on the shaft of the motor and re-directs rearward light in a forwardly direction. A cylindrical rod of polished Lucite "pipes" the light for a considerable distance beyond the front of the



illuminator to bring the light effectively close to the operating field to prevent any obstruction from shadowing it and to act as a convenient handle by which to direct the beam as desired by moving the lamp house on its mount as a unit and to advance and retard the rod by rotating it.

3,461,283

**VANDAL-PROOF LUMINARY**

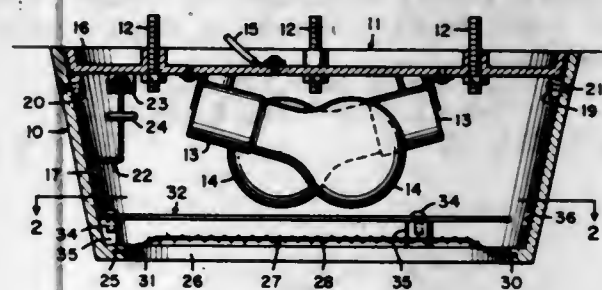
Richard Hahn, Olivette, Mo. (% Soundoller Manufacturing Co., Inc., 9380 Watson, Industrial Park, St. Louis, Mo. 63126)

Continuation of application Ser. No. 596,888, Nov. 25, 1966. This application May 9, 1968, Ser. No. 728,085

Int. Cl. F21v 21/04, 21/00

U.S. Cl. 240-78

2 Claims



The vandal-proof luminary includes a housing having an inwardly facing rim defining the margin of an illumination aperture. A grid, having a dome-shaped configuration with an outwardly projecting skirt portion embedded in the margin of the aperture, projects inwardly of the housing. The grid is structurally integral with the housing to provide a protective guard for the light source. A luminary screen is disposed in the housing between the grid and the light source. The screen is spaced laterally to provide a substantially peripheral vent for the passage of air, but has a greater diameter than the aperture.

3,461,284

**HEAT DETECTING SYSTEM**

Ivan L. Joy, 1616 W. 29th St., Topeka, Kans. 66611

Filed Sept. 5, 1967, Ser. No. 665,329

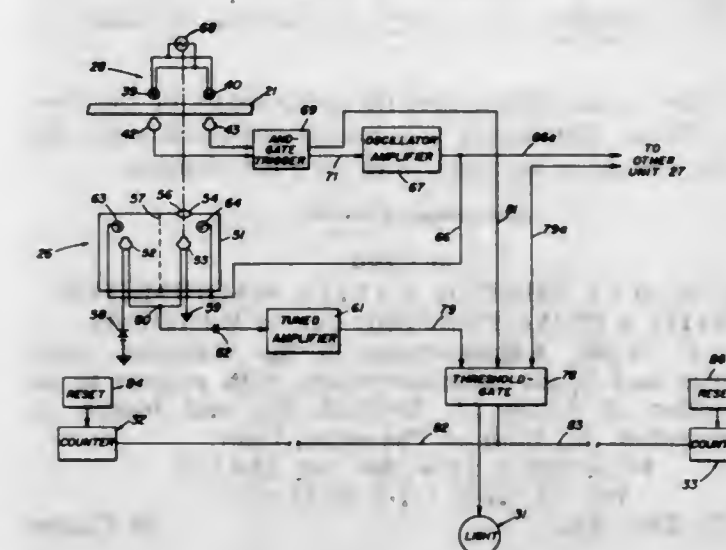
Int. Cl. B61k 3/06; B61k 9/06

U.S. Cl. 246-169

16 Claims

This disclosure deals with a system for detecting the amount of heat radiated by each of a series of moving objects and for giving an indication of the amount of

such heat radiation or giving a signal when such heat radiation exceeds a predetermined value. The objects may



3,461,285

**MASS SPECTROMETER ION SOURCE WITH A TWO REGION IONIZATION CHAMBER TO MINIMIZE ENERGY SPREADING OF THE IONS**

Helmut Wilhelm Werner Werner, Emmasingel, Netherlands, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

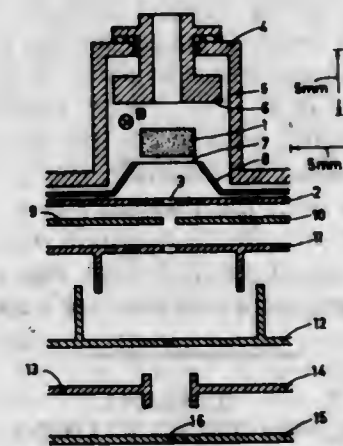
Filed June 28, 1967, Ser. No. 649,544

Claims priority, application Netherlands, July 2, 1966, 6609292

Int. Cl. B07d 59/44

U.S. Cl. 250-41.9

7 Claims



An ion source for a mass spectrometer in which ions are formed by ionization of a gas to be tested with an electron beam collimated by a magnetic field in the direction of the beam, the ions formed being extracted from the ionization space through a small gap parallel to the direction of the electron beam by means of an electric field the direction of which extends at right angles to the direction of the electron beam, a flat grid-like electrode being provided consisting of parallel wires which cross the direction of the electron beam, the latter electrode dividing the ionization space into two zones one of which contains the ionization gap, a potential being applied to the grid-like electrode which in combination with potentials applied to the other electrode produces a small voltage gradient in the first zone and a large voltage gradient in the other zone.

**METHOD AND APPARATUS FOR MEASURING THE VOID FRACTION OF HYDROGENOUS FLUIDS**

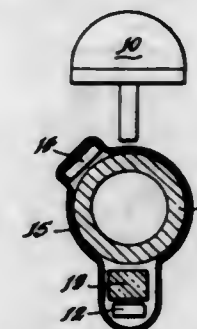
Charles N. Jackson, Jr., and Ward G. Spear, Richland, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed May 23, 1968, Ser. No. 731,521

Int. Cl. G01n 23/12

U.S. Cl. 250-43.5

3 Claims



Method and apparatus for measuring the void fraction of hydrogenous fluids such as boiling water using absorption and moderation effects of the mixture. A high-intensity beam of fast neutrons is directed through the hydrogenous fluid and the intensity of the thermal neutrons obtained by scattering from said hydrogenous fluid or by moderating fast neutrons passing completely through the fluid is measured.

3,461,287

**FERROCENE DERIVATIVES AS ULTRAVIOLET ABSORBERS AND SCINTILLATION AGENTS**

Charanjit Rai, Crystal Lake, Ill., assignor, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

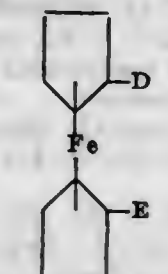
No Drawing. Filed July 17, 1963, Ser. No. 295,830

Int. Cl. G01t 1/20; G03c 1/84; C08f 45/54

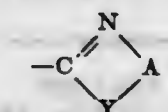
U.S. Cl. 250-71.5

5 Claims

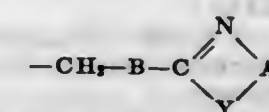
1. A composition of matter consisting essentially of a textile washing compound selected from the class consisting of soaps and synthetic detergents and from about 0.05% to 15% by weight of said textile washing compound of a compound of the formula



wherein D is a member of the group consisting of substituents having the formula



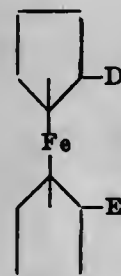
and



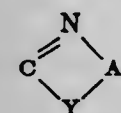
wherein A is a divalent aromatic nucleus of 6 to 14 carbon atoms, Y is a substituent of the group consisting of oxygen, sulfur, and imino, B is a member of the group consisting of unsaturated conjugated chain radicals of 2 to 6 carbon atoms, divalent aryl nuclei of 6 to 14 carbon atoms and C<sub>1</sub> to C<sub>10</sub> alkylene radicals, and E is a member of the group consisting of hydrogen, carboxyl radical, -CH<sub>2</sub>COOH radical and D.



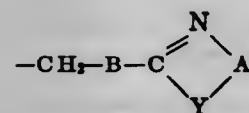
3. The method of determining the radiation emission of a radioactive sample which comprises placing said sample and at least one scintillation solute in at least one solvent capable of absorbing the radiation emitted from said sample and transmitting the same to said solute whereby said solute emits light in the visible spectrum upon excitation from said sample, transforming the visible light to an electrical signal and measuring the time and magnitude of said electrical signal, said solute being a compound of the formula



wherein D is a member of the group consisting of substituents having the formula



and



wherein A is a divalent aromatic nucleus of 6 to 14 carbon atoms, Y is a substituent of the group consisting of oxygen, sulfur, and imino, B is a member of the group consisting of unsaturated conjugated chain radicals of 2 to 6 carbon atoms, divalent aryl nuclei of 6 to 14 carbon atoms and C<sub>1</sub> to C<sub>10</sub> alkylene radicals, and E is a member of the group consisting of hydrogen, carboxyl radical, —CH<sub>2</sub>COOH radical and D, said sample containing said compound in an amount ranging from about 0.01 to 10 gm./liter of total sample.

3,461,288

## CHEMICAL DOSIMETER

Gerald Oster, New York, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission  
No Drawing. Filed Mar. 22, 1966, Ser. No. 538,158  
Int. Cl. G01f 1/06; H01j 39/00

U.S. Cl. 250—83

2 Claims

1. A radiation dosimeter film comprising a plastic body composed of polyvinyl chloride having dispersed throughout said body from about 0.001 to about 1.0 weight percent 1,2,7,8-dibenzanthracene based on the total weight of said film, said film having a thickness of more than 1 micron.

3,461,289

## DIFFERENTIAL ABLATION MEASUREMENT OF HEAT SHIELDS USING A PLURALITY OF RADIOACTIVE MATERIALS

Rubin Feldman, Creve Coeur, Mo., assignor, by mesne assignments, to Thermal Systems, Inc., Clayton, Mo., a corporation of Missouri  
Continuation-in-part of application Ser. No. 311,816, Sept. 26, 1963. This application July 22, 1966, Ser. No. 567,224

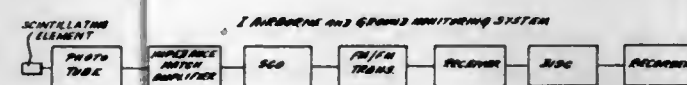
Int. Cl. H01j 39/00

U.S. Cl. 250—83

8 Claims

A method of measuring the rate of ablation or sublimation of different components of a debris producing heat shield, by introducing into an area of the shield two or more radioactive elements which have different energy

levels. The elements are chosen to ablate under different conditions, preferably conditions which closely approxi-



mate those under which specific components of the heat shield ablate. Monitoring equipment simultaneously detects the change in counting rate for each element.

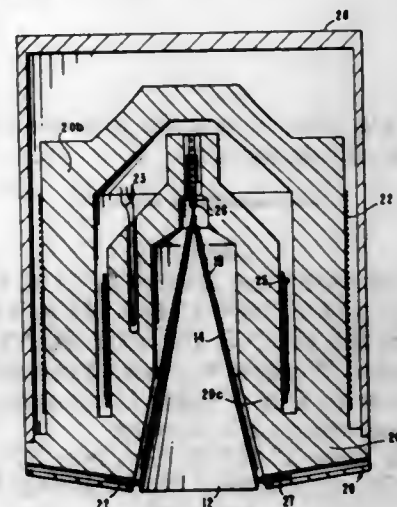
3,461,290

## CONICALLY SHAPED CAVITY RADIOMETER WITH A DUAL PURPOSE CONE WINDING

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of James M. Kendall, Sr., and Joseph A. Plamondon, Jr., both of Pasadena, Calif.  
Filed Oct. 3, 1966, Ser. No. 584,015  
Int. Cl. G01t 1/16; H01j 39/00

U.S. Cl. 250—83.3

10 Claims



A black body radiation receptor in the form of a conically shaped cavity with cone winding, which is in thermal contact with the cone, serving both as a temperature sensor and cavity heating element. The receptor is surrounded by a thermal guard, having a guard temperature sensing element, which together with the cone winding is connected in a D.C. bridge configuration to provide a control signal used to control the supply of power to the cone winding to maintain the cavity in temperature equilibrium with the thermal guard. The power supplied to the cone winding to maintain temperature equilibrium is a function of the radiation into the receptor, the equilibrium temperature and the cone's area.

3,461,291

## WELL LOGGING DEVICE USING A PULSED SOURCE OF MONOENERGETIC NEUTRONS

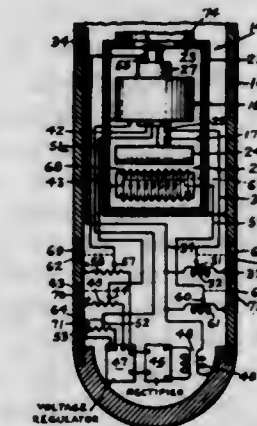
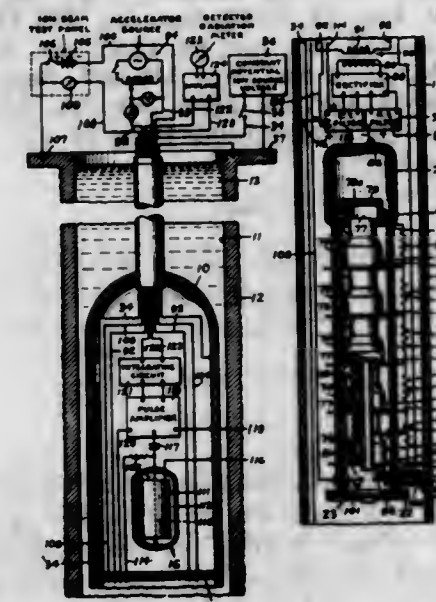
Clark Goodman, Boston, Mass., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas  
Continuation of application Ser. No. 275,932, Mar. 11, 1952. This application June 22, 1967, Ser. No. 648,170  
Int. Cl. G01t 1/18; H01j 39/26; E21b 47/00

U.S. 250—83.6

62 Claims

A system for radioactivity well logging incorporating a source of high energy monoenergetic neutrons is described. The neutron source is an accelerator tube in which charged particles, e.g. deuterium ions, are accelerated under relatively low voltages toward a target element including tritium. The resulting reaction of the deuterium ions with the tritium target produces monoenergetic neutrons at an energy level of 14 mev. These neutrons bombard the formations surrounding the well bore and induce a radioactive response, in the form of neutrons and gamma radiation, which is detected by a suitable instrument in the logging tool. Operation of the accelerator

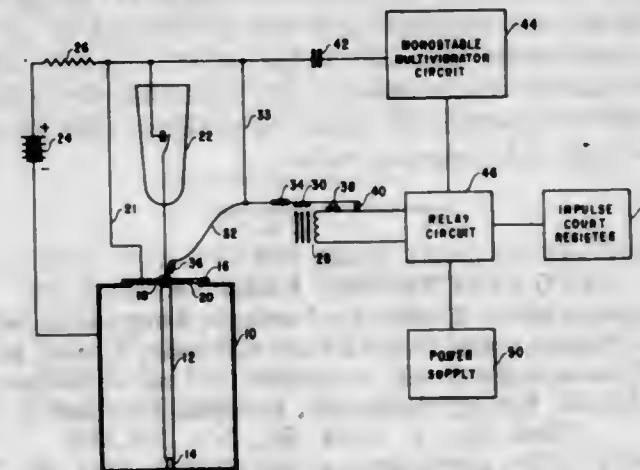
and the detecting circuitry is controlled completely from the surface and the neutron source may be kept in inactive until it reaches the logging depth in the well bore and deactivated prior to its return to the surface, thereby minimizing radiation hazards. At the same time, the



3,461,292  
LOW LEVEL RADIATION MONITOR  
William F. Spilchal, Jr., North Augusta, S.C., assignor to the United States of America as represented by the United States Atomic Energy Commission  
Filed Nov. 10, 1966, Ser. No. 594,325  
Int. Cl. G01t 1/18

U.S. Cl. 250—83.6

4 Claims



This invention relates to an improved radiation measuring device for measuring low-level or background ioniz-

ing radiation comprising an ionization chamber circuit, including an electrostatic relay to sense the voltage across the ionization chamber and providing a coupling means between the chamber circuit and a readout circuit, and a by-pass relay means connected to the chamber in parallel with the electrostatic relay. The by-pass relay is energized by a signal from the readout circuit and is adapted to recharge the ionization chamber. This by-pass relay means permits an ionization chamber having a relatively large capacitance to be used and will completely recharge the chamber after each counting cycle.

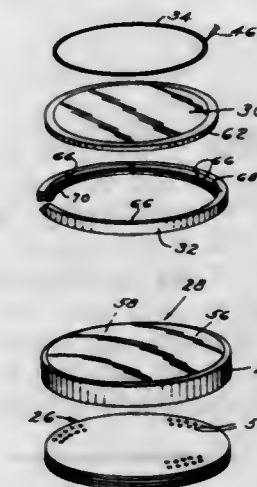
3,461,293

## SPARK IMAGING DEVICE

Norman H. Horwitz, Birmingham, Mich., assignor of one-half to James E. Lofstrom, Birmingham, Mich.  
Filed Dec. 21, 1967, Ser. No. 692,443  
Int. Cl. G01t 1/16; H01j 39/28; G01n 21/38

U.S. Cl. 250—83.6

17 Claims



This disclosure relates to a spark imaging device having a plate-like photosensitive cathode for subjection to the radiation to be imaged, a plate-like light transmitting anode spaced from the cathode opposite the source of radiation, and a gas medium capable of supporting a spark between the electrodes. An electrical field is maintained across the gas medium by a source of current, above the sparking potential of the gas, such that radiation impinging on the cathode creates a spark in the gas medium which may be visualized through the anode. The cathode is concave, having a central portion more closely spaced to the anode than the periphery, to minimize spurious discharges in the periphery. The cathode is a film of gold fired onto a supporting glass plate, in intimate heat transfer contact therewith, and the anode is connected to the source of current through a connector loop disposed adjacent the periphery of the anode, to evenly distribute the charge across the anode surface.

3,461,294

## METHOD FOR GENERATING A BEAM OF IONS WHEREIN THE IONS ARE COMPLETELY POLARIZED

Dieter von Ehrenstein, Westmont, and David C. Hess, Downers Grove, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Dec. 30, 1965, Ser. No. 517,868

Int. Cl. H01j 35/00; G01n 23/00

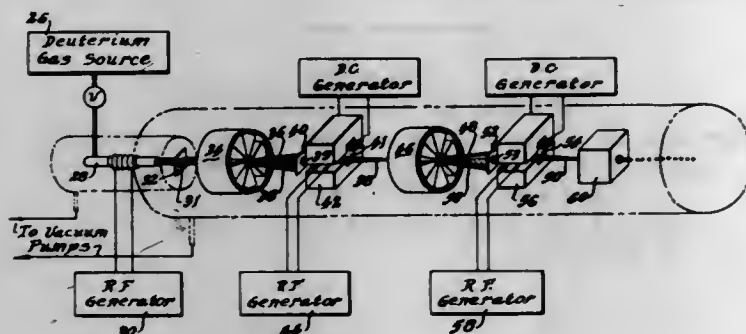
U.S. Cl. 250—84

11 Claims

A method for producing a beam of completely polarized ions from a material whose atoms have a quantum number of the electron shell therein of 1/2 and a total nuclear angular momentum of 1 collimates the atoms of the material into a beam in a partial vacuum and



passes the beam through a first nonuniform magnetic field to separate the atoms therein into first and second groups having respectively a quantum number of the electron shell of the atoms of said material of  $+\frac{1}{2}$  and  $-\frac{1}{2}$ . Atoms contained in said second group are removed from said beam. The beam is then passed through combined DC and radio frequency magnetic fields which are angularly displaced with respect to each other an integral multiple of 90 degrees to effect transition in the quantum



number of the angular momentum of the nucleus of the atoms of said material. The beam is then passed through a second nonuniform magnetic field to separate the atoms therein into third and fourth groups having respectively a quantum number of the electron shell of the atoms of said material equal to  $+\frac{1}{2}$  and  $-\frac{1}{2}$ . The atoms, contained in said fourth group are removed from said beam and the remaining atoms in said beam are ionized to produce a beam of completely polarized ions.

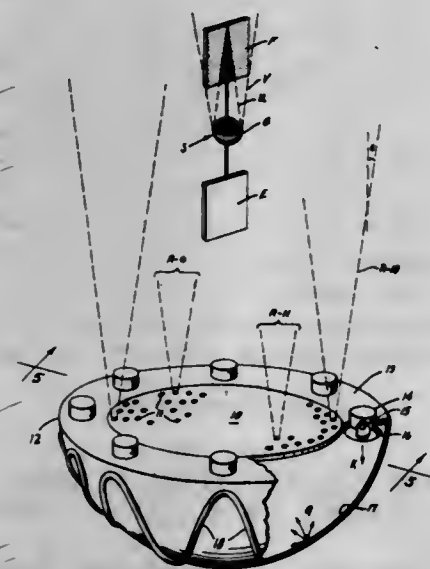
3,461,295

# METHOD AND INSTRUMENT FOR SIMULATING ALBEDO RADIATIONS OF ASTRONOMICAL BODIES

Walter G. Camack, Palo Alto, Calif., assignor to Philco-Ford Corporation, a corporation of Delaware  
Filed Jan. 29, 1965, Ser. No. 428,903  
Int. Cl. G21h 5/00

U.S. Cl. 250-88

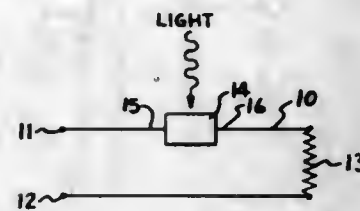
1 Claim



An instrument for simulating the albedo radiations of astronomical bodies. The instrument comprises means for generating the radiation, means for diffusing it and integrating it over an area, and a plate structure overlying said area. Said plate structure has openings no wider than their extension through the structure, for directionally transmitting the radiant energy.

3,461,296  
**PHOTOCONDUCTIVE BISTABLE DEVICE**  
Stanford R. Ovshinsky, Birmingham, Mich., assignor, by mesne assignments, to Energy Conversion Devices, Inc., Troy, Mich., a corporation of Delaware  
Continuation-in-part of applications Ser. No. 118,642, June 21, 1961, Ser. No. 226,843, Sept. 28, 1962, Ser. No. 252,510, Jan. 18, 1963, Ser. No. 252,511, Jan. 18, 1963, Ser. No. 252,467, Jan. 18, 1963, Ser. No. 288,241, June 17, 1963, and Ser. No. 310,407, Sept. 20, 1963.  
This application Apr. 10, 1964, Ser. No. 358,697  
Int. Cl. H01l 15/06; H01j 39/12  
U.S. Cl. 250-211

10 Claims



1. An electrical load circuit including in series a substantially constant voltage source for applying a substantially constant voltage thereto, an electrical load and a symmetrical light responsive current controlling device responsive to the intensity of external light affecting the same for substantially instantaneously energizing the electrical load when the current controlling device is subjected to at least a predetermined high light intensity value, said current controlling device being exposed to light and comprising non-rectifying semiconductor material and electrodes in non-rectifying contact therewith for electrically connecting the same in series in the electrical load circuit, said semiconductor material having means providing a threshold voltage value, said semiconductor material having means providing a negative light-resistance coefficient for decreasing and increasing the resistance thereof and for lowering and raising the threshold voltage value thereof as the value of the light intensity affecting the current controlling device increases and decreases respectively, said semiconductor material having at least portions thereof between the electrodes in one state which is of high resistance and substantially an insulator for blocking the flow of current therethrough substantially equally in each direction below the threshold voltage value which is lowered and raised upon increase and decrease in the value of the light intensity affecting the current controlling device, said semiconductor material having at least portions thereof between the electrodes in another state which is of low resistance and substantially a conductor for conducting the flow of current therethrough substantially equally in each direction, said at least portions of said semiconductor material being controlled by the substantially constant voltage applied to the electrical load circuit, and being substantially instantaneously changed from their blocking state to their conducting state when the threshold voltage value of the current controlling device is lowered to at least the substantially constant value of the applied voltage upon increase of the value of the light intensity affecting the current controlling device to at least said predetermined high light intensity value.

3,461,297

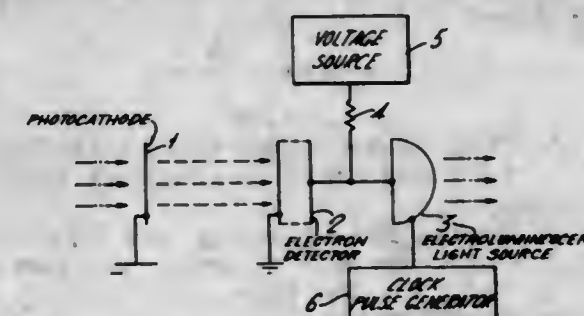
**OPTO-ELECTRONIC LOGIC ELEMENT**  
Edmund Harry Cooke-Yarborough, Longworth, near Abingdon, and Peter Edwin Gibbons, Grove, near Wantage, England, assignors to United Kingdom Atomic Energy Authority, London, England  
Filed May 6, 1964, Ser. No. 365,315  
Claims priority, application Great Britain, May 10, 1963, 18,555/63; Jan. 23, 1964, 3,056/64  
Int. Cl. H01j 39/12, 31/50

U.S. Cl. 250-213

8 Claims

A high-speed opto-electronic logic element comprising

an electron detector and an electroluminescent light source sharing a common voltage source, and a photocathode



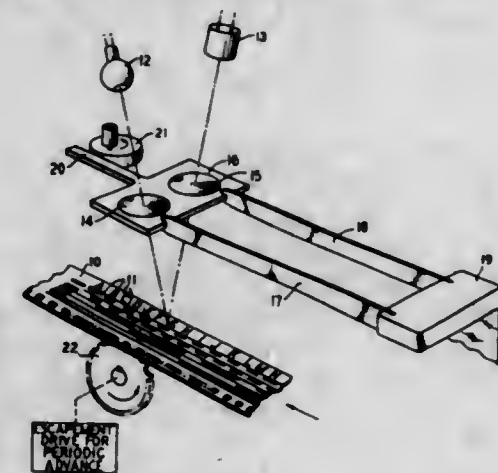
which emits electrons under the action of input light pulses. These electrons strike the electron detector, lowering its impedance and so extinguishing the light source.

3,461,298

**OPTICAL SCANNING APPARATUS EMPLOYING TWO FOCUSING ELEMENTS MOVING PARALLEL TO A DIFFUSELY REFLECTING SURFACE AND WITH A SPACING PARALLEL TO A SPACING BETWEEN A LIGHT SOURCE AND A DETECTOR OR VIRTUAL IMAGE THEREOF**  
David W. Hagelbarger and Donald R. Herriott, Morris Township, Morris County, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York  
Filed May 23, 1966, Ser. No. 552,256  
Int. Cl. G01n 21/30; G11b 7/08

U.S. Cl. 250-219

4 Claims



An optical scanning apparatus is disclosed in which two focusing elements move parallel to a diffusely reflecting surface and with a spacing parallel to a spacing between a light source and a detector or virtual image thereof in order to track images of the light source and the detector across the surface. The scanning motion is advantageous for scanning of paper tape or similar surfaces bearing typed information or the like. The motion is achieved by a double cantilever member arrangement providing rectilinear motion parallel to a planar surface or by an arrangement providing curved motion parallel to a cylindrically curved diffusely reflecting surface being scanned.

3,461,299

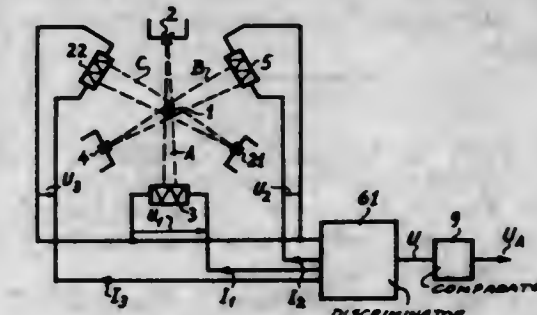
**APPARATUS FOR PHOTO-ELECTRIC DETECTION OF DOUBLE THREADS**  
Ernst Felix Uster, Switzerland, assignor to Zellweger Ltd., Uster, Switzerland, a Swiss corporation  
Filed Apr. 12, 1966, Ser. No. 542,033  
Claims priority, application Switzerland, May 25, 1965, 7,502/65  
Int. Cl. G01n 21/30

U.S. Cl. 250-219

4 Claims

A photocell arrangement is mounted on a disc which oscillates about the path of the thread to be measured. By comparing the electrically produced signal with the

maximum and minimum signals corresponding to the measured diameter of the thread, a double thickness thread can be detected. Also, a stationary photocell arrangement can be used wherein a signal is produced by



bouncing a light beam off a series of mirrors in chronological order so as to produce two signals which can be compared in order to detect the presence of a double thread.

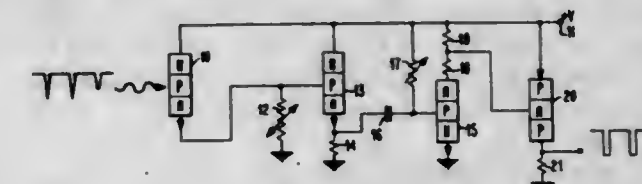
3,461,300

# AUTOMATIC GAIN CONTROL CIRCUIT FOR OPTICAL SENSOR

Roland J. Braun, Vestal, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Aug. 31, 1966, Ser. No. 576,300  
Int. Cl. H01j 39/12

U.S. Cl. 250-219

7 Claims



AGC action, especially useful in optical sensing apparatus, is achieved by applying data manifestations, which are in the form of A-C current components superimposed upon a D-C reference current, to a varistor having a logarithmic current-to-voltage characteristic. The A-C component currents are a fixed percentage of the D-C reference current, thereby producing constant output changes in voltage across the varistor irrespective of the absolute value in the A-C current change.

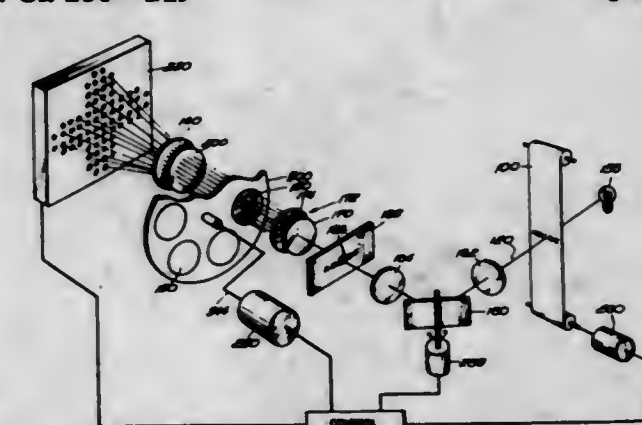
3,461,301

# REFERENCE SYMBOL CHANGER FOR CHARACTER RECOGNITION DEVICE

John A. Fitzmaurice, Arlington, and William Vaughan, Weston, Mass., assignors to Baird-Atomic, Inc., Cambridge, Mass., a corporation of Massachusetts  
Continuation-in-part of application Ser. No. 104,954, Apr. 24, 1961. This application Dec. 9, 1965, Ser. No. 528,669  
Int. Cl. G01n 21/30

U.S. Cl. 250-219

5 Claims

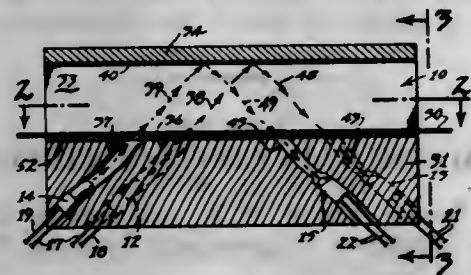


In an electro-optical print reading or character recognition system a rotatable disc is mounted to intercept the



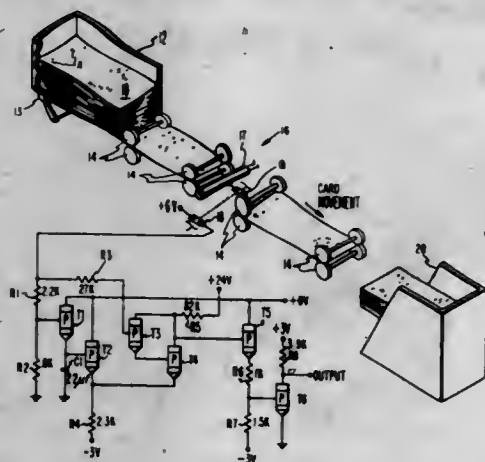
optical projection path and bring to bear selected transparencies mounted in spaced relation about the periphery of the disc. Each transparency carries a group of alpha-numeric characters, each group being of a different distinct type font by which a match may be made with an unknown alpha-numeric character projected along the optical path.

**3,461,302**  
**DEVICE FOR SENSING THE EDGES OF WEBS OF VARYING TRANSPARENCIES**  
 Robert W. Benson, Nashville, and Samuel H. Pearsall, Jr., Donelson, Tenn., assignors to Bonitron, Inc., Nashville, Tenn., a corporation of Tennessee  
 Filed May 9, 1966, Ser. No. 548,612  
 Int. Cl. G01n 21/30  
 U.S. Cl. 250-219 5 Claims



A device for sensing the edge of a web including a pair of light sources and a pair of photocells on one side of the plane of the web, and a light reflective surface on the opposite side of the web, one light source and photocell being located in an interior light plane so that the light source projects a collimated light beam at an acute angle through the web plane against the light surface, the reflective beam being received by the corresponding photocell, the other light source and photocell being located in an exterior light plane, the light source projecting a collimated light beam at the same acute angle through the web plane against the reflective surface, the reflected beam being received by the other corresponding photocell, in the absence of a web, and apparatus adapted to shift the lateral position of the web in response to the signals transmitted by the photocells.

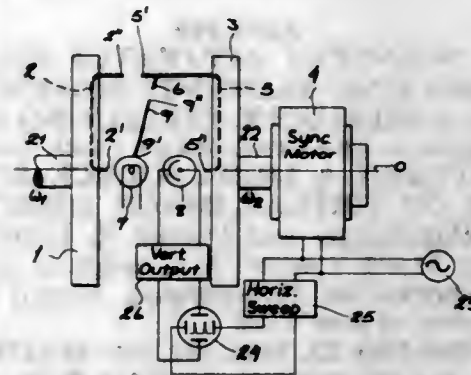
**3,461,303**  
**VARIABLE THRESHOLD AMPLIFIER WITH INPUT DIVIDER CIRCUIT**  
 Charles C. Hanson, Rochester, Minn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
 Filed Dec. 14, 1966, Ser. No. 601,578  
 Int. Cl. H03f 1/42, 3/68; G11b 7/00  
 U.S. Cl. 250-219 9 Claims



An amplifier is provided with a divider network for applying a fraction of the maximum input signal as a switching level on a storage capacitor. The stored switch-

ing level and the input signal are applied as inputs to a differential amplifier. The differential amplifier is formed by two Darlington pairs to balance out voltage offsets and to prevent loading down the input.

**3,461,304**  
**SYSTEM FOR MEASURING ANGULAR DISPLACEMENT OF SHAFTS ROTATING AT DIFFERENT SPEEDS**  
 Rudolf Genähr, Bad Kreuznach, and Erich Schwab, Bad Münster am Stein, Germany, assignors to Jos. Schneider & Co., Bad Kreuznach, Germany, a corporation of Germany  
 Filed Sept. 29, 1966, Ser. No. 582,926  
 Claims priority, application Germany, Oct. 2, 1965, Sch 37,810  
 Int. Cl. H01j 39/12  
 U.S. Cl. 250-227 6 Claims

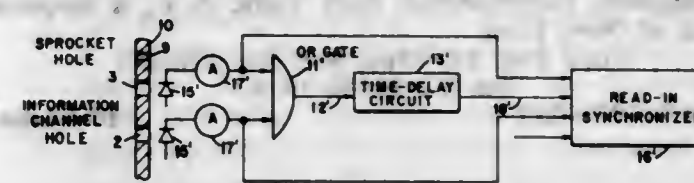


1. A system for measuring the angular displacement of a first member rotatable about an axis, comprising a second member rotatable about said axis; drive means for rotating said second member about said axis at constant speed; a first filamentary light conductor on said first member having an input end and an output end, one of said ends being disposed along said axis, the other of said ends being disposed at a location offset from said axis; a second filamentary light conductor on said second member having an input end positioned for at least intermittent confrontation by said output end of said first light conductor, said second light conductor having an output end in line with said axis; means including a source of radiation positioned for at least intermittent confrontation of the input end of said first light conductor for generating at the output end of said second light conductor a recurring measuring light pulse; optical signaling means independent of said first member and including an auxiliary light-transfer path on said second member for generating a reference light pulse upon said second member passing through a predetermined zero position; and indicating means coupled to said signaling means and including a photoelectric transducer positioned to receive said reference light pulse from the output end of said second light conductor for producing an output representative of the time interval between said reference light pulse and said measuring light pulse.

**3,461,305**  
**SYSTEM FOR CONTROLLING THE RESPONSE OF A PHOTOELECTRIC TAPE READER BY UTILIZING AN "OR" GATE AND A DELAY TO SIMULATE SPROCKET HOLE SIGNALS**  
 Charles L. Moulton, Knoxville, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission  
 Filed Feb. 13, 1967, Ser. No. 616,436  
 Int. Cl. G01n 21/30  
 U.S. Cl. 250-219 1 Claim

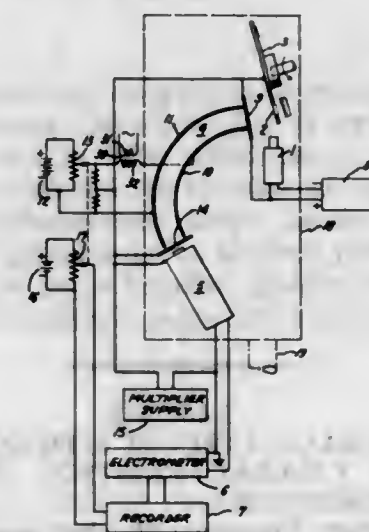
The subject matter relates to systems for controlling the response of data recording circuits in a photoelectric tape reader wherein false operation or failure may occur by reason of misalignment or the disparity in sizes of

punched holes in a tape that are employed to initiate activation of data recording circuits. Correction is achieved by employing plural sensing circuits aligned



with different rows of punched holes so that the first to receive a light signal through one of the punched holes will, after a predetermined delay, initiate activation of the data recording circuits.

**3,461,306**  
**ELECTRON PROBE MICROANALYZER FOR MEASURING THE DIFFERENTIAL ENERGY RESPONSE OF AUGER ELECTRONS**  
 Virgil L. Stout, Schenectady, and Nathan Rey Whetten, Burnt Hills, N.Y., assignors to General Electric Company, a corporation of New York  
 Filed Apr. 27, 1967, Ser. No. 634,214  
 Int. Cl. H01j 37/26  
 U.S. Cl. 250-49.5 8 Claims

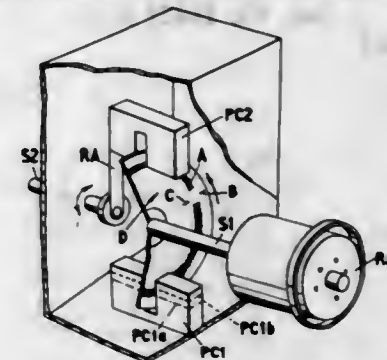


The constituents of the surface layer of an object are determined from characteristic Auger electrons emitted when an electron beam irradiates the object. Auger electrons as well as other secondary emission electrons are translated through a sector analyzer to an electron multiplier and a recorder. An alternating current field is superimposed on the D-C field of a conventional sector analyzer so that the rate of change in number of electrons per unit energy interval is recorded as the D-C field is varied. The rapid fluctuations in the output of the multiplier are detected in synchronism with the change in the field. The structure thus obtained in the differentiated energy distribution curve identifies the Auger electrons and the elements in the surface layer in which they originate.

**3,461,307**  
**RADIATION SENSITIVE INTEGRATING DEVICE USING SYNCHRONOUSLY DRIVEN ROTATING MEMBERS**  
 Eric John Rusling and Edward Ivan Lowe, Avonmouth, England, assignors to Imperial Smelting Corporation (N.S.C.) Limited (formerly The National Smelting Company Limited), London, England, a British company  
 Filed Jan. 14, 1965, Ser. No. 425,440  
 Claims priority, application Great Britain, Jan. 21, 1964, 2,648/64  
 Int. Cl. G01g 11/14; G01d 1/04, 5/36  
 U.S. Cl. 250-231 4 Claims

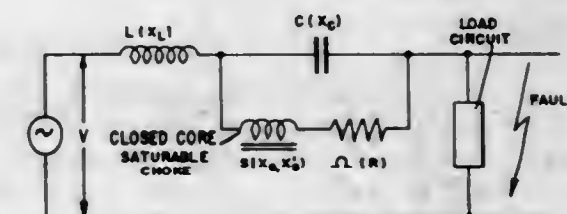
A rotating disc is driven in proportion to one variable to be integrated, and contains one track with marks to be

counted and two markers located at different distances along a radial line. A first fixed sensing means registers the passage of the marks, and a second fixed sensing means responds to one of the markers to start the count. A movable sensing means is moved around a path of the disc in accordance with a second variable to be integrated and responds to the other marker to stop the count. Count-



ing means responsive to the respective sensing means gives a count of marks for each revolution of the disc, and the counts from successive revolutions are added. The integrating device may be used to measure loads on a conveyor belt by driving the disc in synchronism with the belt and moving the movable sensing means proportionally to the weight of the belt and load thereon. Provision is made to take into account the weight of the unloaded belt.

**3,461,308**  
**CIRCUIT ARRANGEMENT FOR LIMITING OVERLOAD CURRENTS INCORPORATING A CAPACITOR AND AN INDUCTANCE AND MEANS FOR MAKING THE CAPACITOR FUNCTION AS A NON-LINEAR CURRENT-DEPENDENT ELEMENT**  
 Bernhard Kalkner, Bad Homburg vor der Höhe, and Hans Becker, Darmstadt, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany  
 Filed Feb. 8, 1966, Ser. No. 525,919  
 Claims priority, application Germany, Feb. 8, 1965, L 49,915  
 Int. Cl. H02j 3/38  
 U.S. Cl. 307-51 4 Claims



A circuit arrangement for limiting overload currents, particularly for use at the juncture of two alternating current nets, as well as for limiting balancing currents between the nets in the case of a short circuit in one of the nets or in case the nets fall out of synchronism. The circuit arrangement comprises a capacitor and an inductance forming a series-circuit whose resonant frequency is tuned at least approximately to the net frequency, there being connected in parallel with the capacitor a shunt circuit which makes the capacitor function as a non-linear current-dependent element. The shunt circuit incorporates a series-circuit of an ohmic resistor and a saturable choke, the ratio of the reactance of the choke, when the same is in saturated condition, to the reactance of the capacitor being between 0.1 and 1 and the ratio of the resistance of the ohmic resistor to the reactance of the capacitor being between 0.3 and 2.



### 3,461,309 DC POWER SUPPLY APPARATUS FOR SUPPLYING A CONSTANT VOLTAGE TO A LOAD

Takashi Yamanaka, Tadashi Kamino, and Hiroshi Ikeda,  
Tokyo, Japan, assignors to Kabushiki Kaisha Yokogawa  
Denki Saisakusho (Yokogawa Electric Works Ltd.),  
Tokyo, Japan, a corporation of Japan

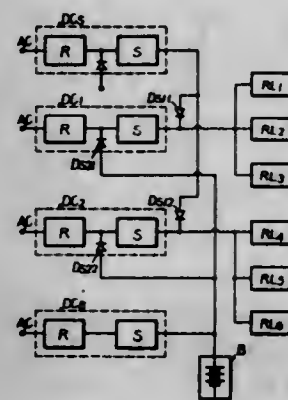
Filed Oct. 17, 1966, Ser. No. 587,322

Claims priority, application Japan, Oct. 18, 1965,  
40/63,861; Jan. 28, 1966, 41/4,960

Int. Cl. H02j 9/06

U.S. Cl. 307—66

3 Claims



A DC power supply device for supplying a constant voltage to a load having a rectifier circuit for rectifying AC commercial power and producing a DC output including a controlling circuit including a reference voltage source and a feedback circuit for producing substantially constant DC voltage, and a battery for producing an output voltage lower than that of said rectifier circuit when the AC commercial power source is interrupted.

### 3,461,310 MULTIPLE-OUTPUT POWER SUPPLY

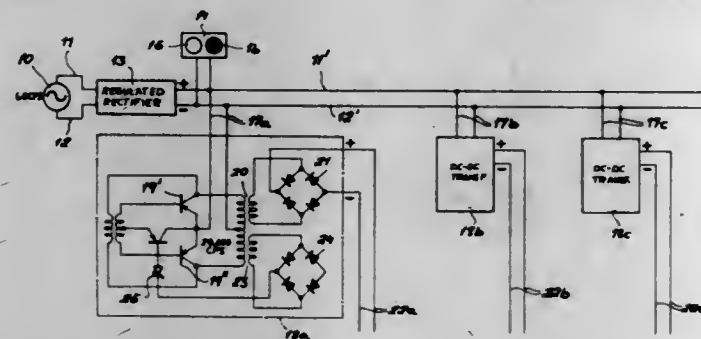
Robert H. Pintell, Congers, N.Y., assignor to Intron  
International, Inc., Congers, N.Y., a corporation

Filed July 24, 1967, Ser. No. 655,437

Int. Cl. H02m 7/20

U.S. Cl. 307—151

8 Claims



Power supply for the energization of a multiplicity of load circuits with direct current at reduced voltage from a low-frequency (e.g., 60-cycle) input line which feeds a preregulator common to all the load circuits; each load circuit includes an individual high-frequency step-down transformer, operating preferably in the kilocycle range, followed by a rectifier. The high-frequency input voltage for the several transformers is obtained either from a common generator in the input line, connected to or forming part of the preregulator, or from individual oscillators in the several output lines of the preregulator leading to the respective load circuits. Absence of iron-core stepdown transformers operating at low frequency reduces losses and improves regulation.

### 3,461,311 SYSTEM FOR AND A METHOD OF IMPLEMENTING A THREE-VARIABLE LOGIC FUNCTION

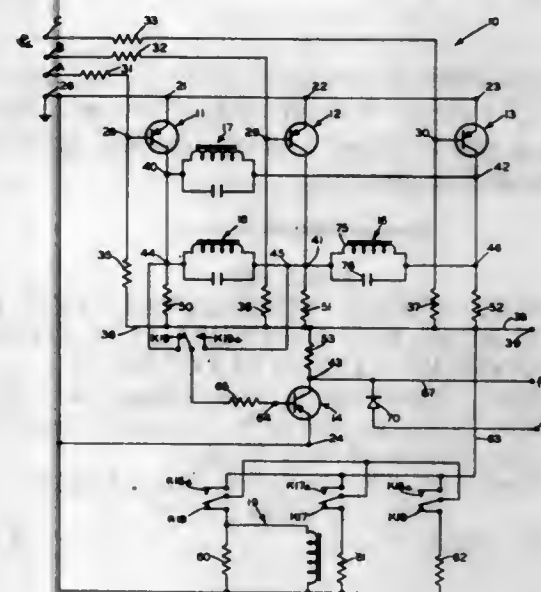
Robert L. Seis, Reading, Pa., assignor to Western Electric  
Company, Incorporated, New York, N.Y., a corporation  
of New York

Filed Feb. 18, 1966, Ser. No. 528,494

Int. Cl. H03k 19/42

U.S. Cl. 307—211

16 Claims



A circuit for implementing a three-variable logic function of the type  $f = AB + AC + BC$ , preselects one signal corresponding to the digital value of one of the variables as representing the value of the function and, subsequently, selects a second signal corresponding to the digital value of another variable as representing the value of the function, if the initially selected signal is not the same as that of at least one of the other two variables.

### 3,461,312 SIGNAL STORAGE CIRCUIT UTILIZING CHARGE STORAGE CHARACTERISTICS OF FIELD-EFFECT TRANSISTOR

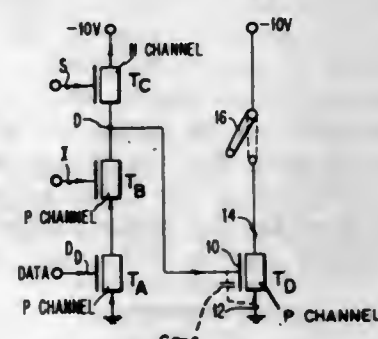
Arnold S. Farber, Yorktown Heights, and Carl E. Ruoff,  
Ossining, N.Y., assignors to International Business  
Machines Corporation, Armonk, N.Y., a corporation of  
New York

Filed Oct. 13, 1964, Ser. No. 403,482

Int. Cl. H03k 17/02; G11b 9/06

U.S. Cl. 307—221

15 Claims



1. An electric signal storage circuit comprising:  
a field-effect storage transistor having gate, source and drain electrodes, means for supplying operating bias voltages to said transistor,  
means for detecting if said transistor is conductive,  
means for selectively supplying a reset signal to the gate electrode of said storage transistor capable of rendering same conductive,  
signal input means for selectively removing said reset signal from the gate electrode of said storage transistor, and

means for electrically isolating said gate electrode other than in a sampling period whereby gate electrode to source electrode capacitance inherent in said transistor is effective to store an input signal, said means for selectively supplying the reset signal comprising a reset field-effect transistor and bias voltage means therefor, first clock pulse means for rendering said reset field-effect transistor conductive whereby the gate electrode to source electrode capacitance of said storage transistor will be charged to said bias voltage.

### 3,461,313 CIRCUIT FOR MAINTAINING SELECTED CIRCUITS OPERATED

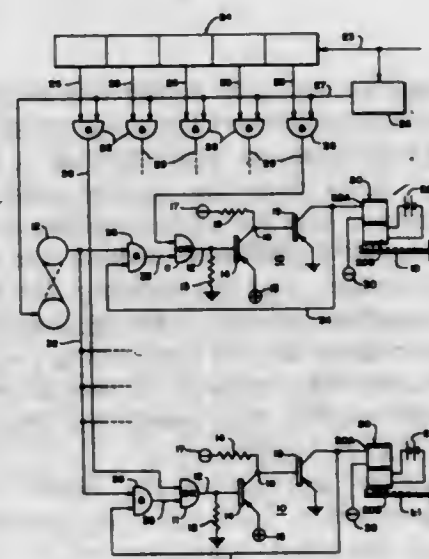
Theodore A. Hansen, Park Ridge, Ill., assignor to  
Teletype Corporation, Skokie, Ill., a corporation  
of Delaware

Filed Dec. 9, 1965, Ser. No. 512,701

Int. Cl. H03k 5/20

U.S. Cl. 307—231

2 Claims



A telegraph receiving circuit in which a serial signal is fed into a shift register until a complete code combination fills the shift register, at which time a timing signal is sent to a plurality of coincidence gates which pass signals from each stage of the shift register that is in one predetermined binary state to an associated individual operating circuit, thereby energizing those operating circuits associated with a bit of the received telegraph code combination that is of the predetermined binary state. The timing signal also triggers a monostable multivibrator to its quasistable state, thereby supplying a timed input signal to each operating circuit. A feed-back path in each operating circuit combines with the signal from the monostable multivibrator to maintain an individual operating circuit energized for the duration of the period of the monostable multivibrator.

### 3,461,314 HIGH SPEED ANTISATURATING TRANSISTORIZED INVERTER

Joseph David Standeven, Roslyn, and Thomas A. Stauffer,  
Hatboro, Pa., assignors to Philco-Ford Corporation,  
Philadelphia, Pa., a corporation of Delaware

Filed Oct. 13, 1965, Ser. No. 495,575

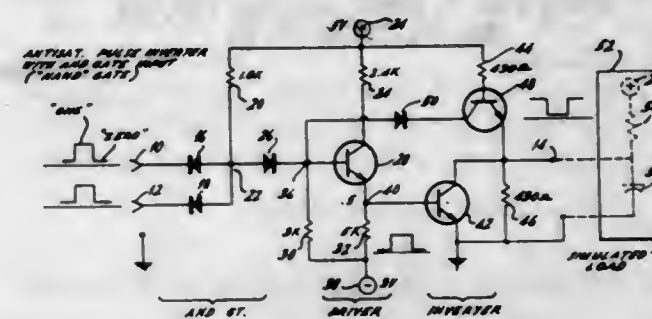
Int. Cl. H03k 5/20

U.S. Cl. 307—235

6 Claims

High speed antisaturating transistorized inverter comprising an emitter follower driver stage and a cascaded common emitter output stage, plus an input voltage limiting circuit comprising a diode and the collector-emitter circuit of an additional transistor connected in series between the input of the driver stage and the output of the

output stage. The limiting circuit becomes conductive to provide a bypass from the input of the driver stage to the output of the output stage when an input signal becomes large enough to drive the output transistor to saturation. The time required to turn on the additional transistor allows the input signal to provide an initial overdrive to the output stage, causing the output pulse to have a sharp leading edge. The added impedance pro-



vided in series with the diode by the collector-emitter circuit of the additional transistor enables the output transistor to be driven closer to saturation. Also, the base-emitter diode of the additional transistor, connected in series with the load resistor of the output stage, provides a constant voltage drop which permits the value of the load resistor, and hence the RC time constant of the output circuit, to be lowered.

### 3,461,315 ELECTRONIC SIGNAL SELECTOR

Amos Nathan, % Dept. of Electrical Engineering, Technion,  
Israel Institute of Technology, Haifa, Israel

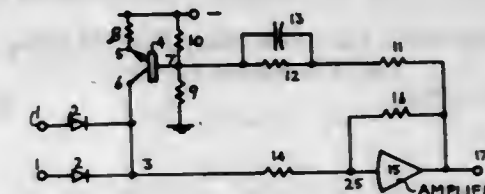
Filed May 9, 1966, Ser. No. 548,620

Claims priority, application Great Britain, May 18, 1965,  
21,078/65

Int. Cl. H03k 5/20

U.S. Cl. 307—235

9 Claims



1. An electronic signal selector for the selection from a plurality of input signals of an output signal having a fixed magnitude relation with respect to said input signals, comprising a plurality of input means for accepting a plurality of input signals; a point of common output connection; a plurality of unidirectionally conductive means, each of said unidirectionally conductive means connected at one end to a corresponding one of said input means and all said unidirectionally conductive means connected at their other ends to said point of common output connection; current means connected to said point of common output connection for supplying current thereto; sign changing means having an input terminal and an output terminal, said input terminal connected to receive an electrical signal from said point of common output connection, said sign changing means producing at said output terminal a second signal that is a substantially linear function of said electrical signal such that said second signal decreases when said electrical signal increases; circuit means connecting said output terminal with said current means for causing said current supplied by said current means to be physically influenced by the value of said electrical signal such that the total current flowing into



said plurality of unidirectionally conductive means is substantially physically uninfluenced by the values of said input signals.

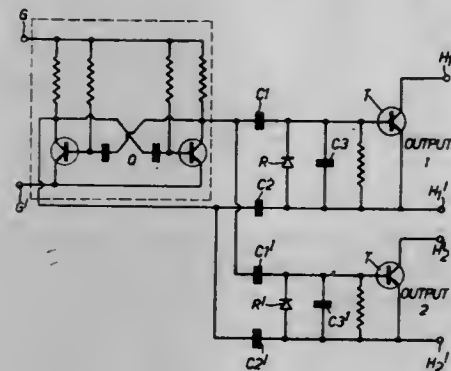
### 3,461,316 OSCILLATOR CONTROLLED SWITCHING CIRCUIT

John R. Acton, Farmborough, and Peter Turton, Bugbrooke, near Northampton, England, assignors to The Plessey Company Limited, Ilford, England, a British company

Filed Feb. 7, 1966, Ser. No. 525,724  
Int. Cl. H03k 17/56

U.S. Cl. 307—241

5 Claims



An oscillator input circuit connected over two paths each containing a capacitor to an output device including a solid-state amplifying device controlled by means including a rectifier, responsive to the energy received from the oscillator to bring about variation of its electrical condition for switching of said amplifying device.

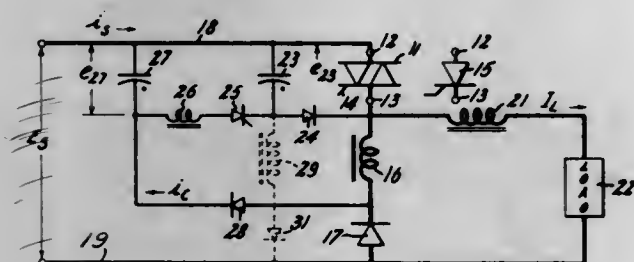
### 3,461,317 COMMUTATION SCHEME FOR POWER SEMICONDUCTOR CIRCUITS FOR LIMITING RATE OF REAPPLIED VOLTAGE AND CURRENT

Raymond E. Morgan, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Oct. 24, 1965, Ser. No. 504,744  
Int. Cl. H03k 17/08

U.S. Cl. 307—252

11 Claims



A soft commutation circuit for thyristors such as the SCR and triac is provided in a family of solid state time ratio control and inverter circuits to limit the rate of reappplied voltage after commutation, or the rate of change of current upon turning on the device, or both. A commutating capacitor connected to limit  $dv/dt$  and a series blocking diode are operatively coupled across the load terminals of the thyristor in such manner as to charge the capacitor while the device is nonconducting. A resonating and cushioning inductor can limit load current  $di/dt$  and is coupled by a feedback path to the commutating capacitor to reverse the polarity of its charge and forward bias the diode when it is desired to effect commutation.

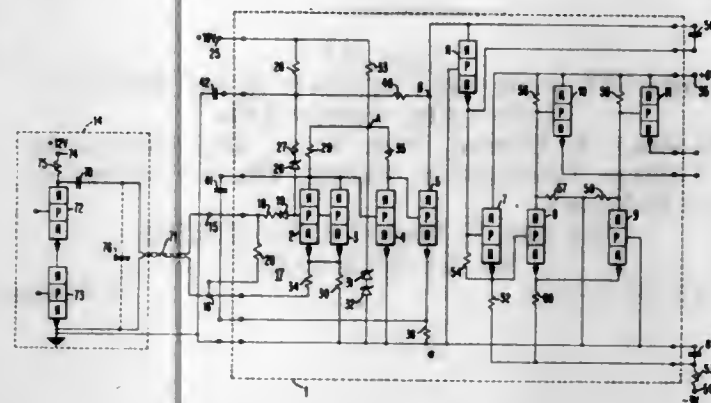
### 3,461,318 MONOLITHICALLY FABRICATED SENSE AMPLIFIER-THRESHOLD DETECTOR

Robert Ordower, Vestal, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Apr. 22, 1966, Ser. No. 544,467  
Int. Cl. H03k 5/20

U.S. Cl. 307—235

9 Claims



A sense amplifier includes a plurality of cascade-connected transistor amplifiers of the same conductivity type having the characteristic at saturation of a larger base-emitter voltage drop than the emitter-collector voltage drop. Direct current bias for each amplifier is determined by providing negative feedback around the major loop of the sense amplifier and by utilizing the base-emitter drop of each amplifier together with the collector resistor and supply potential of the next preceding amplifier to set a precise collector bias current in the latter amplifier. This obviates the need to compensate for level shift problems from amplifier to amplifier.

The base-emitter junction of the input (first stage) amplifier is preferably connected in parallel with a similarly poled, matched transistor of the same conductivity type having its base-collector electrodes short-circuited, whereby good common mode rejection is assured even where the input lines are unbalanced and whereby gain stability in the input amplifier is assured.

An improved, frequency insensitive threshold detector coupled to the sense amplifier output includes an input grounded base transistor switch, an output transistor switch and an emitter follower coupling the output switch to the input switch. A capacitor couples input signals above the threshold around the input switch to the emitter follower, turning the input switch off and the output switch on. At the termination of the input signal, the input switch rapidly discharges the capacitor; and a resistor across the base-emitter junction of the emitter follower presents a high impedance to the capacitor during signal duration to maintain charging of the capacitor to a low linear rate.

### 3,461,319 SECONDARY SLAVE CONTROL FOR SERIES-CONNECTED GATE CONTROLLED SWITCHES

John W. Motto, Jr., Greensburg, Warren C. Fry, Connellsville, and Ralph A. Prunty, Greensburg, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

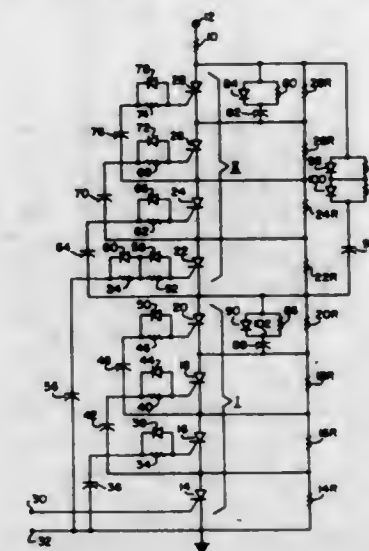
Filed Feb. 24, 1967, Ser. No. 618,451  
Int. Cl. H03k 17/04

U.S. Cl. 307—252

7 Claims

This invention relates to semiconductor switching circuitry employing thyristors. More particularly, the invention relates to secondary slave control circuitry for series-connected thyristors capable of controlling high voltage direct current power wherein the thyristors are operated as a plurality of modules of thyristors, each module hav-

ing a master thyristor which is turned on or off in synchronism with the other master thyristors in the series string. Turn-on of the master thyristor in each module, for example, immediately initiates sequential turn-on of



the other thyristors in its associated module such that turn-on of all thyristors in the string is achieved much more rapidly, enabling the number of thyristors in a series string to be greatly increased.

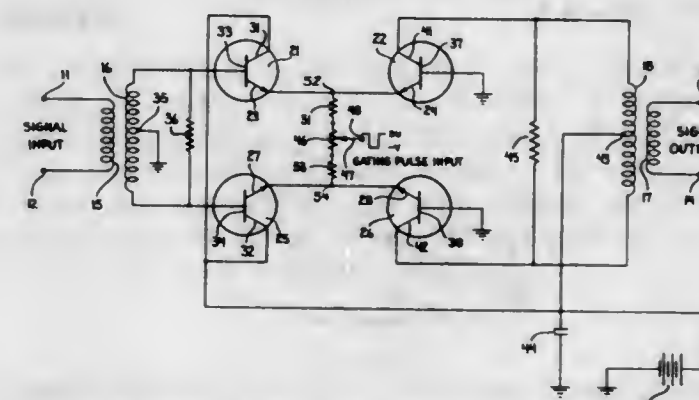
### 3,461,320 BALANCED GATING CIRCUIT FOR RADAR RECEIVER

Franklin M. Eastland, Linthicum Heights, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Dec. 9, 1966, Ser. No. 600,703  
Int. Cl. H03k 17/16

U.S. Cl. 307—254

4 Claims



1. A balanced gating circuit comprising: an input transformer and an output transformer each having a primary winding and a center-tapped second-tapped secondary winding, first and second transistors each having base, collector, and emitter electrodes, said emitter electrodes being connected together, said base electrode of said first transistor being connected to one end of said secondary winding of said input transformer, said base electrode of said second transistor being connected to ground potential and said collector electrode of said second transistor being connected to one end of said secondary winding of said output transformer, third and fourth transistors each having base, collector, and emitter electrodes, said emitter electrodes of said third and fourth transistors being connected together, said base electrode of said third transistor being connected to the other end of said secondary winding of said input transformer, said base electrode of said fourth transistor being connected to

ground potential and said collector electrode of said fourth transistor being connected to the other end of said secondary winding of said output transformer,

a source of voltage, means connecting said source of voltage directly to said collector electrodes of said first and third transistors and to the center tap of said secondary winding of said output transformer, means for applying a gating pulse simultaneously to the emitters of said first, second, third, and fourth transistors, and balancing means connected to said emitters of said first, second, third, and fourth transistors for minimizing transients at said output transformer.

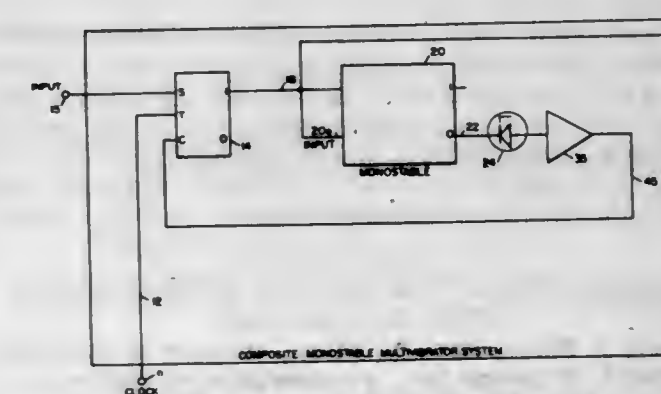
### 3,461,321 COMPOSITE MONOSTABLE MULTIVIBRATOR SYSTEM

Harold R. Greene, New Shrewsbury, N.J., assignor to Electronic Associates Inc., Long Branch, N.J., a corporation of New Jersey

Filed May 16, 1966, Ser. No. 550,358  
Int. Cl. H03k 3/26

U.S. Cl. 307—273

8 Claims



The disclosure relates to a monostable multivibrator system having 100% duty cycle by providing, in combination, a "JK" flip-flop, a monostable multivibrator and a switching circuit with a breakdown means connected between the monostable and the switch.

### 3,461,322 ELECTRONIC TIMING CIRCUIT

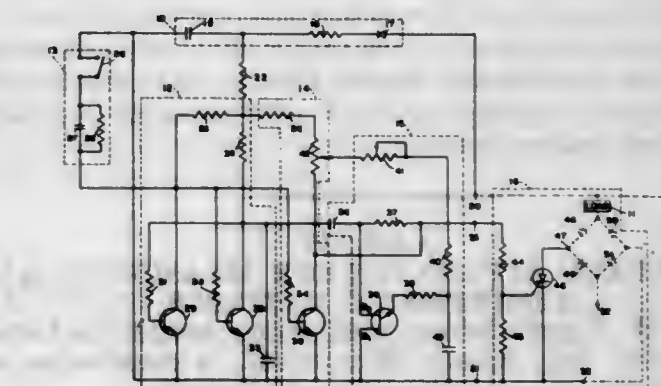
James Arthur Hirsch, Indianapolis, and Robert D. Smith, Martinsville, Ind., assignors to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 499,931

Int. Cl. H03k 17/28

U.S. Cl. 307—293

4 Claims



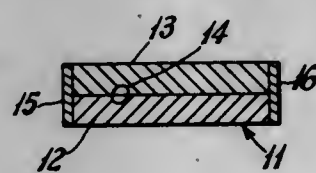
A timing circuit contains a bistable multivibrator which is coupled to and energized by a single half-wave power supply coupled across an alternating current power source. The bistable multivibrator has two states which are the controlling states for the timing circuit. A circuit



means having a conducting state corresponding to one of the states of the multivibrator and a nonconducting state corresponding to the other state of the multivibrator is included in the timing circuit. The output of the circuit means operates a unijunction transistor timing circuit for changing the state of the multivibrator and an output circuit for energizing the load when the circuit means is in the nonconducting state. The output circuit utilizes a relaxation oscillator to trigger an alternating current gate-controlled switch.

### 3,461,323 NEGATIVE RESISTANCE SEMICONDUCTOR DEVICE

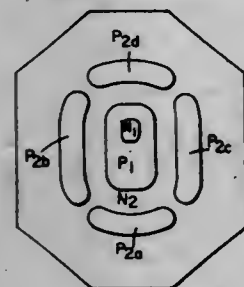
Charles O. Mulford, Jr., Union, N.J., and Peter J. C. Normington, New Milford, Conn., assignors to The Bendix Corporation, a corporation of Delaware  
Filed Feb. 8, 1968, Ser. No. 704,093  
Int. Cl. H03k 19/08  
U.S. Cl. 307—302 6 Claims



An elongated semiconductor device in which contacts are placed across the junction at both ends and a plasma effected by exciting the holes and electrons present in the P and N material to energize the electrons of the bonding atoms of the crystal to the conduction band.

### 3,461,324 SEMICONDUCTOR DEVICE EMPLOYING PUNCHTHROUGH

Robert J. Barry, Beverly, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware  
Filed July 3, 1967, Ser. No. 650,991  
Int. Cl. H01L 11/10  
U.S. Cl. 307—305 7 Claims



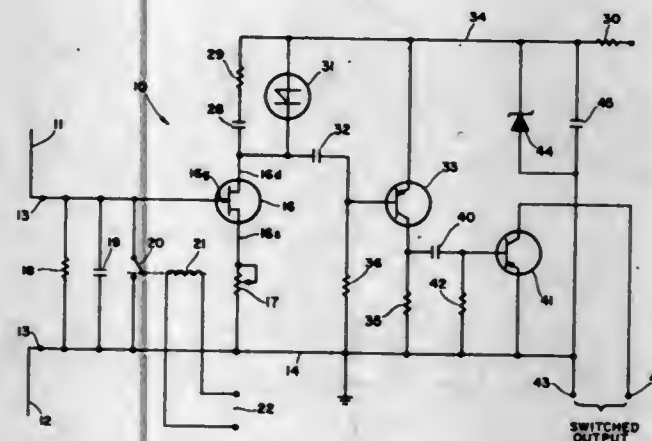
Four-layer type semiconductor device having an additional region of the same conductivity type as one of the terminal regions adjacent the terminal region. Under reverse bias conditions punchthrough occurs from the terminal region to the additional region effectively increasing the size of the terminal region. Reverse bias operation of the device is thereby modified and improved electrical characteristics are obtained.

### 3,461,325 SWITCHING APPARATUS FOR MEASURING AN ATMOSPHERIC VARIABLE

Robert W. Barrett, Minneapolis, Minn., assignor to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland  
Filed Dec. 7, 1966, Ser. No. 599,760  
Int. Cl. H03k 3/26  
U.S. Cl. 307—308 8 Claims

This measuring apparatus uses a dipole antenna to sense atmospheric air-earth currents and signals indicative of such currents are applied to an oscillating circuit

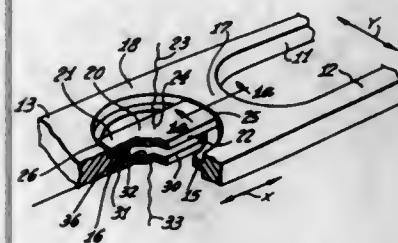
including a field-effect transistor, an RC circuit, and a Shockley diode in combination with the RC circuit. The output from the oscillating circuit is applied through a buffer-amplifier stage to control the conductive state of a transistor used for switching purposes. An RC circuit is provided for reducing or eliminating the effect of un-



wanted displacement currents on the operation of the apparatus, and the overall circuit is comprised of components having relatively non-critical values to facilitate reproducibility of the apparatus. The apparatus described herein also can be used for measuring other variables such as, for example, atmospheric electrostatic potential.

### 3,461,326 TUNING FORK

William J. Holt, Jr., Pacific Palisades, Calif., assignor, by mesne assignments, to Varo Inc., Electrokinetics Div., Santa Barbara, Calif., a corporation of California  
Filed Nov. 22, 1965, Ser. No. 509,097  
Int. Cl. H02n 11/00  
U.S. Cl. 310—8.2 20 Claims



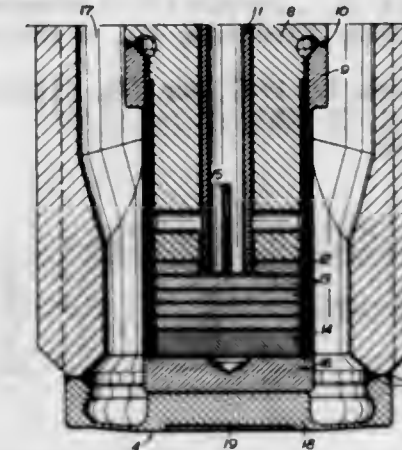
This invention relates to a transducer wherein a tuning fork is agitated by a piezoelectric driver and a piezoelectric sensor is located in a spaced relationship with the driver and monitors the vibrating tuning fork.

### 3,461,327 PIEZOELECTRIC PRESSURE TRANSDUCER

Rudolf Zelringer, Graz, Austria, assignor to Hans List, Graz, Austria  
Filed Dec. 6, 1966, Ser. No. 599,530  
Claims priority, application Austria, Dec. 9, 1965, A 11,100/65; Feb. 8, 1969, A 1,149/69  
Int. Cl. H02n 9/02; H04r 17/00  
U.S. Cl. 310—8.9 10 Claims

A piezoelectric pressure transducer of the pressure measuring type that includes a housing, a cooling chamber and a piezoelectric transducer mounted within the housing. The novelty resides in elimination of the changes of the

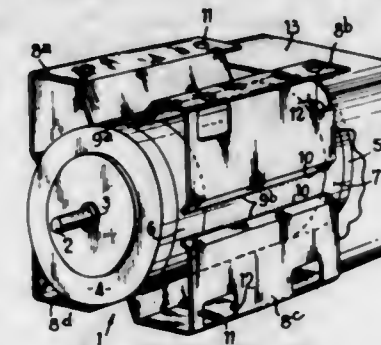
negative bias of the measuring element by short time temperature shocks. This is done by an attachment to the



housing to impede the flow of heat along the bottom of the housing.

### 3,461,328 EXTERNALLY PRISMATIC SHAPED ELECTRO- MAGNETIC ROTARY MACHINE

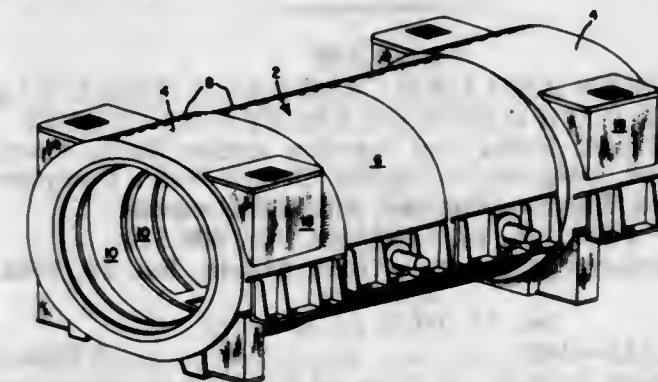
Jean Drouard, Paris, France, assignor to Moteurs Drouard, Paris, France, a French body corporate  
Filed June 5, 1967, Ser. No. 643,435  
Claims priority, application France, June 7, 1966, 64,432  
Int. Cl. H02k 9/28  
U.S. Cl. 310—52 13 Claims



An electromagnetic rotary machine such as an electric motor or generator comprising an assembly of magnetic laminations constituting a stator maintained at both ends by end collars and outer hollow stays interconnecting the collars and constituting ventilating passages, the collars having a U-shaped radial section defining a cavity which faces inwardly of the machine.

### 3,461,329 GENERATOR WITH GAS COOLERS AND CYLIN- DRICAL-ELLIPTICAL FRAME SECTIONS

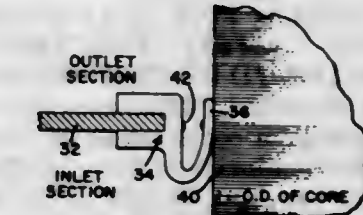
Allan C. Shartrand, Scotia, and Charles H. Holley and James B. Archibald, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York  
Filed Feb. 5, 1968, Ser. No. 703,019  
Int. Cl. H02k 9/10  
U.S. Cl. 310—55 7 Claims



A dynamoelectric machine as a turbogenerator having cylindrical frame midsections and elliptical frame end

sections. The added space near the ends of the ellipse major axis permits the use of fewer and larger hydrogen gas coolers. The generator may be erected at the site of use with either the minor or major ellipse axis in the vertical direction so as to provide vertical or horizontal gas coolers.

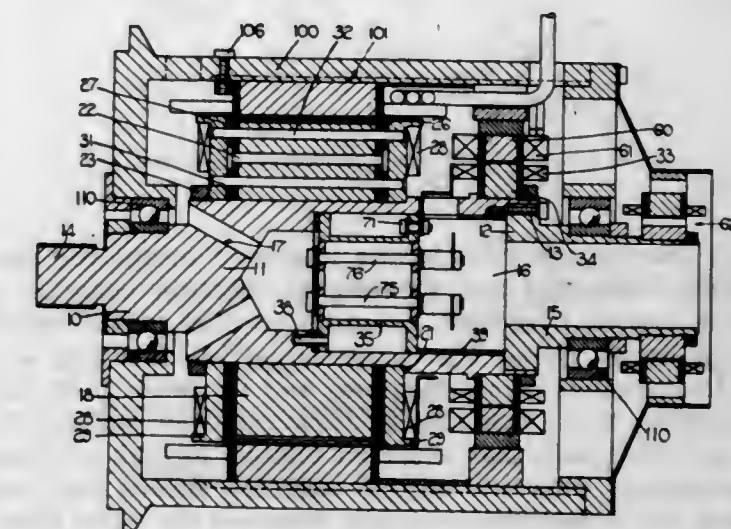
3,461,330  
DYNAMOELECTRIC MACHINE STATOR  
CORE BAFFLE  
John G. MacDougall, Scotia, N.Y., assignor to General Electric Company, a corporation of New York  
Filed Dec. 21, 1967, Ser. No. 692,482  
Int. Cl. H02k 9/16  
U.S. Cl. 310—59 2 Claims



Dynamoelectric machine stator core baffle to seal coolant gas outlet sections from coolant gas inlet sections. Seal is effected by thermo-releasing rubber material sprung into sealing position by heat.

### 3,461,331 COIL END SUPPORTS FOR SALIENT POLE ROTOR

Dennis Alexander Pannell, Ickenham, England, assignor to Rotax Limited, London, England, a British company  
Filed Feb. 8, 1968, Ser. No. 704,013  
Int. Cl. H02k 3/46, 3/48  
U.S. Cl. 310—270 2 Claims



A dynamoelectric machine comprising a rotor having salient pole pieces defining slots accommodating coils defined therebetween, and L-shaped members mounted at the axially opposite ends of the pole pieces, the members defining outwardly extending ledges which support the end portions of the coils.

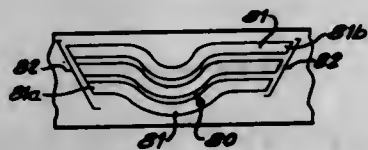
### 3,461,332 VACUUM TUBES WITH A CURVED ELECTRON IMAGE INTENSIFYING DEVICE

Edward E. Sheldon, 30 E. 40th St., New York, N.Y. 10016  
Continuation-in-part of application Ser. No. 392,960, Aug. 28, 1964, now Patent No. 3,400,291. This application Nov. 26, 1965, Ser. No. 519,814  
Int. Cl. H01J 31/26, 39/02  
U.S. Cl. 313—65 15 Claims

This invention relates to novel vacuum tubes which serve for the intensification of images, which are of a high



sensitivity and in spite of this sensitivity are free from spurious signals and can produce images of good contrast and definition. These results are due to the construc-



tion using a device comprising an array of plurality of curved electron multiplying hollow tubes which in addition prevents the instability of operation of said tubes.

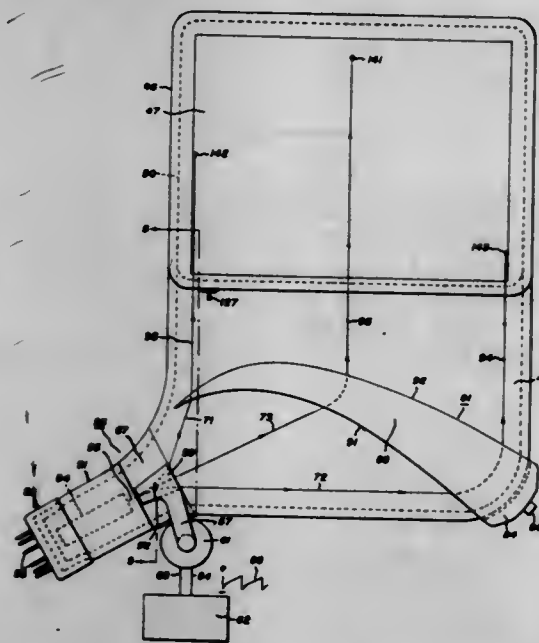
3,461,333

# DEFLECTION SYSTEM FOR FLAT CATHODE RAY TUBE HAVING CANTED ELECTRON GUN IN PLANE PARALLEL TO DISPLAY SCREEN

Svend E. Havn, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York  
Continuation of application Ser. No. 141,863, Sept. 29, 1961. This application Apr. 10, 1967, Ser. No. 629,827  
Int. Cl. H01j 29/70, 29/76

U.S. Cl. 313—77

6 Claims



A cathode ray tube having improved means for producing, deflecting and focusing an electron beam in a plane spaced from and generally parallel to the tube's image target plane. The image target has first and second orthogonal scan dimensions and the beam produced originates at a point that is displaced from and travels in an initial path that is canted relative to both of these dimensions. First and second scanning means are provided for respectively cyclically scanning the beam along the two scan dimensions. The first scanning means includes both dynamic and static deflection means. The dynamic deflection means is disposed across the initial path of the beam with its center of deflection displaced from both scan dimensions and dynamically deflects the beam along a plurality of angularly spaced diverging paths. The static deflection means comprises means for producing a substantially unidirectional magnetic field across the diverging paths and performs the dual function of statically deflecting the beam therefrom along a succession of collimated paths generally parallel to the second scan dimension and also varying the focal length of the beam as it travels along different ones of the collimated paths such that the focus of the beam focal points lies along a line generally parallel to the first scan dimension. The second scan means comprises dynamic deflection means disposed across the collimated paths for dynamically deflecting the beam therefrom toward the target area.

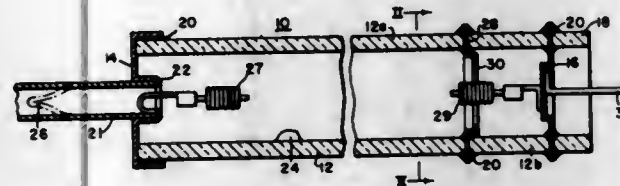
## 3,461,334 CERAMIC DISCHARGE LAMP

William J. Knochel, West Orange, and Hugh D. Fraser, West Caldwell, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 27, 1967, Ser. No. 618,845  
Int. Cl. H01j 17/16, 61/02

U.S. Cl. 313—198

7 Claims



A ceramic discharge lamp having an elongated tubular polycrystalline alumina envelope closed at each end by an electrode carrying refractory metal closure member and having interposed through said ceramic envelope a ring-shaped refractory metal starting electrode adjacent one of the electrodes carried by one of the end closure members.

## 3,461,335 GLOW-DISCHARGE TUBES CONTAINING A RADIO-ACTIVE PRIMER

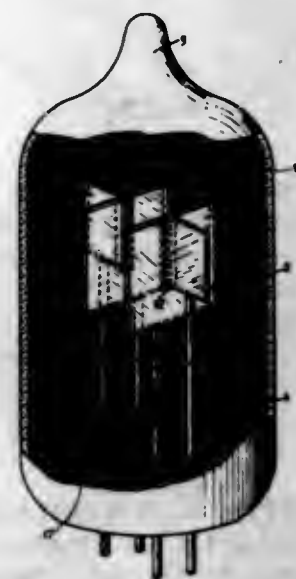
Wolfgang Erich Lothaller, Leidschendam, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed June 26, 1967, Ser. No. 648,743  
Claims priority, application Netherlands, July 9, 1966, 6609664

Int. Cl. H01j 17/20

U.S. Cl. 313—226

5 Claims



A glow-discharge tube employing a gas-filling consisting of a major amount of a first rare gas, a minor amount of a second heavier rare gas, and a radio-active primer.

## 3,461,336 TELEVISION AND LIKE CAMERA CATHODE RAY TUBES WITH DAMPED TARGET STRUCTURES

Edwin Russell Fuller and Norman Arthur Slark, Essex, England, assignors to English Electric Valve Company Limited, London, England, a British company

Filed Jan. 16, 1967, Ser. No. 609,510  
Claims priority, application Great Britain, Jan. 19, 1966, 2,567/66

Int. Cl. H01j 1/18, 19/12

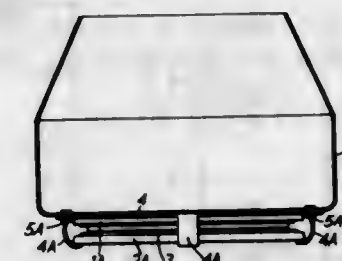
U.S. Cl. 313—269

7 Claims

A camera cathode ray tube, of the kind incorporating a target assembly comprising a resistive membrane closely spaced from a conductive mesh is provided with a rela-

tively heavy supporting member to which the target assembly is attached. The supporting member is in turn connected to a carrier by spring means which allow move-

of each in the area adjacent said emission tip, and thereby provide a filament configuration which is non-inductive in this area.



## 3,461,339 ELECTRIC ARC STABILIZATION IN ELECTRIC ARC MELTING USING CARBON ELECTRODES

Alfred Gordon Evans Robbette, Bovingdon, England, assignor to Fosco International Limited, Nechells, Birmingham, England, a British company  
No Drawing. Filed Aug. 22, 1966, Ser. No. 573,867  
Claims priority, application Great Britain, Aug. 26, 1965, 36,717/65

Int. Cl. H01j 1/00, 17/04, 1/02

U.S. Cl. 313—357

8 Claims

ment of the target assembly and carrier member towards and away from the carrier but which prevents movement in other directions.

An arc melting method for use in the melting of metal and in the production of metal from metal-containing ore and a reducing agent, in an arc furnace. The method stabilizes an arc formed between the metal in the furnace and at least one carbon electrode by providing the electrode with a core including a substance which, under the action of the arc, ionises to increase the electrical conductivity of the arc. The substance included in the core of the carbon electrode may be lithium, barium, calcium, magnesium, chromium, manganese, silicon, potassium, sodium, rubidium, or caesium or compounds such as oxides, carbonates, or silicates of such elements. Such substance is added in particular form and bonded with a binder such as tar, pitch, or a paste or anthracite, tar and pitch.

## 3,461,337 ELECTRON DISCHARGE DEVICE FILAMENT STRUCTURE

Kiyoshi Uchimaru and Tetsuo Tsuji, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed Aug. 12, 1965, Ser. No. 479,208  
Claims priority, application Japan, Aug. 15, 1964, 39/46,889

Int. Cl. H01j 19/28

U.S. Cl. 313—278

6 Claims



A cage-like filament support structure in which the filament wires are provided with intermediate supports connected to a movable support member, said support member being freely slidable on a centrally located fixed support in a direction generally parallel to said wires.

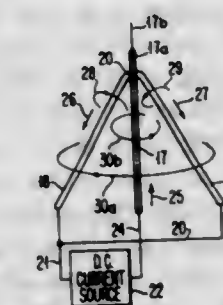
## 3,461,338 NON-INDUCTIVE FILAMENT CONFIGURATION

Siegfried Friedrich Vogel, Palo Alto, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 16, 1967, Ser. No. 609,439  
Int. Cl. H01j 1/02

U.S. Cl. 313—309

3 Claims



A point source filament configuration having a plurality of wire elements leading to the emission tip to provide multiple current paths for dividing the filament heating current in a manner to cancel the resulting magnetic fields

## 3,461,340 IMAGE-TRANSLATING DEVICE

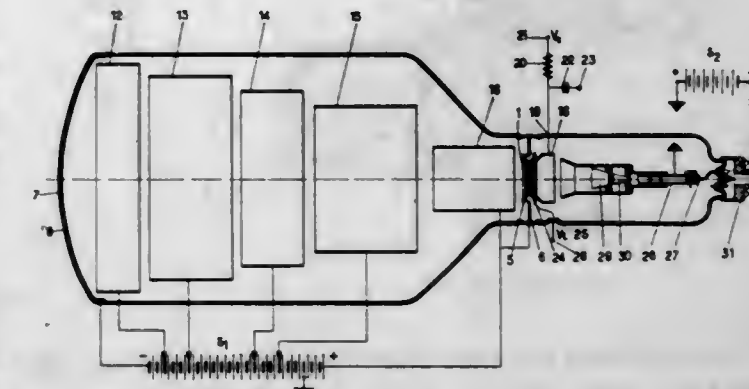
Daniel Charles and Michel Duchet, Paris, France, assignors to CSF-Compagnie de Telegraphie Sans Fil, Paris, France

Filed Jan. 27, 1965, Ser. No. 428,350  
Claims priority, application France, Jan. 31, 1964, 962,214

Int. Cl. H01j 31/48

U.S. Cl. 315—11

8 Claims



An image-translating device comprising a bombardment-induced conductivity target, on one side of the target a reading gun and on the other side a photo-cathode much larger than the target, and means for accelerating and focusing on the target an electron image provided by the photo-cathode, when exposed to a radiant image.

## 3,461,341 DYNAMIC CONVERGENCE DEVICE FOR THREE ELECTRON GUN COLOR TELEVISION RECEIVER

Susumu Egawa, Osaka, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed Dec. 11, 1967, Ser. No. 689,551  
Int. Cl. H01j 29/50, 31/00, 29/70

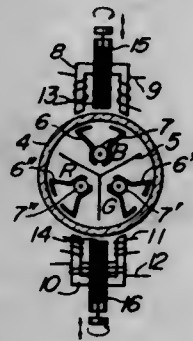
U.S. Cl. 315—13

4 Claims

A dynamic convergence device for a three-electron-gun color television receiver, which is miniaturized and manu-



factured at low cost as compared with the conventional devices of this type. In the dynamic convergence device disclosed herein, a pair of convergence assemblies each comprising a core and a coil are positioned symmetrically with respect to the longitudinal axis of a picture tube, one



of the convergence assemblies being associated with one of the pole pieces for said picture tube and the other convergence assembly being associated with the remaining two pole pieces, and currents of parabolic waveform flow through said coils.

3,461,342

**COLOR CRT ASSEMBLY**

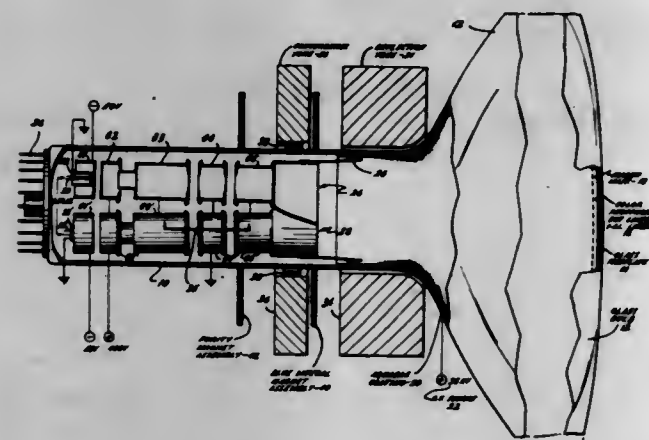
Bruce G. Marks, Lansdale, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware

Filed June 14, 1968, Ser. No. 737,007

Int. Cl. H01j 29/50

U.S. Cl. 315-13

10 Claims



Color cathode ray tube assembly employing three electron guns, each with an einzel type electron focus lens, each lens employing first and third electrodes maintained at second anode potential and second (intermediate) electrode maintained at cathode potential. A purity magnet assembly is mounted around neck of tube forward of the second electrodes of the electron guns and to the rear of the convergence yoke, and a blue lateral magnet assembly is mounted on the neck of the tube forward of the convergence yoke.

3,461,343

**SIMPLIFIED LOW VOLTAGE CONTROLLED NEON BULB CIRCUIT AND METHOD OF OPERATING**

Gaylord Wintriss, 16 Deborah Way, Fairwood, N.J. 07023

Filed Mar. 4, 1966, Ser. No. 531,959

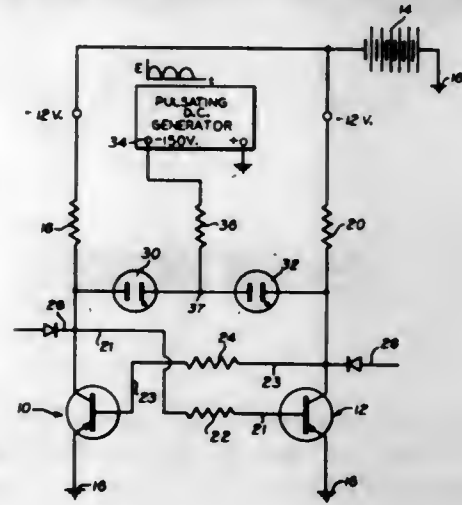
Int. Cl. H05b 37/02, 39/04

U.S. Cl. 315-169

9 Claims

A circuit, with components operated on voltages lower than that required to light a neon bulb, has a pulsating

voltage across the neon bulbs that cooperates with the low voltages of the circuit components to change the volt-



ages across the bulbs above and below the bulb driving voltage. The lighting and extinguishing of the bulbs depend upon the conditions elsewhere in the circuit.

3,461,344

**SOLID STATE MATRIX FOR DISPLAY SYSTEM OR THE LIKE**

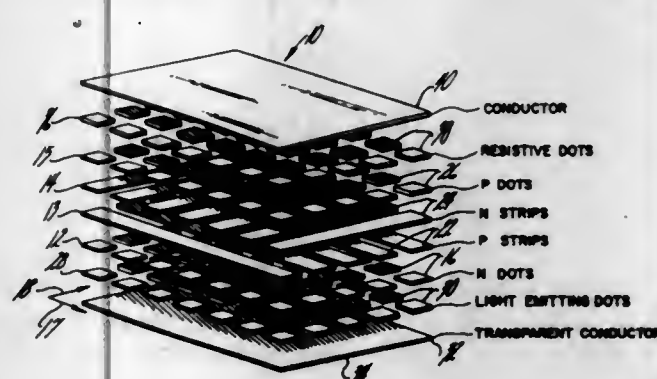
Leonard G. Rich, West Hartford, Conn., assignor to The Gerber Scientific Instrument Company, South Windsor, Conn., a corporation of Connecticut

Filed Feb. 16, 1968, Ser. No. 706,100

Int. Cl. H05b 37/02, 39/08

U.S. Cl. 315-169

16 Claims



A solid state device consists of a matrix of four layer semiconductor switch elements which may be individually and selectively triggered between conducting and non-conducting states and which remain in their last triggered state until retriggered or otherwise deliberately returned to the opposite state. The current passing through the switch elements is used to excite light-emitting elements electrically connected with the switch elements and distributed in a regular pattern over one face of the matrix. Therefore, by properly individually triggering given switch elements to a conducting state a radiant output is produced which may be used as a visible display or as a means for producing photographically drawings or other graphic permanent records. As an alternative to a radiant output, the current passing through the switch elements may be used to activate an electro-sensitive paper or the like to produce a drawing or other graphic record on the paper. Also, as a further alternative, the device may be designed to operate in a "flash" manner wherein each stack, when triggered to a conducting state, thereafter quickly reverts to its non-conducting state so that the output element activated by the current through the switch element is excited for only a short predetermined interval of time.

3,461,345

**SPARK IGNITION SYSTEMS**

Brian Gilbert, Sutton Coldfield, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

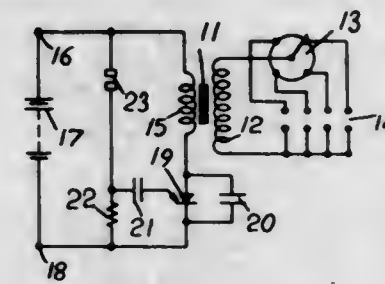
Filed June 6, 1962, Ser. No. 200,449

Claims priority, application Great Britain, June 13, 1961, 21,243/61

Int. Cl. H05b 41/36

U.S. Cl. 315-209

11 Claims



1. A spark ignition system for an internal combustion engine having at least one spark plug, comprising a D.C. source, a winding, means whereby current flow in said winding controls discharge across said spark plug, a series circuit connected across said source and including an inductor, a diode, a capacitor and said winding, a switchable rectifier having an anode, a cathode and a gate, the anode and cathode being connected to said source in series with said diode and said inductor, said switchable rectifier being switched on by a positive pulse applied between its gate and cathode and being switched off by a negative pulse applied between its gate and cathode, a circuit connecting said gate to the D.C. source, an engine-controlled switch in said circuit, operation of said switch by the engine causing successive positive and negative pulses to be applied to said gate to switch the switchable rectifier on and off, said inductor storing energy and said capacitor discharging through said winding to produce said discharge when the switchable rectifier is on, and the energy stored in said inductor serving to charge said capacitor when the switchable rectifier is off.

3,461,346

**PORTABLE TRANSISTORIZED ELECTRO-LUMINESCENT NIGHT LIGHT**

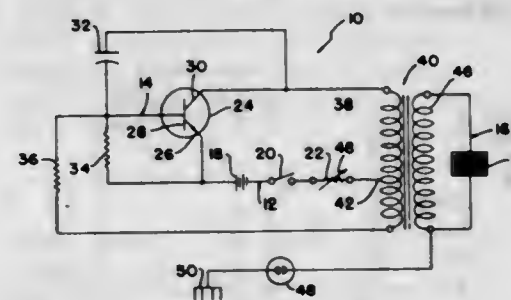
Leslie G. Lilly, 4134 McDougall Ave., Detroit, Mich. 48207

Filed Dec. 27, 1966, Ser. No. 604,863

Int. Cl. H05b 41/16

U.S. Cl. 315-276

5 Claims



A portable transistorized electro-luminescent night light is disclosed. The night light features a battery operated transistor oscillator for converting direct current to alternating current which oscillator is transformer coupled to an electro-luminescent panel. Switch means are provided for actuating the night light along with a variable resistor for varying the power applied to the electro-luminescent panel to give a desired light intensity. A neon light stray signal arrester is also included in the disclosure.

3,461,347

**ELECTRICAL CIRCUIT FABRICATION**

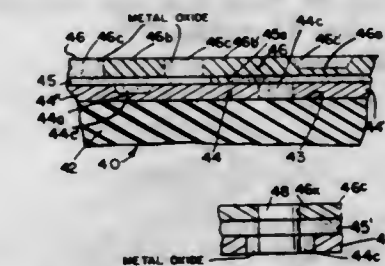
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840

Continuation-in-part of application Ser. No. 86,838, Dec. 27, 1960. This application Nov. 25, 1964, Ser. No. 422,875

Int. Cl. H02b 1/04

U.S. Cl. 317-101

13 Claims



7. An electrical assembly comprising a base, a first conductor in the form of a first thin layer of metal secured to said base, a thin film dielectric compound of said metal forming a portion of the upper strata of a segment of said first conductor, and a second conductor in the form of a vacuum deposited, second thin layer of said metal crossing over said first conductor and insulated therefrom by said thin dielectric film.

3,461,348

**MOUNTING MEANS FOR THE STATIONARY STUDS OF DRAW-OUT METAL CLAD SWITCHGEAR**

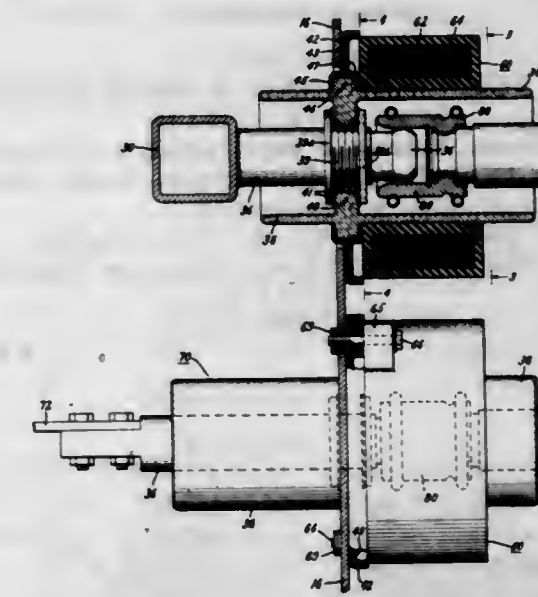
Charles D. Elchelberger, Ridley Park, Pa., assignor to General Electric Company, a corporation of New York

Filed Oct. 21, 1968, Ser. No. 769,291

Int. Cl. H02b 11/06, 1/20

U.S. Cl. 317-103

2 Claims



A switchgear unit comprises a metal cabinet having a vertical metal partition extending thereacross and a bus bar behind the partition having a stud projecting therefrom through an opening in the partition. A tubular insulator is positioned around the stud in the opening and is detachably secured to the stud. A first insulating plate is detachably mounted on the front side of the partition and has an opening receiving the tubular insulator. A second insulating plate is positioned against the front side of the first plate and has an opening also receiving the tubular insulator. The two plates are clamped together.



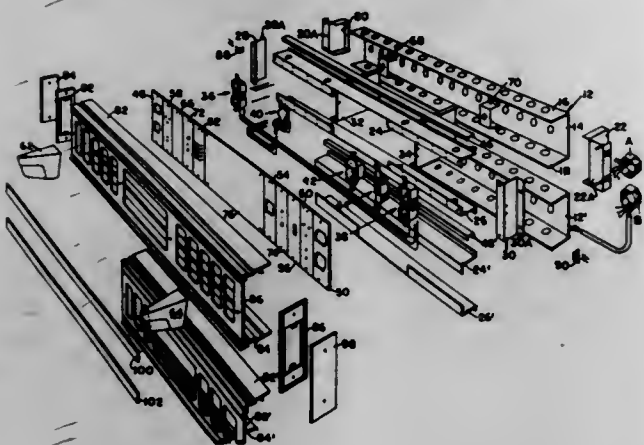
about an outer flange on the tubular insulator to hold the tubular insulator in a fixed position within the openings in the insulating plates.

### 3,461,349 CONSOLE

Ronald K. Meyer, 171 Minna St.,  
San Francisco, Calif. 94105  
Filed Feb. 19, 1968, Ser. No. 706,524  
Int. Cl. H02b 1/10

U.S. Cl. 317-120

6 Claims



A console holds a number of fixtures, such as receptacles, switches, oxygen outlets, and the like, which is made up of a U-shaped base member with a pair of end plates attached thereto, a pair of rails disposed along the base member, each fixture being adapted to be attached to the pair of rails, braces fixed from one rail to the other, the pair of rails being held relative to the base plate, a plurality of fixture plates each adapted to attach over a fixture to the pair of rails, and a front plate adapted to be held relative to the pair of rails, the fixtures being exposed through apertures in the fixture plates and front plate.

### 3,461,350

#### DEVICES FOR PRODUCING A HIGH INTENSITY MAGNETIC FIELD

Christian Rioux, Antony, France, assignor to Centre National de la Recherche Scientifique, Paris, France, a French government administration

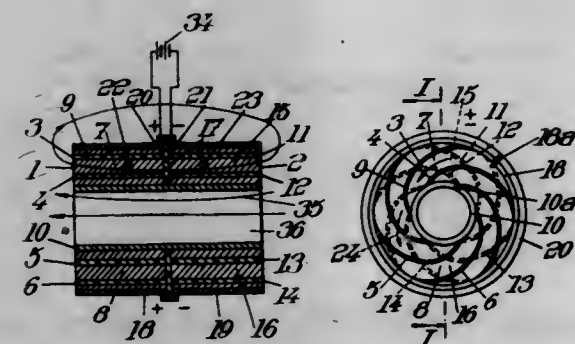
Filed Apr. 20, 1967, Ser. No. 632,278

Claims priority, application France, Apr. 26, 1966, 59,173

Int. Cl. H01h 47/22

U.S. Cl. 317-123

6 Claims



The device comprises two juxtaposed cylindrical elements divided into laminated portions by cylindrical slots of spiral-shaped cross section. The feed of current is effected at the periphery of said cylindrical elements which are insulated from each other by means of a transverse screen and electrically connected together along their inner walls by means of a coaxial sleeve.

### 3,461,351 CYCLING TIMER

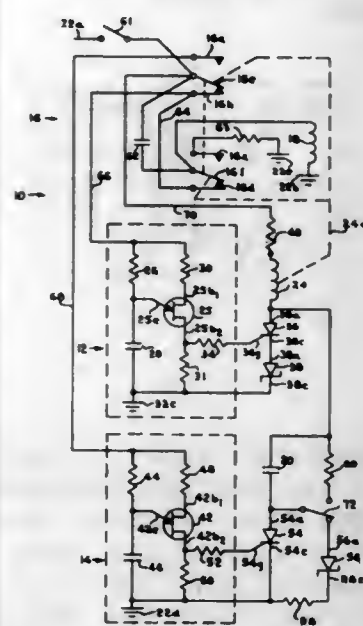
Donald B. Heaslip, Sauquoit, and Florian E. Tepolt, Utica, N.Y., assignors to The Bendix Corporation, a corporation of Delaware

Filed July 18, 1966, Ser. No. 566,047

Int. Cl. H01h 47/18

U.S. Cl. 317-142

14 Claims



A cycling timer for controlling the energization of a device having a plurality of states, each with a predetermined time duration. A pair of timing networks are disclosed in each of which conduction of an SCR is controlled by a unijunction transistor and the anodes of each SCR are coupled by a capacitor. The capacitor is charged through a switch controlling load while the first network is "off" and when the first unijunction transistor begins to conduct, current flow through the load causes the switch to energize the second network. The first and second networks are free-running oscillators and the capacitor discharges through the first SCR and a series diode to ground during the time when the second SCR is conducting.

### 3,461,352

#### CAPACITY LEVEL SWITCHES

Arthur Worland, Gatley, England, assignor to Fielden Electronics Limited, Wythenshawe, England, a British company

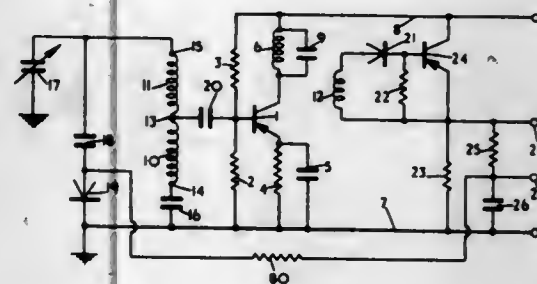
Filed Sept. 28, 1964, Ser. No. 399,810

Claims priority, application Great Britain, Oct. 2, 1963, 38,743/63

Int. Cl. H01h 47/12, 47/32

U.S. Cl. 317-146

3 Claims



A capacity level switch system provided with an electrode and a capacitance sensitive circuit determinative of the rate of change of the capacitance of the electrode. This circuit comprises a self-excited oscillator which includes the electrode capacitance and another capacitance, such that the output amplitude of the oscillations vary according to the change in the capacity and produces a signal proportional to the rate of change of the electrode capacitance, and a time delay circuit is connected to the

oscillator to provide a feedback in a sense to cause a variation in the capacitance tending to eliminate the effect of slow variations in electrode capacitance on the output signal.

### 3,461,353

#### DETECTING UNIT FOR CONDUCTIVE METAL OBJECTS

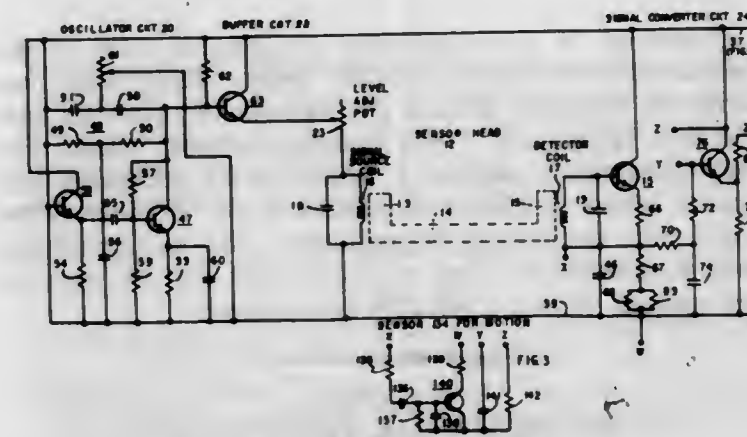
John T. Thorson, Chicago, Ill., assignor to Great Lakes Runway & Engineering Company, Arlington Heights, Ill., a corporation of Illinois

Filed Nov. 10, 1966, Ser. No. 593,440

Int. Cl. H01h 47/12; G08b 13/00

U.S. Cl. 317-146

16 Claims



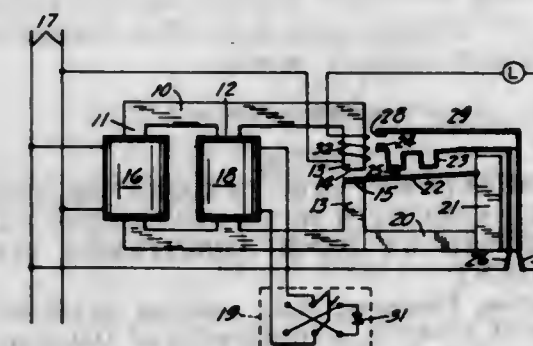
A sensing system for use in the detection of metal current-conducting objects comprising a sensor unit including a core member having a first leg with a driven signal coil mounted thereon and a second leg with a detector coil mounted thereon, the two legs being joined by an intermediate section of the core member. The driven signal coil is driven by an oscillator circuit and the detector coil is resonant at the operating frequency of the signal coil. The amplitude of the alternating current output of the detector coil varies with the presence and absence of a metal current-conducting object, and a signal converter provides direct current signals at correspondingly different levels to associated control circuitry which may be variably adjusted to provide void detection, line limit proximity control and proximity motion control for containers on a conveyor line.

### 3,461,354

MAGNETIC REMOTE CONTROL SWITCH  
Emil Wayne Bollmeier, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware  
Filed May 27, 1966, Ser. No. 553,561  
Int. Cl. H01h 47/02, 51/30

U.S. Cl. 317-156

8 Claims



A magnetic control for remotely operating a switch includes a ferromagnetic core having two closed legs completing a closed magnetic circuit and a third open leg parallel to the two closed legs and wherein two opposed

core faces define a narrow gap; an armature in position of optionally contacting either core face, which armature by its movement operates a switch; a magnetic flux source positioned to establish a unidirectional flow of flux across the armature and one of the core faces which the armature contacts; and primary and secondary coils around the two closed legs, the secondary coil being connected to a switch and a rectifier for shorting the secondary coil to allow unidirectional current flow in a desired direction in the secondary coil. The secondary coil current, depending upon its direction alters the flux flow in the core and thereby changes the relative magnetic attraction of the core faces for the armature.

### 3,461,355

TANTALUM COMPONENT FOR ELECTRICAL DEVICES AND METHOD OF MAKING  
Stanley S. Fry, North Chicago, Ill., assignor to Fansteel Inc., a corporation of New York  
Filed Apr. 25, 1967, Ser. No. 633,444  
Int. Cl. H01g 9/05

U.S. Cl. 317-230

23 Claims



A tantalum casing for an electrical device, having a first gold coating in contact therewith and diffused through any nonconductive film on the inner surface of the tantalum to provide a conductive path through any said film, a second layer of gold plated over the first gold coating, and a layer of platinum black plated over the second layer of gold. The casing can be prepared by plating a layer of gold on the inner surface of the tantalum casing, heating the gold-plated tantalum casing in an environment free of reactive gases to diffuse the gold onto any nonconductive film on the surface of the tantalum, plating a second layer of gold onto the interior of the tantalum casing, and finally plating a layer of platinum black onto the second layer of gold.

### 3,461,356

NEGATIVE RESISTANCE SEMICONDUCTOR DEVICE HAVING AN INTRINSIC REGION  
Akio Yamashita, Ikeda-shi, and Masaru Tanaka, Toyonaka-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan  
Filed Aug. 1, 1966, Ser. No. 569,300

Claims priority, application Japan, Aug. 19, 1965, 40/51,141, 40/51,242; Aug. 27, 1965, 40/52,897

Int. Cl. H01l 3/00

U.S. Cl. 317-234

7 Claims



A semiconductor device comprising an i-type semiconductor body doped with a deep-level-forming impurity in such a manner that the distribution of the impurity in the



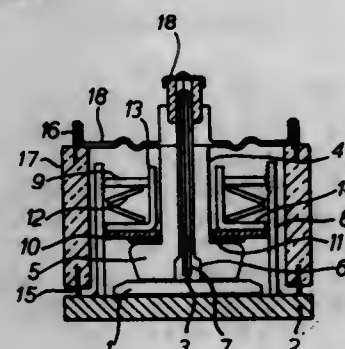
i-type body is not uniform but has a concentration gradient, two metal electrodes, and, as the case may be, alloyed regions between the electrodes and the i-type body. The device has a negative resistance characteristic, and the ratio of the turnover voltage to holding voltage and the switching time are improved. When one of the electrodes form a Schottky barrier with the i-type body, the current-voltage characteristic is unsymmetrical.

**3,461,357**  
**MULTILEVEL TERMINAL METALLURGY FOR SEMICONDUCTOR DEVICES**  
Walter E. Mutter and Paul A. Totta, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Sept. 15, 1967, Ser. No. 668,115  
Int. Cl. H01L 3/12, 5/06  
U.S. Cl. 317-234 9 Claims



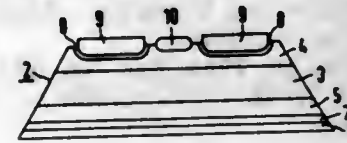
A metallurgy structure for a semiconductor device hermetically sealed at the chip level having a contact stripe overlying and bonded to an insulating layer covering the surface of the semiconductor body, and making electrical contact through an aperture in the layer, and a laminar stripe bonded to a glass layer overlying the insulating layer and contact stripe. The laminar stripe has a layer of copper disposed between layers of chromium. A terminal including solder can be provided in contact with the laminar stripe.

**3,461,358**  
**ENCAPSULATED DIODE WITH SPRING PRESSED CONTACTS AND REDUCED IONIZATION STRESSES**  
Colin Bright Lewis, Nettleham, Lincoln, England, assignor to Associated Electrical Industries Limited, London, England, a British company  
Filed May 19, 1967, Ser. No. 639,823  
Claims priority, application Great Britain, June 20, 1966, 27,484/66  
Int. Cl. H01L 1/02, 1/14  
U.S. Cl. 317-234 8 Claims



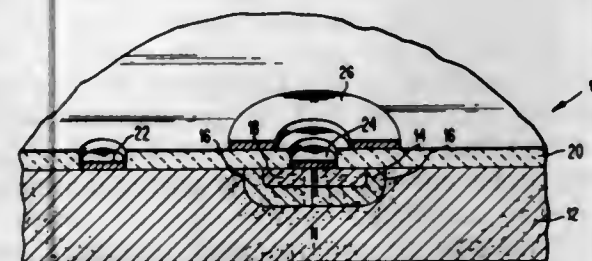
In a semi-conductor rectifier in which a semi-conductor element is held by pressure producing means between and in contact with two conductive members, with the pressure producing means surrounding part of one of the conductive members, an equipotential surface is provided between the pressure producing means and said part of the member to reduce ionisation stresses and possible insulation failure in the rectifier.

**3,461,359**  
**SEMICONDUCTOR STRUCTURAL COMPONENT**  
Kurt Raithel, Uttenreuth, and Konrad Reuschel and Wolfgang Keller, Pretzfeld, Germany, assignors to Siemens Aktiengesellschaft, a German corporation  
Filed Jan. 24, 1968, Ser. No. 700,189  
Claims priority, application Germany, Jan. 25, 1967, S 107,983  
Int. Cl. H01L 3/00, 5/00  
U.S. Cl. 317-234 6 Claims



Described is semiconductor component with a flat monocrystalline semiconductor body. This body has across its thickness at least two regions of opposing conductance types with a p-n junction between them. The body contains a substance which forms recombination centers whose solubility decreases in the semiconductor body with decreasing temperature. The semiconductor body is substantially free of dislocations and has an oxygen content of less than  $10^{18}$  atoms/cm.<sup>3</sup>.

**3,461,360**  
**SEMICONDUCTOR DEVICES WITH CUP-SHAPED REGIONS**  
Fred Barson, Wappingers Falls, and Herbert S. Lehman, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed June 30, 1965, Ser. No. 468,235  
Int. Cl. H01L 11/00  
U.S. Cl. 317-235 8 Claims

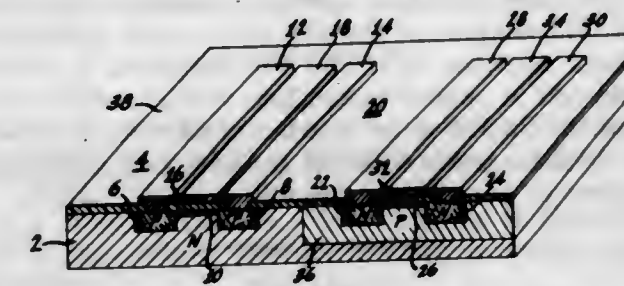


A semiconductor device utilizes the formation of a substantially cup-shaped region of one conductivity type between two regions of opposite conductivity type to preferably form a field effect transistor device. The cup-shaped region is preferably formed through one opening in an insulating layer located on the surface of the device. Two successive diffusion operations of opposite conductivity type through the same opening in the insulating layer form the cup-shaped region to the thickness desired. This invention is directed generally to semiconductor devices including fabrication methods therefor and, more particularly, to insulated gate field effect transistors including fabrication methods therefor.

**3,461,361**  
**COMPLEMENTARY MOS TRANSISTOR INTEGRATED CIRCUITS WITH INVERSION LAYER FORMED BY IONIC DISCHARGE BOMBARDMENT**  
Peter Dellvorias, Findernie, N.J., assignor to Radio Corporation of America, a corporation of Delaware  
Filed Feb. 24, 1966, Ser. No. 529,825  
Int. Cl. H01L 19/00  
U.S. Cl. 317-235 1 Claim

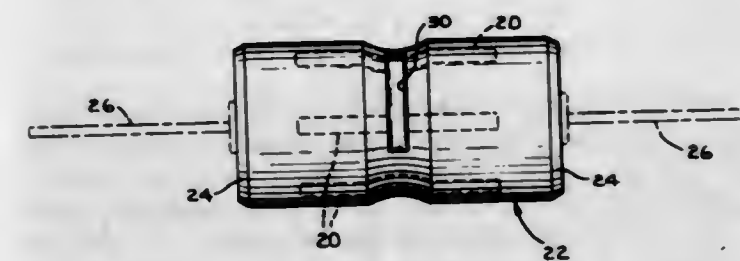
A method of making a complementary pair of MOS transistors in a single semiconductor substrate body of one conductivity type silicon by first, forming a region of

opposite conductivity type in the body, fabricating transistors having opposite type source and drain regions in the regions of different conductivity types each of these transistors having silicon dioxide gate electrode insulator



layers, and, after formation of the silicon dioxide layers, cooling the unit to room temperature in pure, dry oxygen. An inversion layer is formed in the MOS transistor by bombarding the gate insulating layer with an ionic discharge, creating acceptor sites in the insulator.

**3,461,362**  
**LOW VALUE SERIES WOUND CAPACITOR AND METHOD OF FABRICATING SAME**  
Donald R. Brown, Downers Grove, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York  
Filed May 10, 1967, Ser. No. 637,498  
Int. Cl. H01G 13/00  
U.S. Cl. 317-260 2 Claims

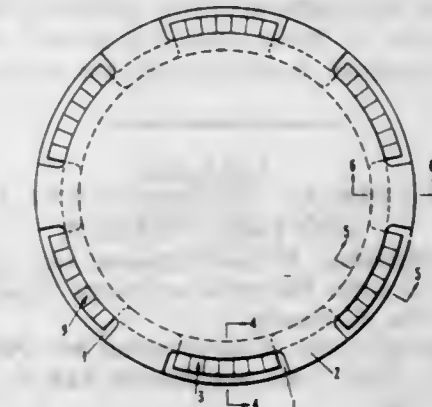


A capacitor, fabricated by metallizing a longitudinal row of narrow electrodes onto a dielectric web transversely thereof, superposing a second dielectric web thereon, superposing a pair of tin foil electrodes onto the second web in laterally spaced relation to each other with the inner marginal portions of the foils overlying end portions of the metallized electrodes and cooperating therewith to form small capacitor sections of minute capacitance value, and with the outer marginal portions of the foils extending beyond the superposed webs, winding the superposed layers into a capacitor roll, and spin swaging the extended foils into terminals. The capacitor is adjusted by removing a portion of the electrode material.

**3,461,363**  
**LOW-INDUCTANCE CAPACITOR**  
Edward Blank, Sharon, Mass., assignor to Tobe Deutschmann Laboratories, Inc., Canton, Mass., a corporation of Massachusetts  
Filed May 10, 1968, Ser. No. 728,181  
Int. Cl. H01G 1/02  
U.S. Cl. 317-261 6 Claims

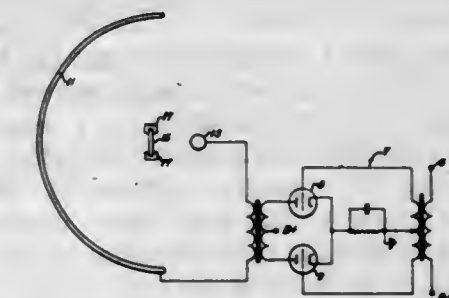
A low inductance capacitor stack formed essentially as a coaxial line from a plurality of individual series connected flat capacitors having opposed series connected ring terminals on opposed faces with a cylindrical conductor coaxial with the individual capacitors forming the return path. The individual capacitors are formed of alternating, conductive and dielectric sheets with the con-

ductive sheets arranged in pairs and having conductive tabs projecting from the outer periphery with each tab



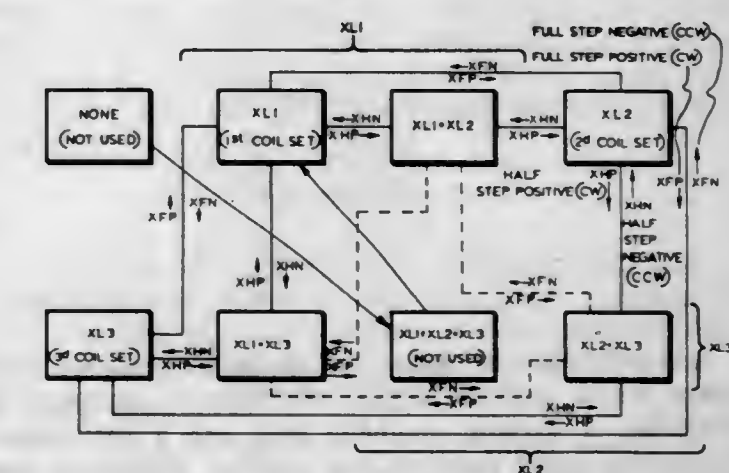
of each pair connected to a different ring and with the tabs of adjacent pairs rotationally staggered.

**3,461,364**  
**NONUNIFORM ELECTRIC FIELD PROCESS AND APPARATUS**  
Carl J. Green, 1704 McClain Road, Knoxville, Tenn. 37912  
Continuation-in-part of application Ser. No. 247,249, Dec. 26, 1962. This application Sept. 19, 1966, Ser. No. 580,482  
Int. Cl. H01G 9/16  
U.S. Cl. 317-262 2 Claims



Apparatus and method whereby a nonuniform electric field has a modulated frequency which vibrates a resilient dipolar object located in such field in accordance with the applied modulated frequency.

**3,461,365**  
**DISPLAY SYSTEM AND METHODS**  
James E. Newland, Fullerton, and Robert C. Morton, Anaheim, Calif., assignors to California Computer Products, Inc., Anaheim, Calif., a corporation of California  
Filed Oct. 26, 1964, Ser. No. 406,364  
Int. Cl. H02p 1/54, 5/46, 7/68  
U.S. Cl. 318-18 12 Claims



Arrangements for controlling a stepping motor having a rotor which responds to the magnetic fields of selected energized sets of field coils to produce rotation of the



rotor less than a normal increment by simultaneously energizing two pairs of field coils between the sequential energization of adjacent individual pairs of coils, together with methods and apparatus for analyzing line slope and controlling one or more stepping motors to position a plotting mechanism in accordance therewith.

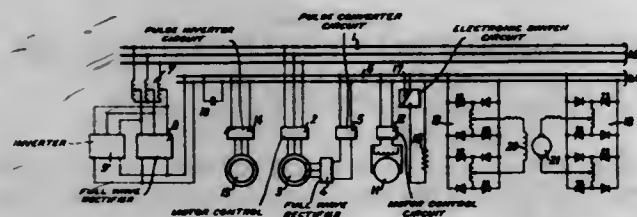
### 3,461,366 ELECTRICAL DISTRIBUTION AND CONTROL SYSTEM

Floris Koppelman, Berlin-Siemensstadt, Germany, assignor to Licentia Patentverwaltungs G.m.b.H., Frankfurt am Main, Germany  
Continuation-in-part of application Ser. No. 414,738, Nov. 30, 1964. This application Jan. 6, 1967, Ser. No. 617,743

Claims priority, application Germany, Nov. 29, 1963, L 46,454; July 28, 1964, L 48,394  
Int. Cl. H02p 1/54, 5/46

U.S. Cl. 318—107

9 Claims



An A.C./D.C. electrical distribution and control system in which a regulated D.C. output voltage is derived from A.C. mains by means of a rectifier and a wound rotor induction motor connected in parallel between the A.C. mains and D.C. mains. The output of the wound rotor induction motor is rectified by a second rectifier and applied to the D.C. mains in a controlled manner so that the average D.C. power supplied by the motor is approximately equal to the load power drawn from the D.C. mains. A switchable ballast resistor is coupled across the D.C. mains to dissipate excess D.C. power. The ballast resistor is automatically switched into the circuit when the D.C. voltage exceeds a predetermined value.

### 3,461,367 BRUSHLESS D-C SERVOMOTOR

Kiyoo Takeyasu, Hachioji-shi, and Toshio Numakura, Kodaira-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a Japanese corporation

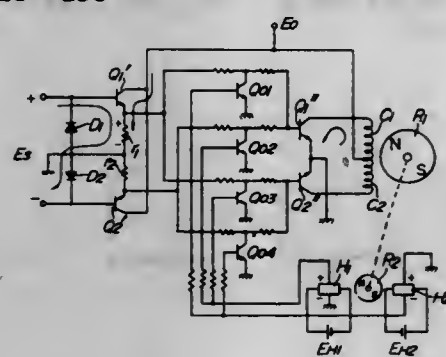
Filed May 27, 1966, Ser. No. 553,495

Claims priority, application Japan, May 31, 1965, 40/31,642

Int. Cl. H02k 29/02; H02p 5/06

U.S. Cl. 318—138

6 Claims



A control for a brushless D-C permanent magnet servomotor which includes a field coil suitably mounted for producing a varying magnetic field and a permanently magnetized rotor mounted for rotation within the magnetic field. The control comprises a rotor position detector for developing output signals indicative of the rotor position and supplying the output signals to chopper

means for chopping a control input signal for controlling the magnitude and polarity of the magnetic field produced by the field coil. Transistor amplifiers are connected to the output of the chopper and comprise at least first and second transistors for amplifying the chopped positive control input signals and the chopped negative control input signals. The outputs of the first and second transistors are connected with the field coil for supplying a current to the field coil in opposite directions whereby the rotor may be rotated clockwise or counter-clockwise at a desired speed in accordance with the polarity and magnitude of the impressed control input signal.

### 3,461,368 DIODE CONTROLLED EXCITER CIRCUIT FOR SYNCHRONOUS MOTORS

Max Haller, Wettingen, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

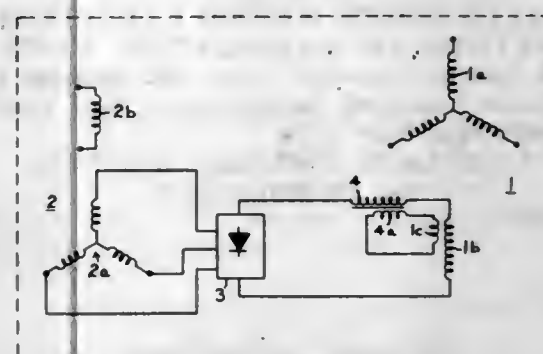
Filed Sept. 29, 1967, Ser. No. 671,639

Claims priority, application Switzerland, Oct. 18, 1966, 15,052/66

Int. Cl. H02p 5/28

U.S. Cl. 318—192

4 Claims



A synchronous motor excited by diodes in which transformer means are provided on the exciter winding of the motor and also on a choke coil connected in the exciter line, the transformer means being interconnected such that an induced voltage occurring temporarily in the exciter winding is transmitted at the same value but in opposite direction to the choke coil.

### 3,461,369 CONTROL SYSTEM FOR REVERSIBLE SERVO-MOTOR FOR DRIVING ELONGATED FLEXIBLE MATERIAL AT CONSTANT TENSION

Zbigniew Bonikowski, Iver, and Jerzy Przemyslaw Szostak, London, England, assignors to British Insulated Cables Limited, London, England, a British company

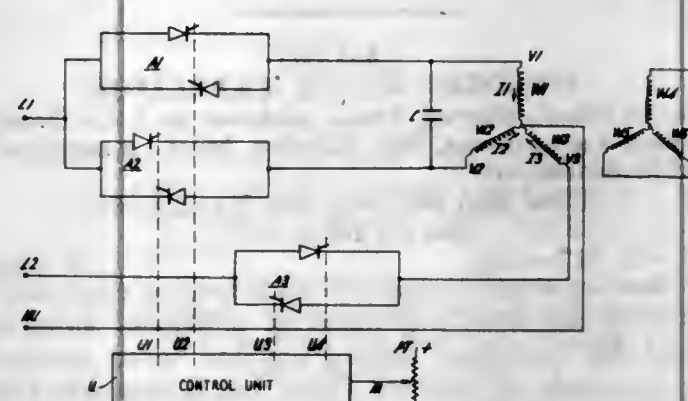
Filed Jan. 24, 1967, Ser. No. 611,389

Claims priority, application Great Britain, Jan. 25, 1966, 3,287/66

Int. Cl. H02k 17/02; H02p 1/28, 3/20

U.S. Cl. 318—207

19 Claims



In a control system for a servo-motor driving elongated flexible material at a substantially constant tension

the motor used is a three-phase induction motor and its three field windings are energized from a two-phase supply through three amplifiers, each controlled by a reference signal in such a way that the motor torque can be raised and, if necessary, can pass smoothly from a forward value through zero to a reverse value.

### 3,461,370 VARIABLE SPEED CONTROL CIRCUIT FOR SINGLE PHASE ALTERNATING CURRENT INDUCTION TYPE MOTORS

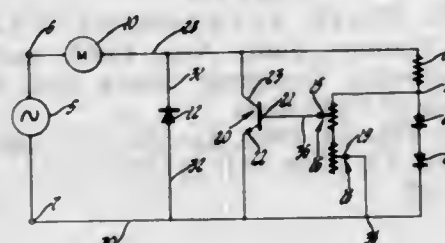
James A. Canter, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 6, 1967, Ser. No. 607,693

Int. Cl. H02p 1/26, 3/18, 5/28

U.S. Cl. 318—227

2 Claims



In the variable speed control circuit of this invention, the combination of a single phase alternating current motor connected in series with the parallel combination of a diode, the collector-emitter electrodes of a transistor and the series combination of a fixed resistor and at least one diode poled in a direction the same as that of the collector-emitter electrodes are connected across a pair of alternating current supply lines. The base electrode of the transistor is connected to the movable contact of a potentiometer device which is connected between the junction between the fixed resistor and the diode and one supply line. By varying the setting of the movable contact of the potentiometer, the degree of conduction of the transistor may be increased to increase the magnitude of supply potential applied across the motor during those half cycles of the alternating current supply potential during which the transistor is forward poled, as less of the supply potential is dropped across the fixed resistor, and decreased to decrease the magnitude of supply potential applied across the motor during those half cycles of the alternating current supply potential during which transistor 20 is forward poled, as more of the supply potential is dropped across the fixed resistor. Therefore, by adjusting the setting of the movable contact of the potentiometer, the speed of the motor may be varied between minimum and maximum limits.

### 3,461,371 MANUALLY OPERATED MOTOR SPEED CONTROL SYSTEMS WITH AUTOMATIC POWER ASSIST BY SEMICONDUCTOR CONTROLLED RECTIFIERS

Arnold I. Klayman and Leonard J. Genest, Marina Del Rey, Calif., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 27, 1966, Ser. No. 604,708

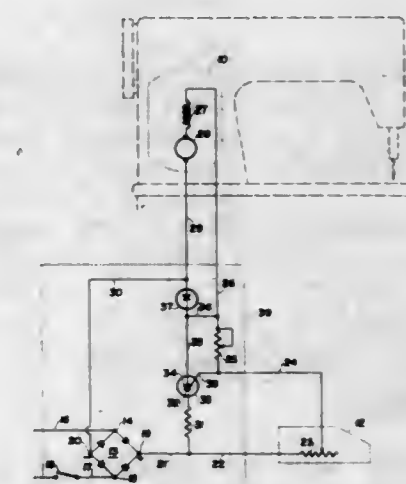
Int. Cl. H02p 5/00, 7/00; H02k 27/20

U.S. Cl. 318—332

5 Claims

A circuit configuration is disclosed wherein a direct current motor is supplied from an unfiltered full-wave rectified alternating voltage source by an operator-actuated variable resistor and a current-sensing resistor in series therewith. A solid state controlled rectifier is connected with its anode-cathode circuit in shunt with the series-connected variable resistor and current-sensing re-

sistor. The current-sensing resistor is connected to the gate and cathode of the controlled rectifier to furnish the sole firing signal thereto responsively to increased load



on the motor. A free-wheeling diode is connected in shunt with the motor to insure turn-off of the controlled rectifier at the end of each half cycle of said rectified voltage.

### 3,461,372 D.C. TO A.C. POWER CONVERTER

Clive Parnell Pickup and John R. Barton, New South Wales, Australia, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

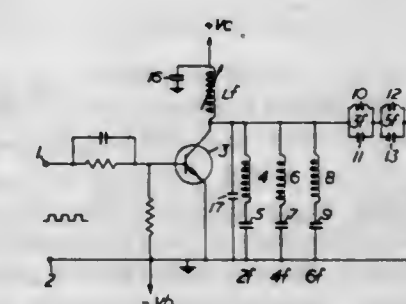
Filed Jan. 17, 1966, Ser. No. 521,189

Claims priority, application Australia, Jan. 22, 1965, 54,246/65

Int. Cl. H02m 1/12; H03k 5/08

U.S. Cl. 321—9

6 Claims



A D.C. to A.C. converter in which power from a D.C. source fed through the collector-emitter circuit of a transistor is alternately switched on and off by a square wave applied to the base of said transistor. The lower even harmonics are attenuated by a plurality of series resonant circuits, each connected between the collector and emitter, while the lower odd harmonics are blocked from the output by a series of parallel resonant circuits connected between the collector and output, thereby providing a sinusoidal output at a frequency equal to the fundamental frequency of said square wave.

### 3,461,373 PULSE WIDTH MODULATED INVERTER

Boris Mokrytzki, Kirtland, Ohio, assignor to Reliance Electric and Engineering Company, a corporation of Ohio

Filed Mar. 20, 1967, Ser. No. 624,539

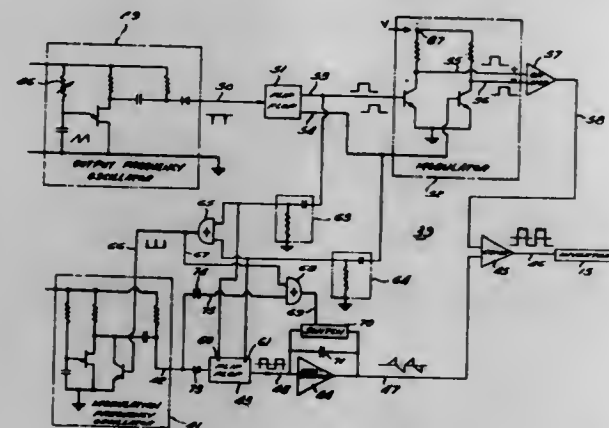
U.S. Cl. 321—9

9 Claims

The invention discloses a pulse width modulated inverter which has a source defining the fundamental frequency of inverter output and a source defining a modulation frequency. The modulation frequency may be any random frequency, and when it is not an integral multiple



of the fundamental frequency, DC components and even harmonics are induced in the inverter output. These harmful effects are eliminated by synchronizing the modu-



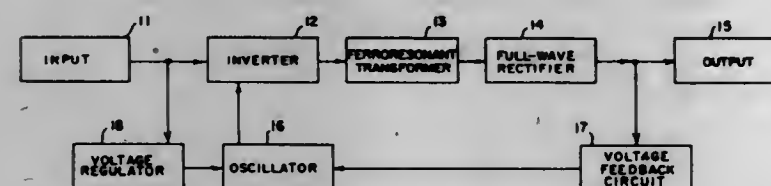
lation frequency with the fundamental frequency at periodic intervals, preferably  $1/2nF$ , wherein  $n$  is the number of phases and  $F$  is the fundamental frequency.

3,461,374

**CONVERTER CIRCUIT FOR REGULATING VOLTAGE BY REGULATION OF FREQUENCY**  
Earl C. Rhyne, Jr., Mills, Mass., assignor to Dielectric Products Engineering Co., Inc., a corporation of Michigan  
Filed Nov. 26, 1965, Ser. No. 509,808  
Int. Cl. H02m 1/08, 7/00

U.S. Cl. 321-18

8 Claims



An output voltage circuit coupled to an input voltage circuit provides an output voltage from an input voltage. The output voltage circuit includes a ferroresonant transformer voltage control which provides an output voltage having a magnitude dependent upon the frequency of the input voltage and comprises a ferroresonant transformer. A feedback circuit is coupled between the output and the input of the voltage control and varies the frequency of the input voltage of the voltage control in accordance with variations of the output voltage thereof thereby to vary the magnitude of the output voltage to compensate for variations thereof. The feedback circuit comprises an oscillator for producing a voltage having a frequency of oscillation which varies directly as the magnitude of a voltage applied to the oscillator. The oscillator is energized at a substantially constant voltage by a voltage regulator. The voltage regulator is coupled to the oscillator by diodes which control the magnitude of the voltage applied to the oscillator and thereby the frequency of the oscillator.

3,461,375

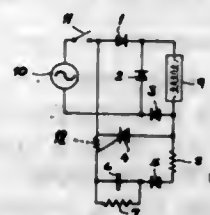
**CIRCUIT ARRANGEMENT FOR TWO-STAGE ENERGIZATION OF LOAD**  
Wolfgang Nestler, Magdeburg, and Eberhard Kallenbach, Stutzbach, Thuringia, Germany, assignors to VEB Magdeburger Armaturenwerke "Karl Marx" Karl-Liebknecht, Germany, a corporation of Germany  
Filed Feb. 20, 1968, Ser. No. 706,875  
Int. Cl. H02m 7/44, 7/68

U.S. Cl. 321-43

8 Claims

A full-wave rectifier bridge for the energization of an inductive load from an alternating-current source includes, in one of its arms, a controlled rectifier whose gate elec-

trode is biased by an RC-network having the cathode-gate impedance of the controlled rectifier as part of its charging resistance. The capacitance of this network is progressively charged during the first few operating cycles



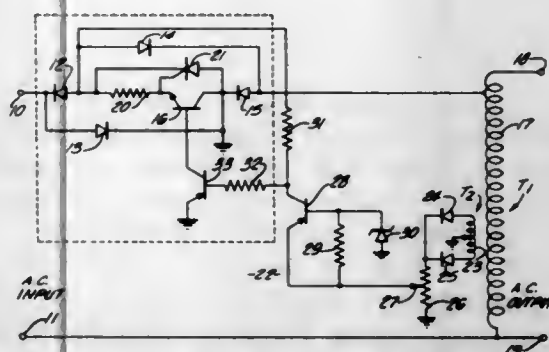
until the bias is so high that the controlled rectifier fails to fire and conduction takes place only through one branch of the bridge, thereby reducing the load current supplied.

3,461,376

**AC SOLID STATE VOLTAGE REGULATOR**  
Cravens L. Wanlass, Santa Ana, Calif., assignor to Wanlass Electric Company, Santa Ana, Calif., a corporation of California  
Filed Feb. 14, 1966, Ser. No. 527,208  
Int. Cl. G05f 1/40, 1/52, 1/60

U.S. Cl. 323-22

21 Claims



An AC voltage regulator in which a plurality of diodes are used to direct current in the proper direction through an asymmetrically conducting device such as a transistor regardless of the instantaneous polarity of the AC voltage. The asymmetrically conducting device acts as a series regulator and is controlled by a feedback circuit which compares the output voltage with a reference voltage and causes the asymmetrically conducting device to reduce conduction or clip when the output voltage exceeds a predetermined level. The feedback circuit is connected across the asymmetrically conducting means so that its energizing voltage is derived from the voltage drop across the asymmetrically conducting means.

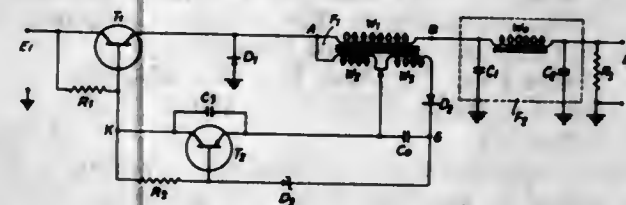
3,461,377

**BLOCKING OSCILLATOR D.C. VOLTAGE REGULATOR**

John S. Reese, St. Petersburg, Fla., assignor to Electronic Communications, Inc.  
Filed Nov. 29, 1966, Ser. No. 597,616  
Int. Cl. G05f 1/40

U.S. Cl. 323-22

7 Claims



A D.C. voltage regulator of the blocking oscillator type wherein a transistor is employed to supply current from a D.C. source in the form of pulses through a primary winding of a transformer to a load and wherein positive

and negative feedback currents are derived from a pair of feedback windings magnetically coupled to the primary winding. A variable resistance device interconnects the feedback windings with the transistor to control the current thereof by varying the on time of the transistor with the device capable of responding to and regulating variations in the load and voltage fluctuations of the D.C. source.

3,461,378

**VOLTAGE REGULATING CIRCUITS WITH OVER-VOLTAGE AND/OR OVER-CURRENT PROTECTION**

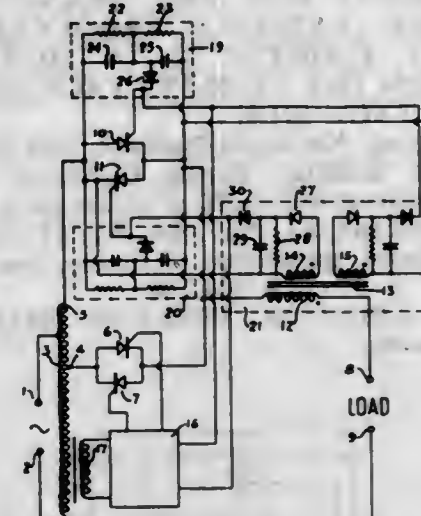
Kenneth G. King, London, England, assignor to Westinghouse Brake and Signal Company, Limited, London England

Filed Jan. 20, 1967, Ser. No. 610,600  
Claims priority, application Great Britain, Feb. 18, 1966, 7,238/66

Int. Cl. H02p 13/06

U.S. Cl. 323-43.5

10 Claims



A protective control circuit is added to the known form of "Syntap" tap changing voltage regulator, whereby conduction is rapidly transferred to the higher potential tap of the supply transformer in the event of an over-voltage or over-current, so that the higher potential thyristors are automatically protected against the voltage transients while the lower potential thyristors are relieved of over-load currents.

3,461,379

**SLIDE TRANSFORMERS AND SLIDE REACTOR DEVICES**

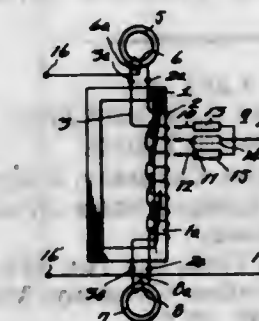
Hideki Okita, Shimonoseki, Japan, assignor to The Osaka Transformer Co., Ltd., Osaka, Japan, a company of the prefecture of Osaka, Japan

Filed Sept. 1, 1967, Ser. No. 665,167  
Claims priority, application Japan, Sept. 10, 1966, 41/59,463, 41/59,464; Sept. 14, 1966, 41/60,313

Int. Cl. H02p 13/06

U.S. Cl. 323-43.5

5 Claims



A slide transformer or a slide reactor device in which at least one leg of the iron core has two partially insulated windings wound thereon and a slidable contactor

assembly having impedance elements in series connected thereto is in contact with the windings for selective contact with conductor portions in selected turns of said windings thereby to provide power to the load side.

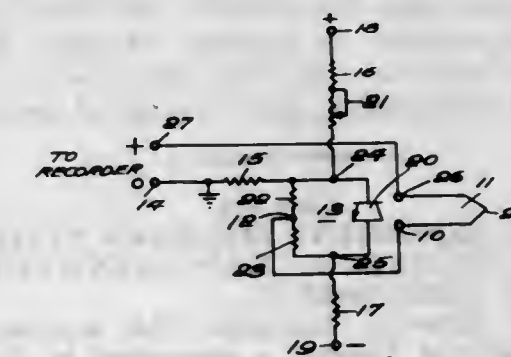
3,461,380

**THERMOCOUPLE REFERENCE JUNCTION COMPENSATING CIRCUITS**

John D. McGhee, Plymouth Meeting, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
Filed Aug. 24, 1967, Ser. No. 662,969  
Int. Cl. G01r 17/02

U.S. Cl. 323-68

5 Claims



In a thermocouple system, a reference junction compensating circuit comprising a semiconductor rectifying device, e.g., a transistor having a linear-negative temperature coefficient, a current source for supplying a substantially constant current to the device in a forward direction or direction of high conductivity, and a voltage divider connected in parallel with the device, the output of the divider compensating for variations in the reference junction temperature from a predetermined value, generally 0° C.

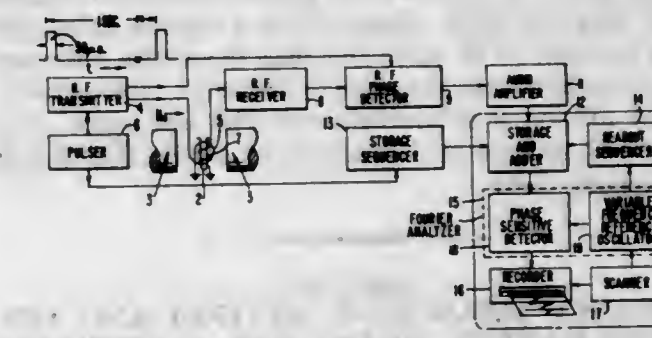
3,461,381

**PHASE SENSITIVE ANALOG FOURIER ANALYZER READOUT FOR STORED IMPULSE RESONANCE SPECTRAL DATA**

Forrest A. Nelson, Santa Clara, Calif., and Richard R. Ernst, Winterthur, Switzerland, assignors to Varian Associates, Palo Alto, Calif., a corporation of California  
Filed June 14, 1968, Ser. No. 737,213  
Int. Cl. G01r 33/08

U.S. Cl. 324-0.5

7 Claims



A gyromagnetic resonance spectrometer and resonance data processing apparatus is disclosed. The gyromagnetic resonance spectrometer includes a pulsed radio frequency transmitter for applying a train of radio frequency impulses of energy to a sample under analysis to excite impulsive gyromagnetic resonance of the sample. The transient free precessional signals emanating from the resonance sample are received in a receiver, converted to an audio frequency spectrum, and stored in a memory. Successive resonance signals are added together in the



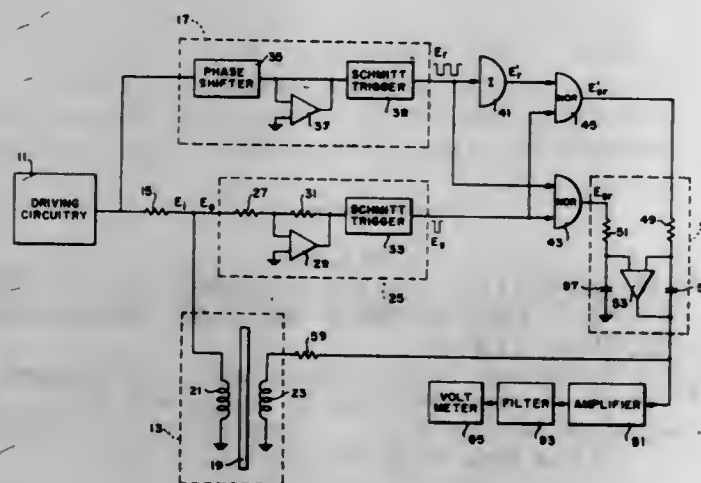
memory to obtain a composite stored resonance signal having improved signal-to-noise ratio. In the memory successive Fourier components of each of the resonance impulse signals are not separated. A readout scanner scans the spectral data stored in the memory to obtain a time varying output containing a plurality of simultaneous Fourier resonance components. The time varying output signal is Fourier analyzed by repetitive comparison in a phase sensitive detector with the frequency of a frequency scanned reference signal to obtain an output signal corresponding to separate ones of the resonant Fourier components, if any, at the instantaneous frequency of the frequency scanned reference signal. A synchronizer synchronizes the phase of the reference frequency signal with the starting time of the repetitively scanned readout of the resonance data stored in the memory whereby the absorption and dispersion modes of the resonance components are separable by adjusting the phase difference between the reference frequency signal and the starting time of the repetitively scanned readout of the memory.

**3,461,382**  
**PULSE DEPENDENT FEEDBACK SYSTEM FOR MEASURING CHANGES IN A PHYSICAL PHENOMENON**

William W. Anderson, Annapolis, Md., assignor to the United States of America as represented by the Secretary of the Navy  
Filed May 28, 1965, Ser. No. 459,961  
Int. Cl. G01r 33/02

U.S. Cl. 324-43

22 Claims



Apparatus for transforming two pulse signals into a feedback signal to form a pulse dependent closed feedback loop. A detected pulse signal and a reference pulse signal are fed through NOR gates and then through a differential integrator, then fed through a feedback coil which is wrapped around a saturable core. The integrator output current and voltage is a function of an applied external DC magnetic field.

**3,461,383**  
**RESISTANCE MEASURING METHOD AND APPARATUS HAVING MEANS FOR ALTERNATELY CONNECTING UNKNOWN RESISTOR TO DIFFERENT ARMS OF BRIDGE**

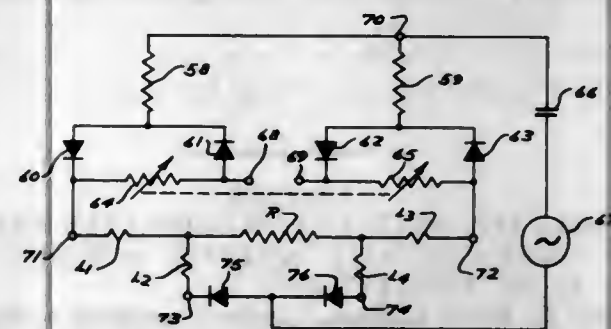
Lowell A. Kleven, Minneapolis, Minn., assignor to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota  
Filed Aug. 25, 1966, Ser. No. 575,011  
Int. Cl. G01r 27/02

U.S. Cl. 324-62

18 Claims

A bridge circuit in which an unknown resistor is alternately connected to a first branch of a bridge and to an adjacent arm in a second branch of the bridge, and when the unknown resistor is in the arm of the first branch of

the bridge a first known resistance is placed into the adjacent arm, and when the unknown resistor is in the adjacent arm a third known resistor is placed into the arm of the

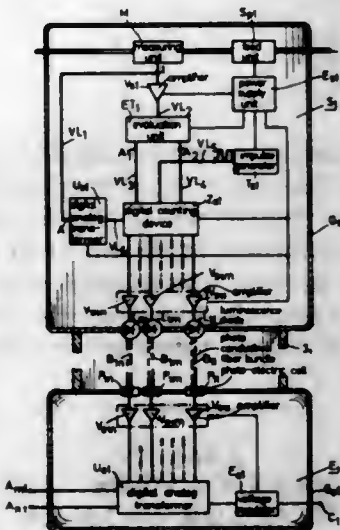


first branch while the second known resistance is removed from the adjacent arm. The second and third resistances are adjustable, and at bridge balance will equal the value of the unknown resistor.

**3,461,384**  
**ARRANGEMENT FOR THE TRANSMISSION OF MEASURED VARIABLE PRODUCED BY THE CURRENT FLOWING IN A HIGH-VOLTAGE LINE FROM THE HIGH-VOLTAGE SIDE TO THE LOW-VOLTAGE SIDE**

Abutorab Bayati, Karlsruhe-Neureut, and Rudolf Feiser and Lothar Scheffter, Berlin, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany  
Filed Jan. 23, 1967, Ser. No. 611,164  
Claims priority, application Germany, Jan. 31, 1966, S 101,730

Int. Cl. G01r 31/00; H04b 9/00; H01j 39/12  
U.S. Cl. 324-96 10 Claims



An arrangement for transmitting a measured variable produced by a current flow in a high-voltage line from a transmitting installation at the high-voltage side, in the form of a digital evaluation, over a light transmission path or paths to a receiving installation at the low-voltage side, at which it is converted to an analog value for measurement and/or protective purposes.

**3,461,385**  
**SYSTEM FOR GIVING CALIBRATED AMPLITUDE INDICATIONS**

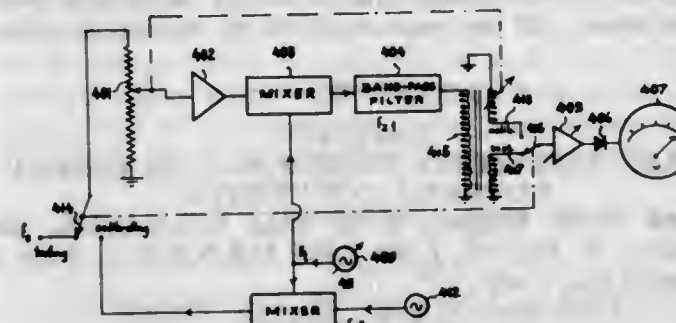
Herbert Bayer, Rentlingen, Germany, assignor to Wandel u. Goltermann KG., Eningen unter Achalm, Germany, a corporation of Germany  
Filed May 31, 1966, Ser. No. 553,731

Claims priority, application Germany, May 28, 1965, W 39,236

Int. Cl. G01r 1/02 4 Claims

U.S. Cl. 324-130  
Circuit arrangement for measuring amplitudes of different input frequencies  $f_0$  which are heterodyned with

a locally generated frequency  $f_1 = f_{s1} + f_0$  to produce a fixed beat frequency  $f_{s1}$  passed by a narrow filter, the system including means for calibrating the transmission



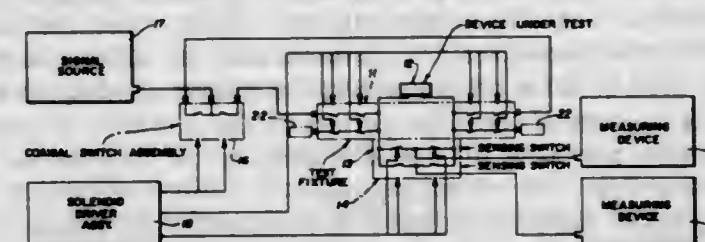
circuits with the aid of a locally generated reference wave of predetermined amplitude; means may be provided for periodically alternating between testing and calibration.

**3,461,386**  
**COAXIAL SWITCH USING REED SWITCH AND ASSEMBLY AND SYSTEM WITH ISOLATED ACTUATING COIL**

Samuel R. McCutcheon and Logan M. Belleville, Saratoga, and William H. Ewin, Los Altos, Calif., assignors to Automated Measurements Corporation, Los Gatos, Calif., a corporation of California  
Filed Jan. 17, 1966, Ser. No. 521,101  
Int. Cl. G01r 1/30

U.S. Cl. 324-158

17 Claims

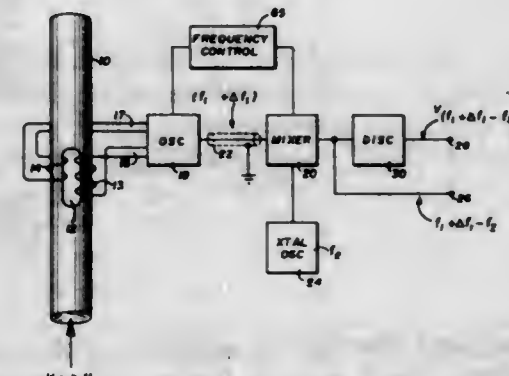


A reed-type switch is placed in a conductive sheath to form a coaxial switch. A U-shaped soft iron pole piece is adjacent the switch with each leg of the U in proximity to a switch contact. The pole piece carries a coil which when energized closes the switch. A switch assembly is formed by radially arranged reed switches in conductive sheaths formed by a slotted aluminum receptacle. A metal sheet covers the slots and the pole piece ends are embedded in this sheet.

**3,461,387**  
**MAGNETIC FIELD DETECTOR USING A VARIABLE INDUCTANCE ROD**

Fred J. Morris, George F. Roberts, and Robert L. Waters, Austin, Tex., assignors to The Electro-Mechanics Company, Austin, Tex., a corporation of Texas  
Filed Apr. 20, 1965, Ser. No. 449,434

Int. Cl. H04b 1/06, 1/16 15 Claims  
U.S. Cl. 325-363



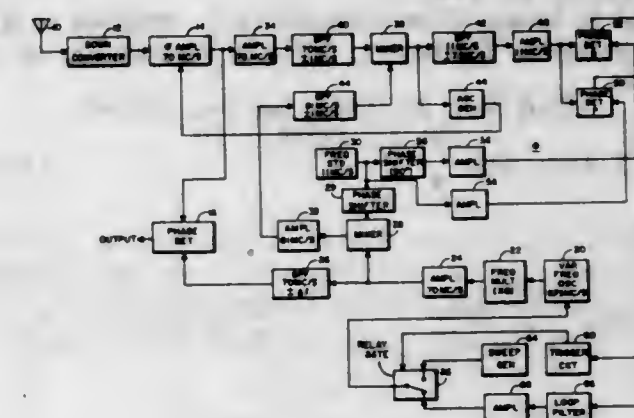
To detect the magnitude of the magnetic component of received radio-frequency signals, a ferromagnetic rod

with a coil passing through a central aperture is connected to an oscillator circuit tuned to produce an RF signal which varies in frequency in response to variations in the incremental permeability of the rod.

**3,461,388**  
**PHASE LOCKED LOOP RECEIVER**  
Timothy Joseph Daley, Fairport, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware  
Filed Nov. 25, 1966, Ser. No. 597,017  
Int. Cl. H04b 1/16

U.S. Cl. 325-421

9 Claims

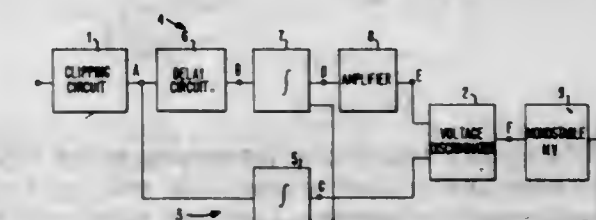


A phase locked loop receiver is described which is adapted to receive an input signal which includes an input carrier having side tones which may contain range, velocity and telemetry information. The phase locked loop is designed to track the input carrier, notwithstanding that the carrier may change in frequency because of Doppler effects, and provides an output signal which is phase coherent with the input carrier. The loop contains filters and frequency translating stages which restrict the response of the loop to progressively narrower band widths whereby noise and signal perturbations are prevented from interfering with the maintenance of phase lock even though the carrier level may be below the noise level. The output signal from the loop and the input signal are applied to a phase detector which demodulates the input signal and makes available for further demodulation of the side tone signals.

**3,461,389**  
**CIRCUIT FOR INITIATING A PULSE A PREDETERMINED TIME INTERVAL AFTER THE CENTER (OR OTHER POSITION) OF AN INCOMING PULSE**  
Gerald W. Whalen, Owego, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Sept. 30, 1966, Ser. No. 583,282  
Int. Cl. H03k 5/20

U.S. Cl. 328-109

5 Claims



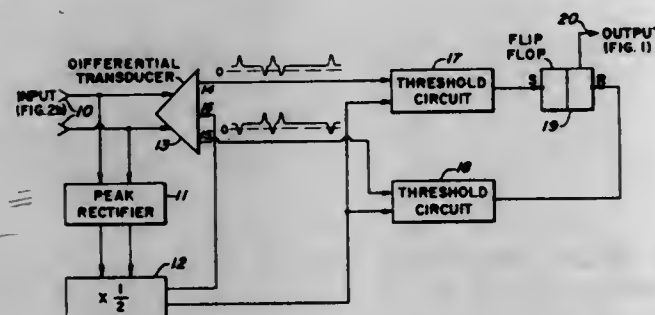
Incoming pulses are applied to a first signal path in which each input pulse is linearly integrated and to a second signal path in which each input pulse is delayed in time, linearly integrated and amplified. The outputs of the first and second paths are then applied to a voltage discriminator which initiates an output signal, when the



output level of the second path exceeds that of the first path. When the signal level of the second path is amplified by a factor of two, or the signal level of the first path attenuated by a factor of one-half, the output of the discriminator will be initiated a predetermined time interval after the precise center of the input data pulse. If the relative amplification factor of the two paths is some value other than two, some other precise position in the input data pulse will be determined.

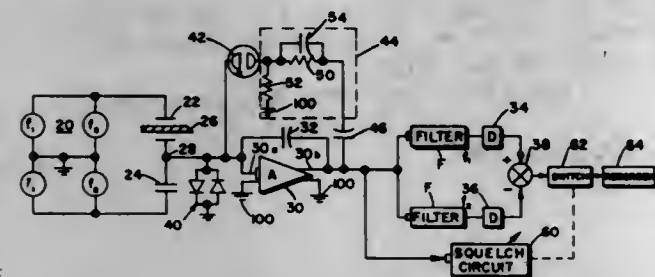
**3,461,390**  
**DICODE DECODER TRANSLATING DICODE OR THREE-LEVEL DIGITAL DATA SIGNAL INTO TWO-LEVEL FORM**  
Donald E. Mack, West Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Nov. 25, 1964, Ser. No. 413,890  
Int. Cl. H03k 5/20  
U.S. Cl. 328—119 5 Claims



A decoder circuit for use with input dicode signals. A received dicode signal is applied to the input of a transformer with a center tapped secondary and simultaneously peak rectified with the peak rectified voltage applied to the transformer center tap. Threshold detector circuits are connected to the other secondary taps to control the operation of a bistable multivibrator. The output signal is the original binary signal transmitted as the dicode signal.

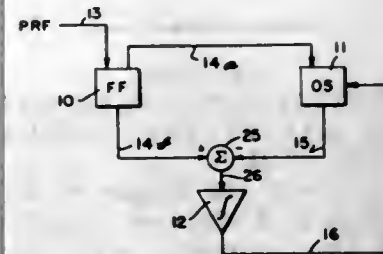
**3,461,391**  
**ELECTRONIC SIGNAL AMPLITUDE LIMITER**  
Milton C. Clerc, Worthington, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio  
Filed Aug. 2, 1965, Ser. No. 476,523  
Int. Cl. H03k 5/08  
U.S. Cl. 328—171 5 Claims



A dual frequency impedance measuring gauge includes a variable gain limiter that substantially reduces a signal amplitude derived therefrom when high amplitude noise pulses are generated by the measuring gauge. In accordance with one embodiment, the limiter includes an operational amplifier with a capacitive feedback path shunted by a voltage responsive neon tube. In a second embodiment, the limiter comprises a neon tube in series with an impedance and the gauge output signal. The limiter output is applied to a different detector channel for each frequency. The outputs of the channels are

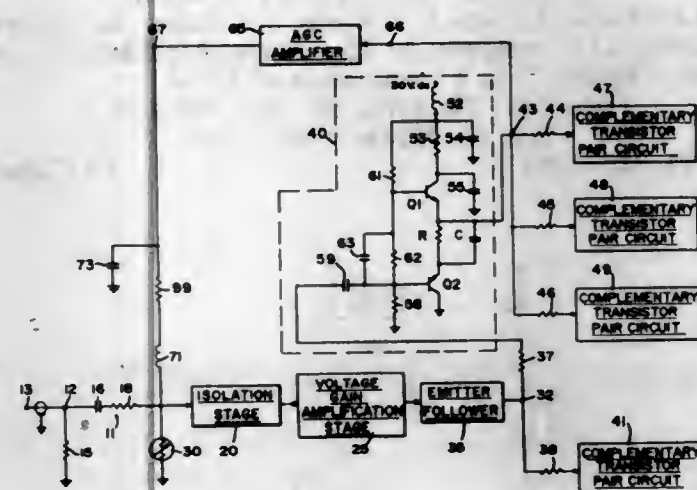
combined and fed to a utilization device via a normally closed photoresistor switch that is opened only in response to the limiter output exceeding a predetermined amplitude. The activation period of the switch occurs at a time related to the response time of one of the channels.

**3,461,392**  
**PULSE REPETITION FREQUENCY TO DIRECT CURRENT CONVERTER**  
Richard Smith Hughes, Code 4022 U.S.N.O.T.S., and Charles E. McCall, Code 4025 U.S.N.O.T.S., both of China Lake, Calif.  
Filed Sept. 8, 1966, Ser. No. 578,431  
Int. Cl. H03k 9/06  
U.S. Cl. 329—104 2 Claims



A device for converting a pulse repetition frequency signal to a direct current voltage. Incoming pulses trigger a flip-flop, the output of which drives a variable period one-shot. The outputs of the flip-flop and the variable period one-shot are summed, and the difference signal used to drive an integrator, the output of which is fed back to control the time period of the one-shot to make the time period of the one-shot equal to the time period of the flip-flop. The integrator output is a direct current voltage which varies as a function of the pulse repetition frequency.

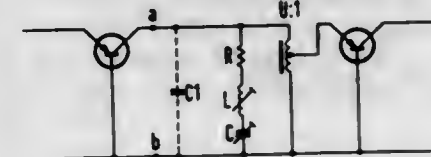
**3,461,393**  
**CASCADED COMPLEMENTARY PAIR BROAD-BAND TRANSISTOR AMPLIFIERS**  
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of George D. Thompson, Jr., La Crescenta, and George F. Lutes, Jr., South Gate, Calif.  
Filed May 9, 1967, Ser. No. 638,192  
Int. Cl. H03f 3/18, 3/68, 3/42  
U.S. Cl. 330—13 4 Claims



A broadband distribution amplifier with a plurality of output stages. Each stage is formed of a complementary transistor pair, interconnected by a parallel capacitor and resistor network so that even at high frequencies, for ex-

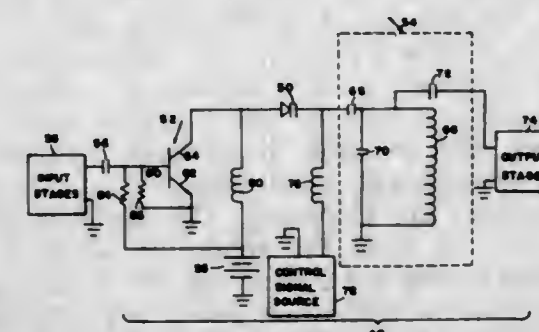
ample 50 mc., one of the transistors provides a very low impedance discharge path for the capacitor, to prevent bottoming. AGC is provided by inserting a thermistor into the input stage of the amplifier which receives the high frequency or RF input signals. The thermistor, due to its pure resistive characteristics, does not produce undesired phase shifts with changing frequencies. Furthermore, due to its small size, stray capacitance produced thereby is held to a minimum.

**3,461,394**  
**MULTISTAGE WIDE-BAND TRANSISTOR AMPLIFIER**  
Wolfgang Ulmer, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany  
Filed July 26, 1965, Ser. No. 474,610  
Claims priority, application Germany, July 28, 1964, S 92,308  
Int. Cl. H03f 1/42, 3/04  
U.S. Cl. 330—21 7 Claims



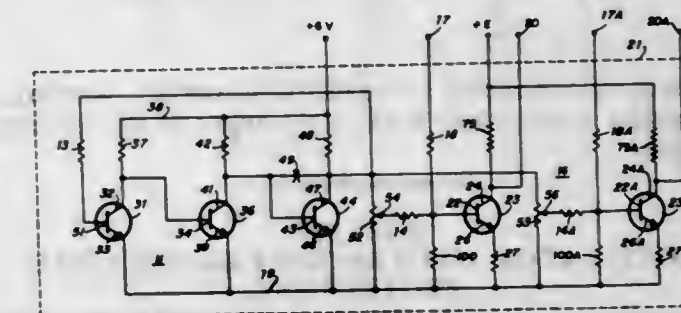
A multistage broad-band transistor amplifier having interstage coupling networks which include a series resonant circuit in parallel with an autotransformer to provide a flat frequency response curve.

**3,461,395**  
**AMPLIFIER CIRCUITS EMPLOYING VARACTORS FOR CONTROLLING POWER GAIN AND BANDWIDTH**  
Joseph E. Racy, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware  
Original application Sept. 8, 1966, Ser. No. 577,962, now Patent No. 3,384,835, dated May 21, 1968. Divided and this application Sept. 11, 1967, Ser. No. 683,748  
Int. Cl. H03g 3/30, 3/20, 5/00  
U.S. Cl. 330—29 6 Claims



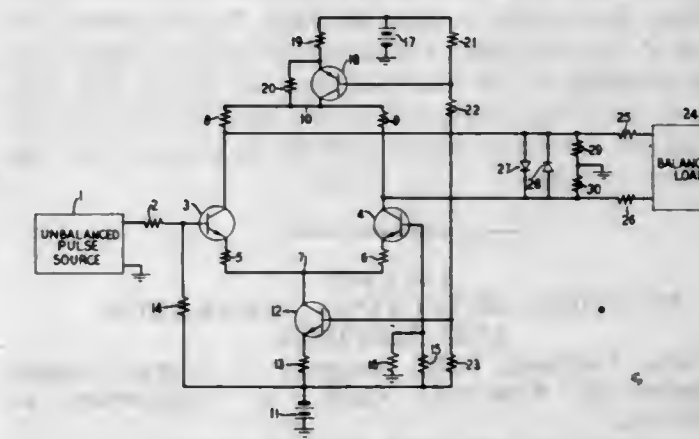
The present invention pertains to electronic circuits, and more particularly to amplifier circuits including an electronic valving device and employing varactors for the purpose of controlling the power gain, bandwidth or effective output impedance characteristics thereof. The varactor is employed in an amplifier circuit which also includes a tuned circuit and a source of control signals. The control signals are fed to the varactor and are able to cause the varactor to vary the Q of the tuned circuit, to thereby vary the bandwidth or the power gain of the amplifier. The control signals fed to the varactor are also effective to cause the varactor to vary the effective output impedance of the electronic valving device.

**3,461,396**  
**COMPENSATED TRANSISTOR AMPLIFIER**  
James J. Harris, San Diego, Calif., assignor, by mesne assignments, to Solitron Devices, Inc., Tappan, N.Y., a corporation of New York  
Filed Mar. 8, 1965, Ser. No. 437,665  
Int. Cl. H03f 7/00, 3/68, 1/38  
U.S. Cl. 330—30 5 Claims



There is provided a circuit wherein one amplifier is connected to another amplifier in such a manner that the first mentioned amplifier provides for temperature compensated operation of the second amplifier.

**3,461,397**  
**BALANCED DIFFERENTIAL AMPLIFIER WITH IMPROVED LONGITUDINAL VOLTAGE MARGIN**  
Peter B. Cunningham, North Andover, Mass., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York  
Filed Apr. 18, 1968, Ser. No. 722,338  
Int. Cl. H03f 3/68  
U.S. Cl. 330—30 3 Claims



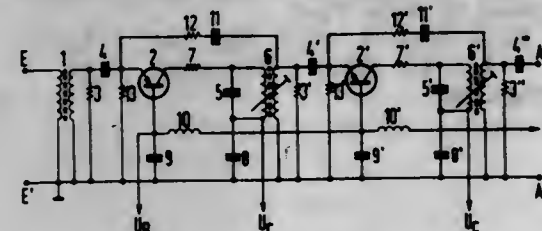
An unbalanced to balanced converter for pulse type signals takes the form of an emitter-coupled transistor differential amplifier in which the effects of longitudinal voltages on the balanced output line are suppressed by using both a constant current emitter biasing source and a constant current collector biasing source.

**3,461,398**  
**CIRCUIT ARRANGEMENT FOR THE REDUCTION OF INTERFERENCE PHASE MODULATION OCCURRING IN TRANSISTOR LIMITING STAGES BY AMPLITUDE-MODULATED FREQUENCY MODULATION**  
Josef Gammel, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany  
Filed Aug. 16, 1965, Ser. No. 479,948  
Int. Cl. H03f 1/38, 3/04  
U.S. Cl. 330—165 5 Claims

A transistor amplifier for frequency-modulated signals having stages operating from a predetermined control level or limiter for reducing the interference phase mod-



ulation which is coupled between stages with transformers. The transformers are of the type having extremely low leakage inductance. An alternating current positive



feedback is connected between the secondary winding of a coupling transformer back to the input of the transistor amplifier.

3,461,399

### OSCILLATOR WITH SHORT CIRCUIT LOAD PROTECTION

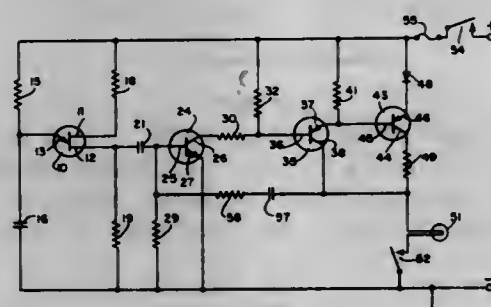
Constantinos E. Houpis, Chicago, and Martin Ivec, Joliet, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Sept. 15, 1967, Ser. No. 668,024

Int. Cl. H02h 7/20; H03k 3/26

U.S. Cl. 331—62

4 Claims



A pulse generator triggers an amplifier which provides power to an output load. A regenerative feedback circuit in the amplifier includes a series coupled capacitance and resistance to provide a time constant for regulating the on time of the amplifier. The feedback circuit acts to turn off the amplifier if the load becomes short circuited. The feedback circuit is connected to the load in such a manner that no feedback signal can be generated with the load short circuited.

3,461,400

### POSITION DETECTING APPARATUS AND METHOD

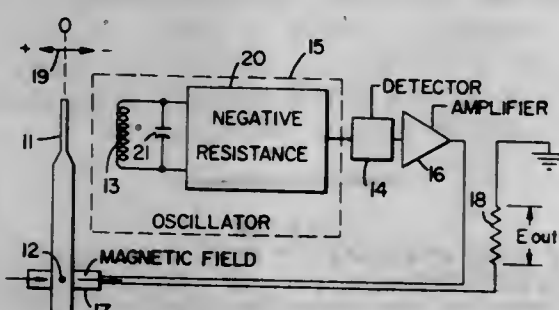
Eiji Koda, Concord, Calif., assignor to Systron-Donner Corporation, Concord, Calif., a corporation of California

Filed Aug. 30, 1967, Ser. No. 664,373

Int. Cl. G01n 27/02; G08c 21/00

U.S. Cl. 331—65

7 Claims



A position detecting apparatus and method having a movable metal paddle coupled to an inductive pick-up circuit which is part of a tuned circuit coupled to a negative resistance device forming an oscillator. The rectified output of the oscillator drives an amplifier which when the paddle departs from a null position provides plus or minus currents to a restoring torque coil also coupled to the paddle. The value of the restoring current is a meas-

ure of the displacement of or the amount of acceleration applied to the paddle. The negative resistance device contains a passive resistor which determines the amplitude of oscillation at the normal null position of the paddle thereby providing a stable position reference for the null position.

3,461,401

### KLYSTRON AMPLIFIER EMPLOYING A LONG LINE FEEDBACK CIRCUIT TO PROVIDE A STABLE HIGH POWER MICROWAVE GENERATOR

Norman H. Williams, San Francisco, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Continuation-in-part of application Ser. No. 609,651,

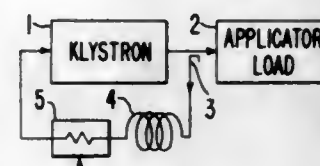
Jan. 16, 1967, This application Nov. 24, 1967, Ser.

No. 688,942

Int. Cl. H03h 9/04

U.S. Cl. 331—83

23 Claims



A stable high power microwave generator is formed by feeding a portion of the output of a klystron amplifier back to its input via a long transmission line having an electrical length equal to or greater than Q wavelengths, where Q is one over the fractional bandwidth between the amplitude response points above which the loop gain is greater than unity. Such a microwave generator is especially suited for use as a source of microwave power for industrial microwave heating or treating applications.

Industrial microwave heating systems are described wherein the feedback is derived from the output of the microwave applicator load such that variable phase shifts produced by the work in the applicator do not stop oscillation of the tube and whereby the power delivered to the work is automatically regulated to a given power level. In addition, a PIN diode electronically-variable attenuator is included in the feedback path of certain microwave applicator systems for automatically regulating the power level of the oscillator or for regulating the reflected power at the output of the tube. In other embodiments, a plurality of microwave applicators are tuned to different frequencies. A ferrite phase shifter is employed in the feedback path of the klystron for tuning the klystron oscillator to the frequency of a selected one of the applicators to shift the power applied to the work in accordance with the shift in oscillator frequency. In still another embodiment, plural applicators tuned to different frequencies are employed. The feedback for the klystron is derived from the applicator which is most heavily loaded by the work such that the system is self-regulating in that the microwave power is applied to that part of the work which will absorb the most power.

3,461,402

### LASER DEFLECTOR HAVING A NON-UNIFORM FIELD APPLIED TO AN ELECTRO-OPTIC CRYSTAL

Roger Dumanchin, Montgeron, France, assignor to Compagnie Generale d'Electricite, Paris, France

Filed May 14, 1964, Ser. No. 367,458

Claims priority, application France, May 17, 1963, 935,252

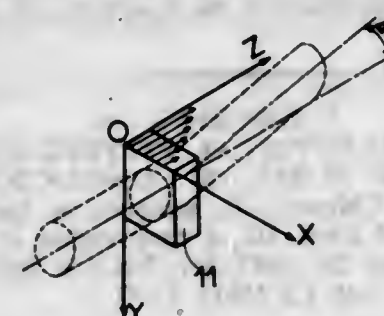
Int. Cl. H01s 3/00; G02f 1/28, 1/36

U.S. Cl. 331—94.5

2 Claims

A device for the control of laser oscillation including a crystal in a resonant optical cavity of the Fabry and

Perrot type, said crystal being capable of effecting selective deviation of a beam of light from its direction under



the effect of an electric field gradient in the crystal produced by a voltage selectively applied thereto.

3,461,403

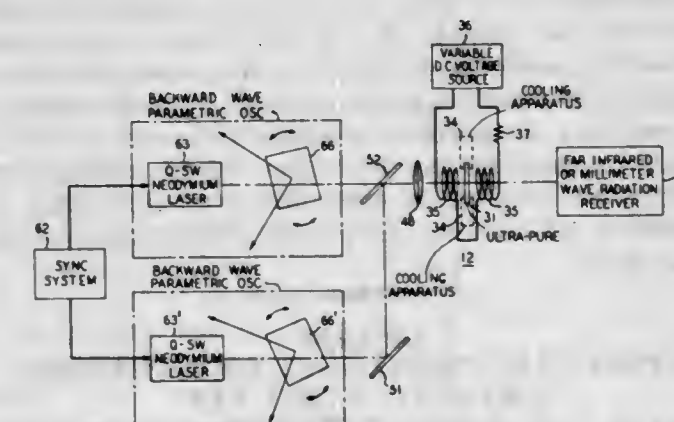
### MILLIMETER AND FAR INFRARED WAVE GENERATOR

Chandra K. N. Patel, Chatham, and Nguyen Van-Tran, Matawan Township, Monmouth County, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Dec. 13, 1967, Ser. No. 690,307

U.S. Cl. 331—107

9 Claims



A phase-matched tunable millimeter wave and far infrared wave generator employs semiconductor active media having large bound-electron second-order nonlinear effects but which are not sufficiently birefringent to be phase-matchable by conventional techniques. There is generated a circularly polarized difference-frequency wave for which free carriers (electrons or holes) have the effect of subtracting an appreciable amount from the index of refraction determining its propagation constant. The circularly polarized wave is generated in relatively pure crystals when the frequencies of a pair of input radiations to be mixed and a tuning condition, such as an applied magnetic field, are appropriately selected. Magnetic field tuning is applicable to semiconductors of the cubic class ( $\sqrt{3}m$ ). Also, in a parametric oscillator, one radiation is supplied and a second radiation relatively closely spaced in frequency is highly resonated, the frequency of the second radiation and the difference frequency being variable by variation of the magnetic field. The difference frequency is also highly resonated.

3,461,404

### DISCONNECTABLE PULSE GENERATOR

Ernst Kutschbach, Karl Marx-Stadt, Germany, assignor to VEB Buchungsmaschinenwerk Karl Marx-Stadt, Karl Marx-Stadt, Germany

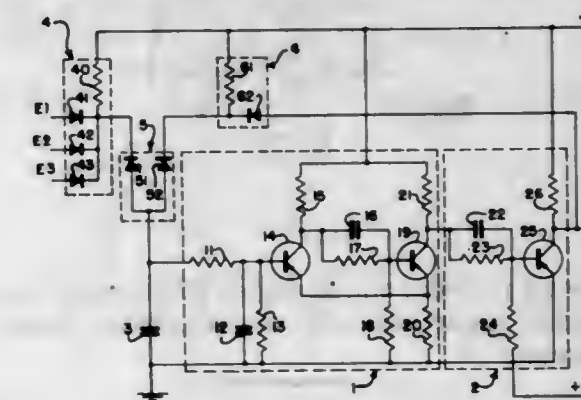
Filed Sept. 20, 1967, Ser. No. 669,154

Int. Cl. H03k 3/26

U.S. Cl. 331—111

10 Claims

A pulse generator disconnectable by a voltage applied to its input, comprises a Schmitt trigger; a feedback path



3,461,405

### DRIVEN INVERTER DEAD-TIME CIRCUIT

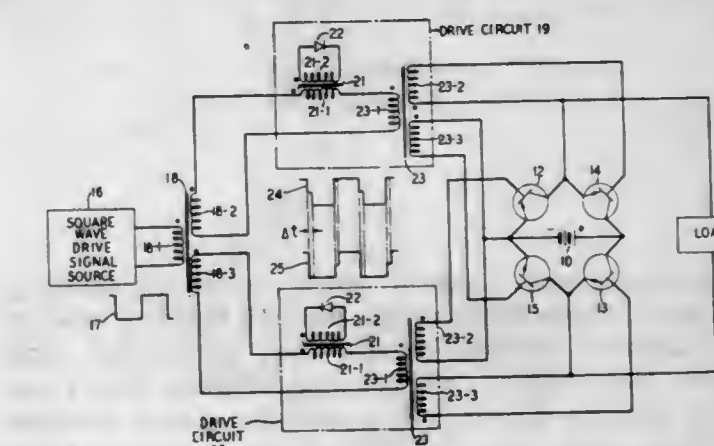
John D. Bishop, Basking Ridge, Murray R. Hasson, Dover, and Fred V. Kadri, Madison, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Sept. 11, 1967, Ser. No. 666,644

Int. Cl. H03k 3/281

U.S. Cl. 331—113

5 Claims



In a driven inverter which utilizes at least two switching transistors conducting alternately and in phase opposition to one another each transistor has its own drive circuit which includes a serially connected primary winding of a saturable core transformer. A diode connected across the secondary winding of the saturable core transformer is poled to present an effective short circuit during a transistor turn-off signal while presenting an effective open circuit during a turn-on signal. As a result, a delay in transistor turn-on is provided while the turn-off signal wavefront is preserved to allow fast and efficient switching transistor turn-off, thereby preventing the simultaneous conduction of out-of-phase transistors.

3,461,406

### DELTA MODULATOR USING OPERATIONAL INTEGRATION

Barney M. Kroll, Morton Grove, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed July 5, 1966, Ser. No. 562,872

Int. Cl. H03k 7/02; H03o 3/08

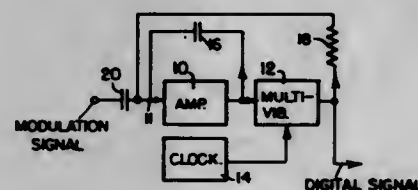
U.S. Cl. 332—11

6 Claims

A delta modulator is provided including an amplifier with degenerative feedback the output of which drives a



multivibrator. The output of the multivibrator is also degeneratively coupled back to the input of the amplifier.



The circuit provides a high degree of isolation between the modulation signal and the digital signals using passive components.

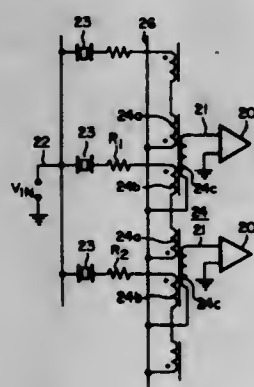
### 3,461,407 CONTIGUOUS FILTER BANK USING SHARED RESONATORS

Norman A. Ruggles, Pasadena, and Irving I. Kaplan, Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 3, 1966, Ser. No. 531,547  
Int. Cl. H03h 7/46, 9/32

U.S. Cl. 333—6

5 Claims



Contiguous filter bank in which crystal resonators in contiguous channels are shared through isolating resistors and inductive coupling means, such as current transformers, each having two primary windings and a secondary winding constituting a mutually shared terminating output impedance. The ratio of the turns as between each primary and its associated secondary being such that the current through the terminating impedance is greater than that through the crystal resonators.

### 3,461,408 ORIENTED $\text{LiTaO}_3$ CRYSTAL AND DEVICES USING SAME

Morio Onoe, Tokyo, Japan, and Arthur W. Warner, Jr., Whippany, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Continuation of application Ser. No. 585,978, Oct. 11, 1966. This application Feb. 9, 1967, Ser. No. 614,916  
Int. Cl. H01v 7/02

U.S. Cl. 333—72

7 Claims



Plates of the piezoelectric material  $\text{LiTaO}_3$ , which may be represented as  $165^\circ$  y plates, evidence pure mode

thickness shear vibration and high coupling efficiency. Such rotated cut crystals are particularly useful as piezoelectric transducers used to convert between electromagnetic and elastic wave energy. Devices utilizing such plates are described.

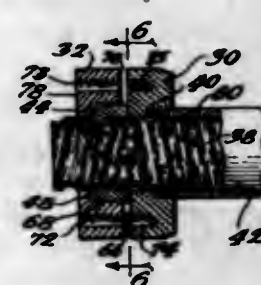
### 3,461,409 GAS-SEALING ELECTRICAL FITTING FOR NON- CIRCULAR TUBULAR CONDUCTORS

Robert F. Miller, Chicago, Ill., assignor to Andrew Corporation, Orland Park, Ill., a corporation of Illinois

Filed Apr. 20, 1967, Ser. No. 632,265  
Int. Cl. H01p 1/00

U.S. Cl. 333—98

9 Claims



A coupling or end-fitting for elliptical or generally similar non-circular corrugated waveguide has a gas-sealing ring exerting uniform pressure on the outer surface of the guide and sealing against leakage from the interior. The ring has a uniform cross-section, and an inner threaded surface mating with the helical corrugations of the guide. Pressure is controlled by a limit-stop on compression of the ring, to prevent deformation of the tubular guide.

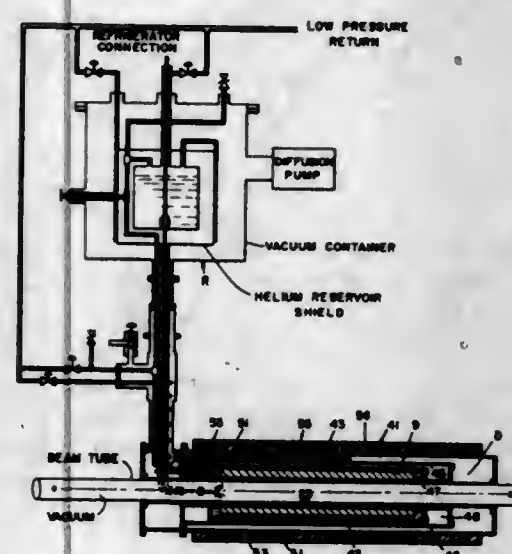
### 3,461,410 2-n POLE ELECTROMAGNET FOR FOCUSING CHARGED PARTICLES

Richard A. Beth, Bellport, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Aug. 21, 1967, Ser. No. 662,207  
Int. Cl. H01f 7/22

U.S. Cl. 335—210

5 Claims



A direct current multipole magnet for generating a strong, uniform field gradient, charged particle focusing, 2-n pole, magnetic field within current sheets defining a cylindrical aperture having a high magnetic external field cancelling member that enhances the field strength and preserves the field shape and form inside the magnet.

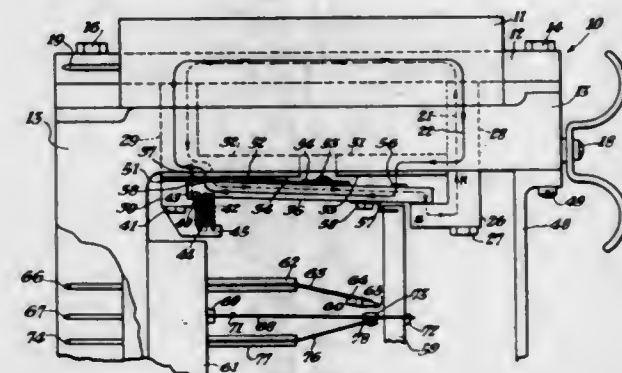
### 3,461,411 ARMATURE ARRANGEMENT

Andrew Hufnagel, Penn Hills Township, Allegheny County, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania

Filed Oct. 25, 1967, Ser. No. 677,924  
Int. Cl. H01f 7/08

U.S. Cl. 335—270

13 Claims



An improved armature arrangement having in combination with the armature an electromagnet which cooperates to move the armature whenever the electromagnet is energized. The armature is comprised of a flattened elongated member, one end of which is a fulcrum end having a beveled surface. The armature is disposed adjacent the electromagnet and interposed between the armature and the electromagnet is a flat, plate-like hinge spring secured at one end thereof to the elongated armature. A hinge block is secured to the electromagnet and is physically disposed to secure the other end of the hinge spring to the electromagnet. The hinge block has a portion thereof extending beneath the fulcrum end of the armature. A spring is disposed between the hinge block extending portion and the fulcrum end of the armature to force the fulcrum end in the direction of the flat hinge spring.

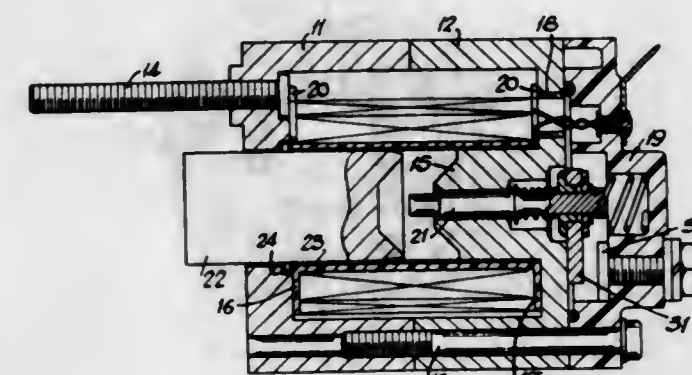
### 3,461,412 SOLENOID HAVING TWO-PART SINTERED BODY AND INTEGRAL POLE PIECE

Brian Sydney Henderson, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Aug. 1, 1967, Ser. No. 657,645  
Claims priority, application Great Britain, Aug. 19, 1966, 37,253/66  
Int. Cl. H01f 7/08

U.S. Cl. 335—281

1 Claim



A solenoid includes a two-part sintered body carrying the winding assembly within which the solenoid plunger slides, the two parts of the body being interconnected by self-tapping screw extending through plain bores in one part of the body into self-tapped holes in the other part of the body.

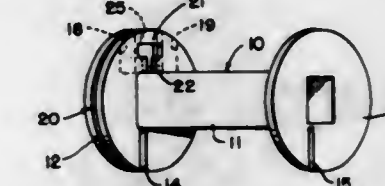
### 3,461,413 SHIELDED ELECTRICAL INDUCTOR COMPONENT

John E. Randolph, Palatine, and Adrian D. Wood, Elk Grove Village, Ill., assignors to Teletype Corporation, Skokie, Ill., a corporation of Delaware

Filed Nov. 10, 1966, Ser. No. 593,368  
Int. Cl. H01f 15/04

U.S. Cl. 336—84

5 Claims



A shielded electrical component including a bobbin comprised of a winding core and a flange having an L-shaped hole extending through it including a plating receiving leg extending axially into the flange and a terminal receiving leg extending radially through the flange, a layer of conductive plating covering the winding core of the bobbin and extending into the plating receiving leg of the L-shaped hole and a terminal positioned in the terminal receiving leg of the L-shaped hole in engagement with the material of the bobbin and extending into engagement with the plating in the plating receiving leg.

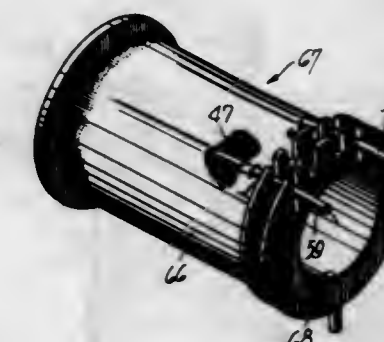
### 3,461,414 INDUCTIVE COIL AND METHOD OF MAKING THE SAME

Ralph L. Fearon, Raytown, and Robert M. Story, Lee's Summit, Mo., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed May 13, 1968, Ser. No. 728,650  
Int. Cl. H01f 15/10, 27/30

U.S. Cl. 336—192

8 Claims



An inductive coil is formed on a flanged dielectric bobbin by respectively winding a pair of auxiliary convolutions of a continuous wire on a circumferential groove in the flange before and after the main coil of such wire is wound on the bobbin core. After taping the coil to the core, both sets of convolutions are unwound from the groove, passed over the taped coil, and soldered to heavy leads. Access between the core and the groove is provided by a plurality of spaced radial slots in the flange.

### 3,461,415 OVEN CONTROL APPARATUS

John V. S. Dahlgren, Atlantic Highlands, N.J., assignor to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio

Filed July 27, 1967, Ser. No. 656,506  
Int. Cl. H01h 37/36

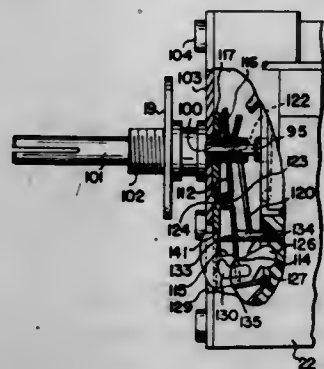
U.S. Cl. 337—310

3 Claims

In FIGS. 1-11 a control apparatus for the bake and broil elements of an oven is shown in which switching means 26, 45, 56 and 71 control opposite sides of bake element 17 and broil element 16, the switches 26, 45 being operated sequentially by a thermally responsive



element 90, 93 and the temperatures at which the switches operate being adjustable by a knob 21. When the knob is set on the broil position, the switch 56 for the bake element is latched open by latch 115, lever 112, and is so held open during rotation of the knob through the adjusting range and is released to reclose only after the



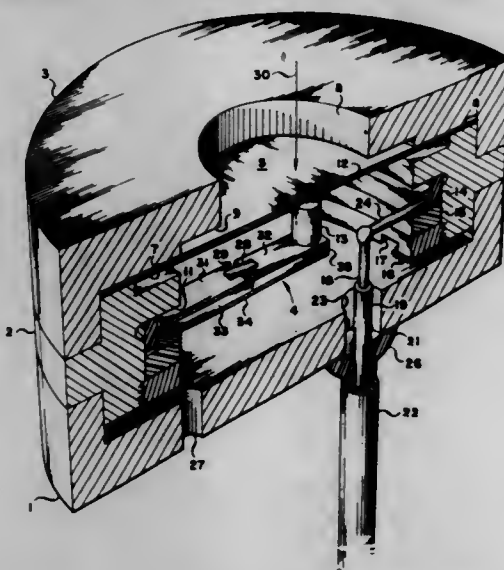
knob has been returned to the off position. In the embodiment shown in FIGS. 12, 13 the knob 150 is movable through two ranges of temperature selections, X, Y, and the switch 56 is held open to break the circuit to the bake element during the time the knob is in the range Y which regulates the maximum broil temperatures in the oven.

### 3,461,416 PRESSURE TRANSDUCER UTILIZING SEMICONDUCTOR BEAM

Edwin N. Kaufman, Woodland Hills, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.  
Filed Dec. 4, 1967, Ser. No. 687,757  
Int. Cl. G011 1/22

U.S. Cl. 338—4

10 Claims



A miniaturized pressure transducer is described having a high output, linear DC signal derived from a semi-conductor sensing element. The pressure-responsive diaphragm is readily interchangeable to accommodate various ranges of input pressure. The low mass of the notched-beam semiconductor sensor and the elements related thereto result in an unusually steep rise time of the transducer's output in response to a step function pressure input.

### 3,461,417 REINFORCED CAPS AND CONNECTORS

Walter C. Schumacher, Warwick, and Luther M. Sheldon, Cranston, R.I., assignors to General Electric Company, a corporation of New York

Filed July 27, 1967, Ser. No. 656,536

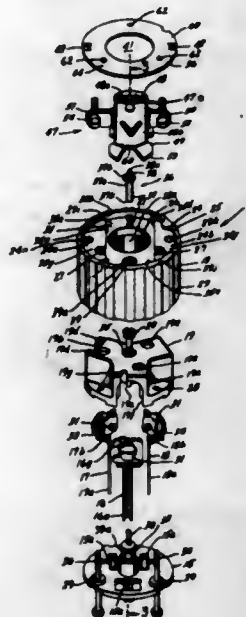
Int. Cl. H01r 3/06, 13/58

U.S. Cl. 339—14

7 Claims

In heavier duty caps and connectors structural reinforcement is provided of the insulating housing by means

of metal screws which are threaded to a clamp assembly to distribute the strain which would otherwise be placed on the conductors. The present invention provides a strong mechanical interlocking of the clamp elements through the device with a minimum of metal parts and utilizes specifically columns of insulating material formed integrally



with the plastic housing of the device to insulate metal screws and to distribute stress from the cable sheathing through the plastic column through the device. The compressive force generated between the through-screws and an annular ring holding the cable clamp is also utilized to ensure good grounding contact of the clamp and screws with a grounding electrode.

### 3,461,418 BULB HOLDERS FOR USE WITH PRINTED CIRCUIT BOARDS

William Lawrence Fry, King's Norton, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company

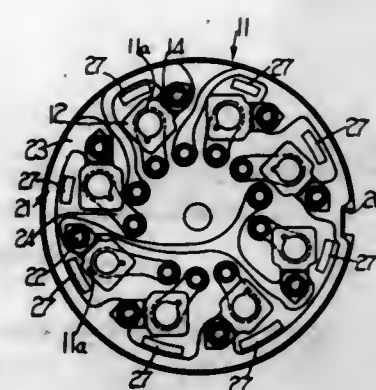
Filed Apr. 11, 1967, Ser. No. 630,072

Claims priority, application Great Britain, Apr. 14, 1966, 16,346/66

Int. Cl. H05k 1/18; H01r 9/08, 9/20

U.S. Cl. 339—17

1 Claim



A bulb holder including a resilient conductive substantially Z-shaped strip one end of which is secured in contact with a first conductive area on a printed circuit board whilst the other end is shaped to engage the conductive cap of a bulb. The strip supports the bulb and urges a contact carried by the cap of the bulb, into engagement with a second conductive area on the board.

3,461,419

### HOT LINE CONNECTOR

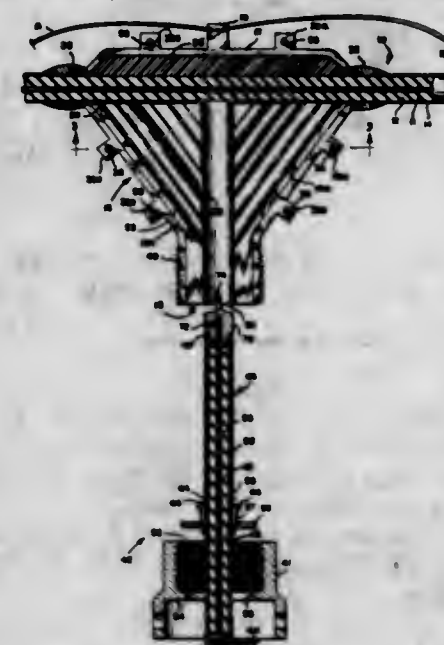
Edwin A. Link, Waukesha, Wis., assignor to RTE Corporation, Waukesha, Wis., a corporation of Wisconsin

Filed June 23, 1967, Ser. No. 648,406

Int. Cl. H01r 13/38, 13/54

U.S. Cl. 339—89

14 Claims U.S. Cl. 340—2



Disclosed herein is a tapping device including an insulator which can be used to enclose a section of a high voltage cable and a cable tap lead that is placed in a passage in the insulator and driven into electrical engagement with the cable.

3,461,420

### WAVELET RECONSTRUCTION PROCESS OF INCREASED RESOLUTION

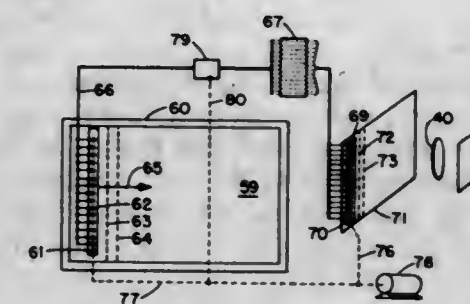
Daniel Silverman, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Continuation-in-part of application Ser. No. 512,689, Dec. 9, 1965. This application Jan. 3, 1967, Ser. No. 606,690

Int. Cl. G01s 9/66

U.S. Cl. 340—1

32 Claims



An object in an optically opaque medium is irradiated by continuous-wave energy that the medium transmits efficiently, such as sound waves in water, for example. This produces over a detection area an interference pattern of direct and reflected waves, which is translated into a proportional exposure on photographic film. Viewing the developed film as a hologram in coherent (laser) light reveals the object. When arrays of spaced point receivers and corresponding modulated point light sources are scanned so as to traverse every point of the detection and film areas, increased resolution is achieved, showing more details of the object.

865 O.G.—23

### 3,461,421 ADVANCED DIRECTION FINDING SONOBUOY SYSTEM

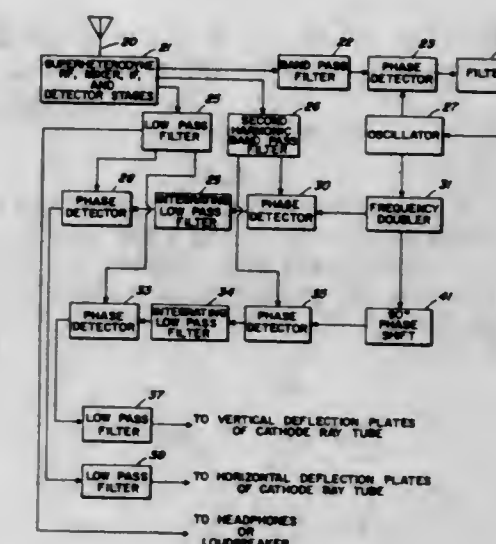
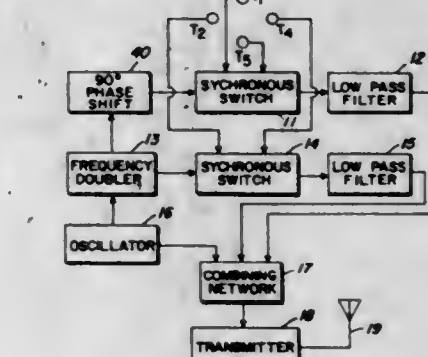
Harris A. Stover, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed July 25, 1967, Ser. No. 655,875

Int. Cl. G01s 1/72, 3/14, 3/80

14 Claims U.S. Cl. 340—2

23 Claims



Disclosed is a very versatile sonobuoy system which is capable of indicating the direction and range of a source of sound located at an unknown position. The sonobuoy system employs four omnidirectional hydrophones located at the corners of an imaginary square. The outputs from diametrically spaced hydrophones are combined and the combined signal is used to modulate a reference subcarrier for transmission to a receiving system. The receiving system demodulates the various subcarriers and the demodulated signals are used to actuate the deflection system of a cathode ray tube or some other indicating means. The orientation of the sonobuoy with respect to true north is detected by means of magnetometers or some other detecting means. The orientation information is used to modulate a reference subcarrier for transmission to a receiving system. By receiving and detecting all the information transmitted by the transmitting system the location and range of a sound source with respect to the sonobuoy is obtained at a remote location equipped with a receiver capable of receiving and utilizing the transmitted information.

### 3,461,422 PROTECTION SIGNALLING SYSTEM FOR SELF-SERVICE ELEVATORS

Edwin J. Hansen, 2996 Ferncrest Drive, Yorktown Heights, N.Y. 10598

Filed Oct. 13, 1965, Ser. No. 495,578

Int. Cl. B66b 3/02

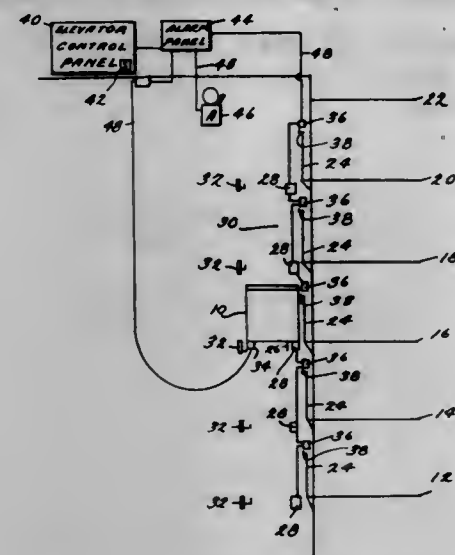
U.S. Cl. 340—21

16 Claims

An alarm system for an elevator which operates between a plurality of separated landings and which gives an appropriate alarm whenever the elevator stops except

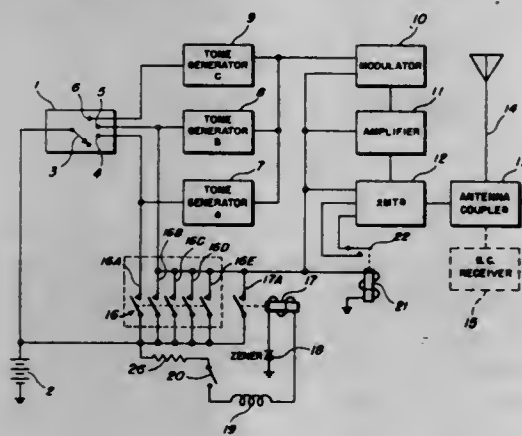


at one of the landings, thereby eliminating the necessity of trying to open the hoistway door to sound an alarm. In the embodiment disclosed, the alarm can also be given



whenever emergency or service areas are entered without authorization or the hoistway door is opened between landings.

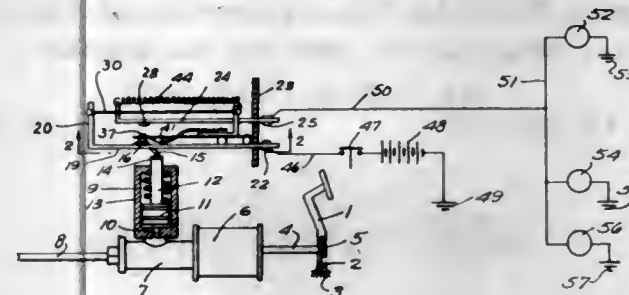
**3,461,423**  
**VEHICLE DISTRESS TONE GENERATOR**  
Frank C. Trumble, 910 Palm Ave.,  
Carlsbad, Calif. 92008  
Filed July 27, 1966, Ser. No. 559,228  
Int. Cl. B60q 5/00; G08b 1/08; B60r 25/00  
U.S. Cl. 340—52 **4 Claims**



1. A distress tone generator for generating a distress tone from a vehicle comprising:
  - a plurality of tone generators for producing a plurality of distinct tones different from each other, each of said tone generators having an output;
  - a modulator having an input and an output, said modulator input coupled to said plurality of tone generator's output;
  - a transmitter having a modulator input and output, said transmitter's modulator input connected to said modulator's output;
  - an antenna coupled to said transmitter's output;
  - a plurality of switching means for coupling a power source to one of said plurality of tone generators and said modulator and transmitter.

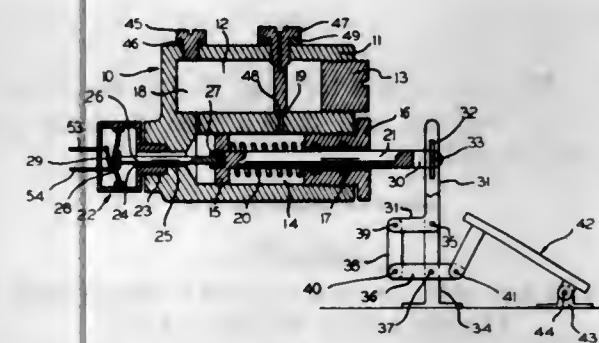
**3,461,424**  
**PRESSURE CONTROLLED DEVICE FOR PRODUCING VARYING FLASHING SIGNALS**  
Joseph Kayuhs, Jr., 33 Burkham Court,  
Wheeling, W. Va. 26003  
Filed Oct. 10, 1966, Ser. No. 585,686  
Int. Cl. B60q 1/00, 3/00, 1/26  
U.S. Cl. 340—60 **4 Claims**  
The present device is controlled by pressure applied

thereto and operates electrical signals in a flashing manner when the pressure is applied to the device and also varies



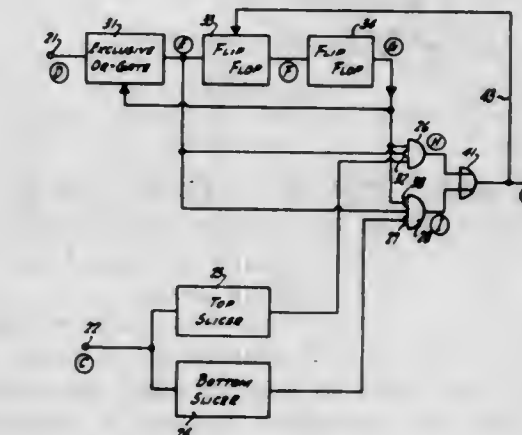
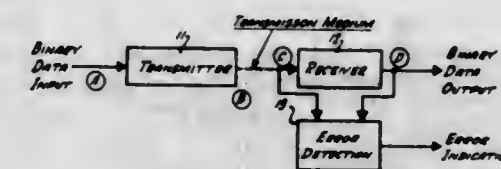
the timing of the flashing signals in accordance with variations in the amount of the pressure applied to the device.

**3,461,425**  
**DECELERATING AND DISTRESS LIGHT**  
Silas L. Schultz, 3854 S. Massachusetts Ave., Milwaukee,  
Wis. 53220, and Edward R. Kerzner, 11940 W. Cold  
Spring Road, Greenfield, Wis. 53228  
Continuation-in-part of application Ser. No. 408,083,  
Nov. 2, 1964. This application Nov. 9, 1966, Ser.  
No. 598,581  
U.S. Cl. 340—71 Int. Cl. B60q 1/30 **9 Claims**



6. A change in speed warning system for vehicles including first circuit means for energization of a first warning light, second circuit means for energization of a second warning light, each said circuit means including a pressure actuated switch adapted when actuated to energize the light associated with said circuit means, means for actuating one switch in response to a decelerating motion of a vehicle accelerator pedal and actuating the other switch in response to an accelerating movement of said pedal including linkage means interconnected with a vehicle accelerator pedal, a piston and cylinder connected between said linkage means and each said switch, said cylinder being connected to pressure responsive means of one switch on one side of the piston in said cylinder whereby a first pressure chamber is defined on said side of said piston, said cylinder being connected to pressure responsive means of the other switch on the other side of the piston whereby a second pressure chamber is defined on the other side of said piston each switch being responsive to the pressure in its associated chamber for actuation thereof in response to a buildup of pressure in its associated chamber, said cylinder including means for reducing the pressure in each chamber to thereby deactivate each said switch after a predetermined time interval following actuation thereof, said piston being effective to build up pressure in alternate ones of said chambers during movement of said piston in opposite directions corresponding to decelerating and accelerating motions of said accelerator pedal, said piston being ineffective to build up pressure in one chamber while pressure is built up in the other chamber.

**3,461,426**  
**ERROR DETECTION FOR MODIFIED DUOBINARY SYSTEMS**  
Adam Lender, Palo Alto, Calif., assignor to Lenkurt  
Electric Co., Inc., San Carlos, Calif., a corporation of  
Delaware  
Filed Apr. 20, 1966, Ser. No. 550,076  
Int. Cl. G08c 25/00  
U.S. Cl. 340—146.1 **6 Claims**

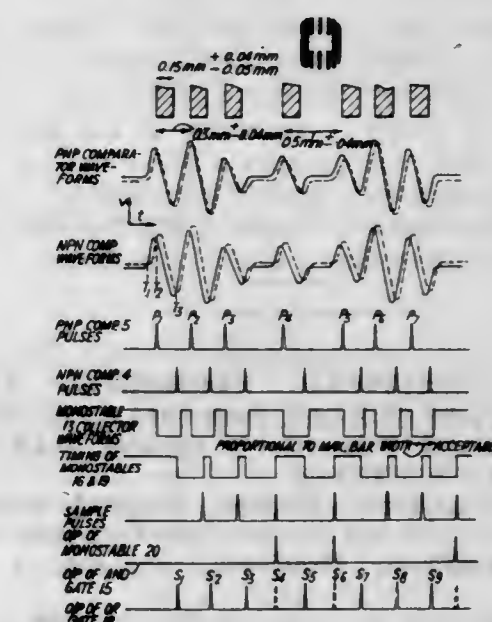


An error detection method and system for modified duobinary data transmission in which correlation properties of the waveform are solely utilized without the introduction of redundant digits. Both the transmitted modified duobinary waveform and the binary waveform reconstituted therefrom by decoding are monitored and coincidences detected between extreme level signals of the former and correlated portions of the latter to indicate errors.

**3,461,427**  
**IDENTIFICATION OF DIGITAL SIGNALS RESULTING FROM SCANNING RECORDED CHARACTERS**  
Barry Norman Parker, Ascot, England, assignor to Crossfield Electronics Limited, London, England, a British company  
Continuation-in-part of application Ser. No. 348,492,  
Mar. 2, 1964. This application Jan. 21, 1966, Ser.  
No. 522,067  
Claims priority, application Great Britain, Mar. 4, 1963,  
8,553/63  
Int. Cl. G06k 9/00 **5 Claims**

1. In a system for identifying electrical coded signals resulting from the scanning of characters which are composed of a fixed number of parallel bars, adjacent bars having their homologous edges separated by intervals of two markedly different widths, and the distance between either edge of a bar of the character followed by a space of the shorter width to the center of the next succeeding bar being less than the distance between the homologous edge of a bar followed by a space of the longer width to the leading edge of the next succeeding bar, the time occupied by scanning the said shorter and longer widths being designated shorter and longer time intervals respectively and the relative positions of the said shorter and longer time intervals serving to identify the character scanned; means for detecting the position in the signal of the longer time intervals relative to the shorter time intervals comprising:

- (a) means for generating a signal of substantially square waveform which includes bar-representing pulses having a voltage level of a first predetermined value for intervals substantially corresponding to the time intervals for which the bars of the character are scanned and space-representing intervals between the bar-representing pulses in which the signal has a voltage level of a second predetermined value, homologous edges of the said bar-representing pulses thus being separated by the said shorter and longer time intervals;
- (b) a monostable circuit which is arranged to be set in synchronism with homologous edges of the said bar-representing pulses and which is arranged to reset and to generate a short duration pulse after a predetermined delay which is substantially equal to the time interval between a given edge of a given one of said bar-representing pulses and the centre of the next succeeding bar-representing pulse separated from the said given bar-representing pulse by a said shorter time interval;

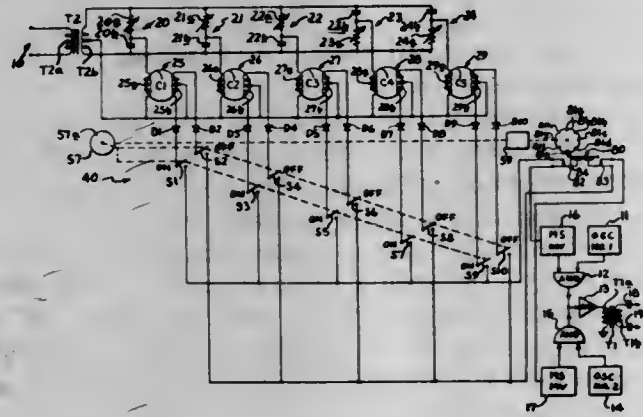


- (c) an AND gate arranged to receive the said signal of square waveform together with the said short duration pulses generated by the said monostable circuit and to transmit the said short duration pulses only if they coincide with a space-representing time interval;
- (d) register means responsive both to signals representing the generation of the said bar-representing pulses and to the said short duration pulses transmitted by the said AND gate, which register means is arranged to store in a parallel manner a sequence of items of information representing the relative order of generation of the signals to which it is responsive; and
- (e) read-out means operative to sample the register means when a predetermined number of items of information have been entered into the register means.

**3,461,428**  
**REMOTE CONTROL SYSTEM INCLUDING CIRCUITRY FOR SUPERIMPOSING HIGHER FREQUENCY CONTROL SIGNALS ON A SUPPLY LINE CARRIER WAVE**  
Wilmer C. Anderson, Greenwich, Conn., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware  
Filed Aug. 30, 1965, Ser. No. 483,674  
Int. Cl. H04q 9/00, 9/08; H04m 11/04  
U.S. Cl. 340—147 **20 Claims**  
A remote control system associated with an A-C supply line wherein control signals are selectively superimposed



on respective opposite polarity half cycles of an A-C power line voltage wave which functions as a carrier wave. The control signals are superimposed on the supply line carrier, and a phase shifting network is provided for controlling the phase relationship between the control signal and the carrier so as to superimpose the control signal on the carrier at different prescribed time intervals

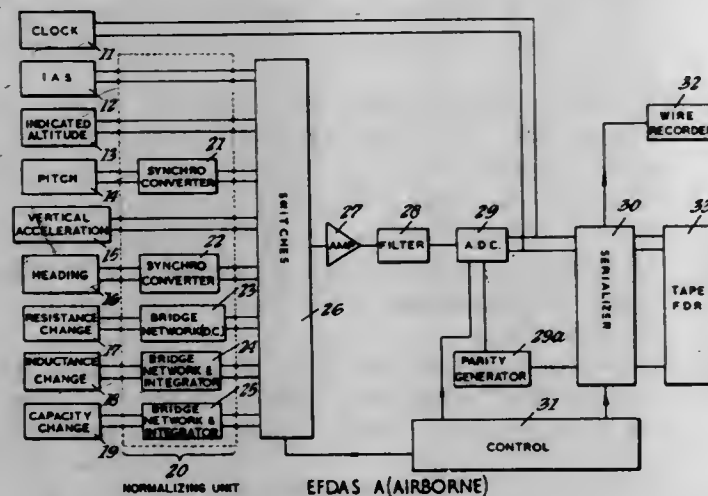


during selected half cycles to provide a plurality of different control channels. The control signals are utilized to actuate a plurality of separate remotely located receivers each of which is responsive to the frequency of the control signal, and includes a phase shifting network for detecting a control signal at a preselected one of the prescribed time intervals during a selected half cycle at the carrier for controlling a desired operation.

### 3,461,429 AIRCRAFT MAGNETIC RECORDING SYSTEM HAVING A RECORDER FOR CRASH DATA AND A RECORDER FOR BOTH CRASH DATA AND FLIGHT CONDITIONS

Michael Richard Gray, Feltham, England, assignor to Epsilon Research and Development Company Limited, Bedford, Feltham, Middlesex, England, a British Company

Filed July 26, 1966, Ser. No. 567,869  
Claims priority, application Great Britain, July 28, 1965,  
32,356/65  
Int. Cl. G11b 13/00; G01d 9/06; H03k 13/02  
U.S. Cl. 340—172.5 3 Claims

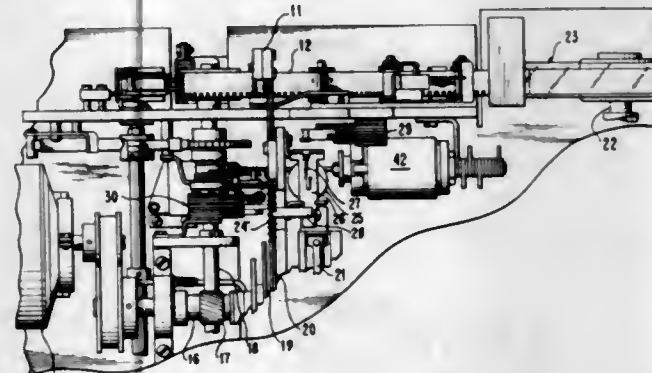


A magnetic recording system for aircraft in which data of a kind usable for establishing flight conditions prior to a crash, and additional data representative of other conditions during a flight, are processed to produce data words each representing an instantaneous condition, the data words representing the crash data are recorded serially in a recorder having an endless metal recording element, and both the crash data and the additional data are recorded on a magnetic tape which is removable at the end of the flight to enable flight conditions and the correct functioning of the aircraft during the flight to be monitored.

### 3,461,430 RECORD READER WITH CONTROLS

Parker R. Blevins, Roderick S. Heard, and Louis M. Hornung, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Sept. 14, 1966, Ser. No. 579,355  
Int. Cl. G11b 5/02; G08b 29/00; G06f 7/00;  
G08c 25/00; G06k 7/016  
U.S. Cl. 340—172.5 16 Claims

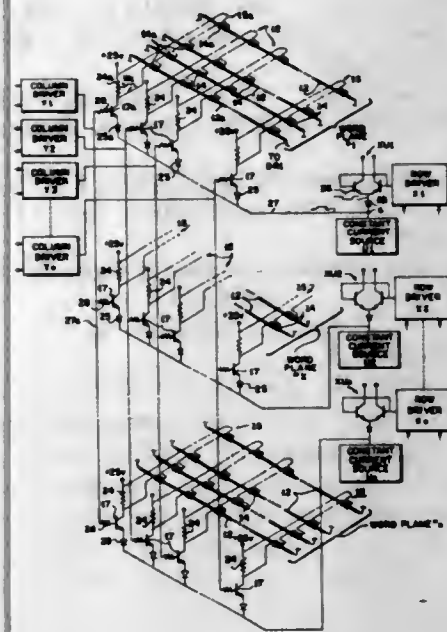


A latch counter receives alternating signals from an emitter to control the position in storing means of each data bit read by a transducer from a record with each alternating signal being supplied prior to the transducer being positioned to receive the data bit from the record. The latches of the counter may be set in other combinations of unique states to control other functions of the reader. When the controlled function is completed, the counter and the storing means are returned to the zero count position in which further reading of the data bits on the record may occur for storage in the storing means.

### 3,461,431 HIGH SPEED THIN FILM MEMORY

Paul B. Ellinger, Inglewood, Calif., and Hiromu John Kuno, Kendall Park, N.J., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Nov. 7, 1966, Ser. No. 592,530  
Int. Cl. G11b 13/00  
U.S. Cl. 340—172.5 13 Claims



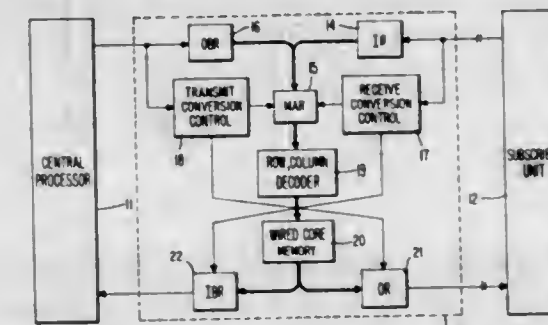
A high-speed magnetic thin film memory is disclosed comprising a three dimensional array of magnetic rod storage elements inductively coupled to word driver circuitry by solenoidal windings of word lines; each of the rod storage elements comprises a conductor having a circumferential anisotropic magnetic thin film on its surface. Each word line couples a plurality of rods in a row

and is connected to a switching transistor, the switching transistors of the word lines in a row being coupled through individual diodes to a common row-line which is connected to a constant current source individual to each row and the source includes a transistor/circuit having an inductor as part of its load to satisfy current requirements necessary to drive any selected word line of the row at high speed. A dummy load is connected to the constant current source and selection of the row of word lines affects switching of the constant current source from the dummy load to the row to drive any one of the word lines in the row according to column selection for the memory array by saturation of the switching transistor for the selected word line. Monolithic integrated circuitry including emitter-coupled logic circuits provide differential amplification and threshold detection for sensing digital signal outputs and decoding circuits which are coupled to driver circuits supplying higher power levels for word currents.

### 3,461,432 BI-DIRECTIONAL CODE CONVERTER

Irvin L. Keiter, Downingtown, Leonard H. Sichel, Jr., Bryn Mawr, and Edgar O. Morgenson, Jr., and Charles R. Questa, King of Prussia, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Dec. 14, 1966, Ser. No. 601,659  
Int. Cl. G11b 13/00  
U.S. Cl. 340—172.5 6 Claims



The present disclosure describes a bi-directional code converter for converting data words to and from first and second codes comprising a memory matrix responsive to being addressed by a data word in a first or second code to provide as an output the data word in the second or first code, respectively. A memory address register receives the data words from either the central processor or subscriber unit and presents each data word as an address to the memory matrix. Control apparatus is provided which causes the converter to time share data words received from either the central processor or subscriber unit. The control apparatus also gives priority to data words from a selected direction when data words from both directions arrive simultaneously. The memory matrix utilizes ferrite cores prewired to cause the incoming data word to be the address which selects the conversion. The control apparatus then causes the data word to be delivered through appropriate gating to the subscriber unit or central processor in the proper code.

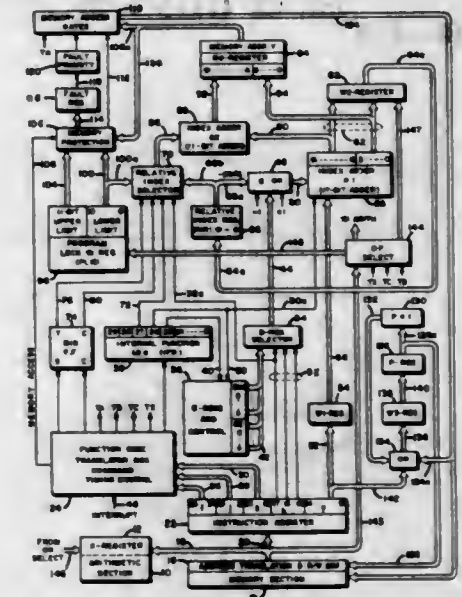
### 3,461,433 RELATIVE ADDRESSING SYSTEM FOR MEMORIES

Waldo C. Emerson, Bloomington, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 27, 1967, Ser. No. 612,256  
Int. Cl. G11b 13/00  
U.S. Cl. 340—172.5 14 Claims

This disclosure relates to digital computing apparatus and methods for accessing addressable memory registers in a memory system, and it has particular reference to an

addressing system for calculating in absolute memory address from a programmed relative address and for selecting a portion of the memory system to be accessed.

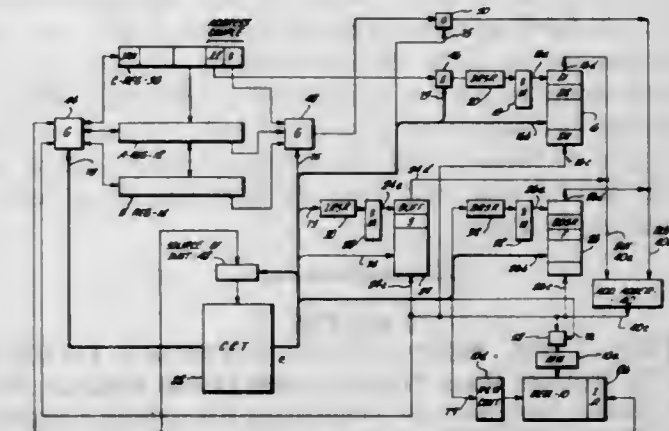


Further, it includes teaching of a system for programmably selecting between ones of a plurality of addressing modes.

### 3,461,434 STACK MECHANISM HAVING MULTIPLE DISPLAY REGISTERS

Robert S. Barton, Salt Lake City, Utah, Bobby A. Creech, Glendora, Benjamin A. Dent, Altadena, Erwin A. Hauck, Arcadia, and William M. McKeeman, Palo Alto, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Oct. 2, 1967, Ser. No. 672,688  
Int. Cl. G11b 13/00  
U.S. Cl. 340—172.5 12 Claims



A data processing system having a main memory for storing stacks of information for processing. An additional memory has individually selectable display registers each containing a different absolute memory address of a base of a stack area used to store variables for a particular level of a job program. A group of registers are provided for storing various information including a reference word which contains a level value designating a particular display register and an index value. Gating and timing is provided for obtaining an absolute address contained in the display register designated by the stored level value. An address adder combines the selected absolute address with the stored index value to derive the absolute address of data in the corresponding stack area.

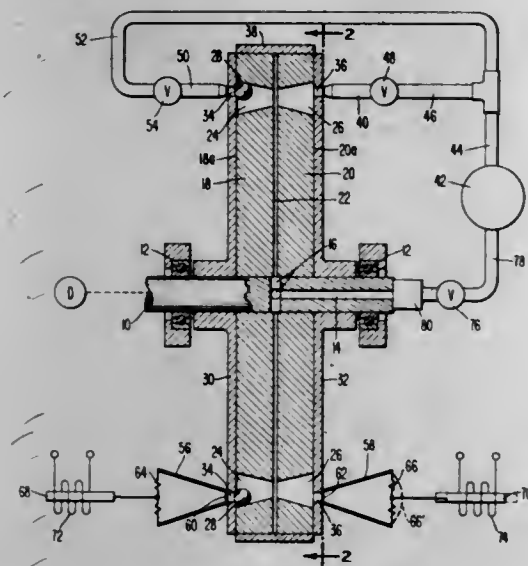


**3,461,435**  
**PNEUMATIC MEMORY WITH ELECTRICAL READ-OUT MEANS**  
 Paul R. Hoffman, Farmington, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Nov. 4, 1966, Ser. No. 592,038  
 Int. Cl. G11b 9/00

U.S. Cl. 340-173

6 Claims

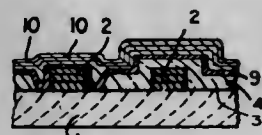


1. A pneumatic memory comprising first and second substantially parallel discs arranged to be rotated as a unit and having their confronting faces adjacent to each other, each disc representing a binary digit and having a row of holes extending through its thickness and with the holes in one disc aligned with the holes in the other disc to form pairs of corresponding holes, each pair of holes constituting a binary bit, a plurality of balls each residing in one of the holes of each pair of holes and adapted to be moved back and forth from one hole to the other of the associated pair, means for retaining each ball in its associated pair of holes, means for rotating said discs, first conduit means for selectively conducting a flow of fluid under pressure into a selected hole of said rotating first disc to force a ball out of said selected hole and into the corresponding hole in said rotating second disc, and second conduit means for selectively conducting a flow of fluid under pressure into a selected hole of said rotating second disc to force a ball out of the selected hole in said rotating second disc and into the corresponding hole in said rotating first disc.

**3,461,436**  
**MATRIX-TYPE, PERMANENT MEMORY DEVICE**  
 David H. Navon, West Peabody, and David Bakalar, Boston, Mass., assignors to Transatron Electronic Corporation, Wakefield, Mass., a corporation of Delaware  
 Filed Aug. 6, 1965, Ser. No. 477,849  
 Int. Cl. G11b 3/00

U.S. Cl. 340-173

15 Claims



A memory device is formed with a base sheet of dielectric material. A plurality of elongated, parallel, conductive members are arranged in two groups extending angularly to each other to form crossover points, with

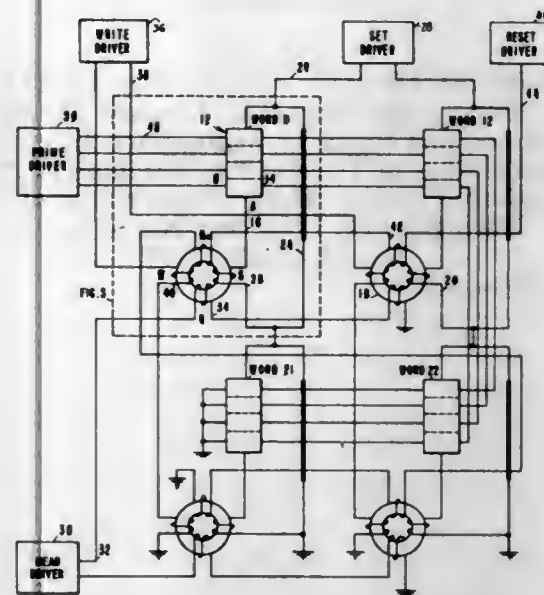
the dielectric material interposed between the two groups. The dielectric material intermediate the groups is formed of a plurality of layers with one layer of uniform thickness and unperforated at the crossover points; and the second layer integral with the first having apertures at selected ones of the crossover points.

**3,461,437**  
**DIGITAL MEMORY IN WHICH THE DRIVING OF EACH WORD LOCATION IS CONTROLLED BY A SWITCH CORE**

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Lawrence J. Zottarelli, La Canada, Calif.  
 Filed Sept. 16, 1965, Ser. No. 487,940  
 Int. Cl. G11c 7/00

U.S. Cl. 340-174

10 Claims



A digital memory system including a plurality of word locations, each comprised of a plurality of memory elements having a drive line commonly coupled thereto. A different switch core is provided for each memory location with the drive line coupled to that location being connected in series with a first winding on the switch core. A different resistance path is connected in parallel across each serially connected drive line and first winding. Current is driven in a first direction through a drive line to switch the switch core coupled thereto to a set state without destroying information stored in memory elements coupled to that drive line. The set switch core is reset by driving current through a second winding thereon which induces a current in the drive line coupled thereto in a first direction, which does not destroy the information stored in the memory elements coupled thereto. Thus a switch core can be uniquely selected without destroying information stored in any of the memory elements.

**3,461,438**  
**MEMORY ELEMENT HAVING TWO ORTHOGONALLY DISPOSED MAGNETIC FILMS**  
 Hsu Chang, Peekskill, and Eugene R. Genovese, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Apr. 6, 1964, Ser. No. 357,417

Int. Cl. G11b 5/02

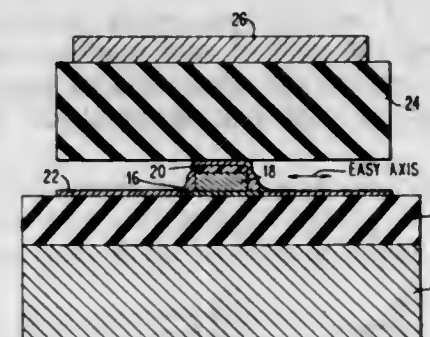
U.S. Cl. 340-174

11 Claims

The invention relates to a coupled magnetic film memory element in which two magnetic films are orthogonally disposed and in contact along the opposite edges of one film over a length which corresponds to the width of the other film. A bit-sense conductor is disposed along the length of one of the films and between the two films at

their intersection. The magnetic films have a common easy axis in the direction of the width of one of the films and are closely spaced (preferably less than  $\frac{1}{50}$  the width of the coupled film) to provide magnetostatic coupling which substantially eliminates demagnetizing fields in each of the magnetic films. One beneficial effect of providing

storage location in accordance with available information. The element is interrogated to determine the type of information value stored therein by applying a sampling field to both a reference location and a storage location and summing the resulting signals induced in circuits coupled to such locations. The element is thereafter read out by applying a readout pulse to the summing circuit which links the information location and sensing the



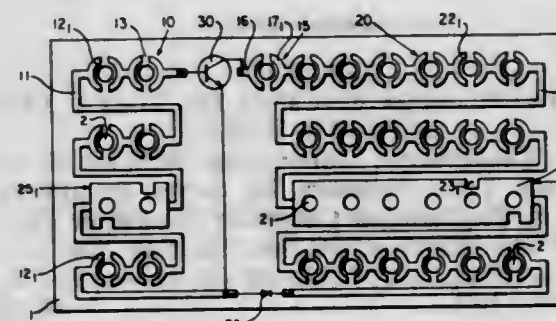
contact of the films at their intersection which produces demagnetized strips extending along the edges of the coupled films perpendicular to the easy axis of the film is that domains are anchored and a virtually creep free magnetic film memory element results. A storage system incorporating these memory elements as an array is also disclosed.

**3,461,439**  
**REUSABLE DATA PLANES FOR SOLENOID ARRAY MEMORY SYSTEMS**

Michael J. Kelly, Melrose Park, and Bernard J. Rekiere, Addison, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware  
 Filed May 6, 1966, Ser. No. 548,110  
 Int. Cl. G11c 7/00; H05k 3/04

U.S. Cl. 340-174

3 Claims



Each data plane for a solenoid array memory system has a major substrate upon which are placed coding strips for each address and word. The major substrate has permanent, interconnecting, printed circuit portions, and the coding strips have alterable conductive portions in contact with the permanent interconnection portions to complete loops about solenoids. The direction of current flow through each of the loops is dependent upon the coding strips. Read-out information is changed by changing data planes. After old information is no longer required on a data plane, its coding strips are removed, and new coding strips for new information are applied so that economical benefits of reuse can be obtained.

**3,461,440**  
**CONTENT ADDRESSABLE MAGNETIC MEMORY**  
 James T. H. Chang, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 24, 1964, Ser. No. 413,444

Int. Cl. G11b 5/00

U.S. Cl. 340-174

33 Claims

A content addressable memory element including reference and information storage locations is written by fixing the orientation of remanent magnetization in the

resulting signal induced in a further circuit which has been used to apply the sampling field. A pair of the memory elements are combined to form a bit storage location wherein one element is interrogated to determine whether or not the bit location stores a binary "1" and the other element is interrogated to determine whether or not the bit location stores a "0." A plurality of bit locations of the type described are combined in a multidimensional content addressable memory array.

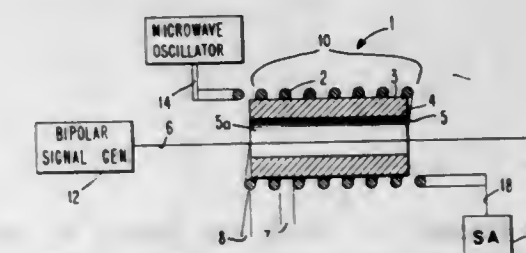
**3,461,441**  
**FERRIRESONANT MEMORY SYSTEM**  
 Ivars G. Akmenkalns, Endicott, and Rodger L. Gamblin and Philip A. Lord, Vestal, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 22, 1965, Ser. No. 500,941

Int. Cl. G11b 5/62

U.S. Cl. 340-174

6 Claims



A microwave absorption and non-destructive memory system in which a ferrite element operating at its gyro-magnetic resonant frequency presents a high or a low loss depending on the magnetic state of the ferrite element. In a first stable state, the ferrite element absorbs microwave energy and therefore presents a high loss. In a second stable state, the ferrite element absorbs less microwave energy and therefore presents a low loss. The ferrite elements are interrogated by means of a helical waveguide structure which is energized at one end by means of a microwave source and has the other end connected to a sense amplifier for determining the amplitude of the microwave energy transmitted through the ferrite element. The helical waveguide is wound over the outside of the ferrite element.



**3,461,442**  
**MAGNETIC LOGIC SYSTEMS COMPRISING STACKED LAYERS OF MAGNETIC FILMS WHICH CONTAIN LOW COERCIVE FORCE CHANNELS**

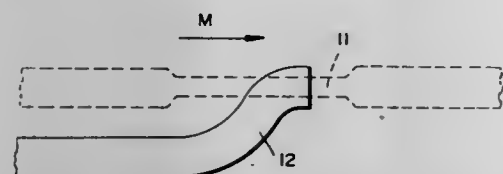
Robert J. Spain, Paris, France, and Harvey I. Jauvtis, Belmont, Mass., assignors, by mesne assignments, to Cambridge Memory Systems, Inc., Framingham, Mass., a corporation of Massachusetts

Filed Jan. 22, 1968, Ser. No. 699,455

Int. Cl. G11b 5/00

U.S. Cl. 340—174

9 Claims



Magnetic logic systems are formed from layers of vertically stacked magnetic films. Each film is anisotropically magnetized and contains low coercive force channels arranged in patterns so that domains of reversed magnetization propagated along channels in one film effect the state of magnetization in channels in the next adjacent film, causing either inhibition of propagation or initiating new domains of reversed magnetization.

**3,461,443**  
**SMOKE DETECTOR WITH MEANS INDICATING THE FAILURE OF THE LIGHT SOURCE**

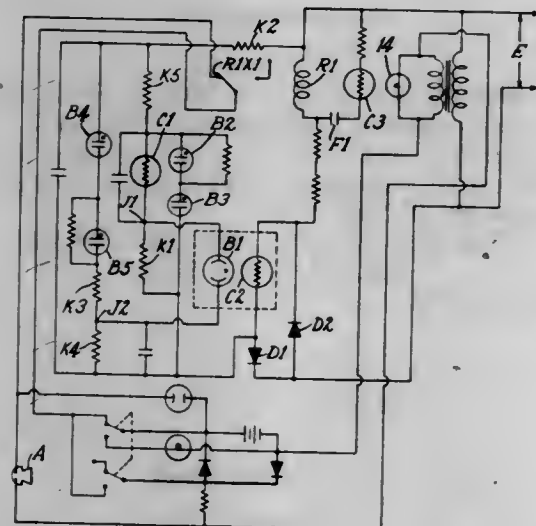
Alfred W. Vasei, 222 Linwood St., Abington, Mass. 02351

Filed Nov. 7, 1966, Ser. No. 592,617

Int. Cl. G08b 21/00

U.S. Cl. 340—228

4 Claims



A smoke detector in which the failure of the light source causes an audible signal by means other than the smoke alarm.

**3,461,444**  
**SWITCH BAILING CIRCUIT**

John A. Eisele, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 2, 1966, Ser. No. 524,975

Int. Cl. G08b 5/00; H04q 1/00; H05b 39/00

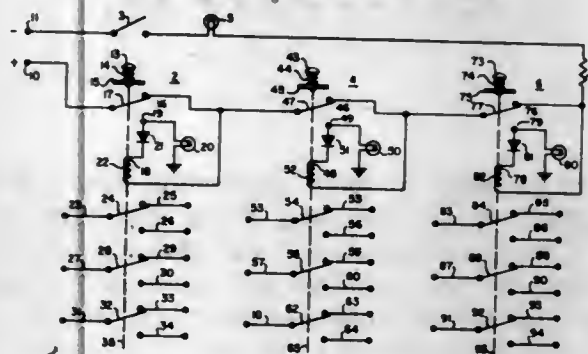
U.S. Cl. 340—332

5 Claims

1. A switch bailing circuit comprising:

a plurality of switch means each including a respective movable blade, each of which is selectively connectable to either of a pair of respective terminals, said blades being normally biased for connection to one of said respective terminals in a first position and being in series connection in said first position,

input terminals for applying energization current to said switch means, an respective unidirectional current limiting means for each of said switch means, each of said unidirectional means having its forward-biased end connected to the second terminal of said pair of terminals of each of said switch means, a holding coil connected at one of its ends to the back-biased side of each of said unidirectional means in series therewith, the other side of said holding coil connected to said one terminal of its respective switch,



a respective plunger mechanically connected to each of said switch blades, and a respective armature associated with each of said plungers and situated to be operated by its respective holding coil, such that when energization is applied to said input terminals when any switch is initially moved from engaging its said one terminal to its said second terminal, any switch subsequently moved from its said one terminal to its said second terminal will release the previously pushed switch.

**3,461,445**  
**AUTOMATIC SEQUENCING OF DATA FROM REMOTE UNITS**

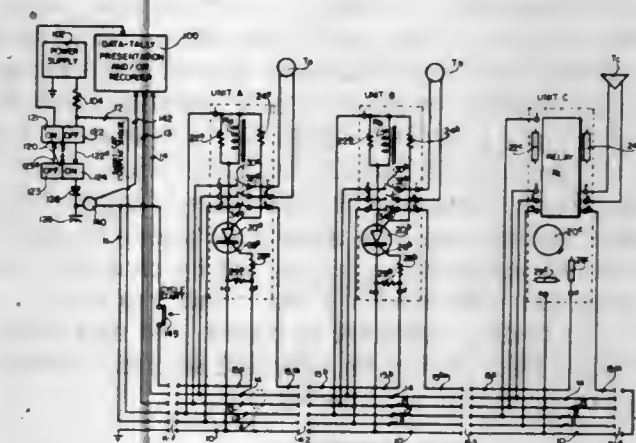
William H. Luehrmann, Dallas, and William H. Parker, Richardson, Tex., assignors, by mesne assignments, to Teledyne Exploration Company, Houston, Tex.

Filed May 9, 1966, Ser. No. 548,704

Int. Cl. H04q 3/00; G08b 29/00; H04m 11/04

U.S. Cl. 340—147

10 Claims



1. A sequencing system for sequentially coupling a central data tally means step-by-step with multiple data acquiring units through common wires of an interconnecting cable, the system comprising:

(a) a source of power connected to said cable; (b) a mechanical relay in each unit having trigger-carrying contacts, having data-conducting contacts connected with said wires, and having a winding for closing all said contacts;

**3,461,448**  
**VISUAL AND AUDIBLE SIGNAL ATTACHMENT FOR UMBRELLAS, CANES AND THE LIKE**

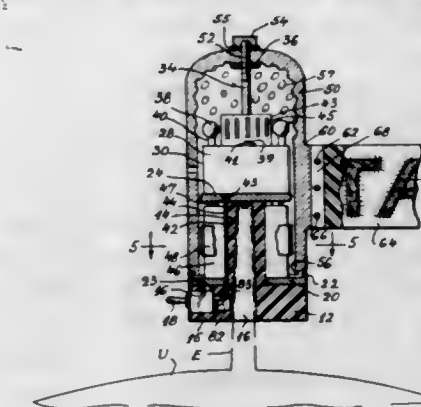
Evelyn Kramer, 215 W. 75th St., New York, N.Y. 10023

Filed Sept. 13, 1967, Ser. No. 667,549

Int. Cl. G08b 23/00

U.S. Cl. 340—321

10 Claims



The disclosure describes a lamp signalling device which can be mounted on a support such as an umbrella. It has a battery driven motor which rotates a reflector carrying a signal flag. The device has a siren which emits an audible signal or alarm.

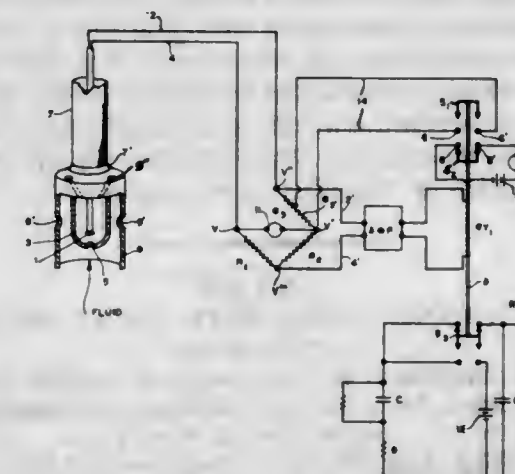
**3,461,446**  
**FLUID-LEVEL DETECTING APPARATUS**  
 Thomas R. Sergeant, Holliston, Mass., assignor to Scully Signal Corporation, Melrose, Mass., a corporation of Massachusetts

Filed July 2, 1965, Ser. No. 469,194

Int. Cl. G08b 21/00

U.S. Cl. 340—244

7 Claims



This disclosure deals with improved circuit-checked foam-detecting systems in which means is provided to insure against spurious parameter changes of the sensor indicating the reception of the foam to be detected during the circuit checking of the system.

**3,461,447**  
**FLUID LEVEL INDICATOR**  
 Guy Marouby, Neuilly, France, assignor to Societe Anonyme D.B.A., Paris, France

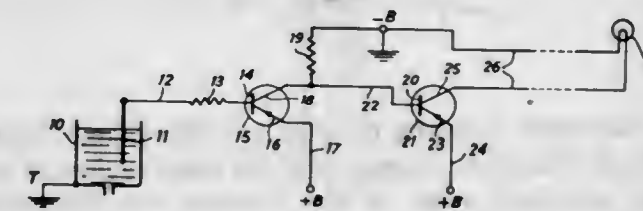
Filed July 14, 1966, Ser. No. 565,180

Claims priority, application France, Sept. 10, 1965, 31,025

Int. Cl. G08b 21/00

U.S. Cl. 340—244

2 Claims



This invention relates to a brake fluid level indicator for use with a vehicle. The device is comprised of a transistorized amplifier means responsive to a fluid presence sensing means for controlling a warning circuit which gives an indication when said fluid level falls to a predetermined minimum level.

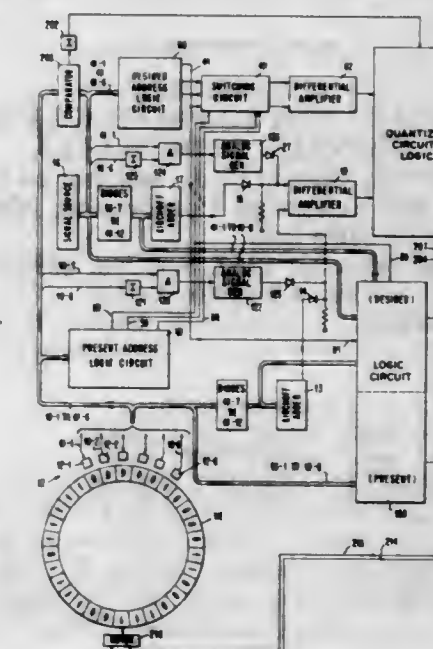
**3,461,449**  
**WHEEL POSITIONING MECHANISM USING A CLOSED CODING RING**  
 Herbert B. Baskin, Mohegan Lake, and Paul F. Evans, Yorktown Heights, N.Y., and Larry E. Rittenhouse, East Lansing, Mich., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed May 25, 1965, Ser. No. 458,705

Int. Cl. G11b 5/00

U.S. Cl. 340—347

12 Claims

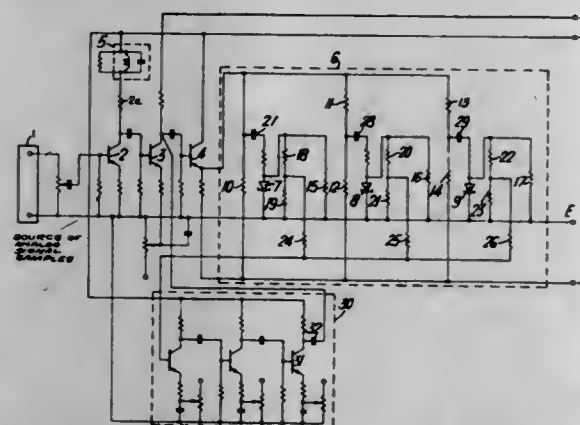


A rotary wheel carries a closed coding ring with sensors serially placed above information bits on the ring. The sensors detect the position of the ring and feed position information to logic circuits where it is compared with desired position information. If the two sets of information are not equal a motor will turn the wheel until the desired position is reached by the shortest possible route.

The present invention relates to a code generating system, and more particularly to a system for accessing a drum, disc or other rotary element by means of code indicia and sensors therefor.

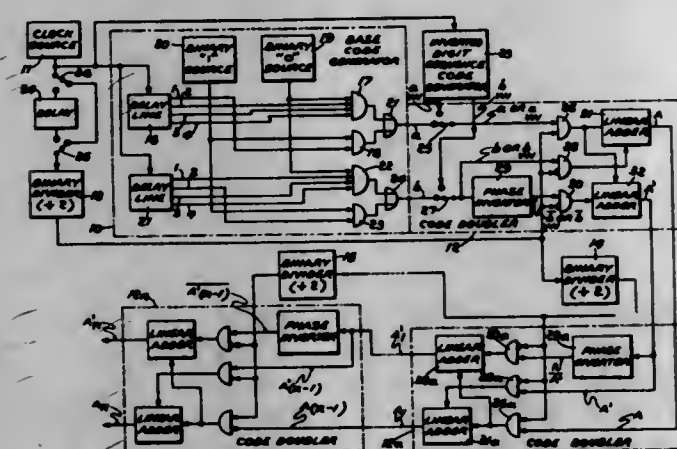


**3,461,450**  
**DAMPED OSCILLATION ANALOG-TO-DIGITAL ENCODER**  
 John Chevalley de Rivaz, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware  
 Filed Aug. 4, 1965, Ser. No. 477,119  
 Claims priority, application Great Britain, Aug. 21, 1964, 34,261/64  
 Int. Cl. H04l 3/00; H03k 13/02  
 U.S. Cl. 340—347 10 Claims



An equilibrium type encoder in which the step function of an analog signal having superimposed thereon a damped oscillation of initial amplitude proportional to the amplitude of the analog signal and decaying at a predetermined fixed rate is coupled in parallel to a plurality of tunnel diodes, each of which is biased to a different predetermined value related to the quantized levels of the encoder. Each diode changes from one stable condition to the other stable condition when the associated predetermined value is exceeded and will reverse this change when feedback reduces the analog input below the associated predetermined value. All the diodes are coupled to the input of a negative feedback circuit whose output is connected in parallel with the analog signal input to reduce the analog input to the diodes. The amount of feedback contributed by each diode is proportional to the digital weight of the diode.

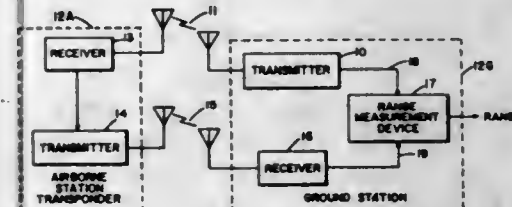
**3,461,451**  
**CODE GENERATOR TO PRODUCE PERMUTATIONS OF CODE MATES**  
 Frank S. Gutleber, Wayne, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland  
 Filed Sept. 22, 1967, Ser. No. 669,899  
 Int. Cl. H03k 13/02  
 U.S. Cl. 340—348 10 Claims



Pseudonoise multiplexed codes including code mates having correlation functions which upon detection provides an impulse autocorrelation function. The code mates can be increased in number by repeatedly solving the equations of FIG. 1 for the original code mates and the re-

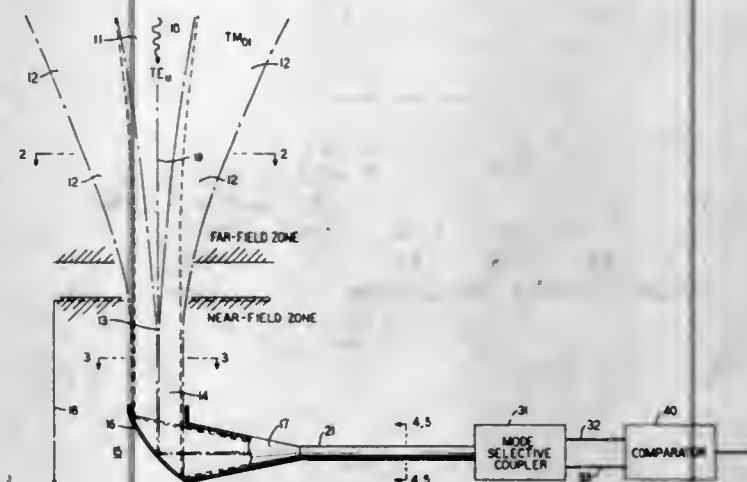
sultant new code mates. The butting process, required in the equations is achieved by logic circuitry controlled by a control signal having a period equal to twice the period of the input code mates.

**3,461,452**  
**TIME DELAY MEASUREMENTS**  
 Neil E. Welter, Scotsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois  
 Filed Oct. 24, 1966, Ser. No. 588,977  
 Int. Cl. G01s 9/04, 9/12  
 U.S. Cl. 343—12 3 Claims



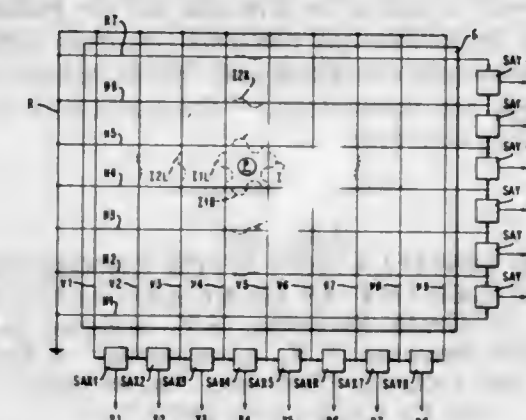
A time delay measurement system wherein a local signal generator is operated at the same frequency as the incoming modulation and the replica signal to supply IF of the incoming modulation. A signal mixer receives the incoming modulation and the replica signal to supply IF signal of varying amplitude indicative of the time delay difference between the locally generated replica signal and the received modulation. When the two signals are in time coincidence the IF signal has zero amplitude.

**3,461,453**  
**REDUCING-NOISE WITH DUAL-MODE ANTENNA**  
 Tingye Li, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York  
 Filed Aug. 30, 1967, Ser. No. 664,385  
 Int. Cl. H04b 7/02  
 U.S. Cl. 343—100 4 Claims



A dual-mode antenna radiates a primary and auxiliary lobe both effectively intercepting the same region of space in the near-field zone of the antenna but intercepting mutually exclusive regions of space in the far-field zone. Both lobes receive components of noise originating in the near-field zone but only the primary lobe receives the desired signal in the far-field zone. The received power in the auxiliary lobe is subtracted from that in the primary lobe to reduce the noise fluctuations which are common to both lobes.

**3,461,454**  
**POSITION IDENTIFYING DEVICE**  
 Ray N. Steckenrider, Raleigh, N.C., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
 Filed June 6, 1968, Ser. No. 735,018  
 Int. Cl. G01s 3/02  
 U.S. Cl. 343—112 7 Claims



Orthogonally arranged horizontal and vertical conductors in substantially the same plane are subjected to a narrow RF field emanating from a probe positioned between any intersecting pairs of horizontal and vertical conductors. Horizontal and vertical differential sense amplifiers each connected to adjacent horizontal and vertical conductors, respectively, respond to the currents induced by the RF field and that horizontal and vertical differential sense amplifier connected to the adjacent conductors bracketing the probe provide a detectable output identifying the probe position.

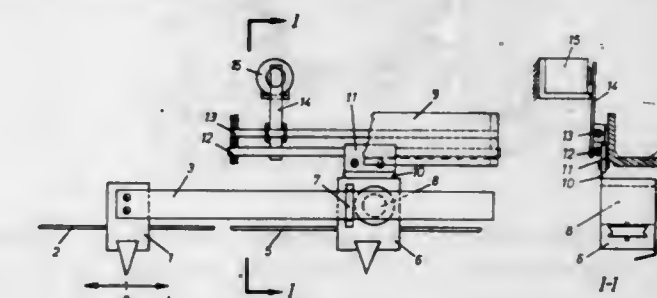
**3,461,455**  
**COIL LOADED ANTENNA**  
 Horace N. Rowe, Maumee, Ohio, assignor to Rowe Industries, Inc., Toledo, Ohio, a corporation of Ohio  
 Continuation of application Ser. No. 451,777, Apr. 29, 1965, which is a division of application Ser. No. 193,191, May 8, 1962, now Patent No. 3,208,702, dated Sept. 28, 1965. This application June 19, 1968, Ser. No. 742,955  
 Int. Cl. H01q 9/04  
 U.S. Cl. 343—749 5 Claims



1. A short wave radio antenna particularly for marine band signals comprising in assembly a tubular mast of lightweight electrically conducting material, a longitudinal loading coil section axially aligned atop said mast, and a whip antenna conductor section on said loading coil section in axial alignment with both said mast and coil

section, said loading coil section comprising a longitudinal hollow cylindrical housing supporting said whip section, the wall of said cylindrical housing being reinforced with continuous glass filaments oriented to impart sufficient strength to said cylindrical wall for full support of said whip section, an inserted helical air-core coil mounted on the interior of said housing and extending in axial alignment therewith, end caps joined in moisture sealed relation with the opposite ends of said housing, said end caps having projecting portions extending into the interior of the opposite ends of said housing, said projecting cap portions extending into abutting engagement with the opposite ends of said coil to support said coil against longitudinal movement within said housing, said coil being connected electrically at one end to said antenna whip through one of said end caps, the other end of said coil being connected electrically to said mast through the other of said end caps to integrate said whip and coil sections electrically with said mast as a single electrical unit.

**3,461,456**  
**APPARATUS FOR AUTOMATICALLY DETERMINING THE TOTAL PITCH ERROR OF GEARS OR THE LIKE**  
 Willy Höfler, 38C Elbingerstrasse, 75 Karlsruhe, Germany  
 Filed Apr. 23, 1968, Ser. No. 723,547  
 Claims priority, application Germany, May 5, 1967, H 62,638  
 Int. Cl. G01d 9/36, 9/32  
 U.S. Cl. 346—49 4 Claims



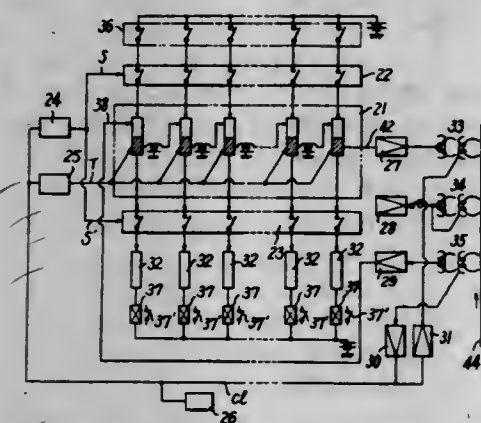
A gear teeth pitch error recording instrument which consists of two different recording systems, the first of which is designed so as to record the individual pitch errors and to return to its original position after each measurement, while the second recording system is connected to the first system only during the period of its movement from original position to the highest position of each movement of the first system and is disconnected from the latter during its return movement thus recording total pitch error.

**3,461,457**  
**DEVICE FOR RECORDING SIGNALS FOR CONTROLLING WATER FOUNTAINS**  
 Koreichi Kawamura, Yoshiko Kawamura, and Koichi Kawamura, all of 66 Jyomyoji, Kamakura, Japan  
 Filed Oct. 11, 1965, Ser. No. 494,420  
 Claims priority, application Japan, Nov. 20, 1964, 39/65,197  
 Int. Cl. G11b 5/00; H03k 13/00; H04l 3/00  
 U.S. Cl. 179—100.2 5 Claims

A device for recording, modifying and reproducing electrical signals for controlling water fountains includes means for simultaneously sampling a large number of control signals for controlling elements of the water fountain, such as nozzles and illuminating devices, so as to produce simultaneous signals. The simultaneous signals are converted into sequential signals by a shift register and recorded in the form of sequential signals. Upon reproduction, the sequential signals are reconverted into simultaneous signals by the shift register, for con-



trolling the water fountains. The simultaneous signals thus reconverted from the reproduced signals can be

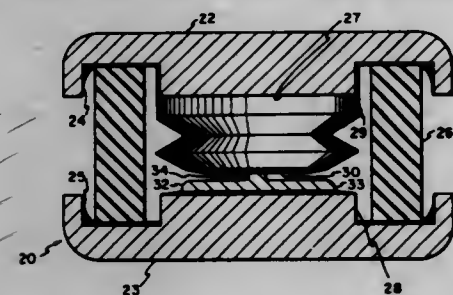


selectively modified by newly sampled simultaneous signals.

3,461,458

**METHOD OF JOINING TWO SURFACES**  
John E. Steinhilber, Jr., Detroit, Mich., assignor to The Bendix Corporation, a corporation of Delaware  
Original application Oct. 18, 1962, Ser. No. 231,420, now Patent No. 3,231,795, dated Jan. 25, 1966. Divided and this application May 28, 1965, Ser. No. 495,740  
Int. Cl. B23k 31/02, 35/38  
U.S. Cl. 29—494

1 Claim

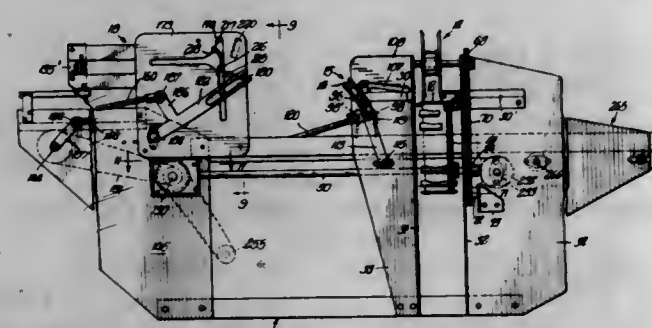


In a process of assembling a sealed chamber by brazing together two portions of the chamber, the step of reducing the pressure exterior of the chamber as the assembly cools to prevent a pressure differential across the brazed portion thereby preventing blow holes.

3,461,459

**EGG HANDLING EQUIPMENT**  
Charles H. Willsey, Topeka, and Francis W. Majors, Ozawie, Kans., assignors, by mesne assignments, to Seymour Foods, Inc., Topeka, Kans., a corporation of Delaware  
Filed Oct. 18, 1965, Ser. No. 497,242  
Int. Cl. B65b 23/06, 57/14, 43/44  
U.S. Cl. 53—55

15 Claims



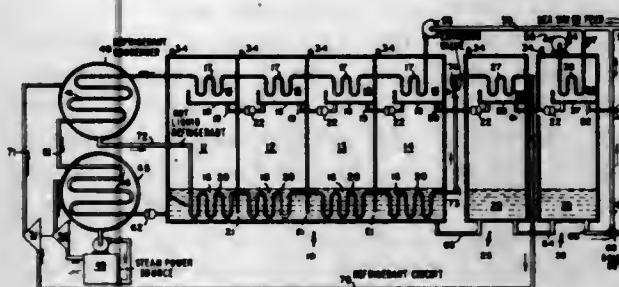
An apparatus for packing eggs in cartons or filler flats which is characterized by a single line conveyor having pocket forming means spaced longitudinally for supporting, with their axes extending transversely of the conveyor path, eggs which are delivered to the conveyor in random arrangement, an orienting device in the form of spaced discs rotatably mounted above the top run of the conveyor for co-operation therewith to orient the eggs, so as to

bring the small end of each egg to the same side of the conveyor, a container dispenser, which is adjustable to feed either open cartons or filler flats onto the top run of a packing conveyor which operates in a path extending transversely of the path of the egg supporting conveyor and a transfer device mounted on a swinging frame which is operative to pick up successive rows of six eggs each on the egg supporting conveyor and deposit the same in the pockets of a carton or filler flat on the packing conveyor. The apparatus has electrical controls which provide for automatic operation and which insures that full rows of eggs are transferred to the containers from the egg supporting conveyor.

3,461,460

**FLASH DISTILLATION WITH CONDENSED REFRIGERANT AS HEAT EXCHANGER**  
William L. McGrath, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware  
Filed Oct. 21, 1965, Ser. No. 499,845  
Int. Cl. C02b 1/06; B01d 3/06  
U.S. Cl. 203—11

13 Claims



A system for flash distillation of sea water to form potable water having a flash evaporator, a refrigerated flash evaporator, and an additional flash evaporator, a compressor, condenser and refrigerant evaporator disposed in the refrigerated flash evaporator, and a boiler, turbine and turbine steam condenser. Sea water is passed through condensing sections in the flash evaporator thence through the refrigerant condenser and the turbine steam condenser to heat the incoming sea water, which is then passed backwardly through the evaporator sections of the flash evaporator, the refrigerated flash evaporator, and the additional flash evaporator, where the heated sea water is successively flashed to form water vapor. The water vapor is condensed in the condensing sections of each of the flash evaporators to form product water. Heat is removed from the condensing section of the refrigerated flash evaporator and pumped to the incoming sea water through the refrigerant condenser via the refrigerant compressor. The condensed refrigerant is then passed through heat exchanger in the evaporating sections of the flash evaporator to subcool the refrigerant and assist in flashing water from the solution in the evaporating sections.

3,461,461

**6-AMINO-4-(SUBSTITUTED AMINO)-1,2-DIHYDRO-1-HYDROXY-2-IMINOPYRIMIDINES**  
William C. Anthony, Kalamazoo, and Joseph J. Ursprung, Portage, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware  
No Drawing. Filed Nov. 1, 1965, Ser. No. 505,993  
The portion of the term of the patent subsequent to May 7, 1985, has been disclaimed  
Int. Cl. C07d 51/42, 87/28

U.S. Cl. 260—256.4  
4 Claims  
6 - amino - 1,2-dihydro-1-hydroxy-2-iminopyrimidines, their carboxyacylated counterparts, and the corresponding acid addition salts thereof are disclosed. These compounds, useful inter alia as antihypertensive agents, are substituted in the 4-position and optionally in the 5-position, the substituent in the 4-position being a secondary or tertiary amino moiety.

3,461,462  
**METHOD FOR BONDING SILICON SEMICONDUCTOR DEVICES**

Edward M. Ruggiero, Dallas, Tex., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Dec. 2, 1965, Ser. No. 511,188

Int. Cl. B23k 31/02; B01j 17/00

U.S. Cl. 29—492

10 Claims

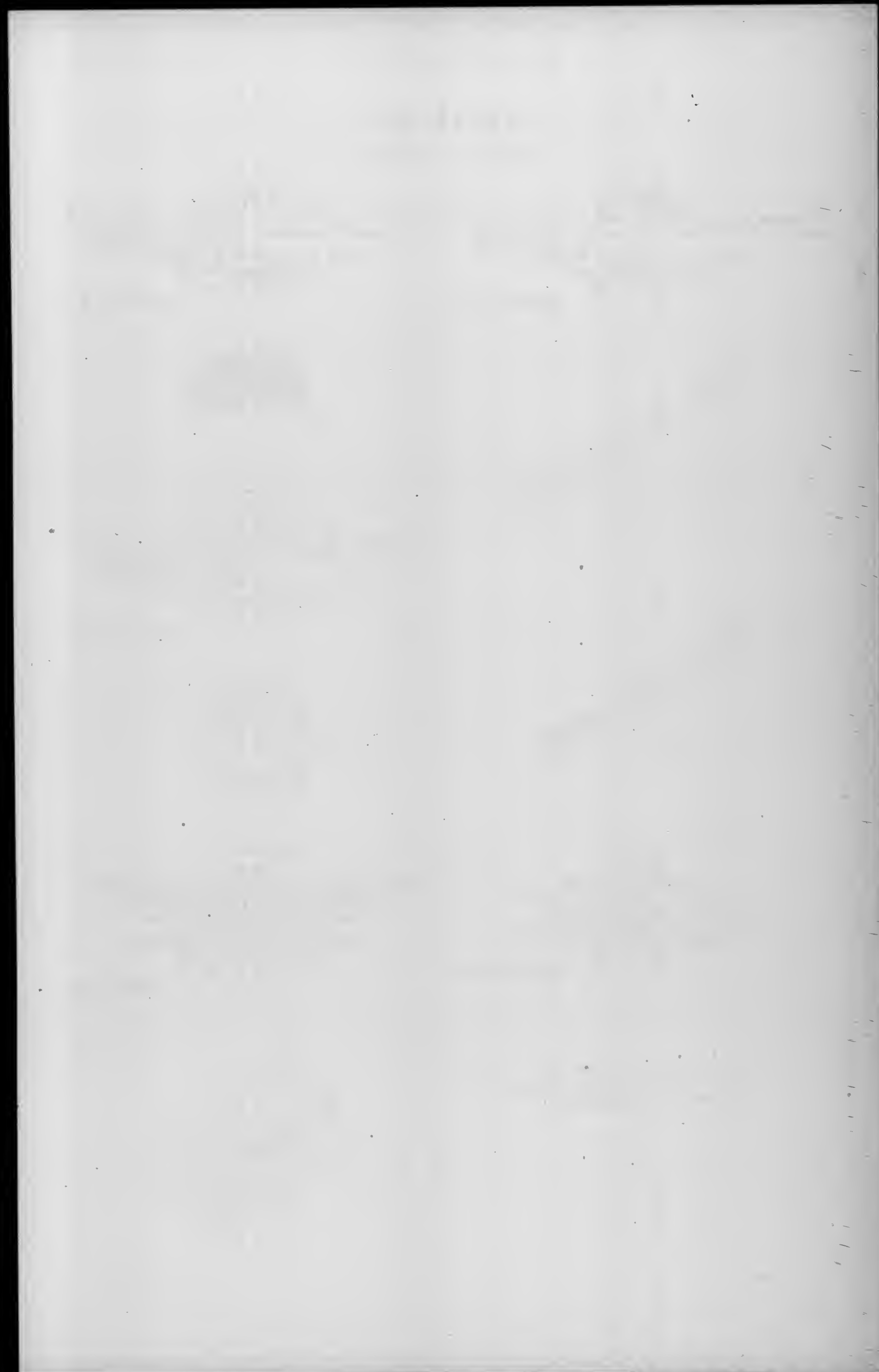
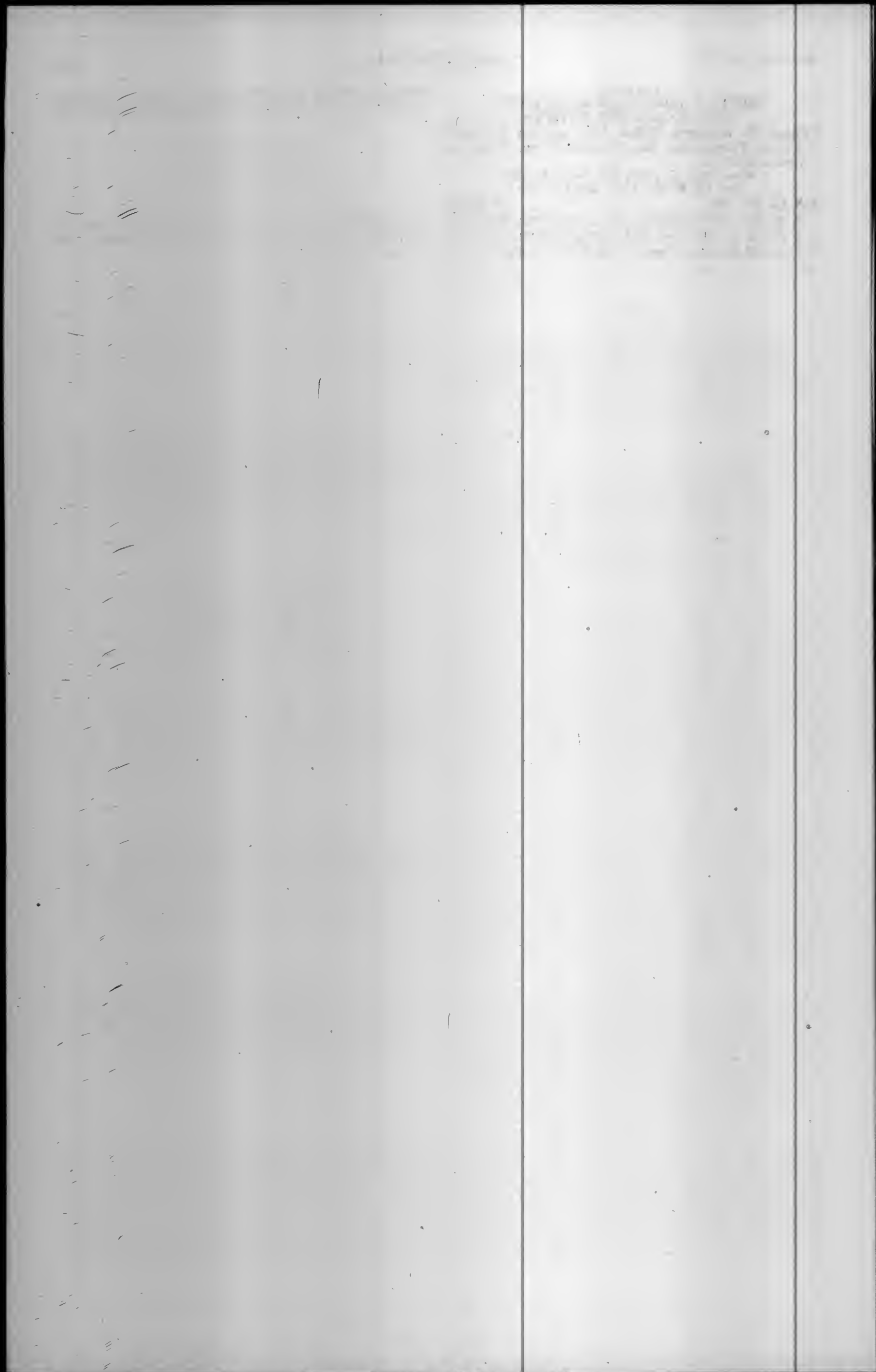
A method of bonding a silicon semiconductor device to a mount in which an aluminum-germanium alloy first is provided at the surface of the mount, a layer of alu-

minum is alloyed to the side of the chip to be mounted, the chip side and the alloy are brought into contact and



this assembly is then heated to just above the eutectic temperature of said alloy to form a bond between said chip and said mount.







# DESIGNS

AUGUST 12, 1969

214,861

## SAFETY HAT

Roger I. Protas, Pittsburgh, Pa., assignor, by mesne assignments, to Mine Safety Appliances Company, a corporation of Pennsylvania

Filed Nov. 9, 1967, Ser. No. 9,339

Term of patent 14 years

Int. Cl. D2—03

U.S. Cl. D2—231



214,862

## DIVER'S HELMET

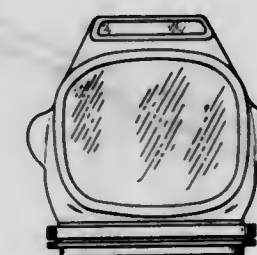
Richard F. Jones, Santa Barbara, Calif., assignor to Agonic Engineering, Inc., Santa Barbara, Calif., a corporation of California

Filed Nov. 25, 1968, Ser. No. 14,619

Term of patent 14 years

Int. Cl. D2—03

U.S. Cl. D2—232



214,863

## COMBINED BED, CHEST OF DRAWERS AND DIAPER CHANGING SUPPORT

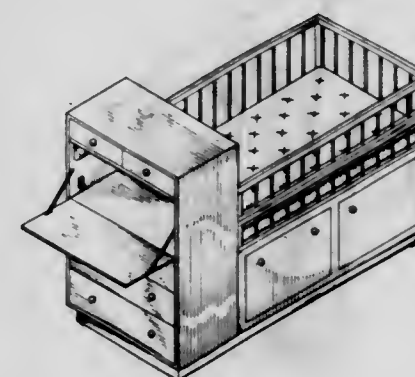
Stanley Klara, 3801 Bennett Road, East Ridge, Tenn. 37412

Filed Jan. 3, 1968, Ser. No. 10,040

Term of patent 14 years

Int. Cl. D6—01

U.S. Cl. D5—5



865 O.G.—24

214,864

## TOOTHBRUSH

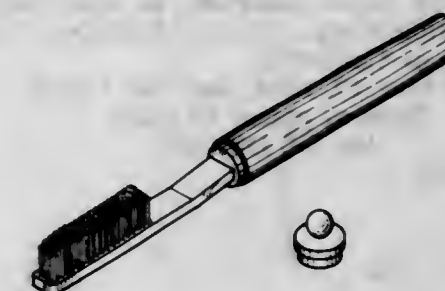
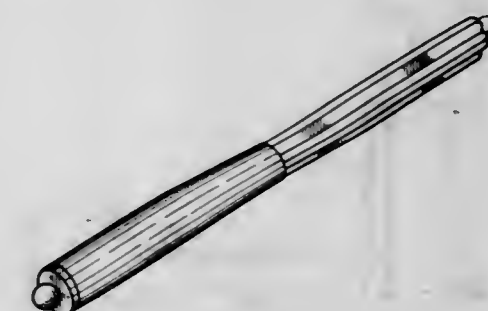
Gary R. Greenfield, East Rockaway, N.Y., assignor to Groomaid International, Ltd., Merrick, N.Y., a corporation of New York

Filed July 12, 1968, Ser. No. 12,724

Term of patent 14 years

Int. Cl. D4—02

U.S. Cl. D4—18



214,865

## SOLDER EXTRACTOR

William Jordan Siegel, 9337 Fraser St., Silver Spring, Md. 20910

Filed May 28, 1968, Ser. No. 12,105

Term of patent 14 years

Int. Cl. D8—02

U.S. Cl. D8—30



641



214,866  
CARTON STAPLING MACHINE OR  
SIMILAR ARTICLE

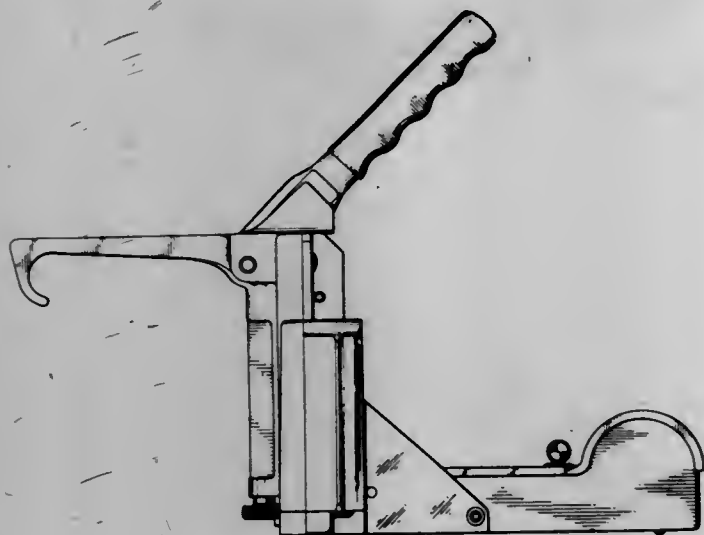
Jack Garfinkel, Bayside, N.Y., assignor to Swingline Inc., Long Island City, N.Y., a corporation of New York

Filed Oct. 14, 1968, Ser. No. 13,968

Term of patent 14 years

Int. Cl. D8—02

U.S. Cl. D8—49



214,867  
KNOB

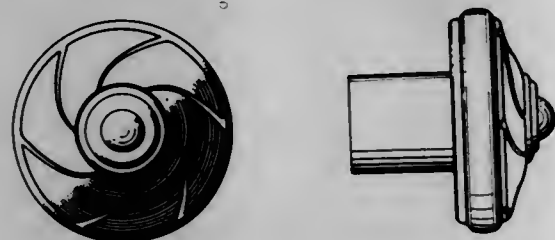
Frank A. Holmes, La Habra, and Lawrence McCain, Beverly Hills, Calif., assignors to Ajax Hardware Manufacturing Corp., City of Industry, Calif., a corporation of California

Filed June 19, 1968, Ser. No. 12,418

Term of patent 14 years

Int. Cl. D8—03

U.S. Cl. D8—145



214,868  
DRAWER PULL

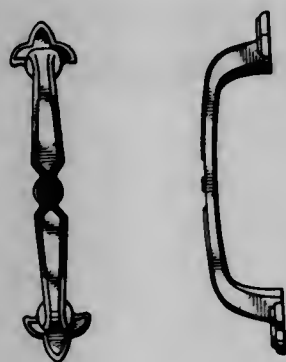
Frank A. Holmes, La Habra, and Lawrence McCain, Beverly Hills, Calif., assignors to Ajax Hardware Manufacturing Corp., City of Industry, Calif., a corporation of California

Filed June 19, 1968, Ser. No. 12,415

Term of patent 14 years

Int. Cl. D8—03

U.S. Cl. D8—159



214,869

PENDANT-TYPE DRAWER PULL

Frank A. Holmes, La Habra, and Lawrence McCain, Beverly Hills, Calif., assignors to Ajax Hardware Manufacturing Corp., City of Industry, Calif., a corporation of California

Filed June 19, 1968, Ser. No. 12,416

Term of patent 14 years

Int. Cl. D8—03

U.S. Cl. D8—169



214,870

GLASS DOOR LOCKING BAR

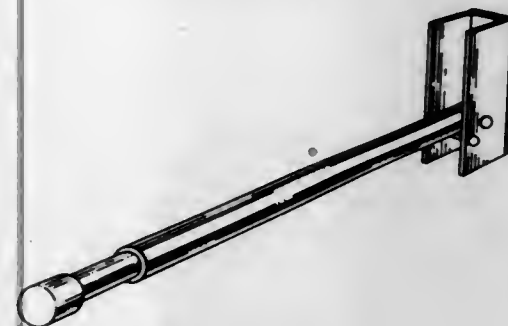
James E. Malone, 11071 Denton Road, Dallas, Tex. 75229

Filed Jan. 2, 1968, Ser. No. 10,028

Term of patent 14 years

Int. Cl. D8—03

U.S. Cl. D8—203



214,871  
BOTTLE

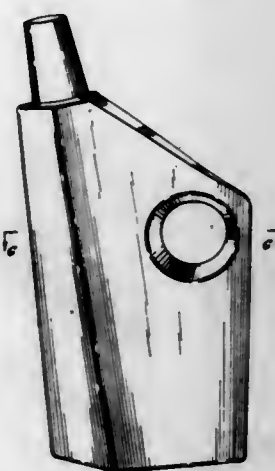
David D. Tompkins, Columbus, Ohio, assignor to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan

Filed July 22, 1968, Ser. No. 12,840

Term of patent 14 years

Int. Cl. D9—01

U.S. Cl. D9—43



214,872

DECANTER OR SIMILAR ARTICLE

Oscar Jacob, 453 S. Los Palmas Ave., Los Angeles, Calif. 90005

Filed Sept. 27, 1968, Ser. No. 13,753

Term of patent 3½ years

Int. Cl. D9—01

U.S. Cl. D9—73



214,873

BOTTLE OR SIMILAR ARTICLE

Victor Koenigsberg, Franklin Square, N.Y., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

Filed Nov. 21, 1967, Ser. No. 9,489

Term of patent 14 years

Int. Cl. D9—01

U.S. Cl. D9—83



214,874

BOTTLE

Harold J. Vanderhyde, North Merrick, N.Y., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a Corporation of Ohio

Filed July 1, 1968, Ser. No. 12,568

Term of patent 14 years

Int. Cl. D9—01

U.S. Cl. D9—110



214,875

BOTTLE OR SIMILAR ARTICLE

Jack H. Rosfeld, Greenville, S.C., assignor to Texize Chemicals, Inc., a corporation of Delaware

Filed Sept. 26, 1968, Ser. No. 13,722

Term of patent 14 years

Int. Cl. D9—01

U.S. Cl. D9—116



214,876  
BOTTLE

John Keith Bright, Santa Monica, Calif., assignor to Lawry's Foods, Inc., Los Angeles, Calif., a corporation of California

Filed Mar. 18, 1968, Ser. No. 11,016

Term of patent 14 years

Int. Cl. D9—01

U.S. Cl. D9—137



214,877

CONTAINER FOR PERFUME OR THE LIKE

Thomas M. Biallo and Olga M. Biallo, both of 430 E. 56th St., New York, N.Y. 10056

Filed May 20, 1968, Ser. No. 12,007

Term of patent 14 years

Int. Cl. D9—01

U.S. Cl. D9—168



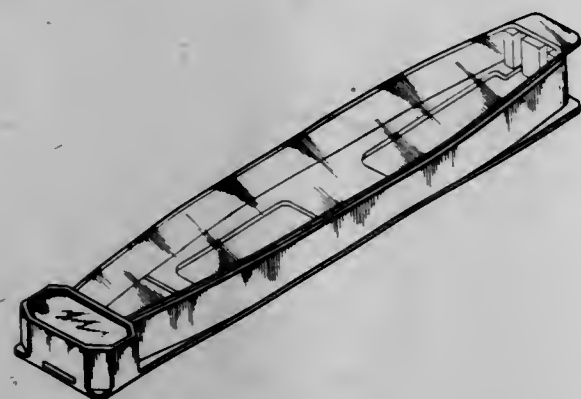


**214,878**  
**DISPLAY BOX FOR WATCH BANDS**  
**OR THE LIKE**

Yuen Sang Poon, Hong Kong, assignor to Baldwin Bracelet Corporation, New York, N.Y., a corporation of New York

Filed May 15, 1968, Ser. No. 11,943  
Term of patent 14 years  
Int. Cl. D9—04

U.S. Cl. D9—185

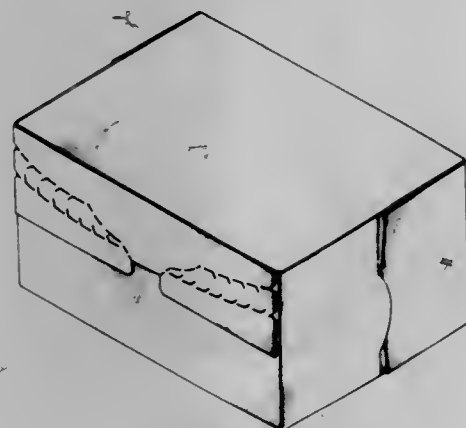


**214,879**  
**ICE CREAM CARTON**

Harry I. Roccaforte, Chicago, and Elverse M. Jordan, Lake Forest, Ill., and William C. Inch, San Francisco, Calif., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington  
Continuation of design applications Ser. No. 6,157, Ser. No. 6,173, and Ser. No. 6,174, Mar. 10, 1967. This application Aug. 6, 1968, Ser. No. 13,796

Term of patent 14 years  
Int. Cl. D9—04

U.S. Cl. D9—240

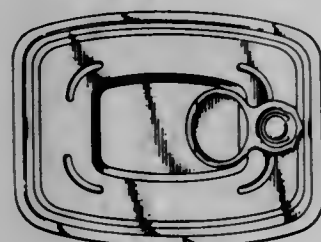


**214,880**  
**END CLOSURE FOR A CONTAINER**

Frederick J. Stec, Oak Lawn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Mar. 11, 1968, Ser. No. 10,908  
Term of patent 14 years  
Int. Cl. D9—02

U.S. Cl. D9—255

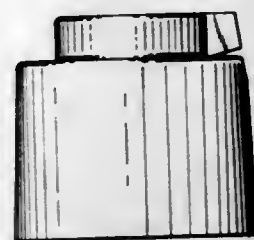


**214,881**  
**DISPENSING CAP FOR A CONTAINER**

Alvin J. Porter, Minneapolis, Minn., assignor to Product Design & Engineering, Inc., Minneapolis, Minn., a corporation of Minnesota

Filed July 29, 1968, Ser. No. 12,937  
Term of patent 14 years  
Int. Cl. D9—02

U.S. Cl. D9—258

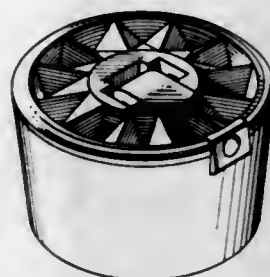


**214,882**  
**DISPENSING CLOSURE**

Robert E. Hazard, North Kingstown, R.I., assignor to Polytop Corporation, Slatersville, R.I., a corporation of Massachusetts

Filed July 24, 1968, Ser. No. 12,885  
Term of patent 14 years  
Int. Cl. D9—02

U.S. Cl. D9—275

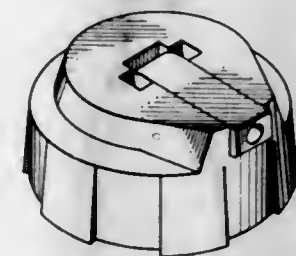


**214,883**  
**DISPENSING CLOSURE**

Robert E. Hazard, North Kingstown, R.I., assignor to Polytop Corporation, Slatersville, R.I., a corporation of Massachusetts

Filed July 24, 1968, Ser. No. 12,887  
Term of patent 14 years  
Int. Cl. D9—02

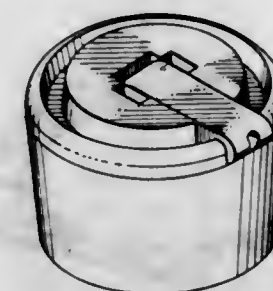
U.S. Cl. D9—275



**214,884**  
**DISPENSING CLOSURE**  
Robert E. Hazard, North Kingstown, R.I., assignor to Polytop Corporation, Slatersville, R.I., a corporation of Massachusetts

Filed Apr. 24, 1968, Ser. No. 11,600  
Term of patent 14 years  
Int. Cl. D9—02

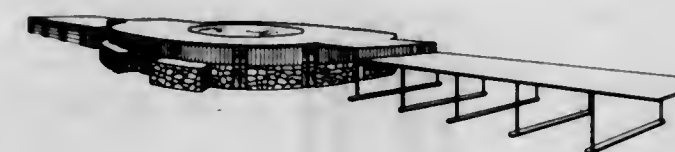
U.S. Cl. D9—279



**214,885**  
**SPECIALIZED BUILDING FOR VEHICLE SERVICE**

Robert H. Young, P.O. Box 508, Fond du Lac, Wis. 54935  
Filed Mar. 25, 1968, Ser. No. 11,121  
Term of patent 14 years  
Int. Cl. D25—04

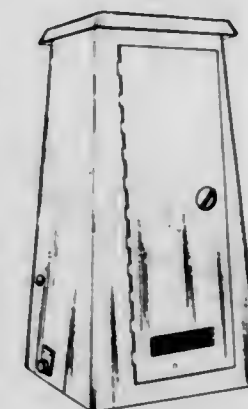
U.S. Cl. D13—1



**214,886**  
**PUBLIC PORTABLE SANITATION BUILDING**  
William F. Katona, Northridge, Calif., assignor to Monogram Industries, Inc., a corporation of California

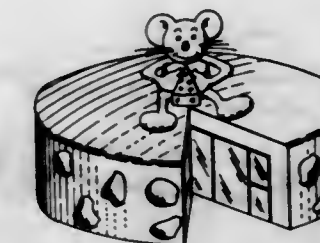
Filed Nov. 4, 1968, Ser. No. 14,311  
Term of patent 14 years  
Int. Cl. D25—04

U.S. Cl. D13—1



**214,887**  
**BUILDING**  
Earl W. Russell, Manchester Center, Vt. 05255  
Filed Nov. 14, 1968, Ser. No. 14,454  
Term of patent 14 years  
Int. Cl. D25—04

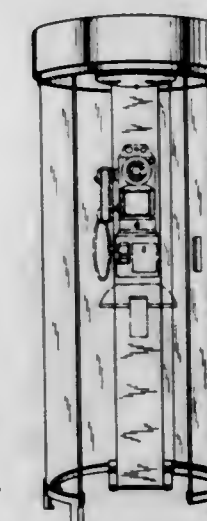
U.S. Cl. D13—1



**214,888**  
**TELEPHONE BOOTH**  
George D. Stewart, Vancouver, British Columbia, Canada, assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Nov. 21, 1968, Ser. No. 14,562  
Term of patent 14 years  
Int. Cl. D25—04

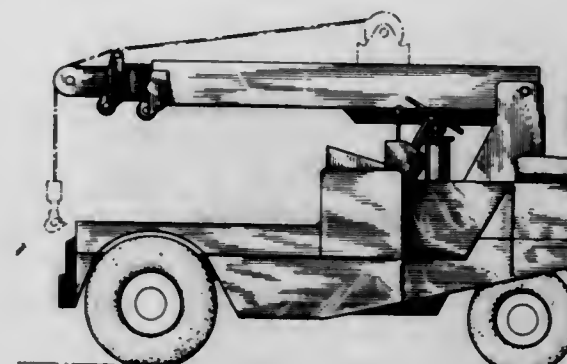
U.S. Cl. D13—1



**214,889**  
**MOBILE CRANE**  
Benjamin A. Stevens, Greencastle, Pa., assignor to Grove Manufacturing Company, Shady Grove, Pa., a corporation of Pennsylvania

Filed Sept. 12, 1968, Ser. No. 13,512  
Term of patent 14 years  
Int. Cl. D12—05

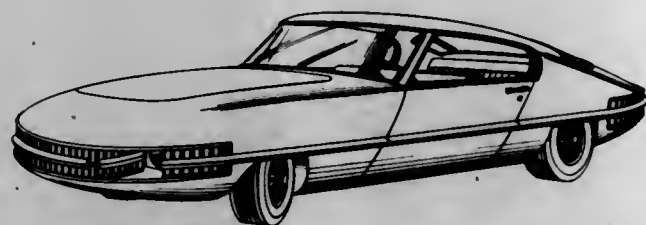
U.S. Cl. D14—3





**214,890**  
**AUTOMOBILE**  
Richard C. Bradley, 3501 NW. 9th Ave.,  
Fort Lauderdale, Fla. 33309  
Filed Dec. 26, 1968, Ser. No. 15,126  
Term of patent 14 years  
Int. Cl. D12—08

U.S. Cl. D14—3



**214,891**  
**COMBINED HAT AND COAT HOOK**  
Robert P. Bartholomew, Grand Rapids, Mich., assignor  
to Steelcase, Inc., Grand Rapids, Mich., a corporation of  
Michigan  
Filed Jan. 24, 1968, Ser. No. 10,291  
Term of patent 14 years  
Int. Cl. D8—03

U.S. Cl. D15—8



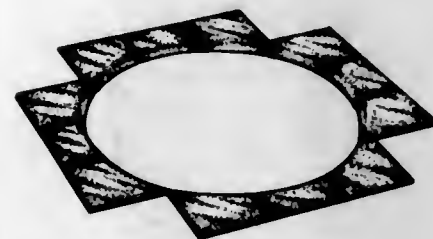
**214,892**  
**LADDER**  
Richard Paul Sulecki, Sharon, Pa., assignor to R. D.  
Werner Co., Inc., Greenville, Pa., a corporation of  
Pennsylvania  
Continuation-in-part of design applications Ser. No.  
87,990, Ser. No. 87,991, Ser. No. 87,992, and Ser.  
No. 87,993, filed Nov. 3, 1965. This application  
Oct. 25, 1967, Ser. No. 9,168  
Term of patent 14 years  
Int. Cl. D25—99

U.S. Cl. D15—8



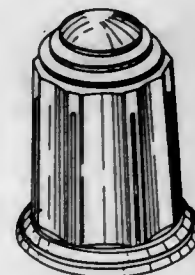
**214,893**  
**TILE TRIM FOR A LAVATORY**  
**COUNTERTOP, OR THE LIKE**  
Joseph Stephen Wheeler, Jr., San Diego, Calif. (% Hunt-  
ington Tile, Inc., 9223 Bolsa Ave., Westminster, Calif.  
92683)  
Filed Dec. 29, 1966, Ser. No. 5,222  
Term of patent 14 years  
Int. Cl. D25—01; D23—02

U.S. Cl. D18—2



**214,894**  
**CREMATION URN**  
Wesley M. Chandler, St. Paul, and Bernard T. Juba,  
White Bear Lakes, Minn., assignors to Wilbert, Inc.,  
Broadview, Ill., a corporation of Illinois  
Filed Mar. 20, 1968, Ser. No. 11,045  
Term of patent 14 years  
Int. Cl. D31

U.S. Cl. D19—1



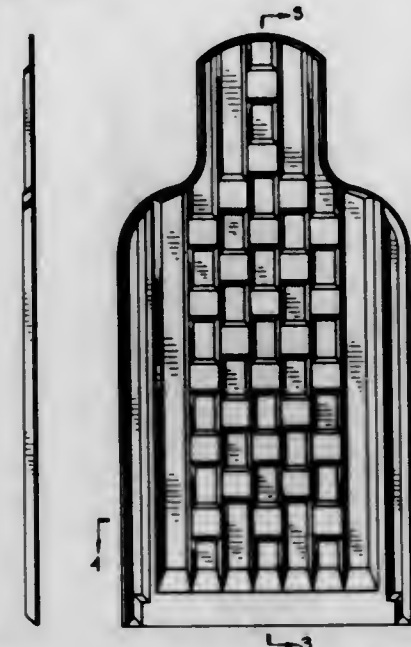
**214,895**  
**EXTENSION TO A BOW SIGHT**  
Fred Hamilton, 9467 Bullion Way,  
Orangevale, Calif. 95662  
Filed Oct. 16, 1967, Ser. No. 9,002  
Term of patent 14 years  
Int. Cl. D22—02

U.S. Cl. D22—5



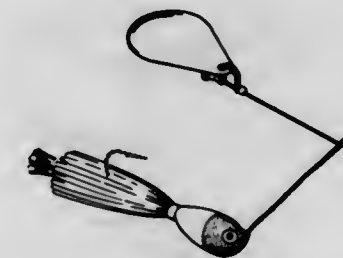
**214,896**  
**GUNNERY TARGET**  
Vincent F. D'Agostino and Phillip Brief, Huntington Sta-  
tion, N.Y., assignors to RAI Research Corporation,  
Long Island City, N.Y., a corporation of New York  
Filed Oct. 10, 1968, Ser. No. 13,934  
Term of patent 14 years  
Int. Cl. D22—99

U.S. Cl. D22—15



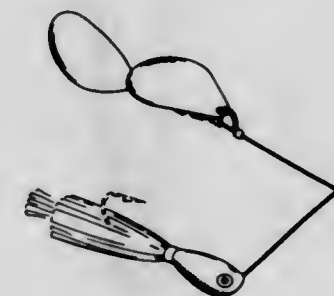
**214,897**  
**FISHING LURE**  
Clarence S. Turbeville and Ike J. Walker, Gainesville,  
Tex., assignors to Bomber Bait Company, Gainesville,  
Tex., a corporation of Texas  
Filed July 11, 1968, Ser. No. 12,712  
Term of patent 14 years  
Int. Cl. D22—07

U.S. Cl. D22—27



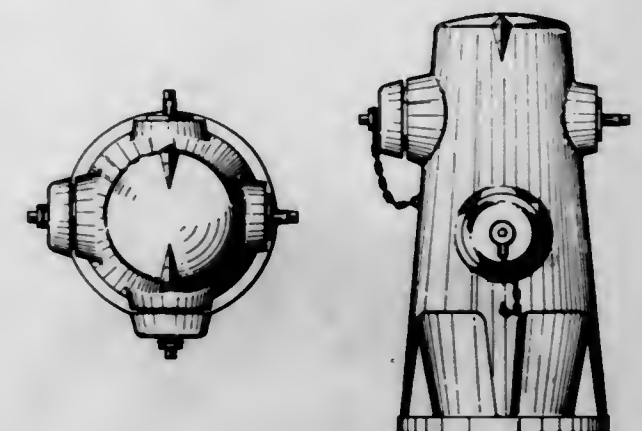
**214,898**  
**FISHING LURE**  
Clarence S. Turbeville and Ike J. Walker, Gainesville,  
Tex., assignors to Bomber Bait Company, Gainesville,  
Tex., a corporation of Texas  
Filed July 11, 1968, Ser. No. 12,713  
Term of patent 14 years  
Int. Cl. D22—07

U.S. Cl. D22—27



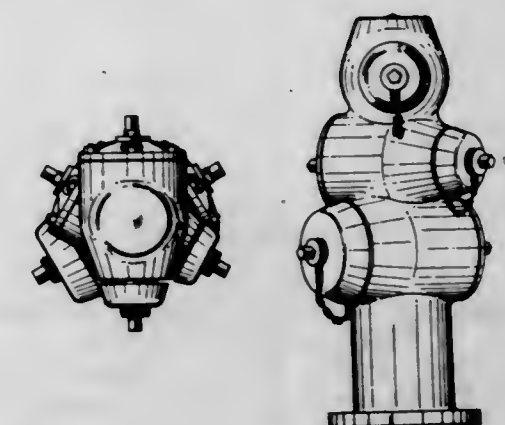
**214,899**  
**FIRE HYDRANT**  
Edward Page, Walnut Creek, Calif., assignor to M.  
Greenberg's Sons, Inc., San Francisco, Calif., a corpo-  
ration of California  
Filed Oct. 23, 1968, Ser. No. 14,151  
Term of patent 14 years  
Int. Cl. D23—01

U.S. Cl. D23—12



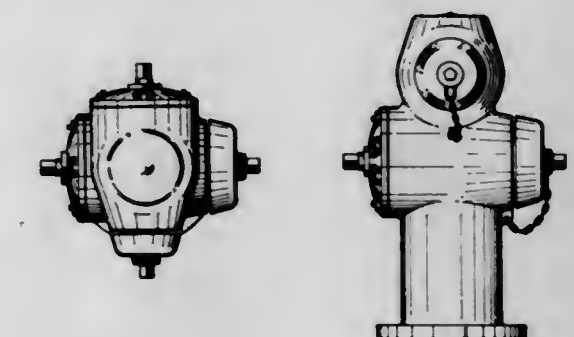
**214,900**  
**FIRE HYDRANT**  
Edward Page, Walnut Creek, Calif., assignor to M.  
Greenberg's Sons, Inc., San Francisco, Calif., a corpo-  
ration of California  
Filed Nov. 18, 1968, Ser. No. 14,524  
Term of patent 14 years  
Int. Cl. D23—01

U.S. Cl. D23—12



**214,901**  
**FIRE HYDRANT**  
Edward Page, Walnut Creek, Calif., assignor to M.  
Greenberg's Sons Inc., San Francisco, Calif., a corpo-  
ration of California  
Filed Nov. 18, 1968, Ser. No. 14,525  
Term of patent 14 years  
Int. Cl. D23—01

U.S. Cl. D23—12

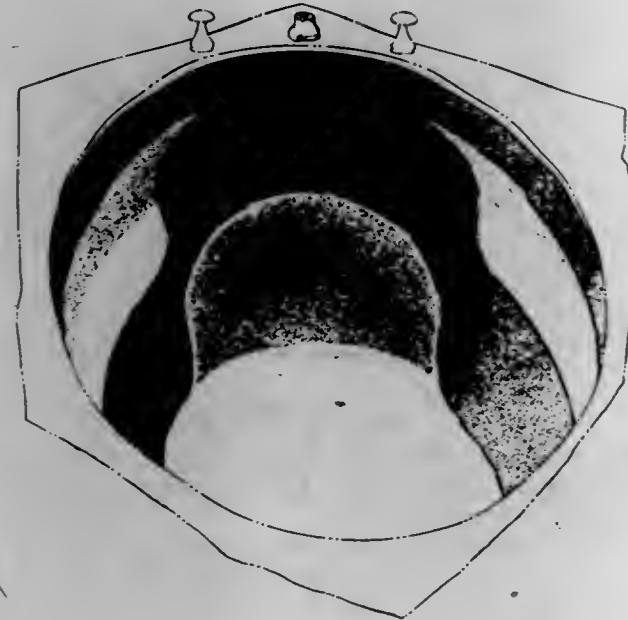




**214,902**  
**BATHTUB**

Jack A. Goodall, Dallas, Tex., assignor, by mesne assignments, to Venetian International, Inc., Dallas, Tex., a corporation of Texas  
Filed June 20, 1968, Ser. No. 12,445  
Term of patent 14 years  
Int. Cl. D23—02

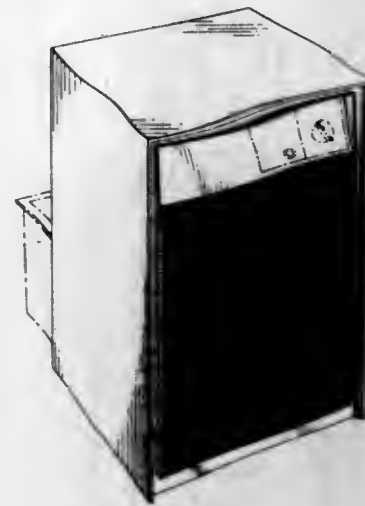
U.S. Cl. D23—55



**214,904**  
**DEHUMIDIFIER**

Roger F. Chapin, Jr., Columbus, Ohio, assignor to Westinghouse Electric Corporation, a corporation of Pennsylvania  
Filed May 27, 1968, Ser. No. 12,094  
Term of patent 14 years  
Int. Cl. D23—04

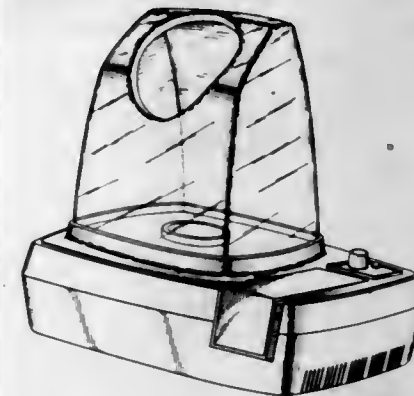
U.S. Cl. D23—146



**214,905**

**VAPORIZER FOR NASAL HYGIENE**  
Austin H. Munson, Earl W. Grawolg, and James Martin, Chicago, Ill., assignors to Saunda, Inc., Chicago, Ill., a corporation of Illinois  
Filed Oct. 24, 1968, Ser. No. 14,170  
Term of patent 14 years  
Int. Cl. D23—04

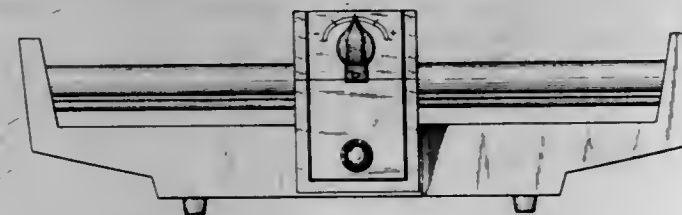
U.S. Cl. D23—148



**214,903**  
**APPARATUS FOR HEATING SLEEVES FOR PERMANENT WAVES**

Jean Leclabart, Paris, France, assignor to Société Anonyme Perma, Paris, France, a company of France  
Filed Mar. 20, 1968, Ser. No. 11,054  
Claims priority, application France Oct. 9, 1967  
Term of patent 14 years  
Int. Cl. D23—03

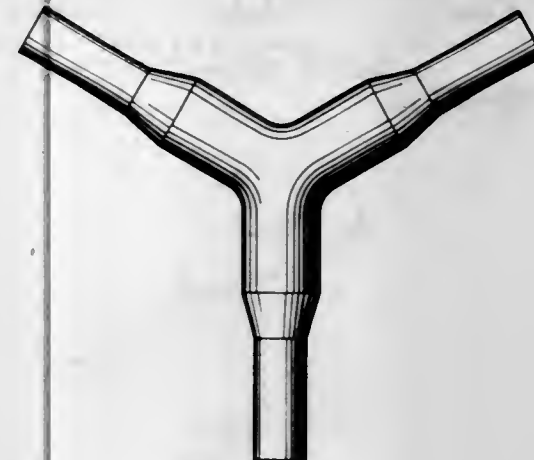
U.S. Cl. D23—77



**214,906**  
**THREE-WAY INSULATED SPLICE FOR ELECTRICAL CONDUCTORS**

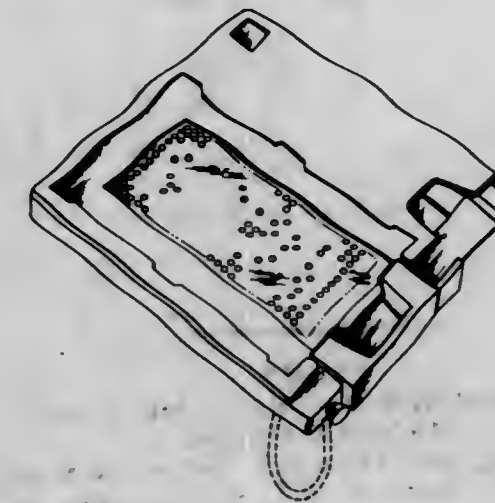
Herbert N. Steinmeyer, 2419 SW. Richardson, Portland, Oreg. 97201  
Filed July 18, 1968, Ser. No. 12,817  
Term of patent 14 years  
Int. Cl. D13—03

U.S. Cl. D26—1



**214,907**  
**COMBINED INFORMATION RECORDING AND RECORD STORAGE UNIT**  
Alfonso W. Merino, Hightstown, N.J., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Mar. 25, 1968, Ser. No. 11,107  
Term of patent 14 years  
Int. Cl. D14—02

U.S. Cl. D26—5



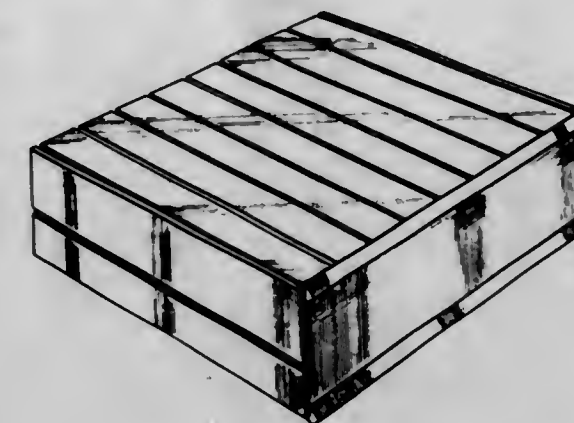
**214,908**  
**ELECTRONIC COUNTER INDICATOR PANEL**  
James P. Donovan, Louisville, Ky., assignor to General Equipment and Manufacturing Company, Inc., Louisville, Ky., a corporation of Kentucky  
Filed Mar. 25, 1968, Ser. No. 11,123  
Term of patent 14 years  
Int. Cl. D14—02

U.S. Cl. D26—5



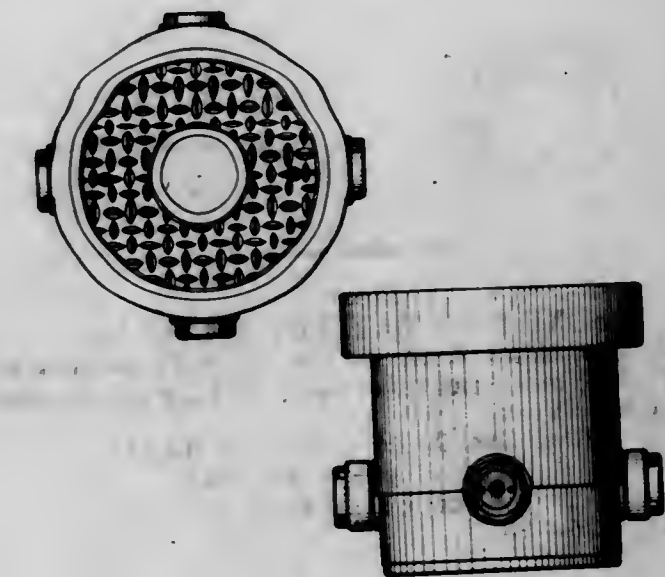
**214,909**  
**INSTRUMENT HOUSING OR SIMILAR ARTICLE**  
Paul E. Brefka, Framingham, Mass., assignor to Aerospace Research, Inc., Boston, Mass., a corporation of Massachusetts  
Filed July 5, 1968, Ser. No. 12,637  
Term of patent 14 years  
Int. Cl. D14—02

U.S. Cl. D26—5



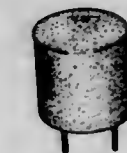
**214,910**  
**GRADE LEVEL HOUSING FOR TELEPHONE, TELEVISION, SIGNAL AND ELECTRIC POWER CABLES**  
William H. Channell, 620 W. Foothill Blvd., Glendora, Calif. 91740  
Filed July 29, 1968, Ser. No. 12,952  
Term of patent 14 years  
Int. Cl. D13—03

U.S. Cl. D26—5



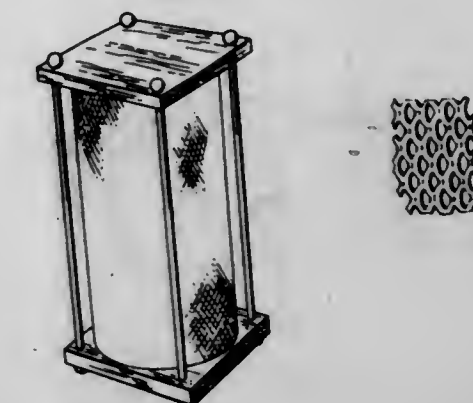
**214,911**  
**LIGHTING DEVICE**  
Robert G. Morgan, Ipswich, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware  
Filed June 1, 1967, Ser. No. 7,322  
Term of patent 14 years  
Int. Cl. D26—01

U.S. Cl. D26—8



**214,912**  
**LOUDSPEAKER ENCLOSURE**  
Gordon L. Duera, Elmira, Ontario, and Michael N. Baldwin, Kitchener, Ontario, Canada, assignors to Electrohome Limited, Kitchener, Ontario, Canada  
Filed May 27, 1968, Ser. No. 12,092  
Term of patent 14 years  
Int. Cl. D14—01

U.S. Cl. D26—14





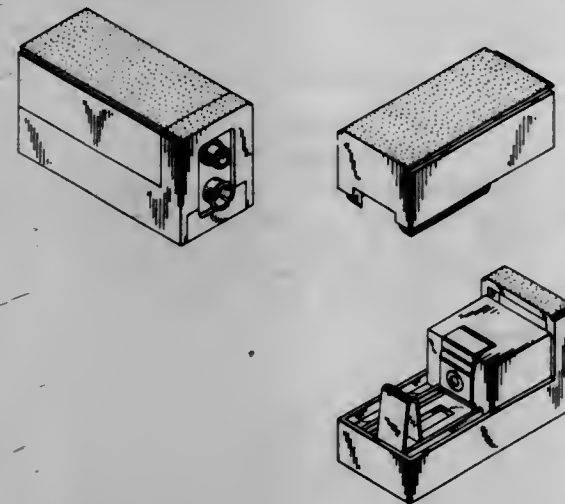
**214,913**  
**HOLDER FOR TELEVISION ANTENNA**  
 Robert G. Shorr, 46 Venetian Way,  
 Miami Beach, Fla. 33139  
 Filed Dec. 2, 1968, Ser. No. 14,745  
 Term of patent 14 years  
 Int. Cl. D14—99

U.S. Cl. D26—14



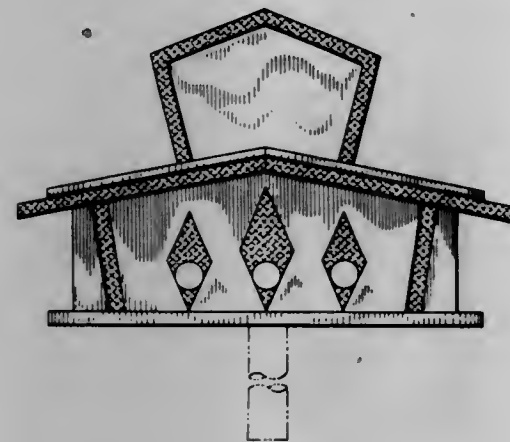
**214,914**  
**AUXILIARY BATTERY CHARGER**  
 Robert D. Kahn, Rockville Centre, N.Y., assignor to  
 Fedtro, Inc., Rockville Center, N.Y., a corporation  
 of New York  
 Filed Dec. 2, 1968, Ser. No. 14,743  
 Term of patent 14 years  
 Int. Cl. D13—02

U.S. Cl. D26—15



**214,915**  
**BIRDHOUSE**  
 Albert D. Hocker, 1418 W. Franklin St.,  
 Evansville, Ind. 47710  
 Filed Apr. 26, 1968, Ser. No. 11,642  
 Term of patent 14 years  
 Int. Cl. D30—01

U.S. Cl. D30—3



**214,916**  
**FISH BREEDING TANK**  
 David D. Lovitz, Short Hills, N.J., assignor to Sternco In-  
 dustries, Inc., Harrison, N.J., a corporation of New  
 Jersey  
 Filed May 21, 1968, Ser. No. 12,030  
 Term of patent 14 years  
 Int. Cl. D30—01

U.S. Cl. D30—9



**214,917**  
**AQUARIUM BREEDER TANK WITH  
 HANGER MEANS**  
 David D. Lovitz, Short Hills, N.J., assignor to Sternco In-  
 dustries, Inc., Harrison, N.J., a corporation of New  
 Jersey  
 Filed Feb. 2, 1968, Ser. No. 10,415  
 Term of patent 14 years  
 Int. Cl. D30—01

U.S. Cl. D30—12



**214,918**  
**BULB OPERATED AQUARIUM CLEANING DEVICE**  
 Allan H. Willinger, New Rochelle, N.Y., assignor to  
 Aquariums Incorporated, Maywood, N.J., a cor-  
 poration of Delaware  
 Filed Aug. 21, 1968, Ser. No. 13,233  
 Term of patent 14 years  
 Int. Cl. D30—01

U.S. Cl. D30—12



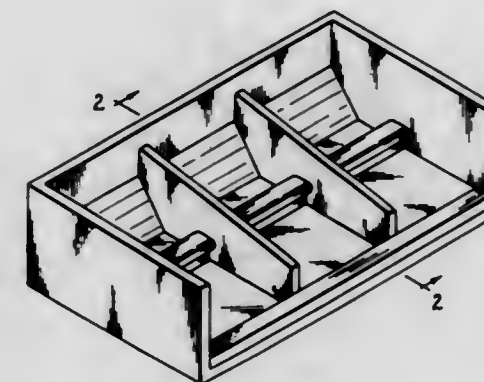
**214,919**  
**LITTER BOX FOR DOMESTIC CATS**  
 Olga C. Moberger, 133 Irving St.,  
 Everett, Mass. 02149  
 Filed Sept. 12, 1966, Ser. No. 3,815  
 Term of patent 14 years  
 Int. Cl. D30—99

U.S. Cl. D30—41



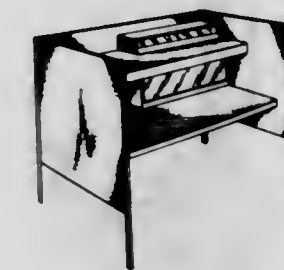
**214,920**  
**DRAWER FOR A SHOE CHEST**  
 Arthur G. Cashman, 8320 Oxon Hill Road,  
 Washington, D.C. 20022  
 Filed Oct. 25, 1968, Ser. No. 14,181  
 Term of patent 14 years  
 Int. Cl. D6—01

U.S. Cl. D33—6



**214,921**  
**CARREL**  
 Tom O. Gulliford, Rockford, and George W. Bicknell,  
 Marshall, Mich., assignors to The Worden Company,  
 Holland, Mich., a corporation of Michigan  
 Filed Jan. 12, 1968, Ser. No. 10,147  
 Term of patent 14 years  
 Int. Cl. D6—01

U.S. Cl. D33—7



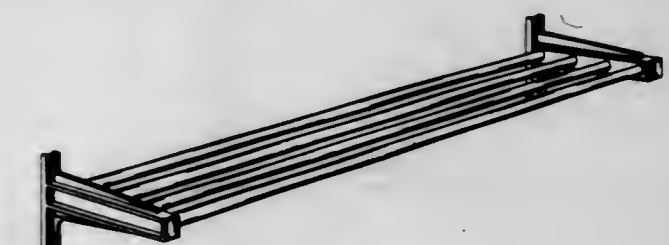
**214,922**  
**COSTUMER**  
 Robert W. Schier, Northfield, and Leonard D. Singer,  
 Chicago, Ill., assignors to Krueger Metal Products, Inc.,  
 Green Bay, Wis., a corporation of Wisconsin  
 Filed Mar. 18, 1968, Ser. No. 11,023  
 Term of patent 14 years  
 Int. Cl. D6—01

U.S. Cl. D33—8



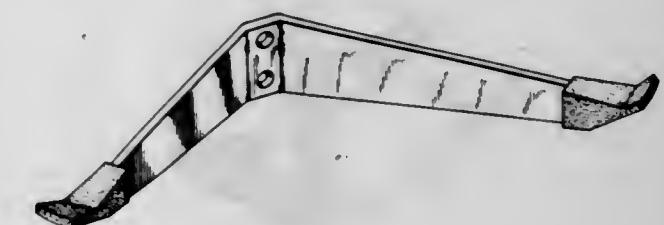
**214,923**  
**SHELF**  
 Robert W. Schier, Northfield, and Larry F. Odar, North-  
 brook, Ill., assignors to Krueger Metal Products, Inc.,  
 Green Bay, Wis., a corporation of Wisconsin  
 Filed Mar. 18, 1968, Ser. No. 11,024  
 Term of patent 14 years  
 Int. Cl. D6—01

U.S. Cl. D33—8



**214,924**  
**ANGLE COAT HOOK**  
 Robert W. Schier, Northfield, and Larry F. Odar, North-  
 brook, Ill., assignors to Krueger Metal Products, Inc.,  
 Green Bay, Wis., a corporation of Wisconsin  
 Filed Mar. 18, 1968, Ser. No. 11,025  
 Term of patent 14 years  
 Int. Cl. D6—01; D8—03

U.S. Cl. D33—8





214,925

## MESSAGE CENTER CABINET

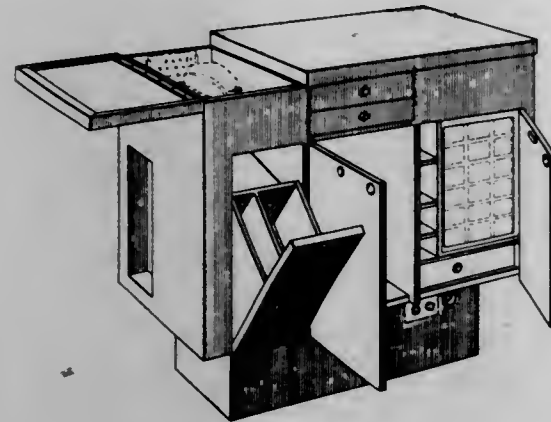
Jon Newell Provest, Framingham, Mass., assignor to  
Atkins & Merrill, Inc., Sudbury, Mass., a corporation  
of Massachusetts

Filed Mar. 28, 1968, Ser. No. 11,173

Term of patent 7 years

Int. Cl. D6—01

U.S. Cl. D33—19



214,926

## COMBINED TOOTHBRUSH HOLDER AND TIMER

John F. Berardo, Arcadia, Calif.

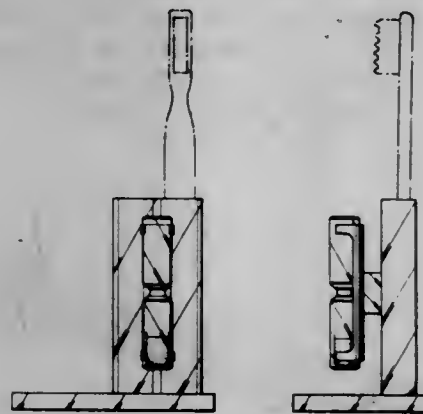
(8727 1/2 La Tijera Blvd., Los Angeles, Calif. 90045)

Filed Aug. 1, 1968, Ser. No. 12,997

Term of patent 14 years

Int. Cl. D6—01

U.S. Cl. D33—28



214,927

## ROCKING TOY FOR CHILDREN

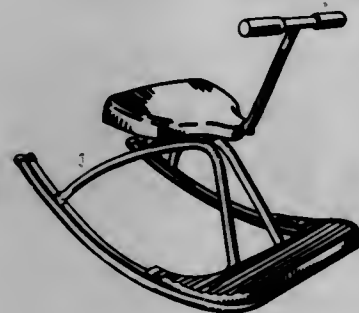
Loran R. Hill, Olney, Ill., assignor to American Machines  
& Foundry Company, a corporation of New Jersey

Filed May 27, 1968, Ser. No. 12,098

Term of patent 14 years

Int. Cl. D21—02, 03

U.S. Cl. D34—5



214,928

COMPONENT OF A MULTI-PIECED TOY  
OR THE LIKE

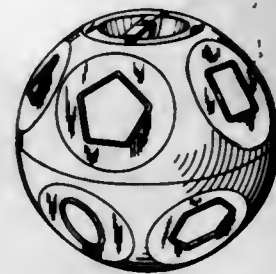
James Baldwin Swett, Barrington, and Harold Prescott  
Ashton, Providence, R.I., assignors to Dart Industries,  
Inc., a corporation of Delaware

Filed July 3, 1968, Ser. No. 12,603

Term of patent 14 years

Int. Cl. D21—02

U.S. Cl. D34—5



214,929

## TOY CAMERA

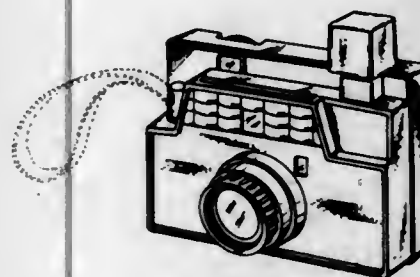
Ralph W. Crawford, East Aurora, N.Y., assignor to  
Fisher-Price Toys Inc., East Aurora, N.Y., a corpora-  
tion of New York

Filed Mar. 4, 1968, Ser. No. 10,831

Term of patent 14 years

Int. Cl. D21—02; D16—01

U.S. Cl. D34—15



214,930

## VEHICLE LIFT

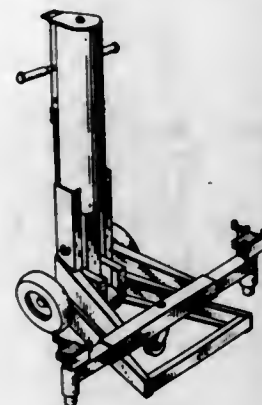
Gary L. Kincaid and Gilbert W. Gaarder, St. Joseph, Mo.,  
assignors to Gray Manufacturing Company, Inc., St.  
Joseph, Mo., a corporation of Missouri

Filed Sept. 4, 1968, Ser. No. 13,393

Term of patent 14 years

Int. Cl. D8—02; D15—05

U.S. Cl. D41—1



214,931

## MOLD FOR COMESTIBLES OR SIMILAR ARTICLE

Robert F. Bateman, North Smithfield, and James B. Swett,  
Barrington, R.I., assignors to Dart Industries, Inc., a  
corporation of Delaware

Continuation of design application Ser. No. 4,901, Dec. 2,

1966. This application Sept. 6, 1967, Ser. No. 8,838

Term of patent 14 years

Int. Cl. D7—02

U.S. Cl. D44—1



214,932

## COVER FOR FRY PANS OR THE LIKE

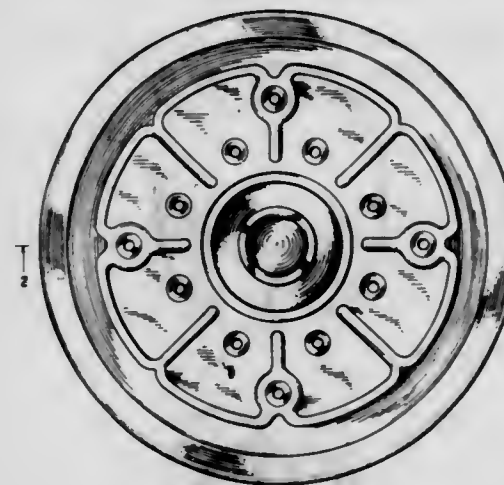
Denzil O. Martin, 16222 Monterey Lane 83,  
Huntington Beach, Calif. 92647

Filed Oct. 17, 1968, Ser. No. 14,045

Term of patent 7 years

Int. Cl. D7—02

U.S. Cl. D44—1



214,933

## DESSERT DISH OR THE LIKE

James B. Swett, Barrington, R.I., and Thomas E. Brown,  
Birmingham, Mich., assignors to Dart Industries Inc.,  
a corporation of Delaware

Filed Aug. 12, 1968, Ser. No. 13,119

Term of patent 14 years

Int. Cl. D7—01

U.S. Cl. D44—9



214,934

## CONTAINER HOLDER FOR AN AUTOMOBILE

Howard C. Pitts, 100 W. 104th St.,

Kansas City, Mo. 64114

Filed Oct. 11, 1968, Ser. No. 13,941

Term of patent 14 years

Int. Cl. D7—99

U.S. Cl. D44—10



214,935

## PLATE OR SIMILAR ARTICLE

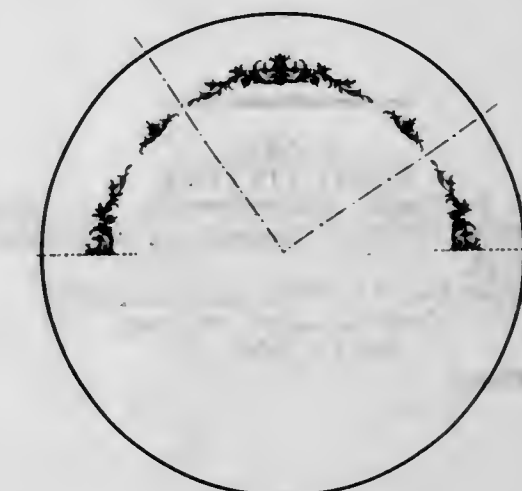
Ryotaro Takeoka, 221 Kitayamoto-cho, Aichiken,  
Nishikasugai-gun, Japan

Filed June 7, 1968, Ser. No. 12,261

Term of patent 7 years

Int. Cl. D7—01

U.S. Cl. D44—15



214,936

## WATCH BRACELET OR SIMILAR ARTICLE

Ananta Uengsakul, Bangkok, Thailand, assignor to Stelux  
Manufacturing Company, Ltd., Kowloon, Hong Kong,  
a corporation of Hong Kong

Filed July 3, 1968, Ser. No. 12,604

Term of patent 14 years

Int. Cl. D11—01

U.S. Cl. D45—4





214,937

**WATCH BRACELET OR SIMILAR ARTICLE**  
Ananta Uengsakul, Bangkok, Thailand, assignor to Stelux Manufacturing Company, Ltd., Kowloon, Hong Kong, a corporation of Hong Kong

Filed July 3, 1968, Ser. No. 12,615

Term of patent 14 years

Int. Cl. D11-01

U.S. Cl. D45-4



214,938

**LIGHT FIXTURE**

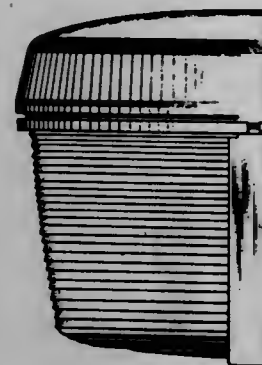
Myron F. Pettengill, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York

Filed Oct. 14, 1968, Ser. No. 13,955

Term of patent 14 years

Int. Cl. D26-02

U.S. Cl. D48-4



214,939

**TRANSLUCENT LIGHT DIFFUSER PANEL**

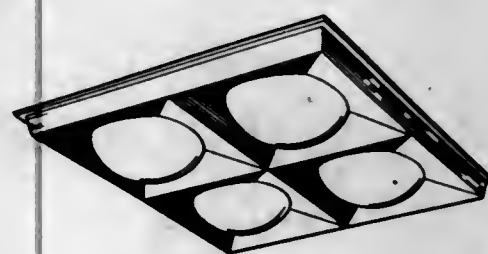
David M. Arrigoni, 231 O'Connor Drive, San Jose, Calif. 95128

Filed Apr. 29, 1968, Ser. No. 11,666

Term of patent 14 years

Int. Cl. D26-06; D25-01

U.S. Cl. D48-16



214,940

**DEVICE FOR CREATING LIGHT PATTERNS**

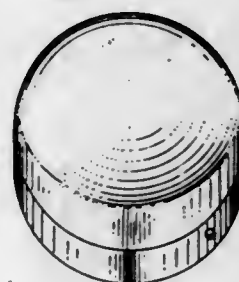
Tod A. Dockstader, Westport, Conn. (15 E. 48th St., New York, N.Y. 10017)

Filed Oct. 16, 1967, Ser. No. 9,015

Term of patent 7 years

Int. Cl. D26-02

U.S. Cl. D48-20



214,941

**FLOOD LAMP**

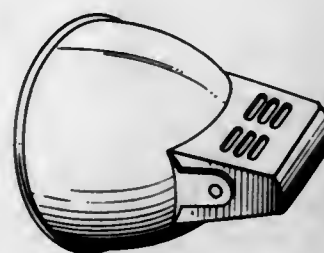
Hy Hilzen, 40 Gateway Road, Yonkers, N.Y. 10703

Filed Sept. 6, 1968, Ser. No. 13,433

Term of patent 14 years

Int. Cl. D26-02

U.S. Cl. D48-20



214,942

**PORTABLE LIGHT WITH SWIVEL HEAD**

Hajime Ota, Tokyo, Japan, assignor to Fedtro, Inc., Rockville Centre, N.Y., a corporation of New York

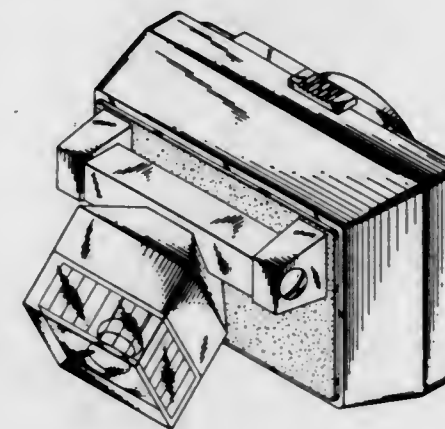
Filed Aug. 20, 1968, Ser. No. 13,204

Claims priority, application Japan July 4, 1968

Term of patent 14 years

Int. Cl. D26-04

U.S. Cl. D48-24



214,943

**CLIP-ON FLASHLIGHT**

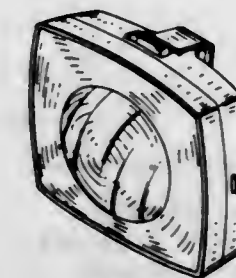
Bronislaw Zapolski, Princeton, N.J., assignor to Herbert J. Ashe, % The H. J. Ashe Company, Inc., South Norwalk, Conn.

Filed Sept. 23, 1968, Ser. No. 13,660

Term of patent 14 years

Int. Cl. D26-04

U.S. Cl. D48-24



214,944

**COMBINED OUTDOOR LIGHTING FIXTURE AND SUPPORT**

Donald V. Vesely, Hillside, and David R. Dalpiaz, Elmhurst, Ill., assignors to Guardian Light Company, Oak Park, Ill., a corporation of Illinois

Continuation-in-part of design application Ser. No. 8,966, filed Oct. 12, 1967. This application May 3, 1968, Ser. No. 11,775

Term of patent 14 years

Int. Cl. D26-03

U.S. Cl. D48-31



214,945

**COMBINED OUTDOOR LIGHTING FIXTURE AND SUPPORT**

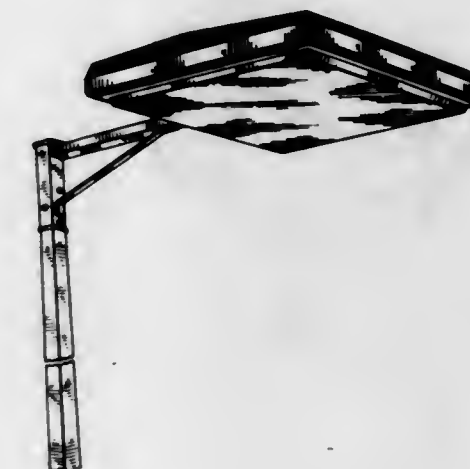
Donald V. Vesely, Hillside, and David R. Dalpiaz, Elmhurst, Ill., assignors to Guardian Light Company, Oak Park, Ill., a corporation of Illinois

Original design application May 3, 1968, Ser. No. 11,775, now Patent No. 212,899, dated Dec. 10, 1968. This application Nov. 12, 1968, Ser. No. 14,398

Term of patent 14 years

Int. Cl. D26-03

U.S. Cl. D48-31



214,946

**COMBINATION GASOLINE PUMP DISPENSER AND PRODUCT STORAGE UNIT**

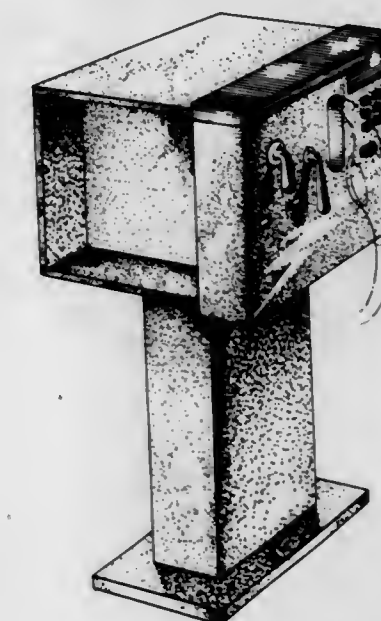
Leonard N. Freed, Saddle Brook, N.J., assignor to Cities Service Oil Company, Tulsa, Okla., a corporation of Delaware

Filed Sept. 15, 1967, Ser. No. 8,605

Term of patent 7 years

Int. Cl. D10-99

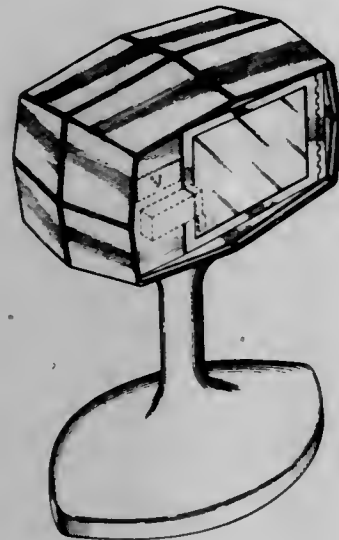
U.S. Cl. D52-2





**214,947**  
**NEWSPAPER DISPENSING DEVICE**  
 Daniel A. Perkins, 1433 W. 11th,  
 Santa Ana, Calif. 92703  
 Filed July 5, 1968, Ser. No. 12,641  
 Term of patent 14 years  
 Int. Cl. D20-01

U.S. Cl. D52-3



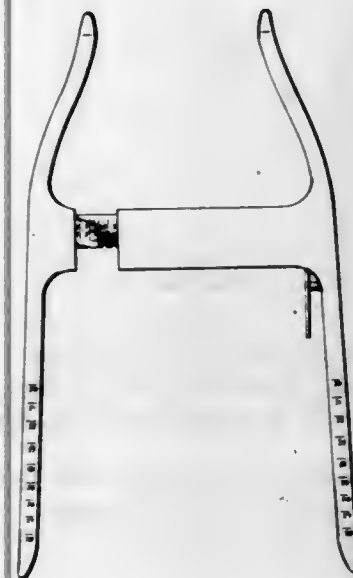
**214,948**  
**COIN INSERTION SLOT**  
 Walter L. Koch, Caldwell, and Kerry A. Day, Parsippany,  
 N.J., assignors to Rowe International, Inc., Whippany,  
 N.J., a corporation of Delaware  
 Filed Sept. 27, 1968, Ser. No. 13,745  
 Term of patent 14 years  
 Int. Cl. D20-01

U.S. Cl. D52-3



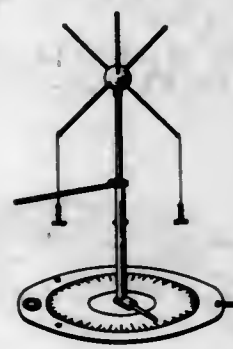
**214,949**  
**ADJUSTABLE FORM FOR BLOCKING  
 AND PRESSING A SKIRT**  
 James Elwood Waite, 2905 Garfield Ave., and William E.  
 White, 5908 Marconi, both of Carmichael, Calif.  
 95608  
 Filed May 10, 1968, Ser. No. 11,880  
 Term of patent 14 years  
 Int. Cl. D10-08

U.S. Cl. D52-6



**214,950**  
**TORQUE VECTOR ANALYZER**  
 Roger Dean Stephenson, 18 E. Drive,  
 Columbia, Mo. 65201  
 Filed Sept. 20, 1968, Ser. No. 13,641  
 Term of patent 14 years  
 Int. Cl. D10-08

U.S. Cl. D52-6



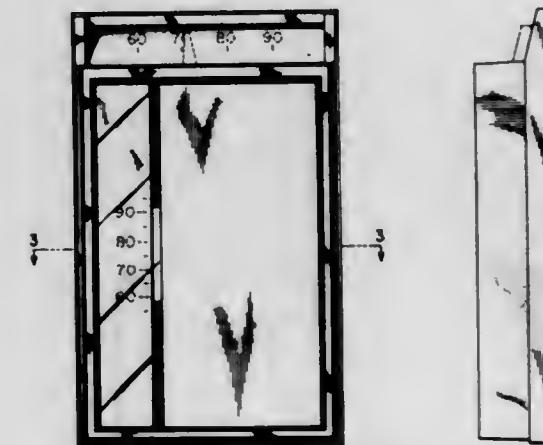
**214,951**  
**METAL DETECTOR**  
 Gerald J. Widawsky, 11 Coventry Court,  
 Englishtown, N.J. 07726  
 Filed Sept. 20, 1968, Ser. No. 13,647  
 Term of patent 14 years  
 Int. Cl. D10-11

U.S. Cl. D52-6



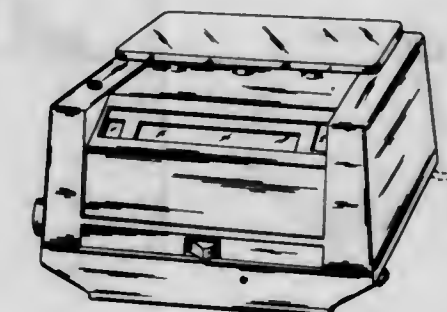
**214,952**  
**CONDITION RESPONSIVE DEVICE**  
 Wallace A. Monson, Golden Valley, Minn., assignor to  
 Honeywell Inc., Minneapolis, Minn., a corporation of  
 Delaware  
 Filed Oct. 23, 1968, Ser. No. 14,135  
 Term of patent 14 years  
 Int. Cl. D10-07

U.S. Cl. D52-7



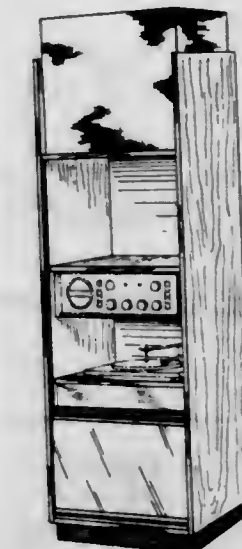
**214,953**  
**POSTAL SCALE OR THE LIKE**  
 Gerbrand G. Nouwen, Voorschoten, Netherlands, assignor  
 to Maatschappij van Berkel's Patent N.V., Rotterdam,  
 Netherlands, a limited-liability company of the  
 Netherlands  
 Filed Nov. 20, 1967, Ser. No. 9,462  
 Term of patent 14 years  
 Int. Cl. D10-08

U.S. Cl. D52-10



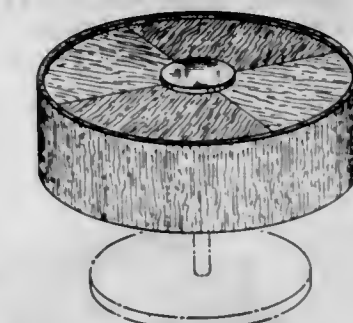
**214,954**  
**COMBINED RADIO, PHONOGRAPH AND  
 SPEAKER UNIT**  
 Gordon L. Duern, Elmira, Ontario, Canada, assignor to  
 Electrohome Limited, Kitchener, Ontario, Canada  
 Filed Apr. 26, 1968, Ser. No. 11,640  
 Term of patent 14 years  
 Int. Cl. D14-03; D6-01

U.S. Cl. D56-4



**214,955**  
**RADIO RECEIVER CABINET OR  
 SIMILAR ARTICLE**  
 Gordon L. Duern, Elmira, Ontario, Canada, assignor to  
 Electrohome Limited, Kitchener, Ontario, Canada  
 Continuation of design applications, Ser. No. 6,527, and  
 Ser. No. 6,537, Apr. 5, 1967. This application Mar. 22,  
 1968, Ser. No. 11,538  
 Term of patent 14 years  
 Int. Cl. D6-01

U.S. Cl. D56-4





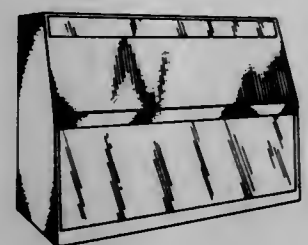
**214,956**  
**MAGNIFIER**  
 Saint Barth Alaska, 3811 Scoville Ave.,  
 Berwyn, Ill. 60402  
 Filed June 6, 1968, Ser. No. 12,236  
 Term of patent 14 years  
 Int. Cl. D16—08

U.S. Cl. D57—1



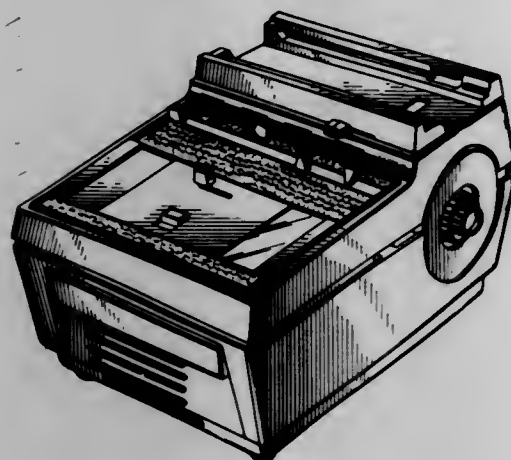
**214,957**  
**VIEWER**  
 Tom O. Gulliford, Rockford, and George W. Bicknell,  
 Marshall, Mich., assignors to The Worden Company,  
 Holland, Mich., a corporation of Michigan  
 Filed Jan. 12, 1968, Ser. No. 10,139  
 Term of patent 14 years  
 Int. Cl. D16—03, 04

U.S. Cl. D61—1



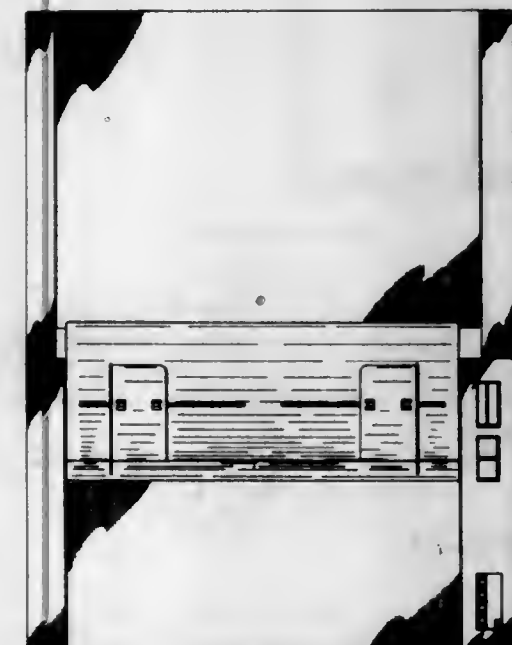
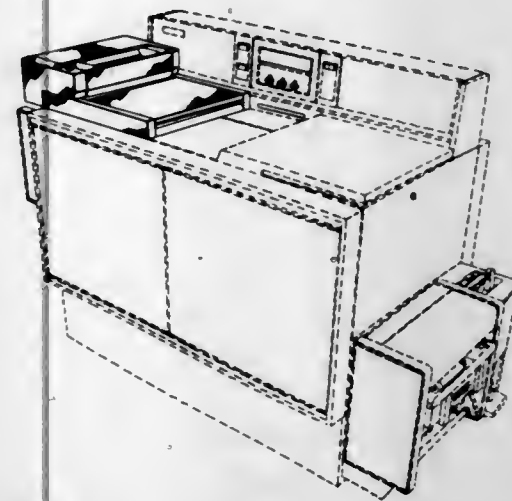
**214,958**  
**COMBINED MOTION PICTURE PROJECTOR  
 AND COVER**  
 Bernard A. Barke, Sunnyvale, Calif., and Anastasios J.  
 Vasilatos, Chicago, Ill., assignors to Bell & Howell  
 Company, Chicago, Ill., a corporation of Illinois  
 Filed Apr. 18, 1968, Ser. No. 11,520  
 Term of patent 14 years  
 Int. Cl. D16—04

U.S. Cl. D61—1



**214,959**  
**AUTOMATIC DOCUMENT FEEDING APPARA-  
 TUS FOR XEROGRAPHIC REPRODUCING  
 MACHINES OR THE LIKE**  
 Stephen R. Anderson, Rochester, Melvin G. Crandell,  
 Walworth, and Donald L. Pease, Marion, N.Y., as-  
 signors to Xerox Corporation, Rochester, N.Y., a cor-  
 poration of New York  
 Filed June 10, 1968, Ser. No. 12,278  
 Term of patent 14 years  
 Int. Cl. D16—05

U.S. Cl. D61—1



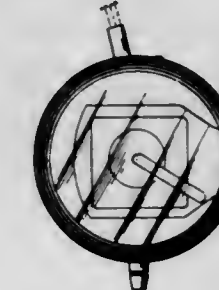
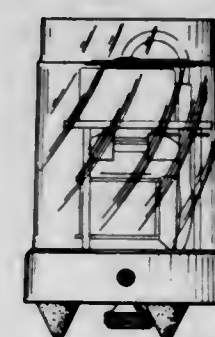
**214,960**  
**ENCLOSURE FOR VARIABLE-SPEED  
 ELECTRONIC PUMP DRIVE**  
 Gilbert A. Gothing, Boylston, Mass., assignor to Ikor,  
 Incorporated, Burlington, Mass., a corporation of  
 Massachusetts  
 Filed July 17, 1968, Ser. No. 12,805  
 Term of patent 14 years  
 Int. Cl. D15—02

U.S. Cl. D65—1



**214,961**  
**AQUARIUM AIR PUMP**  
 Monte L. Levin, New York, N.Y., assignor to Aquariums  
 Incorporated, Maywood, N.J., a corporation of  
 Delaware  
 Filed Aug. 28, 1968, Ser. No. 13,296  
 Term of patent 14 years  
 Int. Cl. D15—02

U.S. Cl. D65—1



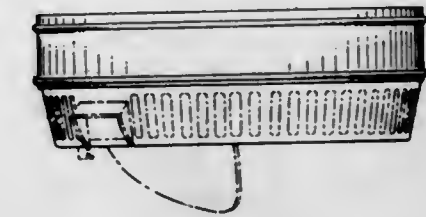
**214,962**  
**AQUARIUM AIR PUMP**  
 Monte L. Levin, New York, N.Y., assignor to Aquariums  
 Incorporated, Maywood, N.J., a corporation of  
 Delaware  
 Filed Aug. 29, 1968, Ser. No. 13,320  
 Term of patent 14 years  
 Int. Cl. D15—02

U.S. Cl. D65—1



**214,963**  
**AUTOMATIC ICE CUBE MAKER**  
 Robert W. Kennedy, Hilliards, Ohio, assignor to Westing-  
 house Electric Corporation, Pittsburgh, Pa., a corpora-  
 tion of Pennsylvania  
 Filed Apr. 29, 1968, Ser. No. 11,670  
 Term of patent 14 years  
 Int. Cl. D15—11

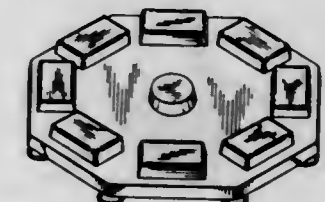
U.S. Cl. D67—3



**214,964**  
**FLASHING SIGNAL UNIT**  
 Robert D. Kahn, 24 Maple Ave., Rockville  
 Centre, N.Y. 14609  
 Continuation-in-part of design application Ser. No. 9,385,  
 Nov. 13, 1967. This application May 23, 1968, Ser. No.  
 12,055

Term of patent 14 years  
Int. Cl. D29—99

U.S. Cl. D72—1



**214,965**  
**TRAFFIC CONTROL MARKER BASE**  
 Seymour N. Schlein, University Heights, Ohio, assignor to  
 Textron Inc., Providence, R.I., a corporation of  
 Delaware  
 Filed Oct. 18, 1968, Ser. No. 14,076  
 Term of patent 14 years  
 Int. Cl. D29—99

U.S. Cl. D72—1

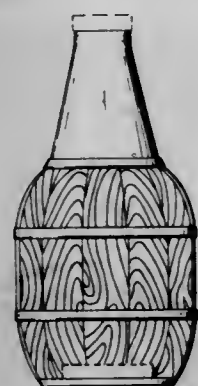




**214,966  
BOTTLE**

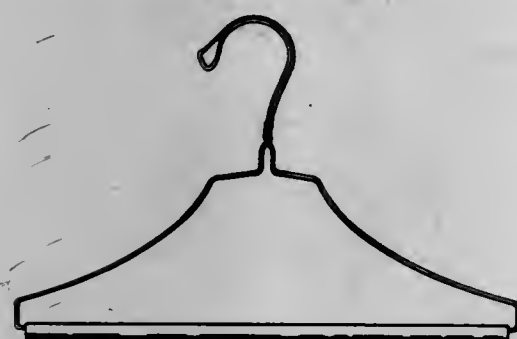
James L. Linn, Jr., Maumee, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio  
Filed Feb. 12, 1968, Ser. No. 10,534  
Term of patent 14 years  
Int. Cl. D9—01

U.S. Cl. D9—112

**214,967  
GARMENT HANGER**

Oliver R. Brekle, Birmingham, Ala., assignor to M&B Metal Products Co., a corporation of Delaware  
Filed Apr. 18, 1968, Ser. No. 11,491  
Term of patent 14 years  
Int. Cl. D6—01

U.S. Cl. D80—8

**214,968  
DISPLAY HANGER FOR HOSIERY**

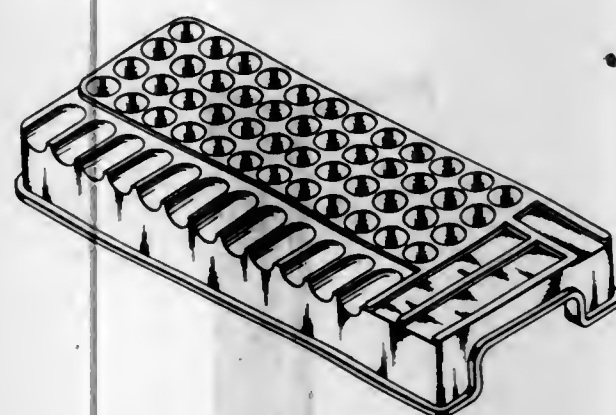
Allen I. Field, 147 Valley Stream Road, Larchmont, N.Y. 10538, and Sidney P. Field, 226 Beach 134th St., Belle Harbor, N.Y. 11694  
Filed Oct. 2, 1968, Ser. No. 13,819  
Term of patent 14 years  
Int. Cl. D6—07

U.S. Cl. D80—8

**214,969  
LIPSTICK DISPLAY TRAY**

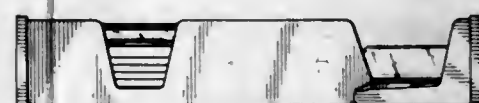
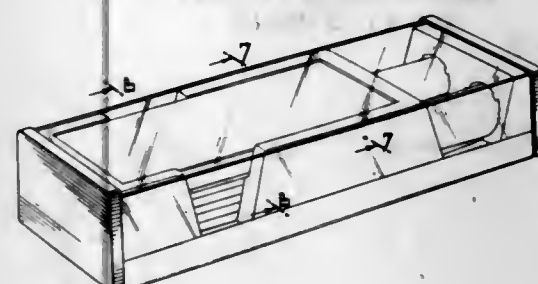
Leon V. Lebedeff, 1620 11th Ave. W., Seattle, Wash. 98119  
Filed Dec. 29, 1967, Ser. No. 9,995  
Term of patent 7 years  
The portion of the term of the patent subsequent to Dec. 27, 1980, has been disclaimed  
Int. Cl. D6—01

U.S. Cl. D80—9

**214,970  
MEDICAL DIAGNOSTIC TEST KIT OR  
SIMILAR ARTICLE**

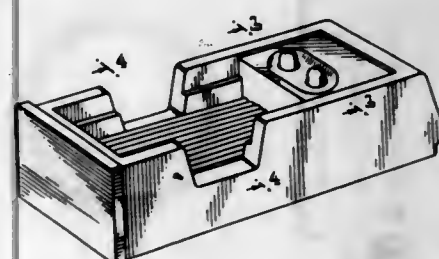
Charles M. Huck, Bound Brook, N.J., assignor to Ortho Pharmaceutical Corporation, a corporation of New Jersey  
Continuation-in-part of design application Ser. No. 7,303, filed May 29, 1967. This application June 28, 1968, Ser. No. 12,552  
Term of patent 14 years  
Int. Cl. D24—02; D9—04

U.S. Cl. D83—1

**214,971  
MEDICAL DIAGNOSTIC TEST KIT OR  
SIMILAR ARTICLE**

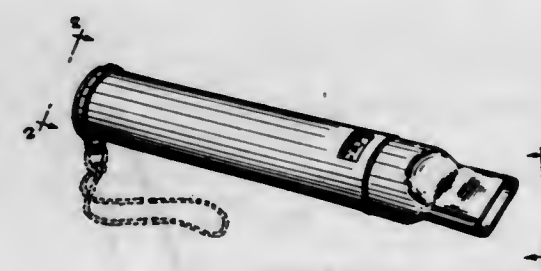
Charles M. Huck, Bound Brook, N.J., assignor to Ortho Pharmaceutical Corporation, a corporation of New Jersey  
Continuation-in-part of design application Ser. No. 7,303, filed May 29, 1967. This application June 28, 1968, Ser. No. 12,553  
Term of patent 14 years  
Int. Cl. D24—02

U.S. Cl. D83—1

**214,972  
INHALER**

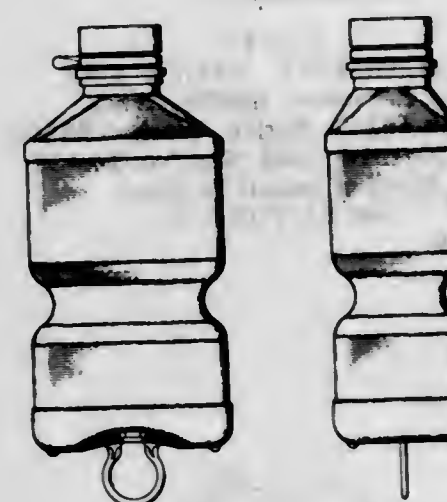
Dean Richard Katerndahl, Wheaton, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois  
Filed Sept. 19, 1968, Ser. No. 13,619  
Term of patent 14 years  
Int. Cl. D24—99

U.S. Cl. D83—1



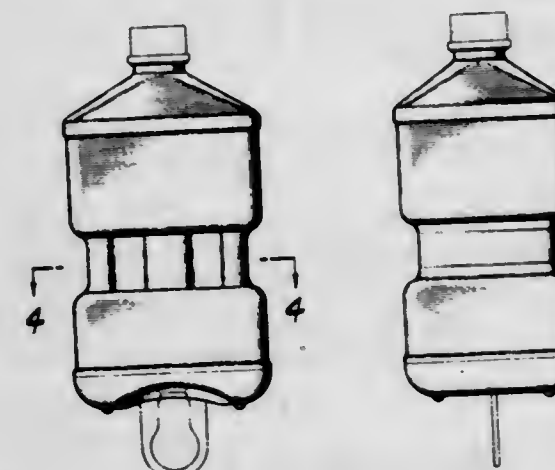
**214,973  
MEDICAL LIQUID CONTAINER**  
Elmer F. St. Amand, North Hollywood, Calif., assignor to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois  
Filed Nov. 12, 1968, Ser. No. 14,391  
Term of patent 14 years  
Int. Cl. D24—02; D9—01

U.S. Cl. D83—1



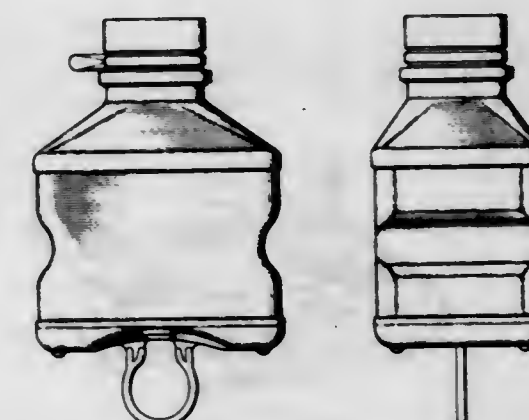
**214,974  
MEDICAL LIQUID CONTAINER**  
Elmer F. St. Amand, North Hollywood, Calif., assignor to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois  
Filed Nov. 12, 1968, Ser. No. 14,394  
Term of patent 14 years  
Int. Cl. D24—02; D9—01

U.S. Cl. D83—1

**214,975  
MEDICAL LIQUID CONTAINER**

Elmer F. St. Amand, North Hollywood, Calif., assignor to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois  
Filed Nov. 12, 1968, Ser. No. 14,410  
Term of patent 14 years  
Int. Cl. D24—02; D9—01

U.S. Cl. D83—1



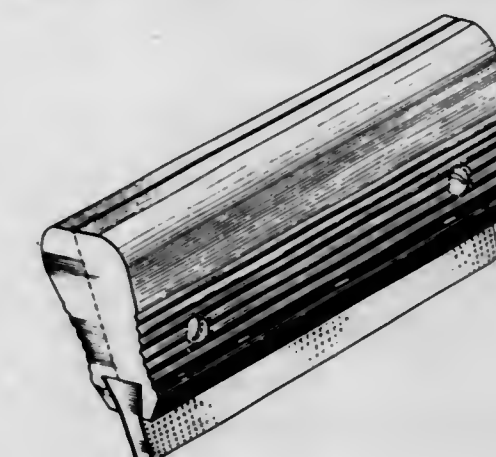
**214,976  
HANDLE FOR A HEATING APPLIANCE FOR USE  
IN HAIR TREATMENT**  
Henry J. Talge, Kansas City, Mo., and Jack E. Briar, Shawnee Mission, Kans., assignors to The Songrand Corporation, a corporation of Missouri  
Filed Feb. 5, 1968, Ser. No. 10,448  
Term of patent 14 years  
Int. Cl. D28—03

U.S. Cl. D86—10



**214,977  
PARTICLE REMOVER**  
Eric Michael Roth, R.R. 1, Unionville, Ontario, Canada  
Filed Aug. 26, 1968, Ser. No. 13,260  
Term of patent 14 years  
Int. Cl. D28—03

U.S. Cl. D86—13

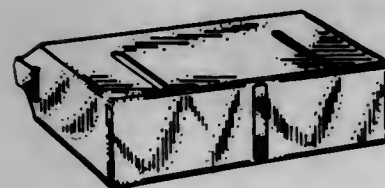
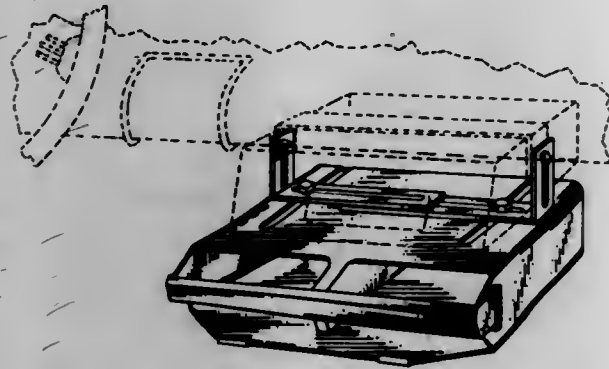




**214,978**  
**AUTOMOTIVE STEREO CARTRIDGE HOLDER**

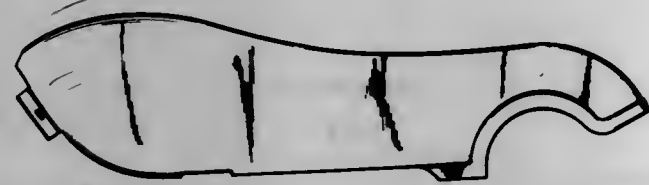
Theodore Ritz, Jr., 9939 Deering,  
Livonia, Mich. 48150  
Filed July 5, 1966, Ser. No. 2,982  
Term of patent 14 years  
Int. Cl. D3—99; D9—04

U.S. Cl. D87—1



**214,979**  
**BICYCLE CHAIN GUARD**  
Viktor Schreckengost, Cleveland Heights, Ohio, assignor  
to The Murray Ohio Manufacturing Co., Nashville,  
Tenn., a corporation of Ohio  
Filed Jan. 29, 1969, Ser. No. 15,561  
Term of patent 14 years  
Int. Cl. D12—14

U.S. Cl. D90—5



**214,980**  
**CYCLE SADDLE**

Thomas Karen, Ashwell, England, assignor to Raleigh  
Industries Limited, a corporation of Great Britain  
Filed June 4, 1968, Ser. No. 12,201  
Claims priority, application Great Britain, Dec. 9, 1967,  
934,257/67

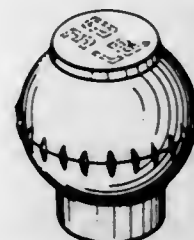
Term of patent 3½ years  
Int. Cl. D12—14

U.S. Cl. D90—16



**214,981**  
**AUTOMOTIVE VALVE CAP**  
Ted P. Nelson, Seattle, Wash.  
(P.O. Box 66347, Burien, Wash. 98166)  
Filed Nov. 14, 1968, Ser. No. 14,464  
Term of patent 14 years  
Int. Cl. D12—14

U.S. Cl. D90—20



## LIST OF REISSUE PATENTEEES

TO WHOM

PATENTS WERE ISSUED ON THE 12TH DAY OF AUGUST, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Bender, Louis, ½ to L. Miller. Portable and storable doll house or display. Re. 26,642, 8-12-69, Cl. 46—12.  
Connerat, Edwin B. Corner support for containers. Re. 26,640, 8-12-69, Cl. 248—119.  
Corey, Philip D., to General Electric Co. Frequency converter. Re. 26,641, 8-12-69, Cl. 321—4.  
Demarco, Richard E.: See—  
Gibbons, Ambrose J., Jr., and Demarco. Re. 26,639.  
General Electric Co.: See—  
Corey, Philip D. Re. 26,641.  
Gibbons, Ambrose J., Jr., and R. E. Demarco, to SCM Corp. Triorganostannoxy zirconium triacetylacetonates and derivatives. Re. 26,639, 8-12-69, Cl. 260—408.  
Holland, Harrison C. Braking system. Re. 26,643, 8-12-69, Cl. 303—8.  
Miller, Leo: See—  
Bender, Louis. Re. 26,642.  
SCM Corp.: See—  
Gibbons, Ambrose J., Jr., and Demarco. Re. 26,639.

## LIST OF PLANT PATENTEEES

Boyd, Fernando C., Jr., to Boyd Nursery Co., Inc. Dogwood tree. 2,916, 8-12-69, Cl. 51.  
Boyd Nursery Co., Inc.: See—  
Boyd, Fernando C., Jr. 2,916.  
Flemer, William, III, to Treeseach. Maple tree. 2,917, 8-12-69, Cl. 51.  
Treeseach: See—  
Flemer, William, III. 2,917.

## LIST OF DESIGN PATENTEEES

Abbott Laboratories: See—  
Katerndahl, Dean R. 214,972.  
Aerospace Research, Inc.: See—  
Brefka, Paul E. 214,909.  
Agonic Engineering, Inc.: See—  
Jones, Richard F. 214,862.  
Ajax Hardware Mfg. Corp.: See—  
Holmes, Frank A., and McCain. 214,867.  
Holmes, Frank A., and McCain. 214,868.  
Holmes, Frank A., and McCain. 214,869.  
Alaska, St. Barth. Magnifier. 214,956, 8-12-69, Cl. D57—1.  
American Hospital Supply Corp.: See—  
St. Amand, Elmer F. 214,973.  
St. Amand, Elmer F. 214,974.  
St. Amand, Elmer F. 214,975.  
American Machine & Foundry Co.: See—  
Hill, Loran R. 214,927.  
Anderson, Stephen R., M. G. Crandell, and D. L. Pease, to Xerox Corp. Automatic document feeding apparatus for xerographic reproducing machines or the like. 214,959, 8-12-69, Cl. D61—1.  
Aquariums Inc.: See—  
Levin, Monte L. 214,961.  
Levin, Monte L. 214,962.  
Willinger, Allan H. 214,918.  
Arrigoni, David M. Translucent light diffuser panel. 214,939, 8-12-69, Cl. D48—16.  
Ashe, Herbert J.: See—  
Zapolski, Bronislaw. 214,943.  
Ashton, Harold F.: See—  
Swett, James B., and Ashton. 214,928.  
Atkins & Merrill, Inc.: See—  
Provest, Jon N. 214,925.  
Automatic Electric Laboratories, Inc.: See—  
Stewart, George D. 214,888.  
Baldwin Bracelet Corp.: See—  
Poon, Yuen S. 214,878.  
Baldwin, Michael N.: See—  
Duern, Gordon L., and Baldwin. 214,912.  
Barke, Bernard A., and A. J. Vasilatos, to Bell & Howell Co. Combined motion picture projector and cover. 214,958, 8-12-69, Cl. D61—1.  
Bartholomew, Robert P., to Steelcase, Inc. Combined hat and coat hook. 214,891, 8-12-69, Cl. D15—8.  
Bateman, Robert F., and J. B. Swett, to Dart Industries Inc. Mold for comestibles or similar article. 214,931, 8-12-69, Cl. D44—1.  
Bell & Howell Co.: See—  
Barke, Bernard A., and Vasilatos. 214,958.  
Berardo, John F. Combined toothbrush holder and timer. 214,926, 8-12-69, Cl. D33—28.  
Biallo, Olga M.: See—  
Biallo, Thomas M., and O. M. 214,877.  
Biallo, Thomas M., and O. M. Container for perfume or the like. 214,877, 8-12-69, Cl. D9—168.  
Bicknell, George W.: See—  
Gulliford, Tom O., and Bicknell. 214,921.  
Gulliford, Tom O., and Bicknell. 214,957.  
Bissell Inc.: See—  
Tompkins, David D. 214,871.  
Bomber Balt Co.: See—  
Turbeville, Clarence S., and Walker. 214,897.  
Turbeville, Clarence S., and Walker. 214,898.  
Bradley, Richard C. Automobile. 214,890, 8-12-69, Cl. D14—3.  
Brefka, Paul E., to Aerospace Research, Inc. Instrument housing or similar article. 214,909, 8-12-69, Cl. D26—5.  
Brefka, Paul E., to M & B Metal Products Co. Garment hanger. 214,967, 8-12-69, Cl. D80—8.  
Briar, Jack E.: See—  
Talge, Henry J., and Briar. 214,976.  
Brief, Philip: See—  
D'Agostino, Vincent F., and Brief. 214,896.  
Bright, John K., to Lawry's Foods, Inc. Bottle. 214,876, 8-12-69, Cl. D6—137.  
Brown, Thomas E.: See—  
Swett, James B., and Brown. 214,933.  
Cashman, Arthur C. Drawer for a shoe chest. 214,920, 8-12-69, Cl. D39—5.  
Chandler, Wesley M., and B. T. Juba, to Wilbert, Inc. Cremation urn. 214,894, 8-12-69, Cl. D19—1.  
Channell, William H. Grade level housing for telephone, television, signal and electric power cables. 214,910, 8-12-69, Cl. D26—5.  
Chapin, Roger F., Jr., to Westinghouse Electric Corp. Dehumidifier. 214,904, 8-12-69, Cl. D23—146.  
Cities Service Oil Co.: See—  
Freed, Leonard N. 214,946.  
Colgate-Palmolive Co.: See—  
Koenigsberg, Victor. 214,873.  
Continental Can Co., Inc.: See—  
Stec, Frederick J. 214,880.  
Crandell, Melvin G.: See—  
Anderson, Stephen R., Crandell, and Pease. 214,959.  
Crawford, Ralph W., to Fisher-Price Toys Inc. Toy camera. 214,929, 8-12-69, Cl. D34—15.  
D'Agostino, Vincent F., and P. Brief, to RAI Research Corp. Gunnery target. 214,896, 8-12-69, Cl. D22—15.  
Dalpiaz, David R.: See—  
Vesely, Donald V., and Dalpiaz. 214,944.  
Vesely, Donald V., and Dalpiaz. 214,945.  
Dart Industries, Inc.: See—  
Bateman, Robert F., and Swett. 214,931.  
Swett, James B., and Ashton. 214,928.  
Swett, James B., and Brown. 214,933.  
Day, Kerry A.: See—  
Koch, Walter L., and Day. 214,948.  
Dockstader, Tod A. Device for creating light patterns. 214,940, 8-12-69, Cl. D48—20.  
Donovan, James P., to General Equipment and Mfg. Co., Inc. Electronic counter indicator panel. 214,908, 8-12-69, Cl. D26—5.  
Duern, Gordon L., to Electrohome Ltd. Combined radio, phonograph and speaker unit. 214,954, 8-12-69, Cl. D56—4.  
Duern, Gordon L., to Electrohome Ltd. Radio receiver cabinet or similar article. 214,955, 8-12-69, Cl. D56—4.  
Duern, Gordon L., and M. N. Baldwin, to Electrohome Ltd. Loudspeaker enclosure. 214,912, 8-12-69, Cl. D26—14.  
Electrohome Ltd.: See—  
Duern, Gordon L. 214,954.  
Duern, Gordon L. 214,955.  
Duern, Gordon L., and Baldwin. 214,912.  
Fedtro, Inc.: See—  
Kahn, Robert D. 214,914.  
Ota, Hajime. 214,942.  
Field, Allen I., and S. P. Display hanger for hosiery. 214,968, 8-12-69, Cl. D80—8.



## LIST OF DESIGN PATENTEES

- Field, Sidney P.: See—  
Field, Allen I. and S. P. 214,968.
- Fisher-Price Toys Inc.: See—  
Crawford, Ralph W. 214,929.
- Freed, Leonard N., to Cities Service Oil Co. Combination gasoline pump dispenser and product storage unit. 214,946, 8-12-69, Cl. D52-2.
- Gaarder, Gilbert W.: See—  
Kincaid, Gary L., and Gaarder. 214,930.
- Gardinkel, Jack, to Swingline Inc. Carton closing machine or similar article. 214,860, 8-12-69, Cl. D8-49.
- General Electric Co.: See—  
Pettengill, Myron F. 214,938.
- General Equipment and Mfg. Co., Inc.: See—  
Donovan, James P. 214,908.
- Goodall, Jack A., to Venetian International, Inc. Bathtub. 214,902, 8-12-69, Cl. D23-53.
- Gothling, Gilbert A., to Ikor, Inc. Enclosure for variable-speed electronic pump drive. 214,960, 8-12-69, Cl. D65-1.
- Grawolig, Earl W.: See—  
Munson, Austin H., Grawolig, and Martin. 214,905.
- Gray Mfg. Co., Inc.: See—  
Kincaid, Gary L., and Gaarder. 214,930.
- Greenberg's, M. Sons, Inc.: See—  
Page, Edward. 214,899.  
Page, Edward. 214,900.  
Page, Edward. 214,901.
- Greenfield, Gary R., to Groomaid International, Ltd. Toothbrush. 214,864, 8-12-69, Cl. D4-18.
- Groomaid International, Ltd.: See—  
Greenfield, Gary R. 214,864.
- Grove Mfg. Co.: See—  
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- Guardian Light Co.: See—  
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Vesely, Donald V., and Dalplaz. 214,945.
- Gulliford, Tom O., and G. W. Bicknell, to The Worden Co. Carrel. 214,921, 8-12-69, Cl. D83-7.
- Gulliford, Tom O., and G. W. Bicknell, to The Worden Co. Viewer. 214,957, 8-12-69, Cl. D61-1.
- Hamilton, Fred. Extension to a bow sight. 214,895, 8-12-69, Cl. D22-5.
- Hazard, Robert E., to Polytop Corp. Dispensing closure. 214,882, 8-12-69, Cl. D9-275.
- Hazard, Robert E., to Polytop Corp. Dispensing closure. 214,883, 8-12-69, Cl. D9-275.
- Hazard, Robert E., to Polytop Corp. Dispensing closure. 214,884, 8-12-69, Cl. D9-279.
- Hill, Loran R., to American Machine & Foundry Co. Rocking toy for children. 214,927, 8-12-69, Cl. D34-5.
- Hilzen, Hy. Flood lamp. 214,941, 8-12-69, Cl. D48-20.
- Hocher, Albert D. Birdhouse. 214,915, 8-12-69, Cl. D30-3.
- Holmes, Frank A., and L. McCain, to Ajax Hardware Mfg. Corp. Knob. 214,867, 8-12-69, Cl. D8-145.
- Holmes, Frank A., and L. McCain, to Ajax Hardware Mfg. Corp. Drawer pull. 214,868, 8-12-69, Cl. D8-159.
- Holmes, Frank A., and L. McCain, to Ajax Hardware Mfg. Corp. Pendant-type drawer pull. 214,869, 8-12-69, Cl. D8-169.
- Honeywell Inc.: See—  
Monson, Wallace A. 214,952.
- Huck, Charles M., to Ortho Pharmaceutical Corp. Medical diagnostic test kit or similar article. 214,970, 8-12-69, Cl. D83-1.
- Huck, Charles M., to Ortho Pharmaceutical Corp. Medical diagnostic test kit or similar article. 214,971, 8-12-69, Cl. D83-1.
- Ikor, Inc.: See—  
Gothling, Gilbert A. 214,960.
- Inch, William C.: See—  
Roccaforte, Harry I., Jordan, and Inch. 214,879.
- International Business Machines Corp.: See—  
Merino, Alfonso W. 214,907.
- Jacob, Oscar. Decanter or similar article. 214,872, 8-12-69, Cl. D9-73.
- Jones, Richard F., to Agonic Engineering, Inc. Diver's helmet. 214,862, 8-12-69, Cl. D2-232.
- Jordan, Elvise M.: See—  
Roccaforte, Harry I., Jordan, and Inch. 214,879.
- Juba, Bernard T.: See—  
Chandler, Wesley M., and Juba. 214,894.
- Kahn, Robert D., to Fedtro, Inc. Auxiliary battery charger. 214,914, 8-12-69, Cl. D26-15.
- Kahn, Robert D. Flashing signal unit. 214,964, 8-12-69, Cl. D72-1.
- Karen, Thomas, to Raleigh Industries Ltd. Cycle saddle. 214,980, 8-12-69, Cl. D90-16.
- Katerndahl, Dean R., to Abbott Laboratories. Inhaler. 214,972, 8-12-69, Cl. D83-1.
- Katona, William F., to Monogram Industries, Inc. Public portable sanitation building. 214,886, 8-12-69, Cl. D13-1.
- Kennedy, Robert W., to Westinghouse Electric Corp. Automatic ice cube maker. 214,963, 8-12-69, Cl. D67-3.
- Kincaid, Gary L., and G. W. Gaarder, to Gray Mfg. Co., Inc. Vehicle lift. 214,930, 8-12-69, Cl. D41-1.
- Klara, Stanley. Combined bed, chest of drawers and diaper changing support. 214,863, 8-12-69, Cl. D5-5.
- Koch, Walter L., and K. A. Day, to Rowe International, Inc. Coin insertion slot. 214,948, 8-12-69, Cl. D52-3.
- Koenigsberg, Victor, to Colgate-Palmolive Co. Bottle or similar article. 214,873, 8-12-69, Cl. D9-83.
- Krueger Metal Products, Inc.: See—  
Schier, Robert W., and Odar. 214,923.  
Schier, Robert W., and Odar. 214,924.  
Schier, Robert W., and Singer. 214,922.
- Lawry's Foods, Inc.: See—  
Bright, John K. 214,876.
- Lebedeff, Leon V. Lipstick display tray. 214,969, 8-12-69, Cl. D80-9.
- Leclabart, Jean, to Societe Anonyme Perma. Apparatus for heating sleeves for permanent waves. 214,903, 8-12-69, Cl. D23-77.
- Levin, Monte L., to Aquariums Inc. Aquarium air pump. 214,961, 8-12-69, Cl. D65-1.
- Levin, Monte L., to Aquariums Inc. Aquarium air pump. 214,962, 8-12-69, Cl. D65-1.
- Linn, James L., Jr., to Owens-Illinois, Inc. Bottle. 214,960, 8-12-69, Cl. D9-112.
- Lovitz, David D., to Sterneo Industries, Inc. Fish breeding tank. 214,916, 8-12-69, Cl. D30-9.
- Lovitz, David D., to Sterneo Industries, Inc. Aquarium breeder tank with hanger means. 214,917, 8-12-69, Cl. D30-12.
- M & B Metal Products Co.: See—  
Brekke, Oliver R. 214,967.
- Maatschappij van Berkel's Patent N.V.: See—  
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- Malone, James E. Glass door locking bar. 214,870, 8-12-69, Cl. D8-203.
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ISSUED AUGUST 12, 1969

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3,461,003	3,460,570	3,461,326	3,460,952	3,460,925	3,460,925
3,461,452	3,460,575	3,461,338	3,461,038	3,460,970	3,460,970
RE:26,643	3,460,580	3,461,349	3,461,048	3,460,973	3,460,973
3,460,166	3,460,596	3,461,365	3,461,202	3,460,979	3,460,979
3,460,167	3,460,615	3,461,371	3,461,224	3,460,981	3,460,981
3,460,178	3,460,627	3,461,376	3,461,235	3,460,989	3,460,989
3,460,183	3,460,630	3,461,381	3,461,275	3,460,992	3,460,992
3,460,224	3,460,632	3,461,386	3,461,277	3,460,998	3,460,998
3,460,229	3,460,633	3,461,392	3,461,344	3,460,999	3,460,999
3,460,230	3,460,634	3,461,393	3,461,428	3,460,999	3,460,999
3,460,232	3,460,668	3,461,396	3,461,401	3,460,999	3,460,999
3,460,255	3,460,683	3,461,401	3,461,416	3,460,999	3,460,999
3,460,256	3,460,694	3,461,407	3,461,423	3,460,999	3,460,999
3,460,260	3,460,707	3,461,426	3,461,426	3,460,999	3,460,999
3,460,276	3,460,708	3,461,431	3,461,426	3,460,999	3,460,999
3,460,290	3,460,726	3,461,431	3,461,426	3,460,999	3,460,999
3,460,293	3,460,728	3,461,431	3,461,426	3,460,999	3,460,999
3,460,300	3,460,745	7 : 3,461,232	3,461,129	3,460,999	3,460,999
3,460,305	3,460,749	8 : 3,460,247	3,461,136	3,460,999	3,460,999
3,460,316	3,460,762	3,460,622	3,461,172	3,460,999	3,460,999
3,460,318	3,460,780	3,460,808	3,461,173	3,460,999	3,460,999
3,460,323	3,460,788	3,460,867	3,461,261	3,460,999	3,460,999
3,460,326	3,460,791	3,460,917	3,460,979	3,460,999	3,460,999
3,460,327	3,460,792	3,460,990	3,460,995	3,460,999	3,460,999
3,460,344	3,460,793	3,460,993	3,461,112	3,460,999	3,460,999
3,460,363	3,460,798	3,461,006	3,461,290	3,460,999	3,460,999
3,460,372	3,460,837	9 : 3,460,195	3,461,437	3,460,999	3,460,999
3,460,377	3,460,850	3,460,206	3,460,307	3,460,999	3,460,999
3,460,382	3,460,857	3,460,209	3,460,328	3,460,999	3,460,999
3,460,410	3,460,860	3,460,218	3,460,330	3,460,999	3,460,999
3,460,428	3,460,880	3,460,286	3,460,383	3,460,999	3,460,999
3,460,429	3,460,881	3,460,289	3,460,502	3,460,999	3,460,999
3,460,469	3,460,904	3,460,354	3,460,537	3,460,999	3,460,999
3,460,477	3,460,920	3,460,503	3,460,560	3,460,999	3,460,999
3,460,482	3,460,954	3,460,509	3,460,778	3,460,999	3,460,999
3,460,486	3,461,034	3,460,572	3,460,812	3,460,999	3,460,999
3,460,488	3,461,073	3,460,670	3,460,929	3,460,999	3,460,999
3,460,492	3,461,074	3,460,711	3,461,053	3,460,999	3,460,999
3,460,500	3,461,118	3,460,714	3,461,377	3,460,999	3,460,999
3,460,507	3,461,135	3,460,719	3,460,701	3,460,999	3,460,999
3,460,514	3,461,157	3,460,729	3,460,724	3,460,999	3,460,999
3,460,515	3,461,214	3,460,742	3,460,755	3,460,999	3,460,999
3,460,529	3,461,229	3,460,832	3,460,848	3,460,999	3,460,999
	3,461,230	3,460,849	3,460,882	3,460,999	3,460,999

XLII

## GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

XLIII

18 : 3,460,525	25 : 3,460,961	29 : 3,460,702	36 : 3,460,298	39 : 3,460,413	42 : 3,460,872
3,460,551	3,460,971	3,460,716	3,460,349	3,460,437	3,460,902
3,460,565	3,460,976	3,460,717	3,460,366	3,460,438	3,460,905
3,460,628	3,461,008	3,460,766	3,460,375	3,460,443	3,460,919
3,460,651	3,461,031	3,460,833	3,460,449	3,460,460	3,460,921
3,460,653	3,461,044	3,460,846	3,460,458	3,460,465	3,460,922
3,460,703	3,461,187	3,461,029	3,460,463	3,460,466	3,460,925
3,460,706	3,461,188	3,461,133	3,460,476	3,460,472	3,460,934
3,460,754	3,461,263	3,461,283	3,460,508	3,460,473	3,460,935
3,460,770	3,461,272	3,461,289	3,460,512	3,460,531	3,460,939
3,460,838	3,461,291	3,461,414	3,460,526	3,460,566	3,460,956
3,460,842	3,461,301	3,460,259	3,460,559	3,460,567	3,460,966
3,461,036	3,461,324	3,460,541	3,460,573	3,460,571	3,460,986
3,461,178	3,461,363	3,460,761	3,460,601	3,460,602	3,460,999
3,461,225	3,461,374	3,461,009	3,460,611	3,460,610	3,461,007
3,461,231	3,461,397	3,460,556	3,460,612	3,460,640	3,461,051
3,461,233	3,461,436	3,461,025	3,460,666	3,460,654	3,461,064
3,461,234	3,461,443	3,461,395	3,460,674	3,460,669	3,461,089
3,461,254	3,461,446	RE:26,642	3,460,679	3,460,671	3,461,108
3,461,322	3,460,190	3,460,164	3,460,685	3,460,684	3,461,122
3,460,194	3,460,216	3,460,192	3,460,696	3,460,693	3,461,123
3,460,332	3,460,225	3,460,211	3,460,741	3,460,748	3,461,139
3,460,399	3,460,236	3,460,241	3,460,744	3,460,759	3,461,163
3,460,426	3,460,292	3,460,252	3,460,785	3,460,790	3,461,168
3,460,918	3,460,297	3,460,254	3,460,789	3,460,796	3,461,175
3,461,421	3,460,421	3,460,311	3,460,800	3,460,797	3,461,184
20 : 3,460,185	3,460,431	3,460,319	3,460,824	3,460,801	3,461,190
3,460,264	3,460,468	3,460,355	3,460,825	3,460,804	3,461,194
3,460,411	3,460,480	3,460,356	3,460,836	3,460,818	3,461,196
3,460,631	3,460,510	3,460,389	3,460,883	3,460,863	3,461,198
3,460,705	3,460,517	3,460,390	3,460,884	3,460,878	3,461,208
3,460,835	3,460,522	3,460,427	3,460,892	3,460,923	3,461,248
3,461,186	3,460,546	3,460,432	3,460,894	3,460,926	3,461,252
3,461,284	3,460,568	3,460,495	3,460,912	3,460,927	3,461,280
3,461,459	3,460,569	3,460,538	3,460,933	3,460,932	3,461,311
3,460,285	3,460,577	3,460,547	3,460,943	3,460,937	3,461,314
3,460,598	3,460,598	3,460,581	3,460,953	3,460,960	3,461,319
3,460,576	3,460,676	3,460,591	3,460,964	3,460,967	3,461,342
3,460,677	3,460,682	3,460,604	3,460,968	3,460,969	3,461,348
3,460,738	3,460,709	3,460,605	3,460,974	3,460,972	3,461,380
3,460,819	3,460,720	3,460,659	3,460,988	3,460,980	3,461,411
3,460,853	3,460,727	3,460,664	3,460,997	3,460,997	3,461,432
3,460,864	3,460,760	3,460,665	3,461,005	3,461,000	44 : 3,460,182
3,461,222	3,460,768	3,460,686	3,461,035	3,461,003	3,460,287
3,461,430	3,460,813	3,460,757	3,461,060	3,461,023	3,460,540
3,460,283	3,460,815	3,460,823	3,461,091	3,461,024	3,461,417
3,460,288	3,460,822	3,460,839	3,461,120	3,461,078	3,461,410
3,460,394	3,460,834	3,460,843	3,461,137	3,461,090	45 : 3,460,660
3,460,594	3,460,847	3,460,852	3,461,218	3,461,092	3,461,047
3,460,866	3,460,859	3,460,856	3,461,223	3,461,104	3,461,065
3,461,089	3,460,865	3,460,873	3,461,227	3,461,107	3,461,105
3,461,041	3,460,874	3,460,888	3,461,228	3,461,150	3,461,166
3,460,422	3,460,876	3,460,901	3,461,228	3,461,150	3,461,199
3,460,595	3,460,877	3,460,930	3,461,246	3,461,250	3,461,244
3,460,317	3,460,897	3,460,944	3,461,259	3,461,259	3,461,255
3,460,373	3,460,965	3,460,948	3,461,260	3,461,260	47 : 3,460,592
3,460,381	3,460,975	3,460,975	3,461,306	3,461,270	3,460,641
3,460,397	3,460,981	3,460,970	3,461,310	3,461,276	3,460,731
3,460,462	3,460,991	3,460,978	3,461,312	3,461,370	3,460,774
3,460,574	3,461,002	3,460,982	3,461,317	3,461,373	3,460,896
3,460,589	3,461,020	3,460,996	3,461,329	3,461,391	3,460,909
3,460,592	3,461,059	3,461,010	3,461,332	3,461,455	3,461,076
3,460,688	3,461,095	3,461,016	3,461,333	3,461,466	3,461,159
3,460,781	3,461,165	3,461,046	3,461,351	3,461,501	3,461,302
3,460,827	3,461,185	3,461,052	3,461,357	3,461,620	3,461,364
3,460,885	3,461,207	3,461,054	3,461,360	3,461,621	3,461,364
3,460,951	3,461,256	3,461,058	3,461,388	3,461,623	48 : 3,460,180
3,461,062	3,461,267	3,461,070	3,461,389	3,461,648	3,460,376
3,461,093	3,461,293	3,461,075	3,461,390	3,460,803	3,460,440
3,461,144	3,461,296	3,461,098	3,461,410	3,461,049	3,460,534
3,461,170	3,461,346	3,461,117	3,461,422	3,461,050	3,



# GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

51 : 3,460,776	51 : 3,461,258	53 : 3,460,899	54 : 3,460,957	55 : 3,460,494	55 : 3,461,011
3,460,784	52 : 3,460,862	3,461,028	3,461,424	3,460,536	3,461,419
3,460,891	53 : 3,460,746	3,461,286	3,460,175	3,460,690	3,461,425
3,461,193	3,460,747	54 : 3,460,721	3,460,475	3,460,739	

## Design Patents

1 : 214,967	6 : 214,949	17 : 214,956	29 : 214,950	36 : 214,914	42 : 214,889
6 : 214,862	214,958	214,972	214,976	214,918	214,892
214,867	214,973	18 : 214,915	214,865	214,929	214,882
214,868	214,974	21 : 214,908	214,907	214,941	214,883
214,869	214,975	25 : 214,909	214,916	214,959	214,884
214,872	9 : 214,940	214,911	214,917	214,961	214,928
214,876	11 : 214,920	214,919	214,943	214,962	214,931
214,886	12 : 214,890	214,925	214,946	214,964	214,933
214,893	214,913	214,960	214,948	214,968	45 : 214,875
214,895	17 : 214,879	26 : 214,891	214,951	37 : 214,938	47 : 214,863
214,899	214,880	214,921	214,970	39 : 214,871	48 : 214,870
214,900	214,905	214,957	214,971	214,904	214,897
214,901	214,922	214,978	214,864	214,963	214,898
214,910	214,923	27 : 214,881	214,866	214,965	214,902
214,926	214,924	214,894	214,873	214,966	50 : 214,887
214,932	214,927	214,952	214,874	214,979	53 : 214,969
214,939	214,944	29 : 214,930	214,877	41 : 214,906	214,981
214,947	214,945	214,934	214,896	42 : 214,861	55 : 214,885

## Plant Patents

34 : 2,917	47 : 2,916				
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TRADEMARKS  
NOTICES

Service by Publication

A petition to cancel each of the registrations identified below having been filed, and the notice of such proceedings sent by registered mail to each registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrants listed herein, their assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancellation will be proceeded with as in the case of default.

Maximilian C. Meyer, d.b.a. PM Game Company, New York, N.Y., Reg. No. 511,741, Canc. No. 9340.  
Frigie Corporation of America, Chicago, Ill., Reg. No. 298,781, Canc. No. 9357.  
Gemex Precision Metals, Inc., assignee, by mesne assignment, of Gemex Company, Union, N.J., Reg. No. 627,815, Canc. No. 9369.  
Simplex Typewriter Co., Inc., New York, N.Y., Reg. No. 288,294, Canc. No. 9371.  
The Wilcox-Gay Corporation, assignee of Garod Electronics Corporation, Charlotte, Mich., Reg. No. 534,760, Canc. No. 9374.

EDWIN L. REYNOLDS,  
First Assistant Commissioner of Patents.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 201,604. (See Reg. No. 201,708.)  
Reg. No. 201,708 (CROWN AND SHIELD DESIGN), General Motors Corporation, Automobiles; Reg. No. 783,126

(CREST AND WREATH DESIGN), Same; Reg. No. 658,918 (DESIGN OF EMBLEM), same, Maintenance and repair service for automotive vehicles, parts, and accessories; Reg. No. 201,694 (CADILLAC), same, Automobiles; Reg. No. 647,241, same, Maintenance and repair service for automotive vehicles, parts, and accessories; Reg. No. 627,311 (STANDARD OF THE WORLD), same, Automobile parts—namely, internal combustion engines and parts thereof—namely, camshafts, chains, connecting rods, crankcases, crankshafts, crankshaft bearings, cylinder blocks, cylinder heads, driving axle shafts, exhaust pipes, flywheels, fuel pipes, manifolds, mufflers, oil pans, pistons, piston pins, piston rings, valves, valve tappets and valve springs; carburetors and parts thereof; clutches and parts thereof—namely, bearings, bushings, housings, hubs, operating levers, operating yokes, pedals, plates, and springs; fans and parts thereof; fuel pumps and parts thereof; steering mechanisms and parts thereof—namely, arms, cylinders, housings, links, pistons, pulleys, pumps, plates, wheels, and valves; transmissions and parts thereof—namely, housings, gears, gearshifts, gearshift levers and shafts; water pumps and parts thereof; Reg. No. 627,265, same, Automobile brakes and parts thereof—namely, cables, drums, cylinders, levers, pedals, pipes, plates, shoes, springs and rods; and structural parts for automobiles—namely, bumpers, doors, fenders, frames, fuel tanks, gravel deflectors, hoods, instrument panels, moldings, panels, plates, shock absorbers, springs, stone guards, running boards, wheels, wheel discs, windshield washers, windshield wipers, and parts thereof;

CONDITION OF TRADEMARK APPLICATIONS AS OF JUNE 30, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)] ..... 13,377  
Date of oldest new application ..... August 7, 1968  
Date of oldest amended application (filing date) ..... November 13, 1964

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B.....	1-29-60	11-13-64
(II) F. H. WETTERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200.....	10-17-68	2-28-66
(III) P. S. BALL, Classes 19, 21, 23, 25, 31, 34, 35, 36.....	12-17-68	2-21-66
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107.....	8-7-68	11-27-64
Renewals (All Classes).....	5-5-60	.....
Sec. 12(c) Publications (All Classes).....	5-12-60	.....

Applications filed during the month of June 1969—2,872

Registrations Issued ..... 427—No. 874,498 to No. 874,924  
Renewals Issued ..... 120

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, \$20.50 per annum, foreign mailing \$5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.



# MARKS PUBLISHED FOR OPPOSITION

## SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.103.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 257,584; Buchanan Hearing Aid Co., Inc., d.b.a. Panophonic Hearing Devices, Washington, D.C. Filed Oct. 31, 1966.

### PANOPHONIC

**Class 100—Miscellaneous**

For Fitting and Testing of Hearing Aids (Int. Cl. 42).

**Class 103—Construction and Repair**

**Class 26—Measuring and Scientific Appliances**

For Frequency Meters; Electronic Revolution Counters; Counting Elements for Digital Systems; Electronic or Integrating Chronographs; Logical Simulators for Automatically Verifying the Logical Function of an Industrial Control System; Quartz Oscillators With Thermostats, Totalisator Chronographs; Transformers of Mean Time Into Sidereal Time (Int. Cl. 9).

**Class 27—Horological Instruments**



front wheel suspension mechanisms and parts thereof—namely, arms, axles, bushings, pins, shafts, steering knuckles, tie rods, and yokes, filed June 3, 1969, D.C. Ariz. (Phoenix), Doc. C-69-235 Phx., *General Motors Corporation v. Dan Leonard et al., doing business as Cadillac Garage and Jupiter Auto Repair.*

Reg. No. 527,589 (GRAND OLE OPRY), WSM Incorporated, Radio program broadcasting services; for entertainment services through the medium of radio and personal appearance performances of dramatic, musical, and dramatico-musical programs; and for the advertising of sponsors' goods through the medium of radio broadcast programs; Reg. No. 645,898, same, The title of entertainment services in the nature of dramatic, dramatico-musical programs and/or musical programs performed through the medium of television and personal appearances, filed Nov. 29, 1968, D.C., M.D. Tenn. (Nashville), Doc. 5228, WSM, Inc. v. Donald Bailey and Jay Rainwater, etc. Consent judgment, plaintiff owner of Reg. No. 527,589 and 645,898; defendants permanently enjoined, June 5, 1969.

Reg. No. 537,992 (KING GEORGE IV), The Distillers Agency Limited, Whisky, filed June 4, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1187, *The Distillers Agency Limited v. Avondale Liquor Store, Inc., doing business as Avondale Self-Service Liquors.*

Reg. No. 618,932 (PORSCHE STUTTGART AND DESIGN), Dr. Ing. h.c. F. Porsche K.G., Automobiles and parts thereof; Reg. No. 618,933 (PORSCHE), same, filed Feb. 14, 1967, D.C., S.D.N.Y., Doc. 87-C-627, Dr. Ing. h.c. F. Porsche, K.G. v. Larry Bronson et al. Action dismissed for lack of prosecution with prejudice, June 3, 1969.

Reg. No. 618,933. (See Reg. No. 618,932.)

Reg. No. 627,265. (See Reg. No. 201,708.)

Reg. No. 627,311. (See Reg. No. 201,708.)

Reg. No. 647,241. (See Reg. No. 201,708.)

Reg. No. 645,898. (See Reg. No. 527,589.)

Reg. No. 647,241. (See Reg. No. 201,708.)

Reg. No. 658,918. (See Reg. No. 783,126.)

Reg. No. 660,274. (See Reg. No. 660,275.)

Reg. No. 660,275 (BLOK-LOK), AA Wire Products Company, Masonry reinforcing wall bonds; Reg. No. 660,926 (PARTITION-LOK), same; Reg. No. 661,269 (CORNER-LOK), same; Reg. No. 798,718 (AA-LOK), same, Wire masonry wall

reinforcements; Reg. No. 660,274 (ECONO-LOK), same, Masonry reinforcing wall bonds; Reg. No. 660,276 (ECONO-CAVITY-LOK), same; Reg. No. 660,277 (CAVITY-LOK), same, filed May 27, 1969, D.C., S.D. Tex. (Houston), Doc. 69-H-475, AA Wire Products Company and Blok Lok of Texas, Corporations v. Mustang Metals, Inc.

Reg. No. 660,276. (See Reg. No. 660,275.)

Reg. No. 660,277. (See Reg. No. 660,275.)

Reg. No. 660,926. (See Reg. No. 660,275.)

Reg. No. 661,269. (See Reg. No. 660,275.)

Reg. No. 699,025 (DATAMATION), F. D. Thompson Publications, Inc., Publication issued periodically, filed June 2, 1969, D.C., S.D.N.Y., Doc. 69-C-2353, F. D. Thompson Publications, Inc. v. Datamation Services Inc.

Reg. No. 783,126. (See Reg. No. 201,708.)

Reg. No. 798,718. (See Reg. No. 660,275.)

Reg. No. 816,922 (FOOSBALL), Patterson International, Inc., Coin-operated table soccer machines, filed June 4, 1969, D.C.N.J. (Newark), Doc. C-634-69, Patterson International Corporation v. Myron Sugarman International, Inc. et al.

Reg. No. 820,466 (NINE FLAGS), The Gillette Company, Shaving cologne; Reg. No. 844,968, same, Razors and razor blades, (Class 23); Shaving cream, hair groom and deodorant for personal use (Class 51); Toilet soap (Class 52), filed Jan. 23, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69-143-FW, The Gillette Company, The Colton Company v. Harry D. Shapiro et al. Judgment, plaintiff is owner of trademark, defendants permanently enjoined, May 27, 1969.

Reg. No. 844,514 (CHICAGO PUMP), FMC Corporation, Sewage and waste treatment equipment, filed May 8, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c996, FMC Corporation v. Joseph Wooding, doing business as Chicago Pump Repair Service.

Reg. No. 844,968. (See Reg. No. 820,466.)

Reg. No. 862,543 (TOWN AND COUNTRY DANCE CLUB AND DESIGN), Stephen Bernat, Dance instruction, filed May 28, 1969, D.C., N.D. Okla. (Tulsa), Doc. 69-C-109, Stephen Bernat v. Jack Klein, doing business as Town and Country Dance Studio and Club.

Reg. No. 865,470 (SHAPE-UP), Caryl Richards, Inc., Permanent hair styling base lotion, filed May 26, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69-1017-JWC, Rayette-Faberge, Inc., etc., Caryl Richards, Inc. v. Baxter of California.

## MARKS PUBLISHED FOR OPPOSITION

### SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 760. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105. A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 257,584. Buchanan Hearing Aid Co., Inc., d.b.a. Panophonic Hearing Devices, Washington, D.C. Filed Oct. 31, 1966.

### PANOPHONIC

#### Class 100—Miscellaneous

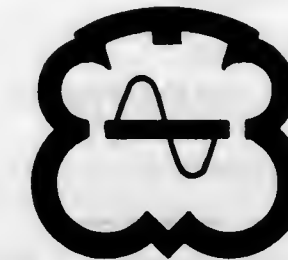
For Fitting and Testing of Hearing Aids (Int. Cl. 42).

#### Class 103—Construction and Repair

For Maintenance and Service of Hearing Aids (Int. Cl. 37).

First use May 1959.

SN 266,183. Ebauches S.A., Neuchatel, Switzerland. Filed Mar. 8, 1967.



The mark comprises or consists of a symbol which includes a portion of the dial of a watch together with a combination of the letters "E" and "B," which are respectively the first and second letters of the name "Ebauches." Without waiving its common law rights therein, applicant disclaims the symbol for the wave of alternating current apart from the mark as shown.

#### Class 21—Electrical Apparatus, Machines, and Supplies

For Quartz Oscillators Without Thermostats; Time Distribution Units—Namely, Apparatus Related to Time Distribution for Use in Factories, Hospitals, Railway Stations, Laboratories and Offices Including One or More Quartz Clocks, Frequency Division Circuitry and Output Amplifiers Delivering Electrical Pulses at Intervals and Actuating, by Means of a Distribution Network, a Number of Slave Clocks Located for Example in the Different Rooms of a Building (Offices, Factories, Hospitals, etc.); Additional Circuitry May Be Included in Order To Give Special Time Signals for Broadcasting Stations, Output Frequencies Used To Drive Synchronous Instruments or Clocks, and Facilities for the Comparison of the Local Time With Respect to Other Time Sources; Time Signal Receivers Including a Radio Receiver of a Special Design, Tuned to Frequencies on Which Time Signals Are Broadcast; The Output May Be to a Loudspeaker, but More Generally May Be an Electric Pulse To Actuate a Relay Contact; This Instrument is for the Calibration of the Local Time (Quartz Clock, Atomic Clock, etc.) With Respect to Standard Time Given by Broadcasting Stations; Proximity Detectors for Detecting the Presence of a Metal Part Without Contact by Variation of the Magnetic Properties of a Captor or Sensing Coil; Piezoelectric Quartz; Photoelectric Detectors or Sensors Including a Light Source and a Photoelectric Cell Picking up a Beam Transmitted or Reflected and Interrupted by the Object To Be Detected; Logical Elements Including Electronic Circuits Performing Logical Operations as Usually Effected by Electromechanical Relays and Used for the Electronic Control of Machine Tools and Industrial Processes; Electronic Programmers—Namely, Apparatus for Automatically Controlling Machine Tools by Means of Electronic Timing Circuits Involving a Predetermined Sequence of Operations (Int. Cl. 9).

#### Class 26—Measuring and Scientific Appliances

For Frequency Meters; Electronic Revolution Counters; Counting Elements for Digital Systems; Electronic or Integrating Chronographs; Logical Simulators for Automatically Verifying the Logical Function of an Industrial Control System; Quartz Oscillators With Thermostats, Totalisator Chronographs; Transformers of Mean Time Into Sidereal Time (Int. Cl. 9).

#### Class 27—Horological Instruments

For Horological Instruments Comprising Electronic Time and Frequency Standards—Namely, Atomic and Quartz Clocks, Quartz Chronometers, Portable Quartz Clocks, Electronic Marine Chronometers, Electric and Electronic Desk Clocks, Electric and Electronic Watches (Int. Cl. 14).

First use 1962; in commerce 1963.

SN 269,819. Comptoir de la Parfumerie S.A., Ancienne Maison Tschanz, Geneva, Switzerland. Filed Apr. 24, 1967.

### EVOCATION

Owner of Swiss Reg. No. 186,064, dated May 30, 1961; and U.S. Reg. No. 784,950.

#### Class 51—Cosmetics and Toilet Preparations

For Perfume, Cologne, Toilet Water, Talcum Powder, Bath Oils, Lipstick, Skin Cream, Foundation Cream, Day and Night Cream, Loose Powder and Compact Powder (Int. Cl. 3).

#### Class 52—Detergents and Soaps

For Toilet Soaps (Int. Cl. 3).

SN 276,562. Istituto Internazionale di Arte Liturgica, S.p.A., Rome, Italy. Filed July 21, 1967.



Applicant disclaims the word "Art" apart from the mark as an entirety.

#### Class 12—Construction Materials

For Church Furnishings—Namely, Marble for Wall and Floor Surfaces and Metal Doors (Int. Cls. 6 and 19).

#### Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Church Furnishings—Namely, Metal Gates (Int. Cl. 6).

#### Class 32—Furniture and Upholstery

For Church Furnishings—Namely, Framed Mosaics of Painted Stone or Ceramic Chips (Int. Cl. 20).



**Class 33—Glassware**

For Church Furnishings—Namely, Stained Glass and Faceted Glass (Int. Cl. 21).

**Class 34—Heating, Lighting, and Ventilating Apparatus**

For Church Furnishings—Namely, Metal Candelabra (Int. Cl. 11).

**Class 39—Clothing**

For Church Furnishings—Namely, Vestments (Int. Cl. 25).

**Class 50—Merchandise Not Otherwise Classified**

For Church Furnishings—Namely, Marble and Metal Statues, Decorative Mosaics for Floor, Wall or Ceiling Embellishment of Painted Stone or Ceramic Chips, and Wall Reliefs (Int. Cl. 20).

First use Apr. 1, 1967; in commerce Apr. 1, 1967.

SN 279,343. Master Chemical Corporation, Perrysburg, Ohio. Filed Aug. 30, 1967.

**TRIM**

Owner of Reg. Nos. 601,823 and 767,813.

**Class 6—Chemicals and Chemical Compositions**

For Anti-Foaming Agents for Use in Cutting Fluid Coolants and Chemical Preparations To Inhibit Bacterial Growth for Use in Cutting Fluid Coolants (Int. Cl. 1).

First use Apr. 13, 1954.

**Class 107—Education and Entertainment**

For Conducting Educational Seminars Relating to Metal Cutting and Grinding (Int. Cl. 41).

First use April 1959.

SN 287,611. Laird-Portch Fashions Limited, East Kilbride, Glasgow, Scotland. Filed Mar. 7, 1969.

**Deerstalker**

Owner of British Reg. No. 916,859, dated Nov. 7, 1967.

**Class 39—Clothing**

For (Based on Use in Commerce) Skirts, Scarves, Stockings, Knitted Sweaters, Knitted Pullovers, Knitted Cardigans, Knitted Jumpers, and Knitted Suits (Int. Cl. 25).

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For (Based on British Registration) Textile Piece Goods for Use in the Manufacture of Skirts, Scarves, Knitted Sweaters, Knitted Pullovers, Knitted Cardigans, Knitted Jumpers, and Knitted Suits (Int. Cl. 24).

First use July 1966; in commerce July 1966.

SN 291,226. Minit Burger Corporation, Nashville, Tenn. Filed Feb. 16, 1968.

**MINIT BURGER**

Applicant disclaims the word "Burger" apart from the mark as shown.

**Class 45—Soft Drinks and Carbonated Waters**

For Carbonated Soft Drinks (Int. Cl. 32).

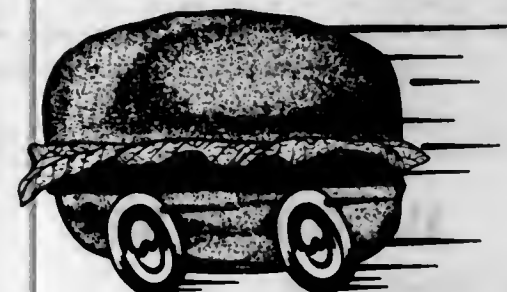
**Class 46—Foods and Ingredients of Foods**

For Cooked Sandwiches, Soups, Milk Shakes, Coffee, Tea, and Milk (Int. Cls. 29 and 30).

**Class 100—Miscellaneous**

For Restaurant and Food Carry-Out Services (Int. Cl. 42).  
First use Mar. 9, 1967.

SN 291,227. Minit Burger Corporation, Nashville, Tenn. Filed Feb. 16, 1968.



Applicant disclaims the representation of a sandwich per se apart from the mark as shown.

**Class 45—Soft Drinks and Carbonated Waters**

For Carbonated Soft Drinks (Int. Cl. 32).

**Class 46—Foods and Ingredients of Foods**

For Cooked Sandwiches, Soups, Milk Shakes, Coffee, Tea, and Milk (Int. Cls. 29 and 30).

**Class 100—Miscellaneous**

For Restaurant and Food Carry-Out Services (Int. Cl. 42).  
First use Mar. 9, 1967.

Subj. to Intf. with SN 285,231.

SN 294,993. DCA Food Industries Inc., New York, N.Y. Filed Apr. 5, 1968.

**DOCO****Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Machines for Processing Doughnuts and Like Baked Goods—Namely, Glazers, Icer-Glazers, and Parts Therefor (Int. Cl. 7).

**Class 34—Heating, Lighting, and Ventilating Apparatus**

For Fryers and Proofer for Processing Doughnuts and Like Bakery Goods (Int. Cl. 11).

First use Jan. 24, 1968.

SN 299,269. Wyo-Ben Products, Inc., Billings, Mont. Filed May 28, 1968.

**Class 1—Raw or Partly Prepared Materials**

For Bentonite and Salt Clay; Barite; Mineral Lignite; Cane Fibers; Flax Straw; Mica; Walnut Shells and Wood Fibers, All for Use in the Compounding and Treatment of Oil-Well Drilling Mud (Int. Cls. 1, 4, 17, 22, and 31).  
First use on or about Mar. 1, 1961.

**Class 6—Chemicals and Chemical Compositions**

For Caustic Soda; Carboxymethylcellulose; Blended Lignosulfonate; and Paraformaldehyde, Thinners and the Like, All for Use in the Compounding and Treatment of Oil-Well Drilling Mud (Int. Cl. 1).

First use on or about Dec. 1, 1962.

SN 301,116. Allied Farm Equipment, Inc., Chicago, Ill. Filed June 24, 1968.



Owner of Reg. No. 844,429.

**Class 19—Vehicles**

For Farm Wagons and Snowmobiles, and Parts for Each (Int. Cl. 12).

First use about June 12, 1968.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Harrows, Cultivators, Grain Augers, Bale Lifting Forks, Bale Conveyors and Loaders, Bale Stokers, Field Sprayers, Feed Mill Mixers, and Parts for Each (Int. Cl. 7).

First use on or about Mar. 20, 1968.

SN 301,120. Aktiebolaget Scania-Vabis, Sodertalje, Sweden. Filed June 24, 1968.

**SCANIA**

Owner of Swedish Reg. No. 69,517, dated Feb. 23, 1951; and U.S. Reg. Nos. 683,995, 688,722, and others.

**Class 19—Vehicles**

For Motor Vehicles, in Particular Buses and Trucks (Int. Cl. 12).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Internal Combustion Engines and Parts Thereof for Buses, Trucks, and Boats (Int. Cls. 7 and 12).

SN 302,883. Elcor Chemical Corporation, Midland, Tex. Filed July 17, 1968.

**Class 100—Miscellaneous**

For Design and Engineering Services Relating to Construction of Plants and Equipment for the Processing of Natural Gas, Petrochemicals, Chemicals, Petroleum Refining, Ore Beneficiation, and Agricultural Chemicals (Int. Cl. 42).

**Class 103—Construction and Repair**

For Construction of Plants and Equipment for the Processing of Natural Gas, Petrochemicals, Chemicals, Petroleum Refining, Ore Beneficiation, and Agricultural Chemicals (Int. Cl. 37).

First use June 1964.

SN 303,217. Bernard Associates, Incorporated, Menlo Park, Calif. Filed July 22, 1968.

**Deko-Craft****Class 1—Raw or Partly Prepared Materials**

For Wood Peel, Split Bamboo, Rayon Straw, and Polypropylene Straw (Int. Cl. 20).

**Class 12—Construction Materials**

For Wood Grain Laminate (Int. Cl. 19).

**Class 37—Paper and Stationery**

For Crepe Velour Paper, Flower Crepe Paper, Decoupage Dye-Cut Patterned Paper, and Metallized Plastic Film for Wrapping (Int. Cl. 16).

**Class 40—Fancy Goods, Furnishings, and Notions**

For Pressure Sensitive Braid, Small, Flat Back Jibble Eyes, Straight Pins for Use in Securing Corsages and Metallic Braid (Int. Cl. 26).

First use Jan. 28, 1968.

SN 303,896. C. R. Daniels, Inc., Daniels, Md. Filed July 30, 1968.



The lining on the drawing is not indicate color. Owner of Reg. No. 548,115.

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For Vinyl Laminated Nylon Fabric, in Rolls; Vinyl Coated Nylon Fabric, in Rolls (Int. Cl. 24).

**Class 50—Merchandise Not Otherwise Classified**

For Tarpaulins and Salving Covers Made From Either of the Above Products (Int. Cl. 22).

First use Nov. 1, 1964; June 15, 1950, as to "Dantex."

SN 308,838. Gem, Incorporated, Byhalia, Miss. Filed Oct. 4, 1968.

**COTTON MAID**

Applicant disclaims the word "Cotton" apart from the mark as shown. Owner of Reg. No. 607,160.

**Class 24—Laundry Appliances and Machines**

For Ironing Board Covers (Int. Cl. 21).

**Class 29—Brooms, Brushes, and Dusters**

For Mops (Int. Cl. 21).

First use Oct. 1, 1968.

SN 309,711. Clairol Incorporated, New York, N.Y. Filed Oct. 16, 1968.

**LAUGHING WATERS****Class 51—Cosmetics and Toilet Preparations**

For Bath Powder, Bath Oil, Friction Lotion, Bubble Bath, and Bath Crystals (Int. Cl. 3).

**Class 52—Detergents and Soaps**

For Toilet Soap (Int. Cl. 3).

First use Oct. 8, 1968.

SN 310,174. Avon Products, Inc., New York, N.Y. Filed Oct. 22, 1968.

**MOONWIND**



**Class 51—Cosmetics and Toilet Preparations**

For Cologne, Dusting Powder, and Perfume (Int. Cl. 3).

**Class 52—Detergents and Soaps**

For Toilet Soap (Int. Cl. 3).

First use Sept. 26, 1968.

SN 312,946. Joe Grudza, d.b.a. Ldl Pro Enterprises, Topeka, Kans. Filed Nov. 25, 1968.

**SECTION 2**

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.  
A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

**Class 1—Raw or Partly Prepared Materials**

SN 289,258. Apex Coated Fabrics Co., Inc., New York, N.Y. Filed Jan. 22, 1968.



The words "Coated Fabrics" are disclaimed apart from the mark as shown.  
For Enamelled Cloth and Artificial Leather (Int. Cl. 18).  
First use Jan. 1, 1926.

SN 295,198. The Upjohn Company, Kalamazoo, Mich. Filed Apr. 8, 1968.

**CASTETHANE**For Castable Urethane Elastomers (Int. Cl. 1).  
First use Mar. 19, 1968.**Class 2—Receptacles**

SN 302,652. Temple Industries, Inc., Diboll, Tex. Filed July 12, 1968.

For Wooden Boxes for Beverage Bottles and Milk Containers (Int. Cl. 20).  
First use January 1964.**Class 2—Receptacles**

For Lunch Boxes and Vacuum Bottles (Int. Cl. 21).

**Class 22—Games, Toys, and Sporting Goods**

For Football Equipment—Namely, Footballs, Shoulder Pads, Helmets, and Kicking Tees; and Football Games (Int. Cl. 28).

**Class 38—Prints and Publications**

For Printed Cartoons (Int. Cl. 16).

**Class 39—Clothing**

For T-Shirts, Sweat Shirts, Socks, Football Jerseys, Football Pants, and Canvas Shoes (Int. Cl. 25).

First use Sept. 30, 1968.

**CAROUSEL**For Tape Dispensers (Int. Cl. 16).  
First use Apr. 9, 1968.

SN 309,305. Henry D. Shannon, d.b.a. Kadiva Designs, Michigan City, Ind. Filed Oct. 9, 1968.

**SPACECRAFT**For Dispensers, Consisting of Two Containers Removably Carried by a Connecting Member From Which Contents of the Containers May Be Selectively Dispensed (Int. Cl. 20).  
First use Sept. 21, 1968.

SN 312,060. National Foam System, Inc., West Chester, Pa. Filed Nov. 13, 1968.

**WIRT & KNOX**For Hose Racks and Hose Reels (Int. Cl. 6).  
First use in 1900.**Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks**

SN 297,311. R. J. Nicholson Co., Lutherville, Md. Filed May 3, 1968.

For Dog and Cat Collars, Dog and Cat Harnesses, Dog and Cat Leads, Dog and Cat Coats, Dog and Cat Feeding Dishes, Dog and Cat Toys, and Bird Toys (Int. Cls. 18 and 21).  
First use June 8, 1967.

SN 298,254. Sirco Products Co., Inc., Mount Vernon, N.Y. SN 294,618. Glyco Chemicals, Inc., New York, N.Y. Filed Apr. 1, 1968.

**GO-GETTER**

For Wallets, Billfolds, Handbags, Purses, and Key Cases (Int. Cl. 18).

First use Mar. 19, 1968.

SN 312,594. La Regale Ltd., New York, N.Y. Filed Nov. 19, 1968.

**POODLE BEADING**

The word "Beading" is disclaimed apart from the mark as shown.

For Ladies' Beaded Bags (Int. Cl. 18).

First use Jan. 17, 1968.

SN 317,616. Reliable Luggage, Inc., West Pittsburg, Pa. Filed Jan. 27, 1969.

**DEPARTURE**For Suitcases, Valises, and Travelling Bags (Int. Cl. 18).  
First use Dec. 21, 1968.**Class 4—Abrasives and Polishing Materials**

SN 307,112. Edw. Livingston &amp; Sons, Inc., Kansas City, Mo. Filed Sept. 11, 1968.

**RAPID WAX**

The term "Wax" is disclaimed apart from the mark as shown.

For Wax for Automobiles (Int. Cl. 3).

First use during June 1966.

**Class 6—Chemicals and Chemical Compositions**

SN 282,303. Roberts &amp; Porter, Inc., Chicago, Ill. Filed Mar. 1, 1968.

**LITHO-FIX**

For Solution Used as a Fixer for Photographic Films and Paper (Int. Cl. 1).

First use May 1, 1966.

SN 292,304. Roberts &amp; Porter, Inc., Chicago, Ill. Filed Mar. 1, 1968.

**REDI-MIST**

For Antioxidant Used as an Ink and Varnish Anti-Skinning Spray (Int. Cl. 1).

First use November 1960.

**GLYCOLUBE**

Owner of Reg. Nos. 337,822, 604,767, and others.

For Fatty Acid Esters Effective in Varied Uses Such as Additives for Admixture With Polyvinyl Chloride and Vinyl Chloride Copolymer Systems, as Agent to Enhance Lubricity, Freedom From Tackiness, Flow Characteristics and Heat Stability in Calendering and Extrusion of them, and Also the Surface Smoothness and Gloss of the End Products and Clarity of the Polyvinyl Chloride Product, and To Enhance the Stabilizing Action of Other Stabilizer Systems for Them (Int. Cl. 1).

First use Aug. 10, 1966.

SN 295,583. Ruhrchemie Aktiengesellschaft, Oberhausen-Holteln, Germany. Filed Apr. 5, 1968.

**RUCAT**Owner of German Reg. No. 838,889, dated Oct. 12, 1967.  
For Catalysts for Chemical Reactions (Int. Cl. 1).

SN 297,531. Carlisle Chemical Works, Inc., Reading, Ohio. Filed May 7, 1968.

**ADVAWAX**

Owner of Reg. No. 439,076.

For Natural Waxes (Not Including Mineral Waxes), and Synthetic Amide Waxes for Use in Paints, Adhesives, Asphalts, and Resins (Int. Cls. 1 and 4).  
First use January 1956.

SN 299,125. H-S Enterprises, Inc., d.b.a. Isochem Resins Company, Lincoln, R.I. Filed May 27, 1968.

**X-AIR**

For Air Entraining Agent and Viscosity Reducer for Resins (Int. Cl. 1).

First use on or about Jan. 12, 1968.

SN 299,126. H-S Enterprises, Inc., d.b.a. Isochem Resins Company, Lincoln, R.I. Filed May 27, 1968.

**AIROUT**For Air Entraining Agents for Resins (Int. Cl. 1).  
First use on or about June 1, 1963.

SN 301,520. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Bayerwerk, Germany. Filed June 27, 1968.

**BAYSEL**Owner of German Reg. No. 830,878, dated Mar. 31, 1966.  
For Pickling Preparation for Conditioning Animal Pelts Preparatory to Tanning (Int. Cl. 1).

SN 304,062. The Drackett Company, Cincinnati, Ohio. Filed Aug. 1, 1968.

**BOUTIQUE**

Owner of Reg. No. 844,822.

For Spray Starches, Bleaches, and Fabric Softeners (Int. Cl. 3).  
First use June 27, 1968.

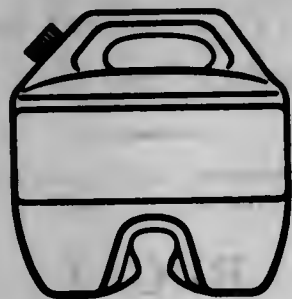


SN 304,529. Zimmerman Fur Institute, Incorporated, d.b.a. Ze Products, Cincinnati, Ohio. Filed Aug. 6, 1968.

**ZE-GLOW**

For Chemical Spray To Add Luster, Sheen and Softness to Furs, Cashmere, and to Man-Made Furs (Int. Cl. 1).  
First use on or about Jan. 1, 1956.

SN 305,020. Linco Products Corporation, Chicago, Ill. Filed Aug. 13, 1968.



For Liquid Bleaching Agent—Namely, Sodium Hypochlorite (Int. Cl. 3).  
First use July 23, 1968.

SN 305,417. The Drackett Company, Cincinnati, Ohio. Filed Aug. 19, 1968.

**PLEASCENTS**

Owner of Reg. No. 848,465.  
For Room Deodorant (Int. Cl. 5).  
First use July 24, 1968.

SN 306,069. Petrochemicals Company, Inc., Fort Worth, Tex. Filed Aug. 27, 1968.

**URE-A-FLO**

For Complex Alkyl Aryl Sulfonate, Magnesium Salt Employed in Various Forms as an Anticaking Additive for Urea and for Emulsifiers and Detergents (Int. Cl. 1).  
First use Aug. 13, 1968.

SN 306,156. Major Pool Equipment Corp., South Kearny, N.J. Filed Aug. 28, 1968.



For Disinfectant-Bactericide in Granule Form for Use in Swimming Pools (Int. Cl. 5).  
First use May 31, 1968.

SN 311,851. Emhart Corporation, Bloomfield, Conn. Filed Nov. 12, 1968.

**GRO-TONE**

Owner of Reg. Nos. 541,494 and 766,977.  
For Compositions Containing Pesticides and Plant Food (Int. Cl. 1).  
First use 1951.

**Class 7—Cordage**

SN 304,374. N.V. Lankhorst Touwfabrieken, Sneek Netherlands. Filed Aug. 5, 1968.

**QUALI-TEST**

For Baler Twine (Int. Cl. 22).  
First use July 28, 1968; in commerce July 28, 1968.

**Class 8—Smokers' Articles, Not Including Tobacco Products**

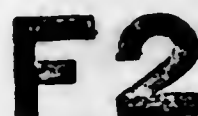
SN 308,860. Abbott Distributing Company, El Segundo, Calif. Filed Oct. 4, 1968.



For Desk and Table Cigarette Lighters in the Shape of a Telegraph Key (Int. Cl. 34).  
First use on or about Sept. 1, 1968.

**Class 9—Explosives, Firearms, Equipments, and Projectiles**

SN 251,570. Societa per Azioni Baschieri & Pellagri, Bologna, Italy. Filed Aug. 2, 1966.



Priority claimed under Sec. 44(d) on Italian application filed Feb. 3, 1966; Reg. No. 180,895, dated Sept. 10, 1966.  
For Gunpowder, Ammunition, Projectiles, Cartridges, Cartridge-Cases, Wads, Explosives; Fireworks; Firearms, Pellets, and Shots (Int. Cl. 13).

SN 251,571. Societa per Azioni Baschieri & Pellagri, Bologna, Italy. Filed Aug. 2, 1966.



Priority claimed under Sec. 44(d) on Italian application filed Feb. 3, 1966; Reg. No. 180,894, dated Sept. 10, 1966.  
For Gunpowder, Ammunition, Projectiles, Cartridges, Cartridge-Cases, Wads, Explosives; Fireworks; Firearms, Pellets, and Shots (Int. Cl. 13).  
First use Feb. 15, 1929; in commerce Feb. 18, 1960.

SN 306,360. Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany. Filed Aug. 30, 1968.



The meaning of the word "Meisterpatrone" in English is "master cartridge." Owner of German Reg. No. 664,621, dated Nov. 27, 1953.  
For Ammunition for Hunting and Sporting Purposes, and Cartridge Cases (Int. Cl. 13).

SN 317,132. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Jan. 21, 1969.

**SONY**

Owner of U.S. Reg. Nos. 691,940, 824,847, and others.  
For Matches (Int. Cl. 34).  
First use June 11, 1968; in commerce June 11, 1968.

**Class 12—Construction Materials**

SN 270,896. Compagnies de Saint-Gobain Societe Anonyme, Neuilly-sur-Seine, Hauts-de-Seine, France. Filed May 8, 1967.

**CROMOPAL**

Owner of French Reg. No. 706,754, dated Mar. 15, 1966.  
For Glass Construction Material, Particularly Bricks, Plates for Partition-Walls and Covers, and Mosaics (Int. Cl. 19).

SN 296,531. Georgia-Pacific Corporation, Portland, Ore. Filed Apr. 25, 1968.

**ACRYGLAS**

Owner of Reg. No. 732,985.  
For Resinous-Type Decorative and Protective Coating Composition, Comprising a Component Part of Prefinished Wall Paneling (Int. Cl. 19).  
First use Nov. 28, 1962.

SN 301,270. William J. Stegmeier, Concord, Calif. Filed June 24, 1968.

**FRONTIER BOARDWALK**

The word "Boardwalk" is disclaimed as a part of the mark.  
For Forms for Making Ornamental Textured Finishes on Concrete Surfaces and for a Hydrophonic Powder Applied to the Form and Such Surface To Prevent Damaging the Surface on Removing the Form (Int. Cl. 19).  
First use Nov. 27, 1967.

SN 301,518. Dresser Industries, Inc., Dallas, Tex. Filed June 27, 1968.

**OXILINE M**

For High Purity Dolomite Magnesite Tar Bonded Brick (Int. Cl. 19).  
First use on or about Oct. 13, 1967.

SN 305,858. Santee Portland Cement Corporation, Holly Hill, S.C. Filed Aug. 23, 1968.

**MORTAMIX**

For Masonry Cement (Int. Cl. 19).  
First use Mar. 1, 1968.

SN 306,418. Kayak Mfg. Co. Inc., Depew, N.Y. Filed Sept. 3, 1968.



The word "Pools" is disclaimed apart from the mark as shown.  
For Swimming Pools (Int. Cl. 19).  
First use June 28, 1967.

**TEXTURE FROST**

For Ceramic Tile (Int. Cl. 19).  
First use Aug. 7, 1967.

SN 307,687. Starrco Company, Inc., St. Louis, Mo. Filed Sept. 18, 1968.

**PUMP ISLAND LABOR SAVER**

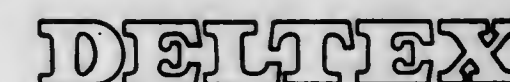
Applicant makes no claim to the "Labor Saver" portion of the mark, apart from the mark as shown.  
For Portable Buildings (Int. Cl. 19).  
First use Feb. 8, 1968.

SN 308,678. Cambar Manufacturing Co., Inc., El Segundo, Calif. Filed Oct. 2, 1968.



The lining shown on the drawing is merely to reproduce the lines shown on the specimens.  
For Doors for Buildings (Int. Cl. 6).  
First use October 1953.

SN 310,868. Delta-Chicago, Inc., Franklin Park, Ill. Filed Oct. 30, 1968.



For Plastic Overlaid Laminated Panels (Int. Cl. 19).  
First use July 1, 1968.

SN 312,325. Herbert B. Pinkley, d.b.a. H. B. Pinkley Insulation Co., Warrenville, Ill. Filed Nov. 15, 1968.

**DEFLECT-A-VENT**

For Insulation Dams for the Insulation of Structures (Int. Cl. 17).  
First use on or about Apr. 13, 1962.

SN 313,736. Severn Products Incorporated, Severna Park, Md. Filed Dec. 5, 1968.



For Metal Floor Panels and Metal Supports for Ready Access Elevated Floor Systems (Int. Cl. 6).  
First use Nov. 20, 1968.



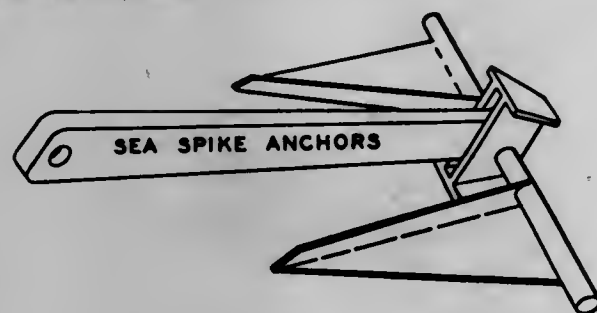
**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

SN 284,954. Universal Metal Products, Inc., Wickliffe, Ohio. Filed Nov. 15, 1967.



For Spring Clamps for Flexible Hose (Int. Cl. 6).  
First use on or about Aug. 30, 1967.

SN 289,037. Sea Spike Anchors, Inc., Farmingdale, N.Y. Filed Jan. 17, 1968.



Except as depicted on the drawing, applicant disclaims the picture of an anchor and the term "Anchors."  
For Marine Hardware and Anchors (Int. Cl. 6).  
First use February 1954.

SN 293,099. Amerock Corporation, Rockford, Ill. Filed Mar. 13, 1968.

**COLONNADE**

For Hardware—Namely, Pulls, Hinges, Backplates, and Keys (Int. Cl. 6).  
First use February 1967.

SN 293,867. Timber Engineering Company, Washington, D.C. Filed Mar. 21, 1968.

**TAP-N-HOLD**

For Shelf Supports (Int. Cl. 6).  
First use in or about January 1968.

SN 294,531. Smith Products, Inc., d.b.a. Childers Products Company, Cleveland, Ohio. Filed Mar. 29, 1968.

**Edge-Saf**

For Metal Strapping for Securing Protective Metal Jacketing, Sheets, etc. in Place About Pipeline, Tank and Vessel Insulation (Int. Cl. 6).  
First use Sept. 19, 1967.

SN 295,781. Tridair Industries, Redondo Beach, Calif. Filed Apr. 16, 1968.

**TRIDAIR**

Owner of Reg. No. 824,393.  
For Fasteners—Namely, Nuts and Bolts (Int. Cl. 6).  
First use Jan. 25, 1968.

SN 299,458. Charles M. Harris, Jr., d.b.a. Virginia Products Company, Alexandria, Va. Filed May 31, 1968.

**HOOK-LOCK**

For Temporary Fastening Device for Post Office Mail Boxes (Int. Cl. 8).  
First use April 1967.

SN 300,304. Stephen A. Young Corporation, Flora, Ind. Filed June 12, 1968.

**SUDS SAVER**

For Plumbing Fixtures—Namely, Sink Strainers and Parts Therefor (Int. Cl. 8).  
First use in or about March 1968.

SN 303,409. Food Research & Equipment Company, Tampa, Fla. Filed July 23, 1968.

**FILT-O-JET**

For Deep Fat Fryers and Parts Therefor (Int. Cl. 11).  
First use May 8, 1968.

SN 303,964. Hellstar Corporation, Wahoo, Nebr. Filed July 31, 1968.

**E-Z-LOK**

For Camper Holddown Bracket (Int. Cl. 6).  
First use June 1, 1968.

SN 310,063. Rex Chainbelt Inc., West Milwaukee, Wis. Filed Oct. 21, 1968.



For Metal Fasteners (Int. Cl. 6).  
First use Oct. 4, 1968.

SN 318,074. Maxon Premix Burfier Company, Inc., Muncie, Ind. Filed Jan. 31, 1969.

**MAXON-OKADEE**

Owner of Reg. Nos. 732,640 and 863,381.  
For Valves (Int. Cl. 6).  
First use in or about November 1947.

SN 318,082. Mine and Smelter Supply Company, Denver, Colo. Filed Jan. 31, 1969.

**MASSCO-GRIGSBY**

Owner of Reg. Nos. 544,413 and 667,597.  
For Pinch Valves (Int. Cl. 6).  
First use in 1938.

SN 318,410. Elkhart Brass Manufacturing Company, Inc. Filed Feb. 5, 1969.  
SN 304,788. Harald Halberg, Svendborg, Denmark. Filed Aug. 9, 1968.

**SIDEWINDER**

For Fire Hose Nozzle (Int. Cl. 9).  
First use on or before Sept. 15, 1964.

**Class 16—Protective and Decorative Coatings**

SN 295,191. Sperry Rand Corporation, New York, N.Y. Filed Apr. 8, 1968.

**LIBRALAC**

For Lacquer for Book Bindings (Int. Cl. 2).  
First use December 1958.

SN 302,870. George F. Strauser, d.b.a. Triple T Company, Palm Beach Gardens, Fla. Filed July 16, 1968.



The mark consists of the words "Tip Top Teak." No claim is made to the word "Teak" apart from the mark.  
For Preservative Compound Used in Treating Teak and Other wood Products (Int. Cl. 2).  
First use Nov. 1, 1967.

**Class 17—Tobacco Products**

SN 304,783. Harald Halberg, Svendborg, Denmark. Filed Aug. 9, 1968.

**GOLDEN EXTRA**

For Smoking Tobacco, Specifically Pipe Tobacco Mixtures (Int. Cl. 34).  
First use June 15, 1968; in commerce July 25, 1968.

SN 304,786. Harald Halberg, Svendborg, Denmark. Filed Aug. 9, 1968.

**MAC BAREN'S LATAKIA BLEND**

The components "Latakia" and "Blend" are disclaimed as such, all common law rights being reserved. Owner of U.S. Reg. No. 782,293.  
For Smoking Tobacco, Specifically Pipe Tobacco Mixtures (Int. Cl. 34).  
First use Aug. 1, 1962; in commerce Sept. 8, 1964.

SN 304,787. Harald Halberg, Svendborg, Denmark. Filed Aug. 9, 1968.

**CLUB BLEND**

The component "Blend" is disclaimed as such, all common law rights being reserved.  
For Smoking Tobacco, Specifically Pipe Tobacco Mixtures (Int. Cl. 34).  
First use May 1, 1952; in commerce July 31, 1965.

**MAC BAREN'S SPECIAL FINE CUT**

The component "Special Fine Cut" is disclaimed as such, all common law rights being reserved. Owner of U.S. Reg. No. 782,293.  
For Smoking Tobacco, Specifically Pipe Tobacco Mixtures (Int. Cl. 34).  
First use Feb. 14, 1964; in commerce Jan. 15, 1966.

**Class 18—Medicines and Pharmaceutical Preparations**

SN 293,939. Marine Realm, Inc., Miami, Fla. Filed Mar. 22, 1968.

**MARV-L-MED**

For Marine and Fresh Water Tropical Aquarium Fish Remedy (Int. Cl. 5).  
First use Sept. 25, 1963.

SN 301,730. Endo Laboratories, Inc., Garden City, N.Y. Filed July 1, 1968.

**ENDECON**

Owner of Reg. No. 324,936.  
For Medicinal Preparation for the Relief of Colds (Int. Cl. 5).  
First use on or about June 28, 1968.

SN 301,839. W. R. Grace & Co., New York, N.Y. Filed July 2, 1968.

**"4 x 4" AUTOMATIC**

Applicant disclaims "Automatic" apart from the mark as shown. Owner of Reg. No. 727,175.  
For Medicated Feed Supplement for Stimulating Growth of Swine (Int. Cl. 5).  
First use Mar. 19, 1957.

**Class 19—Vehicles**

SN 314,773. Auto Products, Inc., Houston, Tex. Filed Dec. 18, 1968.

**CHIP GUARD**

For Door Bumper To Be Detachably Mounted on an Automobile Door (Int. Cl. 12).  
First use May 8, 1968.

SN 315,023. Accelco, Inc., Richmond, Calif. Filed Dec. 23, 1968.

**THE ACCELERATOR**

For Automobile Wheels (Int. Cl. 12).  
First use Nov. 20, 1968.

SN 315,124. Trimline Fiberglass Products Inc., Galesville, Wis. Filed Dec. 23, 1968.

**TRIMLINE**

For Camping Trailers (Int. Cl. 12).  
First use Oct. 24, 1967.



SN 315,938. Los Altos Marine, Inc., Los Altos, Calif. Filed Jan. 6, 1969.

**SIDEWINDER**

For Boats (Int. Cl. 12).  
First use September 1967.

SN 320,969. Powerall Corporation, Minneapolis, Minn. Filed Mar. 6, 1969.

**SNOWOLF**

For Snowmobiles and Parts Thereof (Int. Cl. 12).  
First use Nov. 21, 1968.

SN 321,175. Blount Marine Corporation, Warren, R.I. Filed Mar. 10, 1969.

**VISTA VIEW**

For Sightseeing Boats (Int. Cl. 12).  
First use Apr. 15, 1968.

SN 324,071. Knight Homes Corporation, Savannah, Ga. Filed Apr. 9, 1969.

**GOLDEN KNIGHT**

For Mobile Homes (Int. Cl. 12).  
First use Dec. 15, 1968.

SN 324,072. Knight Homes Corporation, Savannah, Ga. Filed Apr. 9, 1969.

**SILVER KNIGHT**

For Mobile Homes (Int. Cl. 12).  
First use Dec. 15, 1968.

**Class 21—Electrical Apparatus, Machines, and Supplies**

SN 257,697. Crouse-Hinds Company, Syracuse, N.Y. Filed Nov. 1, 1966.



The drawing is lined for the colors red, yellow, and green.  
Owner of Reg. No. 266,316.

For Vehicular Traffic Control Equipment—Namely, Traffic Signal Heads; Traffic Signal Controllers, Including Electronic, Electromechanical, and Electrical Apparatus for Selectively Illuminating the Lamps in the Traffic Signal Heads; Magnetic Vehicle Detectors; Sonic Vehicle Detectors; and Pressure Sensitive Vehicle Detectors (Int. Cl. 9).  
First use Sept. 1, 1968.

SN 282,501. E. J. Ward Limited, Scarborough, Ontario, Canada. Filed Oct. 13, 1967.

**ASTROPROBE**

For Portable Unit Using Magnetic Means for Detecting Cracks and Other Defects on Ferrous Metal (Int. Cl. 9).  
First use February 1964; in commerce February 1964.

SN 290,593. Empire Products, Inc., Cincinnati, Ohio. Filed Feb. 8, 1968.

**CAM-LOK**

For Electrical Cable Connectors, Receptacles and Insulators Therefor (Int. Cls. 9 and 17).  
First use at least as early as Oct. 15, 1951.

SN 290,871. Murray Company of Texas, Inc., d.b.a. Boston Gear Works, Pittsburgh, Pa. Filed Feb. 12, 1968.

**BOSTART**

Owner of Reg. Nos. 547,544, 837,074, and others.  
For Electric Motor Starters and Allied Items Including Heaters, Coils, Contactors, and Push Button Stations (Int. Cls. 7 and 11).  
First use Jan. 15, 1968.

SN 294,005. Atronics Corporation, d.b.a. Applied Engineering Products, Ansonia, Conn. Filed Mar. 25, 1968.



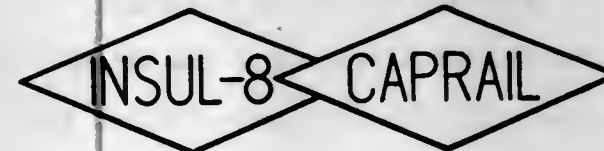
For Electrical Connectors (Int. Cl. 9).  
First use Jan. 1, 1964.

SN 294,006. Baldwin-Gegenheimer Corporation, Stamford, Conn. Filed Mar. 25, 1968.

**DETECTAIR**

For Web-Break Detector (Int. Cl. 9).  
First use June 26, 1967.

SN 297,678. Insul-8-Corp., San Carlos, Calif. Filed May 8, 1968.



Owner of Reg. No. 578,786 and others.  
For Electrical Conductor Bars in Trolley Conductor Systems for Conducting Current to Mobile Machines (Int. Cl. 9).  
First use on or about Dec. 22, 1967.

SN 300,848. Identification Corporation, Riverside, Conn., assignee of Sibany Manufacturing Corporation, Riverside, Conn. Filed June 19, 1968.

**IDENTIMAT**

For Electromechanical Machines Used in Reading Cards, Badges and Tags, for Use in Identification of Personnel for Security Purposes (Int. Cl. 7).  
First use May 15, 1968.

SN 302,630. Modern Sewing Machine Co., Inc., Valley Stream, N.Y. Filed July 12, 1968.

**STRADIVARO**

For Radios, Television, and Amplifiers (Int. Cl. 9).  
First use January 1968.

SN 304,005. McGraw-Edison Company, Elgin, Ill. Filed July 31, 1968.



For Electric Powered Domestic Vacuum Cleaners (Int. Cl. 9).  
First use June 18, 1968.

SN 304,575. Batteries Unlimited, Inc., Dallas, Tex. Filed Aug. 7, 1968.



Applicant disclaims the term "Batteries" and the representation of a battery, as such, apart from the mark, but applicant waives none of its common law rights in the mark shown or any feature thereof.

For Storage Batteries, Generators, Starters, Voltage Regulators, Alternators, and Battery Cables (Int. Cls. 7 and 9).  
First use at least as early as April 1968.

SN 304,978. Square D Company, Park Ridge, Ill. Filed Aug. 12, 1968.



For Electric Control Systems for Controlling Electrically Powered Industrial Trucks (Int. Cl. 9).  
First use Aug. 2, 1968.

SN 305,718. Clairol Incorporated, New York, N.Y. Filed Aug. 22, 1968.

**THE ENLIGHTENED MIRROR**

Applicant disclaims the word "Mirror" apart from the mark as shown.  
For Electrical Make-Up Mirror (Int. Cl. 20).  
First use Aug. 5, 1968.

SN 306,017. Amphicon Systems, Inc., Moonachie, N.J. Filed Aug. 19, 1968.



The words "Systems, Inc." are disclaimed apart from the mark as shown.  
For Television Projectors (Int. Cl. 9).  
First use June 1960.

SN 312,436. Cooke Engineering Company, Alexandria, Va. Filed Nov. 18, 1968.

**ELECTROPEG**

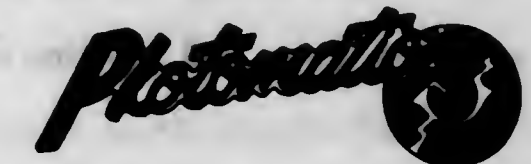
For Electronic Circuit Board Kits (Int. Cl. 9).  
First use Nov. 11, 1968.

SN 312,624. Vita Mix Corporation, Cleveland, Ohio. Filed Nov. 19, 1968.

**SIDEWINDER**

For Electrically Driven Mixing and Comminuting Apparatus—Namely, Domestic Blenders, Primarily Adapted for the Preparation of Food (Int. Cl. 7).  
First use May 8, 1968.

SN 312,692. Photomation Inc., Mountain View, Calif. Filed Nov. 20, 1968.



Owner of Reg. No. 701,707.  
For Photo-Electric Circuits and Parts Which Are Used as Controls in Combustion Manufacturing, or Warehousing Operations (Int. Cl. 9).  
First use Feb. 1, 1959.

SN 314,990. The Telex Corporation, Tulsa, Okla. Filed Dec. 20, 1968.

**PERSONA-PHONE**

For Headsets (Int. Cl. 9).  
First use August 1968.

SN 315,882. Coors Porcelain Company, Golden, Colo. Filed Jan. 6, 1969.

**STRATE-BREAKS**

For Ceramic Substrates for Printed Electrical Circuits (Int. Cl. 9).  
First use Mar. 31, 1966.

SN 316,297. Endevco Corporation, Pasadena, Calif. Filed Jan. 10, 1969.

**ACCUMODE**

For Electrical Circuits Mounted on Circuit Boards (Int. Cl. 9).  
First use May 29, 1968.

SN 316,481. Trans-Aire Electronics, Inc., New Hyde Park, N.Y. Filed Jan. 13, 1969.

**FALCON**

For Radios, Transistor Radios, Clock Radios, and Travel Clock Radios (Int. Cl. 9).  
First use February 1967.

SN 316,527. Electronics International Service Corporation, Wheaton, Md. Filed Jan. 14, 1969.

**TELE-TERMINAL**

For Teletype Sending and Receiving Converters and Power Supplies (Int. Cl. 9).  
First use Jan. 30, 1967.



SN 316,847. Trans-Aire Electronics, Inc., New Hyde Park, N.Y. Filed Jan. 16, 1969.

**HARLIE**

For Radios, Transistor Radios, Clock Radios, and Travel Clock Radios (Int. Cl. 9).  
First use February 1959.

SN 317,071. Litton Precision Products, Inc., Oakville, Conn. Filed Jan. 21, 1969.

**ACCURFRAME**

For Assembled Frames Having Connected, Aligned Electrical Connectors and Assembled Frames Having Connected, Aligned, Wire-Wrapped Electrical Connectors (Int. Cl. 9).  
First use on or about Aug. 23, 1968.

**Class 22—Games, Toys, and Sporting Goods**

SN 282,355. Brunswick Corporation, Chicago, Ill. Filed Oct. 12, 1967.

**DX**

For Golf Clubs and Golf Bags (Int. Cl. 28).  
First use Dec. 15, 1964.

SN 287,184. Teutemacher & Hatcher Co., Lansing, Ill. Filed Dec. 18, 1967.



For Baseball Bats (Int. Cl. 28).  
First use Oct. 3, 1967.

SN 288,733. Western Publishing Company, Inc., Racine, Wis. Filed Jan. 12, 1968.

**PLASTILON**

For Parlor Games of the Types Utilizing Printed Sheets and Boards (Int. Cl. 28).  
First use Dec. 20, 1967.

SN 295,388. True Temper Corporation, Cleveland, Ohio. Filed Apr. 10, 1968.

**ROCKET**

Owner of Reg. No. 646,427.  
For Golf Club Shafts (Int. Cl. 28).  
First use in or about September 1952.

SN 295,803. Milton Bradley Company, East Longmeadow, Mass. Filed Apr. 17, 1968.

**BUMP BALL**

The word "Ball" is disclaimed apart from the mark as shown.  
For Resilient Ball for Use in Playing Skill and Action-Type Games (Int. Cl. 28).  
First use Mar. 1, 1968.

SN 297,557. Gladding Corporation, South Otselic, N.Y. Filed May 7, 1968.

**THE 49'ER**

Owner of Reg. No. 772,748.  
For Fishing Lines (Int. Cl. 28).  
First use August 1954.

SN 306,458. Cash On The Green, Inc., Philadelphia, Pa. Filed Sept. 3, 1968.

**GREEN-CASH**

For Contest Equipment Comprising Numerical Spinner Wheel, Pocket Billiard Table and Balls, Blackboard and Game Cards, for Television Presentation (Int. Cl. 28).  
First use May 2, 1968.

SN 308,066. Professional Golf Company, Chattanooga, Tenn. Filed Sept. 23, 1968.

**GOLDEN LADY**

For Golf Clubs (Int. Cl. 28).  
First use Aug. 7, 1968.

SN 308,307. Outdoor Supply Co. Inc., Rockville Centre, N.Y. Filed Sept. 26, 1968.

**TV-PARTY**

For Indoor Sleeping Bags (Int. Cl. 20).  
First use July 5, 1968.

SN 309,630. Stratton & Terstegge Company, Inc., Louisville, Ky. Filed Oct. 14, 1968.

**IMPERVIUM**

For Plastic Molding Compounds Sold in the Form of a Component of Bait Boxes, Tackle Boxes, and Minnow Buckets (Int. Cl. 28).  
First use June 3, 1964.

SN 309,884. Lee C. McKee, Hopkins, Minn. Filed Oct. 17, 1968.



For Toboggans (Int. Cl. 28).  
First use Aug. 26, 1968.

SN 310,735. Revere Manufacturing Co., Inc., South Hackensack, N.J. Filed Oct. 29, 1968.

**SHEFFIELD**

For Rackets for Tennis or Similar Games (Int. Cl. 28).  
First use June 1, 1968.

SN 310,841. Berkley & Company, Inc., Spirit Lake, Iowa. Filed Oct. 30, 1968.

**KINGPIN**

For Monofilament Nylon Fishing Line (Int. Cl. 28).  
First use Sept. 30, 1968.

SN 310,968. Mattel, Inc., Hawthorne, Calif. Filed Oct. 31, 1968.

**ZOOPSIES**

For Make and Play Toys, Comprising Accessory Packages of Plastic Materials, Molds, and Cooling Tray (Int. Cl. 28).  
First use Sept. 24, 1968.

SN 310,970. Mattel, Inc., Hawthorne, Calif. Filed Oct. 31, 1968.

**ADD-A-PAK**

For Make and Play Toys, Comprising Accessory Packages of Plastic Materials, Molds, and Cooling Tray (Int. Cl. 28).  
First use Sept. 24, 1968.

**Class 23—Cutlery, Machinery, and Tools and Parts Thereof**

SN 273,078. Jacksonville Blow Pipe Company, Jacksonville, Fla. Filed June 5, 1967.

**MONTGOMERY**

For Hog for Reducing Wood or Similar Material to Small Particles, Blow Pipe Systems for Transporting Small Particles Such as Wood Chips; Centrifugal Separators; Powder Arrestor Type Dust Collectors; and Component Parts Thereof (Int. Cl. 7).  
First use 1925.

SN 282,552. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed Oct. 16, 1967.

**BLUE STREAK**

For Industrial Trucks—Namely, Platform Low Lift Trucks (Int. Cl. 12).  
First use at least as early as May 1952.

SN 286,813. Farmhand, Inc., Hopkins, Minn. Filed Dec. 13, 1967.



For Agricultural and Material Handling Equipment—Namely, Loaders, Hay Rakes, Bale Accumulators, Stalk Shredders, Defoliators, Multi-Purpose Wagon-Type Vehicle for Hauling, Mixing and Unloading Farm Feed, Grain, Forage and the Like, Manure Spreaders, Grinder-Mixer Mills, Beet and Potato Harvesters, Beet Toppers, Forage Harvesters, Trailer or Truck Mounted Vehicle for Handling and Moving Stacks of Hay; Fruit and Nut Tree Shakers, and Self-Propelled Pivotal Irrigation Systems (Int. Cl. 7).  
First use Nov. 10, 1967.



For Semi-automatic Car Washing Installation of the Coin-Operated Type (Int. Cl. 7).  
First use August 1966.

SN 291,851. FMC Corporation, Chicago, Ill. Filed Feb. 26, 1968.

**TESKA**

Heavy Media Separators, and Parts Thereof, for Separation of Refuse From Ores, Such as Coal (Int. Cl. 7).  
First use on or about Jan. 5, 1963.

SN 292,098. R. Hoe & Co. Inc., New York, N.Y. Filed Feb. 28, 1968.

**HOE**

Owner of Reg. No. 528,057.  
For Rotary Printing Presses Including Folding Machines and Automatic Roll Changers, Printing Plate Casting and Processing Equipment and Circular Saws (Int. Cl. 7).  
First use Aug. 4, 1936.

SN 293,146. Ingersoll-Rand Company, New York, N.Y. Filed Mar. 13, 1968.



For Fastener Driving Machine (Int. Cl. 7).  
First use Oct. 31, 1967.

SN 297,007. Fulton Iron Works Company, St. Louis, Mo., by change of name and assignment from Ferracute Machine Company, Bridgeton, N.J. Filed May 1, 1968.

**FARQUHAR**

For Material-Working Presses for Use in Connection With Metal, Wood, Fibrous, Plastic or Like Materials, and Material Compressing Presses, Including Expressing and Extruding (Int. Cl. 7).  
First use 1889.

SN 298,563. Bittcher Industries, Inc., Vermillion, Ohio. Filed May 20, 1968.

**WHIZARD**

For Motor Driven Rotary Knives Used Primarily in the Packing House and Meat Distribution Industries, and Sharpening Machines Therefor (Int. Cl. 7).  
First use during January 1956.



SN 300,017. Sterno Industries, Inc., Harrison, N.J. Filed June 7, 1968.

**DELTA**

Owner of Reg. Nos. 823,499 and 824,577.  
For Tools for Scraping, Cleaning and Removing Waste and Sediment From Aquarium Tanks, and Planting Tools for Aquarium Tanks (Int. Cl. 8).  
First use Jan. 8, 1962.

SN 303,759. Applied Power Industries, Inc., Milwaukee, Wis. Filed July 29, 1968.

**ROAD SERVICE**

For Vehicle Lifting, Lowering and Supporting Jacks (Int. Cl. 7).  
First use on or about Apr. 8, 1968.

SN 303,907. G.I.B. Precision Limited, Cirencester, Gloucester, England. Filed July 30, 1968.

**autogard**

For Torque Limiters, Clutches, Tapping Machines, and Tapping Tools (Int. Cl. 7).  
First use May 1967; in commerce May 1967.

SN 304,798. Keltec, Inc., Elkhart, Ind. Filed Aug. 9, 1968.



The drawing is lined for the colors green and blue.  
For Commercial, Institutional and Industrial Floor Conditioning and Maintenance Machines—Namely, Motor-Operated Vacuum Cleaners, Wet-Dry Vacuum Machines, Floor Scrubbing and Polishing Machines, Carpet Shampoo Machines, Mopping Machines, and Outdoor Litter Vacuum Machines (Int. Cl. 7).  
First use Nov. 26, 1956.

SN 305,007. Washington Forge, Incorporated, Englishtown, N.J. Filed Aug. 12, 1968.

**AVON ROSE**

No claim is made to the word "Rose" apart from the mark as shown.  
For Stainless Steel Flatware (Int. Cl. 8).  
First use on or about May 1, 1968.

SN 306,409. Textron Inc., Providence, R.I. Filed Aug. 30, 1968.

**AURA**

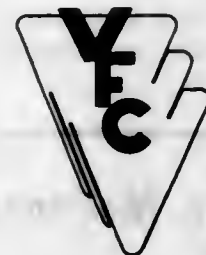
For Stainless Steel Flatware (Int. Cl. 8).  
First use May 6, 1968.

SN 309,343. Star Iron & Steel Co., Tacoma, Wash. Filed Oct. 10, 1968.

**STARPORTER**

For Large Cranes for Handling Cargo, Containers, and Material in Shipyards, Port Authorities, and Similar Operations (Int. Cl. 7).  
First use no later than June 30, 1968.

SN 314,671. Automation Devices, Inc., Fairview, Pa. Filed Dec. 17, 1968.



Owner of Reg. No. 852,690.  
For Vibratory Bowl Feeders for Finished and Semi-Finished Parts; Components Thereof, and Attachments Therefor (Int. Cl. 7).  
First use Mar. 1, 1956.

SN 314,858. Stanray Engineering & Sales, Inc., Atkinson, N.H. Filed Dec. 19, 1968.



For Food Processing Machinery—Namely, Frozen Food Silcers, Saws, and Bundle Openers (Int. Cl. 7).  
First use May 2, 1968.

SN 318,504. Morbark Industries, Inc., Winn, Mich. Filed Feb. 6, 1969.

**CHIP-PAC**

For Machine for Reducing Wood Products to Chips and Screening Them To Achieve Uniformity in Size (Int. Cl. 7).  
First use Aug. 1, 1968.

SN 319,639. Rotax-Werk AG., Guns kirchen, near Wels, Austria. Filed Feb. 19, 1969.



For Small Internal Combustion Engines (Int. Cl. 7).  
First use 1950; in commerce 1960.

SN 320,360. Miehle-Goss-Dexter, Incorporated, Chicago, Ill. Filed Feb. 28, 1968.

**Urbanite**

Owner of Reg. No. 759,176.  
For Printing Presses and Parts Thereof (Int. Cl. 7).  
First use July 2, 1962.

**Class 24 — Laundry Appliances and Machines**

SN 306,382. Industrie A. Zanussi S.p.A., Pordenone, Italy. Filed Aug. 30, 1968.

**LAVAREX**

Owner of Italian Reg. Nos. 175,727, dated Feb. 7, 1966 and 196,658, dated Feb. 3, 1967.  
For Coin-Operated Washing Machines; Centrifuges and Dryers (Int. Cl. 7).

SN 306,761. The Diversey Corporation, Chicago, Ill. Filed Sept. 6, 1968.

**PATROL**

For Apparatus for Automatically Dissolving a Dishwashing Compound and Dispensing the Solution to a Dishwashing Machine in Response to Concentrating Change Therein (Int. Cl. 7).  
First use Feb. 21, 1968.

**Class 25 — Locks and Safes**

SN 303,416. John B. Hockswender, d.b.a. B. H. Hockswender Associates, Pittsburgh, Pa. Filed July 23, 1968.

**FEED#THE KITT**

For Coin and Currency Saving Containers (Int. Cl. 6).  
First use June 12, 1968.

**Class 26 — Measuring and Scientific Appliances**

SN 284,847. Tempflow Manufacturing Company, Inc., Prairie Grove, Ark. Filed Nov. 14, 1967.



For Automatic Temperature Control Devices for Water Systems (Int. Cl. 9).  
First use June 15, 1967.

SN 290,391. Harper-Wyman Company, Hinsdale, Ill. Filed Feb. 6, 1968.

**FLAME SELECTOR**

Owner of Reg. No. 737,332.  
For Thermostatic Gas Valves for Gas Ranges (Int. Cl. 9).  
First use Jan. 10, 1958.

**VISI-CON**

For Monitor for Electronically Controlling the Function of Multiple Machines Used in the Operation of an Industrial Plant or a Building Complex, and Parts Thereof (Int. Cl. 9).  
First use August 1965.

SN 312,240. Technical Training International, Inc., Walnut Creek, Calif. Filed Nov. 14, 1968.

**TECHNIPAC**

For Electronic Home Study Kits With Instructional Manuals for Assembling Oscilloscopes, Vacuum Tube Voltmeters, Power Panels, Vector Boards, and Oscillators (Int. Cl. 9).  
First use on or about Oct. 25, 1968.

SN 312,308. S. S. Kresge Company, Detroit, Mich. Filed Nov. 15, 1968.



Owner of Reg. Nos. 743,912 and 845,181.  
For Optical Appliances and Associated Equipment—Namely, Binoculars, Opera Glasses, Sport Glasses, Telescopes, Microscopes, Still Cameras, Movie Cameras, Projection Screens, Film Reels, Slide Sorters, Slide Viewers, Flash Units, Slide Projectors, and Movie Projectors (Int. Cl. 9).  
First use on or before Sept. 30, 1966.

**Class 28 — Jewelry and Precious-Metal Ware**

SN 317,448. Gerity Products, Inc., Toledo, Ohio. Filed Jan. 24, 1969.



For Gold or Silver Plated Articles—Namely, Candle Snuffers, Carving Aids in the Form of a Fork for Holding Roasts or Fowl, Punch or Soup Ladies, Serving Spoons, Serving Forks, Magnifying Glass and Letter Opener Sets, and Four Leaf Clovers as Wall Decorations or Paper Weights; and Silver Plated Articles—Namely, Carvettes in the Form of Forks for Holding Roasts or Fowl, and Carving Forks for Holding Roasts or Fowl (Int. Cls. 8 and 14).  
First use 1948.

**Class 29 — Brooms, Brushes, and Dusters**

SN 300,307. The Drackett Company, Cincinnati, Ohio. Filed June 11, 1968.

**FLARE TIP**

For Brooms (Int. Cl. 21).  
First use Mar. 22, 1968.



**Class 31 — Filters and Refrigerators**

SN 293,184. The Virtis Company, Inc., Gardiner, N.Y. Filed Mar. 13, 1968.

**FLUOROFOAM**

For Heat Insulated Containers for Refrigeration Application (Int. Cl. 11).  
First use Jan. 5, 1959.

SN 305,763. Sterneo Industries, Inc., Harrison, N.J. Filed Aug. 22, 1968.



For Filter Material for Home Aquariums (Int. Cl. 1).  
First use Feb. 5, 1968.

**Class 32 — Furniture and Upholstery**

SN 293,741. The Schoonbeck Company, Grand Rapids, Mich. Filed Mar. 20, 1968.

**SCHOONBECK**

For Living Room, Dining Room, Bedroom, Institutional, Occasional, and Upholstered Furniture (Int. Cl. 20).  
First use at least as early as March 1962.

SN 308,252. Castro Convertible Corporation, New Hyde Park, N.Y. Filed Sept. 26, 1968.

**SCOTCH & SOFA**

Applicant disclaims the use of the word "Sofa" apart from the mark as shown.  
For Furniture—Namely, Convertible Sofa-Beds, Each Having an Integral High-Fidelity Phonograph and a Bar (Int. Cl. 20).  
First use May 1966.

SN 312,470. The Hughes-Owens Company (Limited), Montreal, Quebec, Canada. Filed Nov. 18, 1968.

**JET-ADJUST**

Owner of Canadian Reg. No. 154,304, dated Nov. 24, 1967.  
For Stools and Posture Chairs for Domestic, Commercial, and Industrial Use (Int. Cl. 20).

**Class 34 — Heating, Lighting, and Ventilating Apparatus**

SN 268,436. State Stove and Manufacturing Co. Inc., Ashland City, Tenn. Filed Apr. 5, 1967.



No claim is made to the term "Glasslined" apart from the mark as shown.  
For Storage-Type Water Heaters (Int. Cl. 11).  
First use Aug. 16, 1962.

SN 268,523. Phillips-Puratronics, Inc., Minneapolis, Minn., by merger and change of name from Phillips Manufacturing Company, Inc., Minneapolis, Minn. Filed Apr. 6, 1967.



Owner of Reg. No. 820,527.  
For Gas Fired, Tank Type Engine Block Heaters (Int. Cl. 11).  
First use January 1964.

SN 290,263. Electrohome Limited, Kitchener, Ontario, Canada. Filed Feb. 5, 1968.



Owner of Canadian Reg. No. 142,060, dated Sept. 24, 1965.  
For Permanent-Type Electric Baseboard Heaters, Portable Baseboard Heaters, Air Conditioners, Electric Fan Heaters, Humidifiers, and Dehumidifiers (Int. Cl. 11).

SN 292,818. Shell Oil Company, New York, N.Y. Filed Mar. 8, 1968.

**SHELL**

Owner of Reg. No. 755,483.  
For Oil Burners (Int. Cl. 11).  
First use at least as early as Dec. 21, 1967.

SN 293,287. The Lummus Company, Bloomfield, N.J. Filed Mar. 14, 1968.

**SRT**

For Industrial Apparatus for Rapid, High-Temperature Heating of Fluids (Int. Cl. 11).  
First use Feb. 7, 1968.

SN 313,933. Hobart Brothers Company, Troy, Ohio. Filed Dec. 9, 1968.

**FABSHIELD**

For Welding Electrodes (Int. Cl. 9).  
First use March 1968.

**Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires**

SN 275,051. Huhn Seal Company Limited, Montreal, Quebec, Canada. Filed June 29, 1967.



The word "Huhn" is the German word for "chicken." Priority claimed under Sec. 44(d) on Canadian application filed May 11, 1967; Reg. No. 155,667, dated Feb. 23, 1968.  
For Mechanical Seals and Packings—Namely, Graphite Packings, Metal Ring Packings, Copper Ring Packings, Carbon Rings and Combinations Thereof; Spring Seals, Locomotive Seals, Carbon Seals with Spring Hose and/or Corrugated Springs, Labyrinth Seals, Carboplane Seals and Tissue Collar Seals, for Use in Moving Machine Elements (Int. Cl. 17).  
First use Oct. 14, 1960; in commerce Oct. 14, 1960.

SN 275,921. Compofoflex Company Limited, Delph, near Oldham, England. Filed July 13, 1967.

**COMPOFLEX**

Owner of British Reg. Nos. B644,296 and B644,297, dated Jan. 29, 1946, and 725,425 and 725,426, dated Jan. 4, 1954.  
For Metallic, Plastic and Rubber Flexible Hose With and Without Metallic Wire Reinforcement (Int. Cls. 6 and 17).

SN 292,112. Lake Chemical Co., Chicago, Ill. Filed Feb. 28, 1968.

**VISU-KIT**

For Dispenser Sold With Packing and Gasket Sealant Cord (Int. Cl. 17).  
First use on or about Dec. 18, 1967.

SN 294,194. Hustler Retread Tire Co., Tucson, Ariz. Filed Mar. 26, 1968.

**HUSTLER**  
the no-splice retread.

No claim is made to the wording "The No-Splice Retread" apart from the mark as shown.  
For Retread Tires (Int. Cl. 12).  
First use on or about Dec. 15, 1967.



No claim is made to the term "patch" apart from the mark in its entirety.  
For Pneumatic-Tire and Inner-Tube Patches (Int. Cl. 12).  
First use Feb. 8, 1965.

SN 319,126. Anchor Coupling Co. Inc., Libertyville, Ill. Filed Feb. 14, 1969.

**MCS**

For Hydraulic Hose and Hose Assemblies (Int. Cl. 17).  
First use on or about Jan. 30, 1969.

**Class 36 — Musical Instruments and Supplies**

SN 296,406. Deutsche Grammophon Gesellschaft m.b.H., Hamburg, Germany. Filed Apr. 24, 1968.

**KARUSELL**

Owner of German Reg. No. 802,509, dated Apr. 1, 1965.  
For Phonographs and Parts Thereof, Phonograph Record Changers, Phonograph Records, Tape Recorders/Reproducers, Pre-Recorded Magnetic Tapes, and Pre-Recorded Photo-Acoustic Recording Tapes (Int. Cl. 9).

SN 300,920. The Estey Musical Instrument Corporation, Harmony, Pa. Filed June 20, 1968.

**STEREO-VIBRATO**

For Electric Organs and Musical Instrument Amplifiers (Int. Cls. 9 and 15).  
First use June 1, 1960.

SN 313,781. Decca Limited, London, England. Filed Dec. 6, 1968.



Exclusive right to the use of the words "Sound System" is disclaimed apart from the mark as shown. Owner of U.S. Reg. Nos. 748,358 and 854,625.  
For Phonograph Records (Int. Cl. 9).  
First use October 1967; in commerce at least as early as January 1968.

SN 316,643. Hammond Corporation, Deerfield, Ill. Filed Jan. 15, 1969.

**GSM**

For Musical Instrument Accessory for Electronically Modifying and Amplifying the Natural Sound of the Instrument (Int. Cl. 15).  
First use Jan. 3, 1969.



SN 316,643. Hammond Corporation, Deerfield, Ill. Filed Jan. 15, 1969. SN 288,618. Velma L. Harlow, d.b.a. Artistic Quotes, Tulsa, Okla. Filed Jan. 11, 1968.

**RSM**

For Musical Instrument Accessory for Electronically Modifying and Amplifying the Natural Sound of the Instrument (Int. Cl. 15).  
First use Jan. 3, 1969.



SN 316,644. Hammond Corporation, Deerfield, Ill. Filed Jan. 15, 1969.

**INNOVEX**

For Musical Instrument Accessory for Electronically Modifying and Amplifying the Natural Sound of the Instrument (Int. Cl. 15).  
First use Jan. 3, 1969.

For Calligraphic Prints (Int. Cl. 16).  
First use Oct. 29, 1965.

SN 293,014. American Aviation Publications, Inc., Washington, D.C. Filed Mar. 12, 1968.

**AEROSPACE DAILY**

Owner of Reg. No. 791,049.  
For Newsletter (Int. Cl. 16).  
First use Jan. 15, 1968.

**Class 37—Paper and Stationery**

SN 293,698. Distinctive Diaries, Inc., New York, N.Y. Filed Mar. 20, 1968.

**QWIK-STRIP**

For Self Sticking Clamps for Holding Sheet Material (Int. Cl. 16).  
First use Mar. 5, 1968.

SN 294,726. The Dow Chemical Company, Midland, Mich. Filed Apr. 2, 1968.

**THE PRACTICING VETERINARIAN**

For Magazine (Int. Cl. 16).  
First use Mar. 4, 1965.

SN 308,025. William H. Messerly, d.b.a. Diplomas of Gratitude, Adrian, Mich. Filed Sept. 23, 1968.

**DIPLOMAS OF GRATITUDE**

For Gift Diplomas (Int. Cl. 16).  
First use Dec. 4, 1967.

SN 294,727. The Dow Chemical Company, Midland, Mich. Filed Apr. 2, 1968.

**THE PRACTICING NUTRITIONIST**

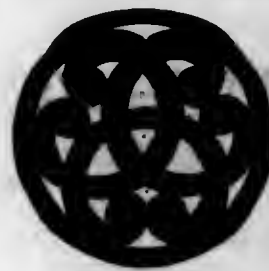
For Magazine (Int. Cl. 16).  
First use June 1, 1967.

SN 308,185. Boorum & Pease Company, Brooklyn, N.Y. Filed Sept. 25, 1968.

**KWIK-FAX**

For Loose Leaf Binders, Indexes Therefor, and Blank Loose Leaf Forms Having a Printed Heading (Int. Cl. 16).  
First use Sept. 18, 1968.

SN 296,306. The Certified Medical Representatives Institute, Inc., Roanoke, Va. Filed Apr. 23, 1968.



SN 314,206. Concel Inc., New York, N.Y. Filed Dec. 11, 1968.

**MELLO**

Owner of Reg. No. 250,814.  
For Toilet Tissue (Int. Cl. 16).  
First use June 26, 1928.

**Class 38—Prints and Publications**

SN 279,712. The Associated Merchandising Corporation, New York, N.Y. Filed Sept. 6, 1967.

*Fashion Leadership*

For Periodically Issued Reports Devoted to Merchandising (Int. Cl. 16).  
First use May 1964.

SN 302,409. The Gallagher Report, Inc., New York, N.Y. Filed July 10, 1968.

**THE GALLAGHER REPORT**

For Periodic Newsletter (Int. Cl. 16).  
First use December 1953.

SN 302,857. National Association for Mental Health, Inc., New York, N.Y. Filed July 16, 1968. SN 311,407. Grinlets, Chicago, Ill. Filed Nov. 5, 1968.



For Booklets, Pamphlets, Brochures and Posters (Int. Cl. 16).  
First use May 15, 1968.

SN 303,350. Ruralite Services, Inc., Portland, Ore. Filed July 22, 1968.

**RURALITE**

For Monthly Magazine (Int. Cl. 16).  
First use December 1954.

SN 308,541. Reports Corporation, Chatham, N.J. Filed July 24, 1968.

**CONSTRUCTIONEER**

For Magazine Published Bi-Weekly (Int. Cl. 16).  
First use Nov. 21, 1945.

SN 304,217. Gordon A. Friesen International, Inc., Washington, D.C. Filed Aug. 2, 1968.

**A CONCEPTS**

Owner of Reg. No. 845,171.  
For Newsletter Directed to Health Care in Hospitals (Int. Cl. 16).  
First use Feb. 1, 1967.

SN 304,744. Standard Oil Company, Flemington, N.J. Filed Aug. 9, 1968.

**ENJAY**

Owner of Reg. Nos. 570,089, 674,808, and others.  
For Periodical Newsletter and Magazine (Int. Cl. 16).  
First use September 1956.

SN 306,942. RKO General, Inc., Los Angeles, Calif. Filed Sept. 9, 1968.

**BOSS 30**

For Weekly Leaflet Setting Forth Popular Records (Int. Cl. 16).  
First use June 29, 1965.

SN 309,412. Ralph Porter Hudlow and Bonnie Marie Hudlow (partnership), Chattanooga, Tenn. Filed Oct. 7, 1968.

**DR. READIO**

For Printed Cards and Rotating Holders Therefor To Be Used in Teaching Reading (Int. Cl. 16).  
First use September 1968.



For Greeting Cards (Int. Cl. 16).  
First use in about September 1967.

SN 313,457. Vernon Book Sales Corp., Mount Vernon, N.Y. Filed Dec. 2, 1968.

**THE BLACK HORSE**

For Numerology Leaflets Published Periodically (Int. Cl. 16).  
First use at least as early as Sept. 1, 1949.

SN 313,458. Vernon Book Sales Corp., Mount Vernon, N.Y. Filed Dec. 2, 1968.

**KIP'S KEY WEEKLY**

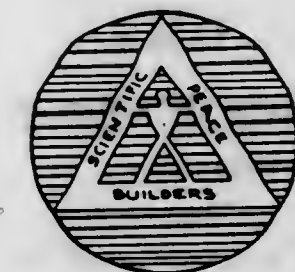
For Numerology Leaflets Published Periodically (Int. Cl. 16).  
First use at least as early as Sept. 1, 1949.

SN 313,459. Vernon Book Sales Corp., Mount Vernon, N.Y. Filed Dec. 2, 1968.

**BLACK & WHITE**

For Numerology Leaflets Published Periodically (Int. Cl. 16).  
First use at least as early as Sept. 1, 1949.

SN 314,371. Victor Uman, d.b.a. The Scientific Peace Builders Foundation, Santa Monica, Calif. Filed Dec. 12, 1968.



The drawing is lined for the color blue.  
For Booklet (Int. Cl. 16).  
First use Dec. 2, 1968.

SN 314,399. Potato Growers Association of California, Inc., Bakersfield, Calif. Filed Dec. 13, 1968.

**CALIFORNIA POTATORAMA**

The word "California" is disclaimed except in the association shown, without waiver of applicant's common law rights in the composite trademark.  
For Association Report Published Monthly (Int. Cl. 16).  
First use on or about Sept. 1, 1964.



SN 316,031. Vernon Books Sales Corp., Mount Vernon, N.Y. Filed Jan. 7, 1969.



The terms "Daily Single-Action" "Pick-Em-Hits" and "Lucky Numbers" are disclaimed apart from the mark as shown.  
For Numerology Leaflets Published Periodically (Int. Cl. 16).  
First use at least as early as Dec. 23, 1968.

SN 316,032. Vernon Book Sales Corp., Mount Vernon, N.Y. Filed Jan. 7, 1969.



The terms "Pick-Em for Hits" and "Lucky Numbers" are disclaimed apart from the mark as shown.  
For Numerology Leaflets Published Periodically (Int. Cl. 16).  
First use at least as early as Dec. 23, 1968.

SN 316,049. DMS, Inc., Greenwich, Conn. Filed Jan. 8, 1969.

### DMS

For Marketing Information Bulletins for Compilation in a Loose Leaf Binder (Int. Cl. 16).  
First use December 1959.

SN 320,006. Selling Areas-Marketing, Inc., New York, N.Y. Filed Feb. 25, 1969.

### SAMI

For Warehouse Withdrawal Reports Covering Movement of Goods in the Food Industry (Int. Cl. 16).  
First use during May 1966.

SN 321,514. Laventhol Krekstein Horwath & Horwath, Philadelphia, Pa. Filed Mar. 12, 1969.

### THE LKHH ACCOUNTANT

For Quarterly Newsletter (Int. Cl. 16).  
First use Jan. 15, 1969.

SN 321,751. Ave Maria Institute, Inc., Washington, N.J. Filed Mar. 14, 1969.

### SOUL

For Religious Magazine (Int. Cl. 16).  
First use 1950.

SN 321,862. Farm Journal, Inc., Philadelphia, Pa. Filed Mar. 17, 1969.

### LAUGHS FROM THE COUNTRY PRESS

Owner of Reg. No. 762,475.  
For Section of a Magazine (Int. Cl. 16).  
First use at least as early as Feb. 16, 1960.

SN 321,864. Farm Journal, Inc., Philadelphia, Pa. Filed Mar. 17, 1969.

### SLICK TRICKS

Owner of Reg. No. 762,478.  
For Section of a Magazine (Int. Cl. 16).  
First use at least as early as Oct. 20, 1945.

### Class 39—Clothing

SN 290,472. Cottage Tailor, Inc., Worcester, Mass. Filed Feb. 7, 1968.

### COTTAGETAILOR

For Ladies' Clothing—Namely, Dresses, Skirts, Blouses, Suits, Slacks, and Shorts (Int. Cl. 25).  
First use May 1963.

SN 292,733. B. B. Walker Shoe Company, Asheboro, N.C. Filed Mar. 7, 1968.

### WALKER

For Men's, Women's, and Children's Leather Shoes (Int. Cl. 25).  
First use on or about Jan. 15, 1952.

SN 293,869. Toyo Rayon Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Mar. 21, 1968.

### LITZLON

For Anoraks, Parkas, Jackets, Raincoats, Other Rainwear, Jumpers, and Slacks (Int. Cl. 25).  
First use at least as early as December 1960; in commerce at least as early as January 1963.

SN 299,464. Mervin Kurtzman, Inc., d.b.a. Le Baron California Clothes, Los Angeles, Calif. Filed May 31, 1968.



The words "California Clothes" are disclaimed apart from the mark as shown.  
For Expensive Men's Clothing, To Wilt, Suits, Sportscoats, Vests, Slacks, Leisure Jackets, and Topcoats (Int. Cl. 25).  
First use May 13, 1960.

SN 302,426. L'Aiglon, Angers, Main-et-Loire, France. Filed July 10, 1968.

### LAMINABELT

Priority claimed under Sec. 44(d) on French Reg. No. 735,734, dated Feb. 13, 1968.  
For Belts for Wearing Apparel (Int. Cl. 25).

SN 303,208. Unlroyal, Inc., New York, N.Y. Filed July 19, 1968.

### KLING-TITE

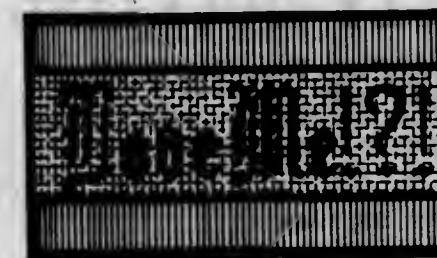
For Shoes (Int. Cl. 25).  
First use 1950.

SN 304,241. Parures et Creations, Paris, France. Filed Aug. 2, 1968.

### JEAN-LOUIS SCHERRER

"Jean-Louis Scherrer" is the name of a living individual whose consent is of record. Owner of French Reg. No. 727,029, dated Sept. 4, 1967.  
For Wearing Apparel and Accessories Therefor—Namely, Dresses, Coats, Shoes, Hats, Garments of Fur, Belts, Underwear, and Gloves (Int. Cl. 25).

SN 308,213. KW International, Inc., Los Angeles, Calif. Filed Sept. 25, 1968.



The drawing is lined for the colors red and yellow.  
For Skirts, Slacks, Sweaters, Dresses, Suits, and Bermudas (Int. Cl. 25).  
First use May 10, 1968.

SN 309,230. Biarritz-Shoes S.A., Biarritz, France. Filed Oct. 9, 1968.

### HENRI J. BELBIS

"Henri J. Belbis" is a living individual whose consent is of record.  
For Boots, Shoes, Slippers, and Sandals; and Children's Clothing—Namely, Socks and Knitted Booties (Int. Cl. 25).  
First use 1966; in commerce 1966.

SN 309,750. Alex Colman, Inc., Los Angeles, Calif. Filed Oct. 16, 1968.

### alex colman

"Alex Colman" is the president of applicant's corporation.  
For Ladies' Casual Wearing Apparel—Namely, Blouses, Dresses, Skirts, Sweaters, Pants, Stretch Pants, and Pants and Dress Combinations (Int. Cl. 25).  
First use the middle of 1949.

SN 310,580. Harry Moss, Los Angeles, Calif. Filed Oct. 25, 1968.



The name "Bella Bettina" is the name of a fictitious person, and is the Italian for "pretty Betty."  
For Women's Shoes (Int. Cl. 25).  
First use June 1968.

SN 311,234. California Leather Jobbing Corp., Glendale, Calif. Filed Nov. 4, 1968.



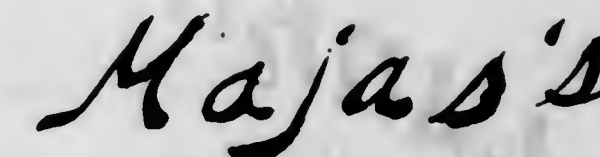
The representation of the sandal is disclaimed apart from the mark as shown.  
For Sandals (Int. Cl. 25).  
First use on or before Jan. 1, 1960.

SN 311,852. Federated Department Stores, Inc., d.b.a. Bullock's, Los Angeles, Calif. Filed Nov. 12, 1968.

### BULLOCK'S SUBURBAN

Owner of Reg. Nos. 734,216 and 816,675.  
For Hosiery (Int. Cl. 25).  
First use January 1967.

SN 312,842. Margaret Shepherd, d.b.a. Majas's, Bethesda, Md. Filed Nov. 20, 1968.



For Women's Dresses, Gowns, Suits, Jackets, and Coats (Int. Cl. 25).  
First use Oct. 1, 1967.



SN 314,021. Maison Gulcher et Coste, Paris, France. Filed Dec. 10, 1968. SN 317,284. Sharon-Jay Togs, Inc., New Bedford, Mass. Filed Jan. 23, 1969.

**BAYARD ELYSEES**

For Clothing for Men and Boys—Namely, Coats, Raincoats, Capes, Suits, Shorts, Pants, Shirts, Hats, Gloves, Shoes, Socks, Ties, and Handkerchieves (Int. Cl. 25).  
First use Feb. 20, 1968; in commerce Feb. 20, 1968.

SN 314,943. Thorntown Textile Co., Inc., Thorntown, Ind. Filed Dec. 20, 1968.

**PUDDINTAME**

For Sportswear—Namely, Suits, Dresses, and Shirts (Int. Cl. 25).  
First use Dec. 12, 1968.

SN 315,498. Posh Inc., Miami, Fla. Filed Dec. 31, 1968. Owner of Reg. Nos. 786,197 and 809,738.

**POSH**

For Sportswear—Namely, Women's Pants, Shirts, Blouses, Overblouses, Jackets, Skirts, Dresses, Coats, Stoles, Bathing Suits, and Shorts (Int. Cl. 25).  
First use Oct. 21, 1960.

SN 315,595. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. Filed Jan. 2, 1969.

**Juilleroy**

Owner of Reg. No. 534,791.  
For Men's Sportcoats (Int. Cl. 25).  
First use August 1965.

SN 316,018. Meco, Inc., Oklahoma City, Okla. Filed Jan. 7, 1969.

**SENSI-FLEX**

For Industrial Work Gloves (Int. Cl. 25).  
First use January 1968.

SN 316,987. Career Originals, Inc., New York, N.Y. Filed Jan. 21, 1969.

**Lankin**

For Women's Apparel—Namely, High Pile and Imitation Fur Coats (Int. Cl. 25).  
First use Apr. 1, 1965.



The lining shown on the drawing is a representation of the lining shown on the specimens.  
For Sportswear for Children—Namely, Jeans, Slacks, Bermuda Shorts, Jumpers, and Shifts (Int. Cl. 25).  
First use in or about March 1967.

SN 317,568. I.B.J. Corporation, Dallas, Tex. Filed Jan. 27, 1969.

**MELISSA LANE**

The name "Melissa Lane" is fictitious.  
For Clothing, More Specifically, Dresses (Int. Cl. 25).  
First use Oct. 23, 1968.

SN 318,606. Jump Suits Limited, Inc., Dallas, Tex. Filed Feb. 7, 1969.

**JUMP  
SUITS, LTD.**

No registration rights are claimed in the term "Jump Suits," apart from the mark as shown.  
For Men's Sportswear—Namely, Jump Suits (Int. Cl. 25).  
First use at least as early as October 1967.

SN 320,106. Charles H. Bacon Company, Inc., New York, N.Y. Filed Feb. 26, 1969.

**UGLY DUCKLING**

For Hosiery and Panty Hose (Int. Cl. 25).  
First use Feb. 19, 1969.

SN 320,357. Lulu, Inc., d.b.a. Jane Harper, Chattanooga, Tenn. Filed Feb. 28, 1969.

**LULU**

For Girls' and Ladies' Dresses (Int. Cl. 25).  
First use Aug. 27, 1968.

SN 321,158. Varsity Industries, Inc., New York, N.Y. Filed Mar. 7, 1969.

**VARSIITY**

Owner of Reg. Nos. 81,813, 744,188, and others.  
For Pajama and Robe Sets (Int. Cl. 25).  
First use on or about Oct. 17, 1963.

SN 322,229. E. R. Moore Company, Niles, Ill. Filed Mar. 20, 1969. SN 303,246. Ambiente Oy, Helsinki, Finland. Filed July 22, 1968.

**MOOREPRESS**

Owner of Reg. Nos. 599,395 and 845,507.  
For Girls' Gym Suits (Int. Cl. 25).  
First use Feb. 24, 1968.

**Class 40—Fancy Goods, Furnishings, and Notions**

SN 304,599. The French Beauty Inc., Montreal, Quebec, Canada. Filed Aug. 7, 1968.

**LID'R**

Owner of Canadian Reg. No. 157,055, dated May 31, 1968.  
For Paper Guides Used for Applying Liquid Eyeliner (Int. Cl. 26).

SN 311,451. All-American Brush Mfg. Corp., Newark, N.J. Filed Nov. 6, 1968.

**MINI-STYLER**

Owner of Reg. No. 731,533.  
For Combs (Int. Cl. 21).  
First use Mar. 4, 1968.

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

SN 292,076. Brunner Bros. Co., North Bergen, N.J. Filed Feb. 28, 1968.

**Engraved**

For Fabrics in the Piece for Making Table Cloths, Draperies, Dresses, Blouses, and Women's Undergarments (Int. Cl. 24).  
First use Oct. 9, 1967.

SN 293,868. Toyo Rayon Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Mar. 21, 1968.

**LITZLON**

Owner of Japanese Reg. No. 560,682, dated Nov. 25, 1960.  
For Textile Piece Goods (Knitted, Netted, Woven and Non-Woven), for Use in Making Anoraks, Parkas, Jackets, Raincoats, Other Rainwear, Jumpers, Slacks, and Umbrellas (Int. Cl. 24).

SN 302,721. Clutson-Penn International Limited, Highfields, Coalville, England. Filed July 15, 1968.



Priority claimed under Sec. 44(d) on British Reg. No. 923,326, dated Apr. 3, 1968.  
For Textile Piece Goods for Making Up Into Coats, Jackets, Skirts, Trousers, Dresses, Jumpers, Sweaters, Cardigans, and Articles of Underclothing (Int. Cl. 24).

**ambiente**

Owner of Finnish Reg. No. 50,862, dated Aug. 21, 1967.  
For Textile Fabrics of Cotton, Wool, Silk, and Synthetic Fibers; and Rugs and Carpets (Int. Cls. 24 and 27).

SN 303,387. Amity Fabrics, Inc., New York, N.Y. Filed July 23, 1968.

**VELVELEN**

For Water Repellent Cotton Fabrics (Int. Cl. 24).  
First use Jan. 2, 1968.

SN 303,390. B. Ashworth & Company (Overseas) Limited, London, England. Filed July 23, 1968.

**CONQUEST**

For Suitings, Being Textile Piece Goods (Int. Cl. 24).  
First use Oct. 2, 1967; in commerce April 1968.

SN 311,045. R. Mackness & Company Limited, Edinburgh, Scotland. Filed Oct. 31, 1968.



Owner of British Reg. No. B900,824, dated Oct. 24, 1966.  
For Quilts, Quilt Covers, Bedsheets, and Pillowcases (Int. Cl. 24).

SN 311,755. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 12, 1968.

**VALLEY TWEED**

Without waiving any common law rights, applicant disclaims any exclusive right in the word "Tweed" apart from the mark as shown.  
For Carpets (Int. Cl. 27).  
First use Apr. 22, 1965.

SN 311,761. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 12, 1968.

**EXECUTIVE LINE**

Without waiving any common law rights, applicant disclaims any exclusive right in the word "Line" apart from the mark as shown.  
For Carpets (Int. Cl. 27).  
First use Jan. 25, 1968.

SN 312,092. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

**SCHOOL TIME**

Without waiving any common law rights, applicant disclaims any exclusive right in the word "School" apart from the mark as shown.  
For Carpets (Int. Cl. 27).  
First use May 29, 1968.



SN 312,145. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

## SUN PLUSH

Without waiving any common law rights, applicant disclaims any exclusive right in the word "Plush" apart from the mark as shown.

For Carpets (Int. Cl. 27).  
First use Apr. 25, 1965.

SN 312,845. Greenwood Mills, Inc., New York, N.Y. Filed Nov. 18, 1968.



The drawing is lined for the colors green and silver. Owner of Reg. No. 541,641.

For Textile Fabric for Apparel and Industrial End Use (Int. Cl. 24).  
First use on or before Jan. 1, 1947.

SN 313,025. Plymouth Rubber Company, Inc., Canton, Mass. Filed Nov. 25, 1968.

## SUPPLSKIN

For Plastic Coated Tricot Sheeting for Use in Making Gloves, Outer Coats, Jackets, Skirts, Trousers, and Caps (Int. Cl. 24).  
First use Sept. 15, 1966.

SN 313,406. Fieldcrest Mills, Inc., Eden, N.C. Filed Dec. 2, 1968.



For Blankets (Int. Cl. 24).  
First use Sept. 28, 1967.

SN 313,648. Decorative Modes, Ltd., Jamaica, N.Y. Filed Dec. 5, 1968.



Applicant makes no claim to the words "Decorative," "Modes," and "Ltd." apart from the mark shown, reserving, however, all other rights in or to the same.

For Curtains, Draperies, Valances, and Bedspreads (Int. Cl. 24).  
First use Sept. 19, 1968.

SN 313,737. Shulman-Sunshine, Inc., Paterson, N.J. Filed Dec. 5, 1968.

## SHULMAN SUNSHINE

Owner of Reg. No. 798,852.  
For Textile Fabrics of Synthetic Fibers and of Combinations of Silk, Rayon and Cotton Fibers (Int. Cl. 24).  
First use Nov. 15, 1965.

SN 315,059. Creek Indian Tribe of Oklahoma USA, Tulsa, Okla. Filed Dec. 23, 1968.

## CREEK INDIAN PLAID

Applicant disclaims the word "Plaid" apart from the mark as shown.  
For Woolen Fabrics (Int. Cl. 24).  
First use July 4, 1968.

SN 319,535. Cone Mills Corporation, Greensboro, N.C. Filed Feb. 19, 1969.



Owner of Reg. Nos. 814,103 and 814,104.  
For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combination Thereof (Int. Cl. 24).  
First use Jan. 7, 1969.

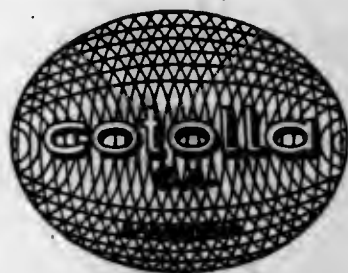
SN 320,431. Carolyn Chenilles, Inc., New York, N.Y. Filed Mar. 3, 1969.

## LADY CAROLYN

For Woven and Tufted Bedspreads and Scatter Rugs (Int. Cls. 24 and 27).  
First use Aug. 15, 1955.

## Class 43—Thread and Yarn

SN 301,514. Cotolla Sociedad Anonima, Barcelona, Spain. Filed June 27, 1968.



Applicant disclaims the designations "S.A." and "Barcelona" apart from the mark as a whole. Owner of Spanish Reg. No. 360 079, dated Oct. 26, 1960.  
For Yarns and Threads of Any Natural and Synthetic Fiber, Except Sisal, Hemp and Esparto (Int. Cl. 23).

## Class 44—Dental, Medical, and Surgical Class 46—Foods and Ingredients of Foods Appliances

SN 266,793. Smiling Sam Ltd., Ottawa, Ontario, Canada. Filed Mar. 15, 1967.



No claim is made to the words "Giant Submarine" and the representation of a sandwich apart from the mark as shown. Owner of Canadian Reg. No. 146,944, dated Sept. 2, 1966.  
For Submarine Sandwiches (Int. Cl. 29).

SN 266,794. Smiling Sam Ltd., Ottawa, Ontario, Canada. Filed Mar. 15, 1967.



No claim is made to the word "Pizzeria" apart from the mark as shown. Owner of Canadian Reg. No. 149,315, dated Feb. 10, 1967.  
For Pizza Pies (Int. Cl. 30).

SN 292,530. S.p.A. Strega Alberti Benevento (S.A.B.), Benevento, Italy. Filed Mar. 6, 1968.

## ALBERTI

Owner of U.S. Reg. Nos. 75,549 and 564,841.  
For Candy (Int. Cl. 30).  
First use 1939; in commerce Sept. 15, 1948.

SN 294,062. Walter M. Lowney Company Limited, Sherbrooke, Quebec, Canada. Filed Mar. 25, 1968.

## GLOSETTE

Priority Claimed under Sec. 44(d) on Canadian application filed Feb. 26, 1968; Reg. No. 160,483, dated Jan. 10, 1969. Owner of U.S. Reg. No. 856,104.  
For Candy, Candied Raisins, and Peanuts (Int. Cls. 29 and 30).

SN 294,272. Fisher Flouring Mills Co., Seattle, Wash. Filed Mar. 27, 1968.

## KRIS

For Wheat Products—Namely, Wheat Flour and Wheat Breakfast Cereals (Int. Cl. 30).  
First use Mar. 18, 1968.

SN 295,145. Hygrade Food Products Corporation, Detroit, Mich. Filed Apr. 8, 1968.

## BERKSHIRE

For Bacon, Ham, Sausage, and Lard (Int. Cl. 29).  
First use Oct. 22, 1907.

SN 272,875. Unitek Corporation, Monrovia, Calif. Filed June 1, 1967.

## AlastiK

For Resilient Force-Module Components and Kits of Such Components for Applying Corrective Orthodontic Forces to Teeth (Int. Cl. 10).  
First use at least as early as May 17, 1967.

SN 277,251. Asti Products, Inc., New York, N.Y. Filed Aug. 1, 1967.

## AIRDOME

For Electrical Hair Dryers (Int. Cl. 7).  
First use June 16, 1967.

SN 301,722. Dow Corning Corporation, Midland, Mich. Filed July 1, 1968.

## CYSTO-CATH

For Suprapubic Drain Kit (Int. Cl. 10).  
First use May 17, 1968.

SN 313,217. Wolf Textile Company, Dallas, Tex. Filed Nov. 27, 1968.

## MEDIC-AID

For Hospital Garments—Namely, Surgical Gowns (Int. Cl. 25).  
First use February 1968.

## Class 45—Soft Drinks and Carbonated Waters

SN 294,400. Supermarkets General Corporation, Cranford, N.J., by change of name and assignment from Louket Markets, Inc., Jersey City, N.J. Filed Mar. 28, 1968.

## PATHMARK

Owner of Reg. Nos. 854,358, 854,884, and 856,671.  
For Ginger Ale (Int. Cl. 32).  
First use Jan. 26, 1968.

SN 308,488. Green & Green, Inc., Houston, Tex. Filed Sept. 30, 1968.

## EMERALD

For Flavoring Extracts for Use in the Preparation of Soft Drinks (Int. Cl. 32).  
First use Aug. 8, 1968.



SN 297,485. Oxo Company of Ireland Limited, Dun Laoghaire, Dublin, Ireland. Filed May 6, 1968.

**ERINOX**

Owner of Irish Reg. Nos. 52,317, dated Sept. 10, 1937 and B70,649, dated June 11, 1965.

For Canned and Frozen Meat; Prepared Meat Products—Namely, Meat Extracts, Bouillon in Liquid, Cube or Dehydrated Form (Int. Cl. 29).

SN 301,046. Crowley's Milk Company, Inc., Binghamton, N.Y. Filed June 21, 1968.

**VOGUE**

For Cottage Cheese, Imitation Sour Cream, Food Dips (Shrimp, Bleu Cheese and French Onion), and Aerated Real Cream Topping (Int. Cl. 29).

First use Mar. 1, 1965.

SN 302,972. A. H. Robins Company, Incorporated, Richmond, Va. Filed July 17, 1968.

**CORN'DERVES**

Applicant disclaims the word "Corn" apart from the mark as shown.

For Corn Chips (Int. Cl. 30).

First use May 24, 1968.

SN 305,582. Martha White Foods, Inc., Nashville, Tenn. Filed Aug. 20, 1968.

**GOODNESS GRACIOUS,  
IT'S GOOD**

Without relinquishing any of its common law rights, applicant disclaims the words "It's Good" apart from the mark as shown. Owner of Reg. Nos. 192,721, 538,025, and others.

For Flour, Corn Meal, Dried Beans, Cake Mix, Pancake Mix, Biscuit Mix, Corn Bread Mix, Corn Muffin Mix, and Instant Potatoes (Int. Cls. 29 and 30).

First use at least as early as Nov. 21, 1902.

SN 305,764. Taco Bell, Torrance, Calif. Filed Aug. 22, 1968.

**TACO BELL**

The word "Taco" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 820,073, 846,432, and 856,207.

For Food Ingredients and Specifically a Taco Mix (Int. Cl. 30).

First use on or about Oct. 13, 1965.

SN 305,842. McCormick & Company, Incorporated, Baltimore, Md. Filed Aug. 23, 1968.

**TAP-A-TREE**

For Pancake Syrup (Int. Cl. 30).

First use Aug. 12, 1968.

SN 306,151. Irsln Restaurant Corporation, d.b.a. Peter Pan, New York, N.Y. Filed Aug. 28, 1968.

**SKINNY SHAKES**

No registration rights are claimed for the word "Shakes" apart from the mark shown in the drawing and applicant waives no common-law or other rights in same.

For Low Calorie Milk Shake Made With a Dry Milk Base, Sold Both in Frozen and Spoonable Form, and Mix Therefor (Int. Cl. 5).

First use Apr. 17, 1968.

Subj. to Intf. with SN 306,703.

SN 309,031. Fenn Bros., Inc., Sioux Falls, S. Dak. Filed Oct. 7, 1968.



Owner of Reg. No. 275,900.  
For Ice Cream (Int. Cl. 30).  
First use Sept. 1, 1951.

SN 309,485. Seab GmbH., Basel, Switzerland. Filed Oct. 11, 1968.

**VITAGHURT**

Owner of Swiss Reg. No. 230,301, dated June 7, 1967; and U.S. Reg. No. 780,879.  
For Cheese, Curds and Yoghurt (Int. Cl. 29).

SN 310,310. David & Sons, Inc., Fresno, Calif. Filed Oct. 23, 1968.

**NUTTY SNACK**

The word "Snack" is disclaimed apart from the mark as shown.  
For Roasted Shelled Sunflower Seeds (Int. Cl. 29).  
First use Oct. 11, 1968.

SN 310,688. Oscar Mayer & Co., Inc., Chicago, Ill. Filed Oct. 28, 1968.

**CONCESSION PACK**

For Frankfurters (Wieners) (Int. Cl. 29).  
First use at least as early as Feb. 27, 1964.

SN 310,814. Topps Tarda Iberica S.A., Barcelona, Spain. Filed Oct. 29, 1968.

**CHA CHA CHA**

Owner of Spanish Reg. No. 470,745, dated Jan. 29, 1966.  
For Chewing Gum (Int. Cl. 30).

SN 310,857. Campbell Soup Company, Camden, N.J. Filed Oct. 30, 1968.

**MacaroniOs**

The word "Macaroni" is disclaimed apart from the mark as a whole. Owner of Reg. No. 857,584.  
For Canned Prepared Macaroni (Int. Cl. 30).  
First use Feb. 21, 1967.

SN 311,588. J. H. Filbert, Inc., Baltimore, Md. Filed Nov. 7, 1968.

**WONDER SPRED**

Applicant disclaims the exclusive right to use of the word "Spred" apart from the mark as shown, reserving unto itself, however, any common law rights that it may have. Owner of Reg. No. 801,428.

For Mayonnaise and Salad Dressing (Int. Cl. 29).

First use Oct. 31, 1968.

SN 311,642. Perry H. Chipurnoi, Inc., Long Island City, N.Y. Filed Nov. 8, 1968.

**ZAANLAND**

For Chocolate Candy (Int. Cl. 30).  
First use Oct. 14, 1968.

SN 311,942. Sir Lucas Standwich Inns of America, Inc., Jacksonville, Fla. Filed Nov. 12, 1968.



The mark does not identify a particular living individual. For Delivery and Take-Out Foods, Mainly Hot and Cold Sandwiches, Salads, Prepared Fish and Meats, Candy, Pastries, Ice Cream Desserts, Salt, Pepper, Mustard, Catsup, Relish, Slaw, Chili Sauce, Mayonnaise, and Pickles (Int. Cls. 29 and 30).

First use Nov. 4, 1968.

SN 312,025. Choice Foods, Inc., Minneapolis, Minn. Filed Nov. 13, 1968.

**CERE-BLEND**

For Non-Chemical Dry Additive for Enriching Flour (Int. Cl. 1).  
First use Oct. 1, 1968.

SN 315,372. Weight Watchers International, Inc., Great Neck, N.Y. Filed Dec. 30, 1968.

**"WW"**

For Meatless Sauces and Gravy (Int. Cl. 30).  
First use Mar. 1, 1966.

**PROTEIN PLUS**

The word "Protein" is disclaimed apart from the mark as shown, but no common law rights are waived thereto.  
For Dog Food (Int. Cl. 31).  
First use Jan. 7, 1969.

SN 316,941. Ralston Purina Company, St. Louis, Mo. Filed Jan. 21, 1969.

**PURINA 43**

Owner of Reg. Nos. 808,908, 845,651, and others.  
For Dog Food (Int. Cl. 31).  
First use Jan. 7, 1969.

SN 317,029. General Foods Corporation, White Plains, N.Y. Filed Jan. 21, 1969.

**PEBBLES**

For Breakfast Cereal (Int. Cl. 30).  
First use Dec. 27, 1968.

SN 317,031. General Foods Corporation, White Plains, N.Y. Filed Jan. 21, 1969.

**BAKEROONIES**

For Breakfast Cereal (Int. Cl. 30).  
First use Dec. 27, 1968.

SN 317,033. General Foods Corporation, White Plains, N.Y. Filed Jan. 21, 1969.

**CREEPY CRUNCHIES**

For Breakfast Cereal (Int. Cl. 30).  
First use Dec. 27, 1968.

SN 317,193. Adobe House, Taylor, Tex. Filed Jan. 22, 1969.

**ADOBE HOUSE**

For Taco Shells (Int. Cl. 30).  
First use Nov. 23, 1965.

SN 318,327. James J. O'Connor Coffee Co., d.b.a. O'Connor Coffee Company, St. Louis, Mo. Filed Feb. 4, 1969.

**O'CONNOR'S**

For Coffee (Int. Cl. 30).  
First use at least as early as 1925.

SN 318,592. Standard Brands Incorporated, New York, N.Y. Filed Feb. 6, 1969.

**POT OF GOLD**

Owner of Reg. No. 362,685.  
For Chocolates (Int. Cl. 30).  
First use Oct. 15, 1937.

SN 318,904. W. R. Grace & Co., New York, N.Y. Filed Feb. 11, 1969.

**HAPPI-FLAVORS**

For Fruit-Flavored Coatings for Ice Cream and Frozen Desserts (Int. Cl. 30).  
First use Aug. 22, 1968.



SN 318,907. Hershey Foods Corporation, Hershey, Pa. Filed Feb. 11, 1969.

**krackel**

Owner of Reg. No. 703,315.  
For Chocolate Bars (Int. Cl. 30).  
First use Jan. 15, 1969.

SN 319,162. Bennett E. Garrison, d.b.a. Garrison's Food Company, Alpha, Mich. Filed Feb. 14, 1969.

## DEER TRAIL

For Mix for Griddle Cakes (Int. Cl. 30).  
First use Feb. 15, 1968.

SN 319,305. General Foods Corporation, White Plains, N.Y. Filed Feb. 17, 1969.

## TOAST'EM

Owner of Reg. Nos. 69,283, 80,493, and 809,030.  
For Food Product, Dough-Like in Nature, With or Without a Fruit Filling, To Be Prepared in a Toaster (Int. Cl. 30).  
First use Aug. 31, 1964.

SN 321,714. Allied Mills, Inc., Chicago, Ill. Filed Mar. 14, 1969.

## KRUNCHETTES

Owner of Reg. Nos. 590,391, 860,891, and others.  
For Livestock Feed (Int. Cl. 31).  
First use Apr. 15, 1968.

## Class 47 - Wines

SN 308,190. Companhia Comercial C. Vinhas, S.A.R.L., Lisbon, Portugal. Filed Sept. 25, 1968.

**DOM  
BAZILIO**

The name "Dom Bazilio" is fanciful.  
For Rose Wine and Table Wines (Int. Cl. 33).  
First use 1963; in commerce January 1967.

SN 318,611. North American Suppliers Ltd., Inc., New Orleans, La. Filed Feb. 7, 1969.

**ESTANCIERO**

The word "Estanciero" is translated in English as "rancher."  
For Wines (Int. Cl. 33).  
First use Dec. 10, 1968.

## Class 49 - Distilled Alcoholic Liquors

SN 300,277. The Great Atlantic & Pacific Tea Company, Inc., New York, N.Y. Filed June 12, 1968.

**Loch Haven**

For Blended Scotch Whisky (Int. Cl. 33).  
First use Dec. 11, 1967.

SN 306,913. Jack Daniel Distillery, Lynchburg, Tenn. Filed Sept. 9, 1968.

## UNCLE JACK'S

For Whiskey (Int. Cl. 33).  
First use May 7, 1968.

SN 307,348. Potter Distilleries Ltd., Langley, British Columbia, Canada. Filed Sept. 13, 1968.



Owner of Canadian Reg. No. 157,129, dated June 7, 1968; and U.S. Reg. No. 842,552.  
For Canadian Whisky (Int. Cl. 33).

SN 309,862. Glenmore Distilleries Company, Louisville, Ky. Filed Oct. 17, 1968.

## GLENMORE

Owner of Reg. Nos. 310,855, 703,326, and others.  
For Scotch Whisky (Int. Cl. 33).  
First use Mar. 15, 1967.

SN 309,863. Glenmore Distilleries Company, Louisville, Ky. Filed Oct. 17, 1968.

## NORTHERN LIGHT

No exclusive claim is made to the word "Light" apart from the mark as shown.  
For Whiskey (Int. Cl. 33).  
First use Sept. 24, 1968.

SN 311,261. The Grand Union Company, East Paterson, N.J. Filed Nov. 4, 1968.

## DEL DIA

The English translation of the Spanish words "Del Dia" is "of the day."  
For Rum (Int. Cl. 33).  
First use on or about Nov. 15, 1967.

SN 319,176. 1892 Liquors, Inc., Boston, Mass. Filed Feb. 14, 1969.

## STANLEY & LIVINGSTONE

For Whiskey (Int. Cl. 33).  
First use Feb. 5, 1969.

## Class 50 - Merchandise Not Otherwise Classified

SN 266,164. Geo. Zoltan Lefton Co., Chicago, Ill. Filed Mar. 7, 1967.

**lefton**

Owner of Reg. No. 643,047.  
For Figurines, Wall Plaques, and Artificial Flowers (Int. Cls. 20 and 26).  
First use 1947.

SN 316,664. Morgan Adhesives Company, Stow, Ohio. Filed Jan. 15, 1969.

## DEC-O-TREADS

For Decorative Safety Pads With Adhesive Backing (Int. Cl. 20).  
First use Sept. 3, 1968.

SN 318,398. Victor H. Chatten, Torrance, Calif. Filed Feb. 5, 1969.

## BEAUTI-FALL

For Decorative, Ornamental and Advertising Visual Liquid Flow Systems, and Components and Portions Thereof, Utilizing Liquids Flowing Down Filaments or Lines (Int. Cl. 20).  
First use December 1967.

## Class 51 - Cosmetics and Toilet Preparations

SN 289,142. Yardley of London, Inc., Totowa, N.J. Filed Jan. 18, 1968.

## THE OLIVER LOOK

For Nail Polish, Lipstick and Lip Polish (Int. Cl. 3).  
First use Jan. 3, 1968.

SN 290,075. Clairol Incorporated, New York, N.Y. Filed Feb. 1, 1968.

## MOISTURE-WHIP

For Moisture Cream (Int. Cl. 3).  
First use Dec. 4, 1967.

SN 293,259. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 14, 1968.

## PEACE PAINT

Without waiving common law rights the word "Paint" is disclaimed from the mark as shown.  
For Liquid Make Up Foundation (Int. Cl. 3).  
First use on or about Feb. 23, 1968.

SN 302,167. Yardley of London, Inc., New York, N.Y. Filed July 5, 1968.

## CELLOPHANES

For Body Lotion, Cream Foundation, Rouge, Eye Shadow, Nail Color and Lip Color (Int. Cl. 3).  
First use May 21, 1968.

SN 303,128. American Parfums Corporation, Carson City, Nev. Filed July 19, 1968.

## LE GALION

Applicant's mark is translated to be "the galleon." Owner of Reg. No. 501,674.  
For Pre-Shave Lotion, After Shave Lotion, Hair Conditioner, Talcum powder, Hair Spray, Lipstick, Body Cream, and Personal Deodorant (Int. Cls. 3 and 5).  
First use 1936.

SN 303,420. Jacqueline Cochran, Inc., New York, N.Y. Filed July 23, 1968.

## URBANE COLLECTION

Applicant disclaims any exclusive right to the word "Collection" except as shown.  
For Eye Shadow, Liquid Eyeliner, Eye Treatment Moisturizer; Eye Cream; Night Cream; Astringent Lotion; Face Powder; Make-Up Foundations; and Lipstick (Int. Cl. 3).  
First use Apr. 1, 1968.

SN 305,456. Johnson & Johnson, New Brunswick, N.J. Filed Aug. 19, 1968.

## WINTER SEASON

For Hand Cream (Int. Cl. 3).  
First use July 2, 1968.

SN 313,305. Johnson & Johnson, New Brunswick, N.J. Filed Nov. 29, 1968.

## THIRSTY SKIN

Applicant disclaims the word "Skin" apart from the trademark.  
For Bath Oil and Hand Lotion (Int. Cl. 3).  
First use Aug. 21, 1968.

SN 314,030. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Dec. 10, 1968.

## LIQUID LID

For Eye Shadow (Int. Cl. 3).  
First use Nov. 7, 1968.

SN 314,031. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Dec. 10, 1968.

## UN-CIRCLE

For Make-Up for Concealing Under-Eye Circles and Shadows (Int. Cl. 3).  
First use Nov. 7, 1968.

SN 316,881. Clairol Incorporated, New York, N.Y. Filed Jan. 17, 1969.

## OUT OF SIGHT

Owner of Reg. No. 853,813.  
For Perfume and Cologne (Int. Cl. 3).  
First use Mar. 14, 1967.

SN 321,866. The Gillette Company, Boston, Mass. Filed Mar. 17, 1969.

## MARINER'S

For Skin Lotion (Int. Cl. 3).  
First use Nov. 12, 1968.  
Subj. to Intf. with SN 318,618.



**Class 52—Detergents and Soaps**

SN 303,038. The Cleveland Cleaner & Paste Company, Cleveland, Ohio. Filed July 18, 1968.

**WALL-BRITE**

For Wallpaper Cleaning Preparations, Wallpaper Sponges Impregnated With a Cleaning Preparation, and Dry Cleaning Sponges Impregnated With a Cleaning Preparation for Household Use (Int. Cls. 3 and 21).  
First use in 1948.

SN 303,129. American Parfums Corporation, Carson City, Nev. Filed July 19, 1968.

**LE GALION**

Applicant's mark means "the gallon." Owner of Reg. No. 501,674.  
For Toilet Soap (Int. Cl. 3).  
First use 1938.

SN 305,457. Johnson & Johnson, New Brunswick, N.J. Filed Aug. 19, 1968.

**THIRSTY SKIN**

Applicant disclaims the word "Skin" apart from the trademark.  
For Toilet Soap (Int. Cl. 3).  
First use July 2, 1968.

SN 306,373. Herald Pharmacal, Inc., Bedford, Va. Filed Aug. 30, 1968.

**SEBORID**

For Hair Shampoo (Int. Cl. 3).  
First use Aug. 20, 1968.

SN 307,081. Bristol-Myers Company, New York, N.Y. Filed Sept. 11, 1968.

**GLORIFY**

First use May 27, 1968.

**SERVICE MARKS****Class 100—Miscellaneous**

SN 273,191. Flint's Incorporated, Englewood, Ohio. Filed June 6, 1967.



For Restaurant and Catering Services (Int. Cl. 42).  
First use May 26, 1967.

SN 307,572. W. R. Grace & Co., New York, N.Y. Filed Sept. 17, 1968.

**VESTA-KLEAN**

Owner of Reg. Nos. 721,707, 831,890, and 836,517.  
For Biodegradable Cleaner for Use in Industrial and Food Processing Plants and on Automotive Vehicles (Int. Cl. 3).  
First use Dec. 18, 1967.

SN 308,217. Lafayette Brass Company, Inc., New York, N.Y. Filed Sept. 25, 1968.

**CLOG BUSTER**

Owner of Reg. No. 866,090.  
For Liquid Drain Pipe Cleaner (Int. Cl. 3).  
First use Aug. 1, 1968.

SN 308,293. W. R. Grace & Co., New York, N.Y. Filed Sept. 26, 1968.

**VESTA-BRITE**

Owner of Reg. Nos. 721,707, 831,890, and 836,517.  
For Biodegradable Cleaner for Use in Industrial and Food Processing Plants and on Automotive Vehicles (Int. Cl. 3).  
First use Feb. 20, 1968.

SN 316,565. Lever Brothers Company, New York, N.Y. Filed Jan. 15, 1969.

**BANK**

For Household Detergent for General Washing and Cleaning (Int. Cl. 3).  
First use Jan. 8, 1969.

SN 318,393. Bonewitz Chemicals, Inc., Burlington, Iowa. Filed Feb. 5, 1969.

**MIKRO-CIDE**

For Composition for Sanitizing and Cleaning Food Equipment for Use in Dairies and the Like (Int. Cl. 5).  
First use Oct. 25, 1968.



Applicant disclaims the words "Service," "Technology," and "Education" as shown in the drawing apart from use as shown. The mark is lined for the color red.

For Engineering, Materials Testing and Chemical Processing Services Related to Atomic and Nuclear Energy Materials (Int. Cl. 42).  
First use on or about July 1, 1966.

SN 289,255. American Fishing Association, Springdale, Ark. Filed Jan. 22, 1968.



No claim is made to the wording "American Fishing Association" apart from the mark as shown.

For Association Services—Namely, Furnishing Information and Publications to Members and Promoting Sport Fishing by Fishing Contests and the Like (Int. Cl. 42).  
First use Dec. 11, 1967.

SN 290,778. Tun-dra Kennels, Nunica, Mich. Filed Feb. 9, 1968.

**TUN-DRA**

For Dog Kennel Services (Int. Cl. 42).  
First use on or about July 1, 1962.

SN 291,134. Chef's Orchid, Inc., Jamaica, N.Y., assignee of Chef's Orchid Airline Caterers, Inc., Jamaica, N.Y. Filed Feb. 15, 1968.



Owner of Reg. No. 760,446.  
For Food Catering Services (Int. Cl. 42).  
First use during November 1966.

SN 291,147. Gary's Restaurants Franchise Co., Inc., Maplewood, N.J. Filed Feb. 15, 1968.



For Restaurant Services (Int. Cl. 42).  
First use April 1960.

SN 291,866. Halmor Services, Inc., Tulsa, Okla. Filed Feb. 26, 1968.

**HALMOR**

For Meter Proving (Int. Cl. 42).  
First use Apr. 15, 1959.

TM 865 O.G.—4

SN 291,925. Waste Control of Florida, Inc., Jacksonville, Fla. Filed Feb. 26, 1968.

**SATISFACTION  
GUARANTEED  
OR DOUBLE YOUR  
GARBAGE BACK**

Owner of Reg. No. 751,471.  
For Garbage and Trash Pick-Up and Disposal Services (Int. Cl. 42).  
First use on or about Apr. 16, 1961.

SN 295,710. American Catering Corporation, Springfield, Va. Filed Apr. 16, 1968.



For Restaurant Services (Int. Cl. 42).  
First use Mar. 4, 1967.

SN 299,674. Henry's Drive-In, Inc., Chicago, Ill. Filed June 4, 1968.



Owner of Reg. Nos. 756,232 and 833,087.  
For Drive-In Restaurant Services (Int. Cl. 42).  
First use on or about Mar. 21, 1968.

SN 300,442. W. R. Grace & Co., New York, N.Y. Filed June 14, 1968.



Applicant disclaims the words "Green Machine" apart from the mark as shown. The drawing is lined for the color green, but no claim is made to the color.

For Application of Fertilizer Materials to Lawns (Int. Cl. 42).  
First use Mar. 3, 1967.

SN 302,909. Automatic Retailers of America, Inc., Philadelphia, Pa. Filed July 17, 1968.

**SPEEDLINE**

For Cafeteria Services (Int. Cl. 42).  
First use Dec. 4, 1965.



SN 307,623. Bal Harbour Towers, Inc., Bal Harbour, Fla. Filed Sept. 18, 1968.  
 SN 275,132. Franchises International, Inc., White Plains, N.Y. Filed June 30, 1967.

## HARBOUR HOUSE

For Providing an Apartment Type Dwelling for Transients (Int. Cl. 42).  
 First use Mar. 4, 1961.

SN 308,209. Al Hirt's Sandwich Saloons, Inc., Nashville, Tenn., by change of name from Al Hirt Sandwich Saloons, Inc., Nashville, Tenn. Filed Sept. 25, 1968.



No Registration rights are claimed for the words "Sandwich" and "Saloon" apart from the mark as shown; however, applicant waives none of its common law rights in the mark as shown or any features thereof. "Al Hirt" is a living individual whose consent is of record.

For Restaurant Services (Int. Cl. 42).  
 First use Sept. 6, 1968.

SN 311,874. Cyber-Tronics, Inc., New Hyde Park, N.Y. Filed Nov. 13, 1968.



Owner of Reg. No. 803,230.  
 For Computer Systems Engineering Services (Int. Cl. 42).  
 First use Apr. 28, 1961.

## Class 101—Advertising and Business

SN 267,238. Extraservices, Inc., Hartford, Conn. Filed Mar. 21, 1967.

## extraservices

Owner of Reg. Nos. 801,598 and 824,252.  
 For Supplying Temporary Administrative, Clerical, Custodial, Maintenance, Office, Production, Sales, Technical, and Other Personnel (Int. Cl. 35).  
 First use Nov. 1, 1966.



Without relinquishing any common law rights and for the purpose of registration of the composite mark herein, exclusive rights in the phrase "First in Franchising" are disclaimed apart from the mark as shown.

For Lending Technical Assistance to Commercial Organizations in the Field of Franchising (Int. Cl. 35).  
 First use Nov. 14, 1965.

SN 289,193. House of Nine, Incorporated, Los Angeles, Calif. Filed Jan. 19, 1968.

## HOUSE OF NINE

The words "House of" are disclaimed apart from the balance of the mark as shown. Owner of Reg. Nos. 564,890 and 802,302.

For Retail Store Services in the Field of Women's Apparel in Specialized Sizes (Int. Cl. 35).  
 First use January 1943.

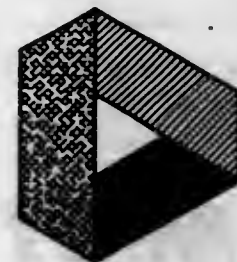
SN 289,194. House of Nine, Incorporated, Los Angeles, Calif. Filed Jan. 19, 1968.



The words "House of" are disclaimed apart from the balance of the mark as shown. Owner of Reg. Nos. 564,890 and 802,302.

For Retail Store Services in the Field of Women's Apparel in Specialized Sizes (Int. Cl. 35).  
 First use Sept. 26, 1967.

SN 290,119. Walter Associates, Inc., Los Altos, Calif. Filed Feb. 1, 1968.



The drawing is lined for the colors orange and brown, but no claim is made for these colors as a part of the mark.

For Distributorship Services—Namely, Distributing Electronic Equipment and Accessories Therefor for Others (Int. Cl. 35).  
 First use Jan. 8, 1962.

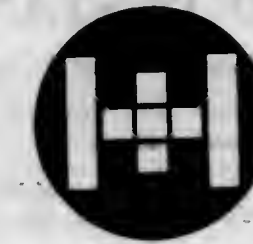
SN 299,703. G. E. Stimpson Co., Inc., Worcester, Mass. Filed June 4, 1968.

## TRU-PRICE PLAN

Applicant disclaims the word "Plan" apart from the mark as shown.

For Supplying Representative Services for Numerous Manufacturers of Office Equipment and Supplies (Int. Cl. 35).  
 First use on or about Aug. 15, 1966.

SN 302,086. Information Management Incorporated, San Francisco, Calif. Filed July 5, 1968.  
 SN 306,205. Acme Personnel Service of Spokane, Inc., Spokane, Wash. Filed Aug. 29, 1968.



The mark consists of a fanciful "H" and "I" design.  
 For Computerized Hospital Patient Accounting Services (Int. Cl. 35).  
 First use May 2, 1967.

SN 302,414. Glendinning Companies, Inc., Westport, Conn. Filed Sept. 6, 1968.

## BEE IN THE MONEY

Applicant disclaims the word "Money" apart from the mark as shown.

For Promotional Game Programs of the Public-Participation Type, for Retail Businesses of Others—Namely, Originating, Planning, Devising Materials for, and Implementing Such Programs (Int. Cl. 35).  
 First use May 9, 1968.

SN 304,250. The Progressive Farmer Company, Birmingham, Ala. Filed Aug. 2, 1968.

## JOYS OF SOUTHERN LIVING

Owner of Reg. Nos. 782,602 and 847,643.  
 For Advertising Services for Customers Who Advertise in a Periodical Publication (Int. Cl. 35).  
 First use Nov. 1, 1966.

SN 305,684. Scientific Apparatus Makers Association, Washington, D.C. Filed Aug. 21, 1968.



The mark consists of the fanciful presentation of the letters "SAMA." Owner of Reg. Nos. 736,556 and 807,537.

For Trade Association Services in Promoting Standardization and Improvement of Scientific Apparatus, in Collecting and Disseminating Trade Statistics, and in Distributing Information Relating to Scientific Apparatus (Int. Cl. 35).  
 First use July 1967.



The word "Personnel" is disclaimed apart from the mark as shown.

For Employment Agency Services (Int. Cl. 35).  
 First use Jan. 21, 1948.

SN 306,770. Glendinning Companies, Inc., Westport, Conn. Filed Sept. 6, 1968.

## BIG NAME BINGO

Applicant disclaims the word "Bingo" apart from the mark as shown.

For Promoting the Sale of Goods and/or Services of Others Through the Distribution of Printed Materials and Advertising Designs for Promotional Games (Int. Cl. 35).  
 First use Nov. 7, 1967.

SN 306,903. Martin Greenfield Associates, Inc., Great Neck, N.Y. Filed Sept. 9, 1968.



For Advertising Agency Services (Int. Cl. 35).  
 First use May 1962.

SN 313,414. Glendinning Companies, Inc., Westport, Conn. Filed Dec. 2, 1968.

## GREAT DATES

For Promoting the Sale of Goods and/or Services of Others Through the Distribution of Printed Material and Advertising Designs for Promotional Contests (Int. Cl. 35).  
 First use Aug. 1, 1968.

SN 313,418. Glendinning Companies, Inc., Westport, Conn. Filed Dec. 2, 1968.

## ACTION MAIL

For Promoting the Sale of Goods of Others Through the Distribution of Coupons and Other Printed Material and of Sample Specimens of the Goods of Such Others (Int. Cl. 35).  
 First use Sept. 9, 1968.

## Class 102—Insurance and Financial

SN 276,423. First Federal Savings and Loan Association of Bremerton, Bremerton, Wash. Filed July 20, 1967.

## BUILD-A-PENSION

For Banking Service (Int. Cl. 36).  
 First use on or about June 15, 1966.



SN 280,045. Georgia International Life Insurance Company, Atlanta, Ga. Filed Sept. 11, 1967.

### SECURI-KEY

For Disability Income Insurance, Underwriting and Other Insurance Services Relating Thereto (Int. Cl. 36).  
First use Sept. 6, 1967.

SN 291,603. First National City Bank, New York, N.Y. Filed Feb. 21, 1968.

### THE BRANCH AROUND THE CORNER CAN SERVE YOU AROUND THE WORLD

For Banking Services Including International Banking Services, and the Issue and Redemption of Traveller's Checks (Int. Cl. 36).  
First use Oct. 28, 1936.

SN 298,437. First Bank and Trust Company of Hampden County, Springfield, Mass. Filed May 17, 1968.



The wording "First Bank and Trust Company of Hampden County" is disclaimed apart from the mark as shown.  
For Banking Service (Int. Cl. 36).  
First use May 6, 1968.

SN 302,842. Integrity National Life Insurance Company, Philadelphia, Pa. Filed July 16, 1968.



The word "Life" is disclaimed apart from the mark as shown.  
For Underwriting Insurance (Int. Cl. 36).  
First use Apr. 3, 1965.

SN 303,518. First National City Bank, New York, N.Y. Filed July 24, 1968.

### CHECKING PLUS

The word "Checking" is disclaimed apart from the mark as shown.  
For Checking Accounts With Over-Draft Privileges (Int. Cl. 36).  
First use June 1966.

SN 303,895. County Federal Savings and Loan Association of Westport, Westport, Conn. Filed July 30, 1968.



The words "Federal Savings & Loan Association" are disclaimed apart from the mark as shown.  
For Banking Services (Int. Cl. 36).  
First use on or about Jan. 2, 1968.

SN 306,927. La Salle National Insurance Company, Chicago, Ill. Filed Sept. 9, 1968.

### "WHERE THE NON- STANDARD IS STANDARD"

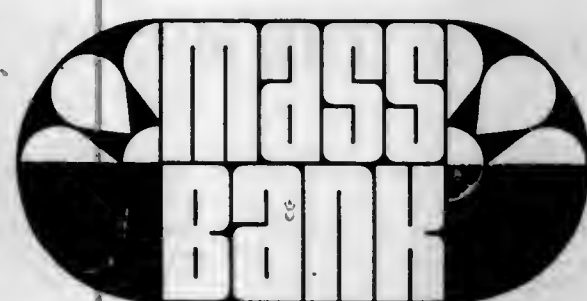
For Underwriting of Insurance (Int. Cl. 36).  
First use June 1968.

SN 317,496. The First National Bank of Bay Harbor Islands, Bay Harbor Islands, Fla. Filed Jan. 27, 1969.

### THE RED CARPET BANK FOR BLUE CHIP PEOPLE

Applicant disclaims the term "Bank" apart from the mark as shown.  
For Banking Services (Int. Cl. 36).  
First use July 30, 1968.

SN 317,503. Massachusetts Bank and Trust Company, Brockton, Mass. Filed Jan. 27, 1969.



Applicant disclaims the words "Mass" and "Bank" apart from the mark as shown, reserving to itself any common law rights which it may otherwise have.  
For Commercial and Savings Bank Services (Int. Cl. 36).  
First use at least as early as Jan. 3, 1969.

SN 319,123. United California Bank, Los Angeles, Calif. Filed Feb. 14, 1969.



The words "California Bank" are disclaimed apart from the mark as shown. Owner of Reg. No. 857,659.  
For General Banking Services (Int. Cl. 36).  
First use Dec. 20, 1968; 1868 as to "United California Bank."

### Class 103—Construction and Repair

SN 290,839. Fox & Jacobs Construction Co., Inc., Dallas, Tex. Filed Feb. 12, 1968.

### TODAY

For Construction of Residential Homes (Int. Cl. 37).  
First use on or about July 1, 1967.

SN 298,643. Towmotor Corporation, Cleveland, Ohio. Filed May 20, 1968.

### TOWMOTOR

Owner of Reg. Nos. 602,341, 652,695, and others.  
For Service, Maintenance and Repair of Material Handling Equipment Such as Lift Trucks, Tractors, Straddle Carriers, Attachments, Accessories and Equipment Associated With All of Said Products; and Installation of Repair Parts for Said Products (Int. Cl. 37).  
First use 1935.

SN 303,190. Murdock, Inc., Compton, Calif. Filed July 19, 1968.



Owner of Reg. No. 847,010.  
For Custom Manufacturing Services—Namely, Tooling, Fabricating, Machining, Assembling, Welding, Stamping, Punching, Hot Forming, and Stress Relieving (Int. Cl. 37).  
First use August 1964.

SN 314,782. Guardian Corporation, Denver, Colo. Filed Dec. 18, 1968.



Applicant disclaims exclusive rights in and to the representation of the transmission apart from the mark as shown.  
For Rebuilding, Repair and Installation of Automotive Automatic Transmissions (Int. Cl. 37).  
First use Oct. 19, 1964.

### Class 105—Transportation and Storage

SN 280,533. Altair Airlines, Inc., Philadelphia, Pa. Filed Sept. 18, 1967.



For Passenger and Freight Air Service (Int. Cl. 39).  
First use Oct. 31, 1966.

SN 280,654. Valet Systems, Inc., Atlanta, Ga., by change of name from Valet Rent-A-Car System, Inc., Atlanta, Ga. Filed Sept. 18, 1967.



VALET  
RENT-A-CAR SYSTEM, INC.

The words "Rent-A-Car System, Inc." are disclaimed.  
For Rental of Motor Driven Vehicles, Primarily Automobiles (Int. Cl. 39).  
First use July 18, 1967.

SN 287,528. Deutsche Lufthansa Aktiengesellschaft, Cologne, Germany. Filed Dec. 26, 1967.

### PICK-A-GROUP

For Providing Travel Guidance, Arranging Travel Tours, Providing Transportation Therefor, and Arranging for Travel Accommodations (Int. Cl. 39).  
First use January 1967; in commerce January 1967.

SN 290,982. Stollne Systems, Inc., Bridgeton, Mo. Filed Feb. 13, 1968.

### STOLINE

For Freight Forwarding (Int. Cl. 39).  
First use Dec. 4, 1967.

SN 299,832. Corporate Air Transport, Inc., Chicago, Ill. Filed June 6, 1968.



The drawing is lined for gold.  
For Transportation Services—Namely, Supplying Pilots and Aircraft for Hire (Int. Cl. 39).  
First use on or before Aug. 22, 1957.

SN 303,696. O-N-C Motor Freight System, Palo Alto, Calif. Filed July 26, 1968.

### O·N·C

For Truck Transportation of Freight (Int. Cl. 39).  
First use Apr. 24, 1962.

SN 303,697. O-N-C Motor Freight System, Palo Alto, Calif. Filed July 16, 1968.



The words "Motor Freight System" and the words "Washington, Oregon, California, Nevada" and "British Columbia" are disclaimed apart from the mark as shown.  
For Truck Transportation of Freight (Int. Cl. 39).  
First use Apr. 24, 1962.



**Class 107 — Education and Entertainment**

SN 292,996. Seattle Super Sonics Corp., d.b.a. The Seattle Supersonics, Seattle, Wash. Filed Mar. 12, 1968.



Applicant disclaims the exclusive right to the use of the word "Seattle" apart from the mark as shown.  
For Entertainment Services in the form of Professional Basketball Game Competition (Int. Cl. 41).  
First use Mar. 3, 1967.

SN 293,134. Graphic Controls Corporation, Buffalo, N.Y. Filed Mar. 13, 1968.



The mark consists of the letters "GC" in design form.  
For Counselling and Training of Corporate Personnel; Conducting Management Seminars; and Developing Materials and Evaluative Aids for Corporate and Organizational Supervisors of Sales, Research, Personnel and Administrative Personnel (Int. Cl. 41).  
First use prior to October 1967.

SN 297,308. Motown Record Corporation, Detroit, Mich. Filed May 3, 1968.

**THE TEMPTATIONS**

For Entertainment Services in the Form of Music Rendered by a Vocal Group Through the Medium of Television, Radio, Recordings, and Personal Appearances (Int. Cl. 41).  
First use August 1961.

**COLLECTIVE MEMBERSHIP MARKS****Class 200**

SN 323,410. American Society of Travel Agents, Inc., New York, N.Y. Filed May 13, 1969.



Owner of Reg. No. 748,917.  
For Indicating Membership in Applicant.  
First use Dec. 1, 1944.

SN 299,101. Certification Commission for Executive Secretaries, Inc., Washington, D.C. Filed May 27, 1968.



The words "Certification Commission for Executive Secretaries, Inc." are disclaimed apart from the mark as shown.  
For Providing Aptitude Tests, Suggested Curriculum, Devising Proficiency Examinations, and Certifying Students Who Have Satisfactorily Passed Examinations (Int. Cl. 41).  
First use Apr. 18, 1968.

SN 301,586. James W. M. Edwards, St. Ann, Mo. Filed June 28, 1968.

**JONNIE COUGAR**

The name "Jonnie Cougar" is not the name of any particular living individual known to applicant.  
For Entertainment Services—Namely, Radio and Television Programs and Personal Appearances Concerned With News, Music, Entertainment, and Other Informative Matter (Int. Cl. 41).  
First use at least as early as Sept. 10, 1967.

SN 307,628. Claster Enterprises, Inc., Baltimore, Md. Filed Sept. 18, 1968.

**DUCKPINS AND DOLLARS**

For Entertainment Services Rendered Through the Medium of Television Programs Featuring Bowling Exhibitions (Int. Cl. 41).  
First use at least as early as Sept. 9, 1968.

SN 310,339. LIN Broadcasting Corporation, Nashville, Tenn. Filed Oct. 23, 1968.

**DELTA**

For Operation of Programs for Special Education, Training and Research (Int. Cl. 41).  
First use Mar. 28, 1967.

**TRADEMARK REGISTRATIONS ISSUED  
PRINCIPAL REGISTER****Class 1 — Raw or Partly Prepared Materials**

- 874,498. KITTYLAND. Hi-Life Packing Company. SN 251,426. Pub. 4-18-67. Filed 8-1-66.  
874,499. "F." Ultra Carbon Corporation. MULTIPLE CLASS (Classes 1 and 23). SN 273,547. Pub. 5-27-69. Filed 6-12-67.  
874,500. LONSEAL. Kawaguchi Rubber Industrial Co., Ltd. SN 283,344. Pub. 5-27-69. Filed 10-25-67.  
874,501. REDETURF AND DESIGN. Redeturf, Inc. SN 304,251. Pub. 5-27-69. Filed 8-2-68.  
874,502. DARAK. Dow Badische Company. SN 317,992. Pub. 5-27-69. Filed 1-31-69.  
874,503. EMPOR. Minnesota Mining and Manufacturing Company. SN 318,004. Pub. 5-27-69. Filed 1-31-69.

**Class 2 — Receptades**

- 874,504. MAIL-SAFE. Earl M. McKelvey. SN 298,750. Pub. 5-27-69. Filed 5-21-68.  
874,505. CAST WAX. Cas Pack Corporation. MULTIPLE CLASS (Classes 2 and 37). SN 299,324. Pub. 5-27-69. Filed 5-29-68.  
874,506. RCP AND DESIGN. Rubbermaid Incorporated. SN 305,250. Pub. 5-27-69. Filed 8-15-68.  
874,507. MONOVAC. Inland Steel Company. SN 312,298. Pub. 5-27-69. Filed 11-15-68.  
874,508. GENWARE AND DESIGN. The General Tire & Rubber Company. SN 312,768. Pub. 5-27-69. Filed 11-21-68.  
874,509. SAFETRIX. Charles T. Evans, d.b.a. Safety Motivations. SN 313,092. Pub. 5-27-69. Filed 11-26-68.  
874,510. CONVOCAN. Phillips Petroleum Company. SN 313,515. Pub. 5-27-69. Filed 12-3-68.  
874,511. PIC "N" PAC. Comet Packaging Corporation. SN 313,559. Pub. 5-27-69. Filed 12-4-68.  
874,512. CF AND DESIGN. Olinkraft, Inc. SN 314,602. Pub. 5-27-69. Filed 12-13-68.

**Class 5 — Adhesives**

- 874,513. CAROLINA. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers. SN 293,109. Pub. 5-27-69. Filed 3-13-68.

**Class 6 — Chemicals and Chemical Compositions**

- 874,514. FOTORITE AND DESIGN. Agfa-Gevaert, Inc., assignee of Fotorite, Inc. MULTIPLE CLASS (Classes 6 and 26). SN 251,257. Pub. 5-27-69. Filed 7-29-66.  
874,515. BLACKJACK. The Lubrizol Corporation. SN 258,390. Pub. 7-16-68. Filed 11-10-66.  
874,516. CYCLOGOL. Cyclo Chemicals Limited. SN 262,740. Pub. 8-15-67. Filed 1-19-67.  
874,517. CYCLOTON. Cyclo Chemicals Limited. SN 262,742. Pub. 8-8-67. Filed 1-19-67.  
874,518. CYCLOFOR. Cyclo Chemicals Limited. SN 266,481. Pub. 4-16-68. Filed 3-13-67.

- 874,519. CITROIL. Citroil Aromatics, Inc. SN 280,207. Pub. 5-27-69. Filed 9-13-67.  
874,520. LIQWEEDATE. Brullin & Company, Inc. SN 282,172. Pub. 5-27-69. Filed 10-10-67.  
874,521. SILAN. Henkel & Cie G.m.b.H. SN 284,197. Pub. 5-27-69. Filed 11-6-67.  
874,522. HO-NO-MO. Alco Chemical Co. SN 284,561. Pub. 5-27-69. Filed 11-13-67.  
874,523. TAXO. Becton, Dickinson and Company. SN 287,245. Pub. 5-27-69. Filed 11-29-67.  
874,524. CATIMULS. Lancaster Chemical Company. SN 290,499. Pub. 5-27-69. Filed 2-7-68.  
874,525. SANDOPLAST. Sandoz, Inc. SN 290,538. Pub. 5-27-69. Filed 2-7-68.  
874,526. BYK. Byk-Gulden Lomberg. MULTIPLE CLASS (Classes 6 and 18). SN 295,698. Pub. 5-27-69. Filed 4-16-68.  
874,527. FRAMOLIN. Geigy Chemical Corporation. SN 307,735. Pub. 5-27-69. Filed 9-19-68.  
874,528. AUTO-POW. Flow Laboratories Incorporated. SN 307,930. Pub. 5-27-69. Filed 9-23-68.  
874,529. EXPOSE. S. C. Johnson & Son, Inc. MULTIPLE CLASS (Classes 6 and 52). SN 312,943. Pub. 5-27-69. Filed 11-25-68.  
874,530. DEX-TAB AND DESIGN. Sucrest Corporation. SN 316,060. Pub. 5-27-69. Filed 1-8-69.

**Class 10 — Fertilizers**

- 874,531. DAIRY ORGANIC COMPOST. Organic Compost Corporation. SN 272,897. Pub. 5-27-69. Filed 5-25-67.  
874,532. R (DESIGN). Radiant Color Company. SN 305,245. Pub. 5-27-69. Filed 8-15-68.  
874,533. METRO. Metropolitan Waste Conversion Corporation. SN 313,322. Pub. 5-27-69. Filed 11-29-68.

**Class 12 — Construction Materials**

- 874,534. ALLIED. Allied Fence Corp., assignee of Allied Chain Link Fence Co., Inc. MULTIPLE CLASS (Classes 12 and 13). SN 250,917. Pub. 5-27-69. Filed 7-25-66.  
874,535. D-H VAKUUMSTAHL AND DESIGN. Dortmund-Hoerder Huettenuunion A.G. MULTIPLE CLASS (Classes 12, 13, 14, and 23). SN 287,008. Pub. 5-27-69. Filed 12-15-67.  
874,536. PICTURE OF AMERICAN EAGLE. American Steel Bar Joists, Inc. SN 294,447. Pub. 5-27-69. Filed 3-29-68.  
874,537. SWISS FORMULAE. Swiss Laboratory, Inc. MULTIPLE CLASS (Classes 12, 16, and 34). SN 296,737. Pub. 5-27-69. Filed 4-29-68.  
874,538. STYLIZED E. Essex Chemical Corporation. MULTIPLE CLASS (Classes 12 and 16). SN 299,900. Pub. 5-27-69. Filed 6-7-68.  
874,539. RABEC SEALRITE. Rabec, Incorporated. SN 300,370. Pub. 5-27-69. Filed 6-13-68.  
874,540. MFG PLY/GLASS. Molded Fiber Glass Body Company. SN 300,607. Pub. 5-27-69. Filed 6-17-68.  
874,541. DURO-TRON 5. Boise Cascade Corporation. SN 308,085. Pub. 5-27-69. Filed 9-24-68.  
874,542. STRANDLOK. Reliable Electric Company. SN 308,812. Pub. 5-27-69. Filed 10-3-68.  
874,543. CHANNELWOOD. Weyerhaeuser Company. SN 309,706. Pub. 5-27-69. Filed 10-15-1968.



- 874,544. SOLITE AND DESIGN. Solite Corporation. SN 309,996. Pub. 5-27-69. Filed 10-18-68.  
 874,545. SUN DESIGN. V. E. Anderson Mfg. Co. SN 310,195. Pub. 5-27-69. Filed 10-22-68.  
 874,546. KUBO. Kubo Greenhouses, Inc. SN 310,789. Pub. 5-27-69. Filed 10-29-68.  
 874,547. AMERICAN. American Olean Tile Company, Inc. SN 311,000. Pub. 5-27-69. Filed 10-31-68.  
 874,548. THE HIGHLANDS. Johns-Manville Corporation. SN 312,475. Pub. 5-27-69. Filed 11-18-68.

### Class 13—Hardware and Plumbing and Steam-Fitting Supplies

- 874,534. (See Class 12 for this trademark.)  
 874,549. MORAF. The Dow Chemical Company. MULTIPLE CLASS (Classes 13, 23, and 35). SN 284,081. Pub. 5-27-69. Filed 11-3-67.  
 874,550. MISCELLANEOUS DESIGN. International Horse-shoe Co., Inc., d.b.a. Multi-Products Co. SN 286,938. Pub. 5-27-69. Filed 12-14-67.  
 874,551. KELTA. Walker Crossweller and Company, Limited. SN 290,357. Pub. 5-27-69. Filed 2-5-68.  
 874,552. HUCKRIMP. Huck Manufacturing Company. MULTIPLE CLASS (Classes 13 and 23). SN 296,160. Pub. 5-27-69. Filed 4-22-68.  
 874,553. SPOT-LOK. The Allen Manufacturing Company. SN 305,191. Pub. 5-27-69. Filed 8-15-68.  
 874,554. SPAT SYSTEM. G.K.N. Screws & Fasteners Limited. MULTIPLE CLASS (Classes 13 and 23). SN 306,237. Pub. 5-27-69. Filed 8-29-68.  
 874,555. LABEL DESIGN. Elco Tool and Screw Corporation. SN 316,936. Pub. 5-27-69. Filed 1-21-69.

### Class 14—Metals and Metal Castings and Forgings

- 874,535. (See Class 12 for this trademark.)  
 874,556. FMD. American Smelting and Refining Company. SN 316,966. Pub. 5-27-69. Filed 1-21-69.

### Class 15—Oils and Greases

- 874,557. EMO AND DESIGN. Murphy Oil Corporation. SN 284,098. Pub. 3-11-69. Filed 11-3-67.  
 874,558. EDCO. Standard Oil Company. SN 296,254. Pub. 5-27-69. Filed 4-23-68.  
 874,559. PESYA. Howard Saltin. SN 303,929. Pub. 5-27-69. Filed 7-30-68.  
 874,560. TORQUE. Hastings Manufacturing Company. SN 305,737. Pub. 5-27-69. Filed 8-22-68.  
 874,561. FACTOPET. The Standard Oil Company. SN 306,176. Pub. 5-27-69. Filed 8-28-68.  
 874,562. FACTOPURE. The Standard Oil Company. SN 306,177. Pub. 5-27-69. Filed 8-28-68.  
 874,563. FACTOKOTE. The Standard Oil Company. SN 306,179. Pub. 5-27-69. Filed 8-28-68.  
 874,564. FACTOFILM. The Standard Oil Company. SN 306,180. Pub. 5-27-69. Filed 8-28-68.  
 874,565. FACTOCOOL. The Standard Oil Company. SN 306,181. Pub. 5-27-69. Filed 8-28-68.  
 874,566. FACTOWAY. The Standard Oil Company. SN 306,183. Pub. 5-27-69. Filed 8-28-68.  
 874,567. FACTOCYL. The Standard Oil Company. SN 306,184. Pub. 5-27-69. Filed 8-28-68.

- 874,568. FACTOVIS. The Standard Oil Company. SN 306,185. Pub. 5-27-69. Filed 8-28-68.  
 874,569. FACTRAN. The Standard Oil Company. SN 306,186. Pub. 5-27-69. Filed 8-28-68.

### Class 16—Protective and Decorative Coatings

- 874,538. (See Class 12 for this trademark.)  
 874,537. (See Class 12 for this trademark.)  
 874,570. MCI AND DESIGN. Mary Carter Industries, Inc., d.b.a. M.C.I. Co. SN 308,598. Pub. 5-27-69. Filed 10-1-68.  
 874,571. GALVA-METAL. Harris Paint Company. SN 313,292. Pub. 5-27-69. Filed 11-29-68.

### Class 17—Tobacco Products

- 874,572. LJUNGLOFS AND DESIGN. Conwood Corporation. SN 293,806. Pub. 5-27-69. Filed 3-21-68.  
 874,573. FLAIR. Brown & Williamson Tobacco Corporation. SN 310,183. Pub. 5-27-69. Filed 10-22-68.  
 874,574. SIERRA. Brown & Williamson Tobacco Corporation. SN 310,184. Pub. 5-27-69. Filed 10-22-68.  
 874,575. LAREDO. Brown & Williamson Tobacco Corporation. SN 310,185. Pub. 5-27-69. Filed 10-22-68.  
 874,576. VENTURA. Brown & Williamson Tobacco Corporation. SN 310,186. Pub. 5-27-69. Filed 10-22-68.  
 874,577. BRISK. R. J. Reynolds Tobacco Company. SN 316,390. Pub. 5-27-69. Filed 1-13-69.  
 874,578. NOMAD. R. J. Reynolds Tobacco Company. SN 316,505. Pub. 5-27-69. Filed 1-14-69.  
 874,579. CLAIM. R. J. Reynolds Tobacco Company. SN 316,506. Pub. 5-27-69. Filed 1-14-69.  
 874,580. PAGEANT. R. J. Reynolds Tobacco Company. SN 316,507. Pub. 5-27-69. Filed 1-14-69.

### Class 18—Medicines and Pharmaceutical Preparations

- 874,526. (See Class 6 for this trademark.)  
 874,581. POUNDS AWAY. American Home Products Corporation. SN 308,736. Pub. 5-27-69. Filed 10-3-68.  
 874,582. THIOZET. American Home Products Corporation. SN 309,811. Pub. 5-27-69. Filed 10-17-68.  
 874,583. AIRCO. Air Reduction Company, Incorporated. SN 314,168. Pub. 5-27-69. Filed 12-11-68.  
 874,584. OSTOPRED. Osto Pharmaceutical Company. SN 315,782. Pub. 5-27-69. Filed 1-3-69.  
 874,585. BASOQUIN. Parke, Davis & Company. SN 317,187. Pub. 5-27-69. Filed 1-22-69.  
 874,586. QUINAZIL. Chas. Pfizer & Co., Inc. SN 317,189. Pub. 5-27-69. Filed 1-22-69.

### Class 19—Vehides

- 874,587. RODEO. Raleigh Industries Limited. MULTIPLE CLASS (Classes 19 and 22). SN 268,647. Pub. 5-27-69. Filed 4-10-67.  
 874,588. HURON. Aluminum Goods Limited. SN 299,819. Pub. 5-27-69. Filed 6-6-68.  
 874,589. HYDRA FAIL-SAFE. Rockwell-Standard Company. SN 300,483. Pub. 5-27-69. Filed 6-14-68.  
 874,590. BENAIRE. Bennie B. Herboldshelmer, d.b.a. Benaire. SN 301,622. Pub. 5-27-69. Filed 6-28-68.

- 874,591. WALCO. Walthour & Hood Company. SN 304,722. Pub. 5-27-69. Filed 8-8-68.  
 874,592. DUKE. Beech Aircraft Corporation. SN 308,455. Pub. 5-27-69. Filed 9-30-68.  
 874,593. SHOCK BUSTERS. W. H. Miner, Inc. SN 311,192. Pub. 5-27-69. Filed 11-1-68.  
 874,594. OMEGA. Motor Coach Corporation. SN 316,805. Pub. 5-27-69. Filed 1-16-69.

### Class 21—Electrical Apparatus, Machines, and Supplies

- 874,595. POSITERM. Rogers Corporation. SN 258,153. Pub. 5-27-69. Filed 11-7-66.  
 874,596. TUGMONITOR. National Marine Service Incorporated. SN 277,061. Pub. 5-27-69. Filed 7-28-67.  
 874,597. CHAMBERS AND DESIGN. Rangaire Corporation. SN 289,916. Pub. 5-27-69. Filed 1-30-68.  
 874,598. ULTRALARM. Plessey Airborne Corporation, assignee of Airborne Accessories Corporation. SN 292,336. Pub. 5-27-69. Filed 3-4-68.  
 874,599. OI (DESIGN). Optimation, Inc. SN 295,157. Pub. 5-27-69. Filed 4-8-68.  
 874,600. FLINTROL. Gilbert Electronics, Inc. SN 296,823. Pub. 5-27-69. Filed 4-29-68.  
 874,601. ALERT. Alert Stamping & Mfg. Co., Inc. SN 298,996. Pub. 5-27-69. Filed 5-24-68.  
 874,602. SQUID AND OCTOPUS DESIGN. ITT Blackburn Corporation. SN 299,675. Pub. 5-27-69. Filed 6-4-68.  
 874,603. HYTRON. Samuel Steckman. SN 301,556. Pub. 5-27-69. Filed 6-27-68.  
 874,604. TNEDAX. T.N.E. Incorporated. SN 303,878. Pub. 5-27-69. Filed 7-30-68.  
 874,605. ROYAL MAJESTIC. Majestic Creations, Inc. SN 305,660. Pub. 5-27-69. Filed 8-21-68.  
 874,606. OLMAG. Olsen Magnetic, Inc. SN 307,857. Pub. 5-27-69. Filed 9-20-68.  
 874,607. UCAR AND HEXAGON DESIGN. Union Carbide Corporation. SN 309,315. Pub. 5-27-69. Filed 10-9-68.  
 874,608. THE PICKER AND DESIGN. Ted L. Riddings, d.b.a. T.R. Imports. SN 309,479. Pub. 5-27-69. Filed 10-11-68.  
 874,609. COLOR-WEDGE. Winegard Company. SN 309,804. Pub. 5-27-69. Filed 10-16-68.  
 874,610. DURAGLAS. Natvar Corporation. SN 316,504. Pub. 5-27-69. Filed 1-14-69.

### Class 22—Games, Toys, and Sporting Goods

- 874,587. (See Class 19 for this trademark.)  
 874,611. ALLFUN. Theodore W. Johnson and Ralph Silvola (joint venture), d.b.a. Educational Playhouse Company. SN 266,428. Pub. 5-27-69. Filed 3-10-67.  
 874,612. BAA-BAA. Citizens Bank and Trust Company, assignee of Edward L. Mobley, Jr., d.b.a. The Edward Mobley Co. SN 272,843. Pub. 5-27-69. Filed 6-1-67.  
 874,613. CLASSIC V. South Bend Tackle Company Inc. SN 277,799. Pub. 2-13-68. Filed 8-8-67.  
 874,614. CLASSIC I. South Bend Tackle Company Inc. SN 277,801. Pub. 2-13-68. Filed 8-8-67.  
 874,615. CLASSIC II. South Bend Tackle Company Inc. SN 277,802. Pub. 2-13-68. Filed 8-8-67.  
 874,616. CLASSIC III. South Bend Tackle Company Inc. SN 277,804. Pub. 2-13-68. Filed 8-8-67.  
 874,617. CLASSIC IV. South Bend Tackle Company Inc. SN 277,805. Pub. 2-6-68. Filed 8-8-67.  
 874,618. DAZ-E-MAE. Daz-E-Mae Lure Company. SN 277,893. Pub. 5-27-69. Filed 8-9-67.

- 874,619. KAM-LURE. Lawrence Allan Gilmore, d.b.a. Sure-Lure Balts. SN 278,205. Pub. 5-27-69. Filed 8-14-67.  
 874,620. CYCLE PAL. Gerald K. Stevens. SN 278,250. Pub. 5-27-69. Filed 8-14-67.  
 874,621. THE CLASSIC SQUARE. Gladding Corporation. SN 284,367. Pub. 5-27-69. Filed 11-8-67.  
 874,622. FUNNY FLYER. Larami Corporation. SN 287,923. Pub. 5-27-69. Filed 1-2-68.  
 874,623. KRAZY COLORS. Venus Esterbrook Corporation. SN 295,391. Pub. 5-27-69. Filed 4-10-68.  
 874,624. BELSON. Belson Manufacturing Co., Inc. MULTIPLE CLASS (Classes 22, 32, and 34). SN 296,510. Pub. 5-27-69. Filed 4-25-68.  
 874,625. PEDI-GO-GO. Pedigo Pork Rind Company, Inc. SN 302,118. Pub. 5-27-69. Filed 7-5-68.  
 874,626. HOPPITY HOP. Sun Corporation. SN 302,648. Pub. 5-27-69. Filed 7-12-68.  
 874,627. ROLL-A-WORD. Pictorial Publishers, Inc. SN 306,738. Pub. 5-27-69. Filed 9-6-68.  
 874,628. POWER-LIMBS. Mattel, Inc. SN 308,978. Pub. 5-27-69. Filed 10-7-68.  
 874,629. BUBBL-JET. Kenner Products Company. SN 311,786. Pub. 5-27-69. Filed 11-12-68.

### Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

- 874,499. (See Class 1 for this trademark.)  
 874,549. (See Class 13 for this trademark.)  
 874,552. (See Class 13 for this trademark.)  
 874,554. (See Class 13 for this trademark.)  
 874,535. (See Class 12 for this trademark.)  
 874,630. BAY STATE. The Cleveland Twist Drill Company. MULTIPLE CLASS (Classes 23 and 26). SN 279,368. Pub. 5-27-69. Filed 8-30-67.  
 874,631. PRESTO MATIC AND DESIGN. Harold D. Johnson, d.b.a. Ideas for Industry. SN 282,194. Pub. 5-27-69. Filed 10-10-67.  
 874,632. TRIPLE-KLEEN. SN 282,840. Pub. 5-27-69. Filed 10-18-67.  
 874,633. MELROE AND DESIGN. Melrose Company. SN 285,245. Pub. 3-11-69. Filed 11-20-67.  
 874,634. TWINWORKS. J. A. Henckels Zwillingswerk AG. SN 283,803. Pub. 5-27-69. Filed 10-31-67.  
 874,635. INCIN-A-GARD. The Johnson-March Corporation. SN 284,205. Pub. 5-27-69. Filed 11-6-67.  
 874,636. SPERRY RAND AND STAR DESIGN. Sperry Rand Corporation. SN 286,379. Pub. 5-27-69. Filed 12-6-67.  
 874,637. SULLISCREW. Sullivan Machinery Company, Inc. SN 288,984. Pub. 5-27-69. Filed 1-16-68.  
 874,638. LOS-LOSENHAUSEN. Losenhausen Maschinenbau Aktiengesellschaft. MULTIPLE CLASS (Classes 23 and 26). SN 296,031. Pub. 5-27-69. Filed 4-19-68.  
 874,639. ECON-O-LINE. Econ-O-Line Manufacturing Company. SN 302,059. Pub. 5-27-69. Filed 7-5-68.  
 874,640. COMPACKAGER. Compackager Corporation, assignee, by mesne assignment, of Washington Inclinator Sales and Service, Inc. SN 302,875. Pub. 5-27-69. Filed 7-16-68.  
 874,641. PICABOND. AMP Incorporated. SN 303,026. Pub. 5-27-69. Filed 7-18-68.  
 874,642. KTJS AND DESIGN. Keystone Automotive Warehouse, Inc. SN 303,053. Pub. 5-27-69. Filed 7-18-68.  
 874,643. FLEETLINE. Davis Manufacturing, Inc. SN 303,511. Pub. 5-27-69. Filed 7-24-68.  
 874,644. ALROY. Lee Metal Products Co., Inc. SN 303,534. Pub. 5-27-69. Filed 7-24-68.  
 874,645. MISCELLANEOUS DESIGN. Mor-Win Products, Inc. SN 303,538. Pub. 5-27-69. Filed 7-24-68.



- 874,646. WT AND DESIGN. Wheel Trueling Tool Company. SN 304,272. Pub. 5-27-69. Filed 8-2-68.
- 874,647. CRYSTAL-CLAD. Precision Diamond Tool Company. SN 305,378. Pub. 5-27-69. Filed 8-19-68.
- 874,648. ROTO-FLO FEED. Oliver Corporation. SN 306,505. Pub. 5-27-69. Filed 9-3-68.
- 874,649. STYLIST. The Singer Company. SN 307,677. Pub. 5-27-69. Filed 9-18-68.
- 874,650. LUGALL. The Lug-All Company. SN 307,747. Pub. 5-27-69. Filed 9-19-68.
- 874,651. RESY. Emme di Emme Ltd. SN 309,246. Pub. 5-27-69. Filed 10-9-68.
- 874,652. BUTTONEER. Dennison Manufacturing Company. MULTIPLE CLASS (Classes 23 and 40). SN 309,512. Pub. 5-27-69. Filed 10-14-68.
- 874,653. ROTOSTOCK. International Patent Developments Limited. SN 311,037. Pub. 5-27-69. Filed 10-31-68.
- 874,654. CONVERTIPAC. Verson Manufacturing Company. SN 311,708. Pub. 5-27-69. Filed 11-8-68.

### Class 25—Locks and Safes

- 874,655. "KANE-M" AND DESIGN. Morito & Co., Ltd. MULTIPLE CLASS (Classes 25 and 40). SN 294,071. Pub. 5-27-69. Filed 3-25-68.

### Class 26—Measuring and Scientific Appliances

- 874,514. (See Class 6 for this trademark.)
- 874,630. (See Class 23 for this trademark.)
- 874,638. (See Class 23 for this trademark.)
- 874,656. LOCAP. Tinius Olsen Testing Machine Company. SN 271,664. Pub. 5-27-69. Filed 5-16-67.
- 874,657. WHITMAN. Whitman Publishing Company. SN 278,333. Pub. 5-27-69. Filed 8-15-67.
- 874,658. THERMOGUARD. Thermo King Corporation. SN 280,896. Pub. 5-27-69. Filed 9-21-67.
- 874,659. CIRCUIT RYDER. Raytek, Inc. SN 281,115. Pub. 5-27-69. Filed 9-25-67.
- 874,660. COLOR TAPECULATOR. Better Packages, Inc. SN 285,389. Pub. 5-27-69. Filed 11-22-67.
- 874,661. ERASA DURE AND DESIGN. Tecnifax Corp. SN 288,039. Pub. 5-27-69. Filed 1-3-68.
- 874,662. YANKEE PT. Becton, Dickinson and Company. SN 289,961. Pub. 5-27-69. Filed 1-31-68.
- 874,663. HYDROSHOCK. General Dynamics Corporation. SN 302,737. Pub. 5-27-69. Filed 7-15-68.
- 874,664. BLUE POLY-2 AND DESIGN. J. Ulano & Company, Inc. SN 303,115. Pub. 5-27-69. Filed 7-19-68.
- 874,665. BLUE POLY-3 AND DESIGN. J. Ulano & Company, Inc. SN 303,116. Pub. 5-27-69. Filed 7-19-68.
- 874,666. IRCAT. Barnes Engineering Company. SN 304,299. Pub. 5-27-69. Filed 8-5-68.
- 874,667. LINEAR. Linear Corporation. SN 305,557. Pub. 5-27-69. Filed 8-20-68.
- 874,668. MILBEN. B-R Importing Co., Inc. SN 305,711. Pub. 5-27-69. Filed 8-22-68.
- 874,669. ACCU-MARK. H. Daroff & Sons, Inc. SN 307,985. Pub. 5-27-69. Filed 9-23-68.
- 874,670. DUROMATE. Durolith Corporation. SN 308,608. Pub. 5-27-69. Filed 10-1-68.
- 874,671. TRONAC. Tronac, Inc. SN 308,935. Pub. 5-27-69. Filed 10-4-68.
- 874,672. MINIMASS. Picker Corporation. SN 309,078. Pub. 5-27-69. Filed 10-11-68.

- 874,673. CIBACHROME-PRINT. Ciba Limited. SN 311,825. Pub. 5-27-69. Filed 11-12-68.
- 874,674. MODUTEC. Modutec Incorporated. SN 311,905. Pub. 5-27-69. Filed 11-12-68.
- 874,675. DIAL-A-CON. Felsenthal Instruments Company. SN 314,292. Pub. 5-27-69. Filed 12-12-68.
- 874,676. SOLARBRONZE. PPG Industries, Inc. SN 317,921. Pub. 5-27-69. Filed 1-30-69.
- 874,677. OP. Kleer-Vu Industries, Inc. SN 318,506. Pub. 5-27-69. Filed 2-6-69.

### Class 27—Horological Instruments

- 874,678. RICHWOOD. General Time Corporation. SN 307,460. Pub. 5-27-69. Filed 9-16-68.
- 874,679. TERRAMAR. Brac AG. SN 312,558. Pub. 5-27-69. Filed 11-19-68.

### Class 28—Jewelry and Precious-Metal Ware

- 874,680. NRL AND DESIGN. National Ring and Leather Corporation. SN 307,616. Pub. 5-27-69. Filed 9-18-68.

### Class 29—Brooms, Brushes, and Dusters

- 874,681. WHITMAN. Whitman Publishing Company. SN 278,332. Pub. 5-27-69. Filed 8-15-67.

### Class 30—Crockery, Earthenware, and Porcelain

- 874,682. FASHION ROYALE. Ashcraft Distributors, Inc. SN 290,065. Pub. 5-27-69. Filed 2-1-68.

### Class 31—Filters and Refrigerators

- 874,683. AIR SENTRY. North Star Specialties Company. SN 294,965. Pub. 5-27-69. Filed 4-4-68.
- 874,684. CRES-COR. Crescent Metal Products, Inc. SN 300,336. Pub. 5-27-69. Filed 6-13-68.
- 874,685. UNI-SEAL. Filterite Corporation. SN 309,563. Pub. 5-27-69. Filed 10-14-68.
- 874,686. FILT-R-IFIC. National Aquarium Supplies & Accessories, Inc. SN 310,682. Pub. 5-27-69. Filed 10-28-68.

### Class 32—Furniture and Upholstery

- 874,624. (See Class 22 for this trademark.)
- 874,687. DOWRY. Sprague & Carleton, Inc. SN 288,127. Pub. 5-27-69. Filed 1-4-68.
- 874,688. SAYBROOK. Sprague & Carleton, Inc. SN 288,128. Pub. 5-27-69. Filed 1-4-68.
- 874,689. THYME-LITE. Sprague & Carleton, Inc. SN 288,129. Pub. 5-27-69. Filed 1-4-68.
- 874,690. OLD THYME. Sprague & Carleton, Inc. SN 288,130. Pub. 5-27-69. Filed 1-4-68.
- 874,691. ACCENTS AMERICANA. Sprague & Carleton, Inc. SN 288,131. Pub. 5-27-69. Filed 1-4-68.

- 874,692. OLD MILL. Sprague & Carleton, Inc. SN 288,132. Pub. 5-27-69. Filed 1-4-68.
- 874,693. SPRAGUE'S CROSSING. Sprague & Carleton, Inc. SN 288,134. Pub. 5-27-69. Filed 1-4-68.
- 874,694. COUNTRY CABINET MAKER. Sprague & Carleton, Inc. SN 288,136. Pub. 5-27-69. Filed 1-4-68.
- 874,695. STEELCASE AND S DESIGN. Steelcase, Inc. SN 288,239. Pub. 5-27-69. Filed 1-5-68.
- 874,696. JAMESTOWN COLONY ETC. AND DESIGN. Henkel-Harris Co., Inc. SN 307,206. Pub. 5-27-69. Filed 9-12-68.

### Class 33—Glassware

- 874,697. MOD 32. Anchor Hocking Glass Corporation. SN 299,088. Pub. 5-27-69. Filed 5-27-68.

### Class 34—Heating, Lighting, and Ventilating Apparatus

- 874,537. (See Class 12 for this trademark.)
- 874,624. (See Class 22 for this trademark.)
- 874,698. CHAMBERS AND DESIGN. Rangaire Corporation. SN 289,914. Pub. 5-27-69. Filed 1-30-68.
- 874,699. THE GREAT INDOORS AND DESIGN. Carrier Corporation. SN 295,111. Pub. 5-27-69. Filed 4-8-68.
- 874,700. PERMA CLEAN. Modern Maid, Inc. SN 300,722. Pub. 5-27-69. Filed 6-18-68.
- 874,701. ALUMAIRE. Molecular Research, Inc. SN 311,285. Pub. 5-27-69. Filed 11-4-68.
- 874,702. CHEVRON (DESIGN). Standard Oil Company of California. SN 311,415. Pub. 5-27-69. Filed 11-5-68.
- 874,703. AZEOVAIRE. E. Sam Dick Company Inc. SN 311,669. Pub. 5-27-69. Filed 11-8-68.

### Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

- 874,549. (See Class 13 for this trademark.)
- 874,704. NEOTHANE. The Goodyear Tire & Rubber Company. SN 294,185. Pub. 5-27-69. Filed 3-26-68.
- 874,705. EL CRIADO. Harno Tire & Rubber Corporation. SN 295,332. Pub. 5-27-69. Filed 4-10-68.
- 874,706. ALLEY CAT. Unlroyal, Inc. SN 309,127. Pub. 5-27-69. Filed 10-7-68.
- 874,707. SCOT SUPER HAWK. McCreary Tire & Rubber Company. SN 313,828. Pub. 5-27-69. Filed 12-6-68.
- 874,708. V-LASTIC. The Goodyear Tire & Rubber Company. SN 314,337. Pub. 5-27-69. Filed 12-12-68.
- 874,709. SCOR. The Goodyear Tire & Rubber Company. SN 314,339. Pub. 5-27-69. Filed 12-12-68.

### Class 36—Musical Instruments and Supplies

- 874,710. KUSTOM 100 AND DESIGN. Kustom Electronics, Inc., by change of name from Ross, Inc. SN 298,867. Pub. 5-27-69. Filed 5-22-68.
- 874,711. KUSTOM 200 AND DESIGN. Kustom Electronics, Inc., by change of name from Ross, Inc. SN 298,868. Pub. 5-27-69. Filed 5-22-68.
- 874,712. KUSTOM 400 AND DESIGN. Kustom Electronics, Inc., by change of name from Ross, Inc. SN 298,869. Pub. 5-27-69. Filed 5-22-68.

- 874,713. 20TH CENTURY-FOX RECORDS AND DESIGN. Twentieth Century-Fox Film Corporation. SN 305,502. Pub. 5-27-69. Filed 8-19-68.
- 874,714. INFONICS. Infonics, Inc. SN 307,842. Pub. 5-27-69. Filed 9-20-68.
- 874,715. THREAD-O-MATIC. Sears, Roebuck and Co. SN 309,403. Pub. 5-27-69. Filed 10-10-68.
- 874,716. SHAMLEY AND DESIGN. MCA Inc. SN 309,977. Pub. 5-27-69. Filed 10-18-68.
- 874,717. MISCELLANEOUS DESIGN. Pantoni, Naklada-telstvi Svazu cs. Skladatelu. SN 311,400. Pub. 5-27-69. Filed 11-5-68.
- 874,718. H DESIGN. Hammond Corporation. SN 318,420. Pub. 5-27-69. Filed 2-5-69.
- 874,719. NASCO. Nashboro Record Co., Inc. SN 318,565. Pub. 5-27-69. Filed 2-6-69.

### Class 37—Paper and Stationery

- 874,505. (See Class 2 for this trademark.)
- 874,720. WHITMAN. Whitman Publishing Company. SN 278,331. Pub. 5-27-69. Filed 8-15-67.
- 874,721. ELASTOLAM. Chase Bag Company. SN 284,993. Pub. 5-27-69. Filed 11-16-67.
- 874,722. MARKANA. Gunther Wagner Pelikan-Werke. SN 290,670. Pub. 5-27-69. Filed 2-8-68.
- 874,723. T TOPCO AND DESIGN. Topco Associates, Inc. SN 295,476. Pub. 5-27-69. Filed 4-11-68.
- 874,724. MMS (DESIGN). The Monarch Marking System Company. SN 296,443. Pub. 5-27-69. Filed 4-24-68.
- 874,725. PLANISHEEN. Brown Company. SN 298,318. Pub. 5-27-69. Filed 5-16-68.
- 874,726. ULTRA-COR. Consolidated Packaging Corporation. SN 298,431. Pub. 5-27-69. Filed 5-17-68.
- 874,727. PPP (DESIGN). The Lynn Pacific Corporation, d.b.a. Pacific Paper Products. SN 299,240. Pub. 5-27-69. Filed 4-25-68.

### Class 38—Prints and Publications

- 874,728. WHITMAN. Whitman Publishing Company. SN 278,336. Pub. 5-27-69. Filed 8-15-67.
- 874,729. V.I.P. V.I.P. Corporation. SN 278,753. Pub. 8-27-68. Filed 8-27-67.
- 874,730. V.I.P. AND DESIGN. V.I.P. Corporation. SN 278,754. Pub. 8-27-68. Filed 8-21-67.
- 874,731. DATA-SLIDE. Midwood Industries, Inc. SN 288,841. Pub. 5-27-69. Filed 1-15-68.
- 874,732. SNACK FOODS MERCHANDISER. Grocers Publishing Co., Inc. SN 289,502. Pub. 5-27-69. Filed 1-24-68.
- 874,733. DENTAL HIGHLIGHTS. Scientific Communications, Inc. SN 313,765. Pub. 5-27-69. Filed 12-2-68.
- 874,734. SECRET SIX. National Periodical Publications, Inc. SN 317,424. Pub. 5-27-69. Filed 1-24-69.
- 874,735. HERTZ AND DESIGN. Hertz System, Inc. SN 317,912. Pub. 5-27-69. Filed 1-30-69.
- 874,736. HERTZ. Hertz System, Inc. SN 317,913. Pub. 5-27-69. Filed 1-30-69.

### Class 39—Clothing

- 874,737. MODS. Gambits Shoes Inc. SN 207,125. Pub. 7-27-65. Filed 11-30-64.
- 874,738. WW WORK WEAR AND DESIGN. Work Wear Corporation. MULTIPLE CLASS (Classes 39 and 42). SN 264,627. Pub. 5-27-69. Filed 2-13-67.



- 874,739. FLORADORABLE. Maldenform, Inc. SN 288,744. Pub. 5-27-69. Filed 1-15-68.
- 874,740. CABRITO AND DESIGN. La Industrial de Punto C.A. SN 289,102. Pub. 5-27-69. Filed 1-18-68.
- 874,741. BREEZY POINT AND DESIGN. Breezy Point Actionwear, Inc. SN 289,382. Pub. 5-27-69. Filed 1-23-68.
- 874,742. HL AND DESIGN. Henri-Lloyd Limited. SN 289,401. Pub. 5-27-69. Filed 1-23-68.
- 874,743. SNUGGLE TIME. Diana Stores Corporation. MULTIPLE CLASS (Classes 39 and 42). SN 290,138. Pub. 5-27-69. Filed 2-2-68.
- 874,744. STUART C. NELSON CALIFORNIA AND DESIGN. Stuart C. Nelson. SN 290,432. Pub. 5-27-69. Filed 2-5-68.
- 874,745. ADOLFO. Adolfo Inc. SN 291,240. Pub. 5-27-69. Filed 2-16-68.
- 874,746. CHRISTOPHER JOHN. Allied Millinery Company, Inc. SN 291,475. Pub. 5-27-69. Filed 2-20-68.
- 874,747. KENWYN. Barringer Knitting Mills Incorporated. SN 291,826. Pub. 5-27-69. Filed 2-26-68.
- 874,748. PLANE COAT AND DESIGN. John Weitz Designs, Inc. SN 295,066. Pub. 5-27-69. Filed 4-5-68.
- 874,749. DELLA. Henry H. Greene. SN 304,917. Pub. 5-27-69. Filed 8-12-68.
- 874,750. EVENING STAR. Benson Shoe Company. SN 310,438. Pub. 5-27-69. Filed 10-24-68.

### Class 40—Fancy Goods, Furnishings, and Notions

- 874,852. (See Class 23 for this trademark.)
- 874,855. (See Class 25 for this trademark.)
- 874,751. SCRUFIX. Scrufix Limited. SN 246,487. Pub. 5-27-69. Filed 5-24-66.
- 874,752. IF YOUR OWN HAIR WON'T FASHION TRESS WILL. Fashion Tress, Inc. SN 265,470. Pub. 5-27-69. Filed 2-27-67.
- 874,753. AMERICAN BEAUTY WIGS AND DESIGN. American Beauty Wig Corporation, d.b.a. American Beauty Wigs. SN 288,583. Pub. 5-27-69. Filed 1-11-68.
- 874,754. DERBAC. Cereal Soaps Company, Inc. SN 307,729. Pub. 5-27-69. Filed 9-19-68.
- 874,755. MODAC 53. Helene Curtis Industries, Inc. SN 308,108. Pub. 5-27-69. Filed 9-24-68.
- 874,756. BIG BOYE. The Boye Needle Company. SN 308,865. Pub. 5-27-69. Filed 10-4-68.
- 874,757. MAGI-LASH. Holiday Magic. SN 309,257. Pub. 5-27-69. Filed 10-9-68.
- 874,758. CHEVOLON. The Glemby Company, Inc. SN 311,783. Pub. 5-27-69. Filed 11-12-68.

### Class 41—Canes, Parasols, and Umbrellas

- 874,759. TELE-MINI AND DESIGN. Telesco Brophey Limited. SN 306,520. Pub. 5-27-69. Filed 9-3-68.
- 874,760. STAR. Telesco Brophey Limited. SN 306,522. Pub. 5-27-69. Filed 9-3-68.

### Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

- 874,738. (See Class 39 for this trademark.)
- 874,743. (See Class 39 for this trademark.)

- 874,761. WOOL PRESS. J. P. Stevens & Co., Inc. SN 251,967. Pub. 5-27-69. Filed 8-8-66.
- 874,762. TWIN TERRY. Panhandler, Inc. SN 281,915. Pub. 5-27-69. Filed 10-5-67.
- 874,763. WEATHERALL. Mobasco Industries, Inc., d.b.a. The Firth Carpet Company. SN 285,247. Pub. 5-27-69. Filed 11-20-67.
- 874,764. STOCKINIT. Alamac Knitting Mills, Inc. SN 288,663. Pub. 5-27-69. Filed 1-12-68.
- 874,765. PERSIATEX AND DESIGN. Strachman Associates, Inc. SN 294,979. Pub. 5-27-69. Filed 4-4-68.
- 874,766. HOUSE & HEARTH. J. P. Stevens & Co., Inc. SN 298,260. Pub. 5-27-69. Filed 5-15-68.
- 874,767. SUPPL-SOFT. Plymouth Rubber Company, Inc. SN 299,788. Pub. 5-27-69. Filed 6-5-68.
- 874,768. POWERSPAN. Bontec Corp. SN 306,631. Pub. 5-27-69. Filed 9-5-68.
- 874,769. COHAMETRIC COLLECTION. United Merchants and Manufacturers, Inc. SN 306,700. Pub. 5-27-69. Filed 9-5-68.
- 874,770. MITYMESH. Collins & Aikman Corporation. SN 306,755. Pub. 5-27-69. Filed 9-6-68.
- 874,771. FASTBAC. The General Tire & Rubber Company. SN 307,104. Pub. 5-27-69. Filed 9-11-68.
- 874,772. SNOOTY HOOTY. W. T. Eckersley, d.b.a. W. T. Eckersley Co. SN 307,201. Pub. 5-27-69. Filed 9-12-68.
- 874,773. EUROCOINED. Coin Sales Corporation. SN 313,161. Pub. 5-27-69. Filed 11-27-68.

### Class 43—Thread and Yarn

- 874,774. KURLTEX. Fred Whitaker Company. SN 306,007. Pub. 5-27-69. Filed 8-26-68.
- 874,775. POPPY. Oregon Worsted Company. SN 307,665. Pub. 5-27-69. Filed 9-18-68.
- 874,776. LUMIYARN. Toyo Rayon Kabushiki Kaisha, d.b.a. Toyo Rayon Co., Ltd. SN 307,689. Pub. 5-27-69. Filed 9-18-68.

### Class 44—Dental, Medical, and Surgical Appliances

- 874,777. VACUMITTENT. Oxygen Equipment and Service Company. SN 266,912. Pub. 5-27-69. Filed 3-16-67.
- 874,778. PULMONAIRE. William C. Jones, d.b.a. Jones Medical Instrument Company. SN 282,803. Pub. 5-27-69. Filed 10-18-67.
- 874,779. HCA. Hudson National, Inc. MULTIPLE CLASS (Classes 44 and 100). SN 286,054. Pub. 5-27-69. Filed 12-4-67.
- 874,780. GARRETT AND DESIGN. The Garrett Corporation. SN 298,590. Pub. 5-27-69. Filed 5-20-68.
- 874,781. SOLARCAST. Solar Laboratories, Inc. SN 310,253. Pub. 5-27-69. Filed 10-22-68.
- 874,782. SCUTAN. Espe Fabrik Pharmazeutischer Praparat GmbH. SN 311,673. Pub. 5-27-69. Filed 11-8-68.
- 874,783. TAMMI. Medical Supply Company. SN 316,108. Pub. 5-27-69. Filed 1-8-69.
- 874,784. FAIRFIELD AND F DESIGN. Fairfield Surgical & Medical Electronics, Inc. SN 316,377. Pub. 5-27-69. Filed 1-13-69.
- 874,785. FETONE. Fairfield Surgical & Medical Electronics, Inc. SN 316,378. Pub. 5-27-69. Filed 1-13-69.
- 874,786. CONTOUR-OPTIC. Fairfield Surgical & Medical Electronics, Inc. SN 316,380. Pub. 5-27-69. Filed 1-13-69.

### Class 45—Soft Drinks and Carbonated Waters

- 874,787. PENNSYLVANIA DUTCH AND DESIGN. Ju-C-Orange of America. SN 284,309. Pub. 5-27-69. Filed 11-7-67.

### Class 46—Foods and Ingredients of Foods

- 874,788. CHEF-PAC AND DESIGN. National Institutional Food Distributor Associates, Inc. SN 266,349. Pub. 5-27-69. Filed 3-9-67.
- 874,789. SHAKES A LA MODE. National Biscuit Company. SN 278,315. Pub. 5-27-69. Filed 8-15-67.
- 874,790. DR HILLERS. Dr. Hillers A.G. Nähr- und Heilmittelwerk, d.b.a. Dr. Hillers AG. SN 269,649. Pub. 5-27-69. Filed 4-20-67.
- 874,791. MONFORT OF COLORADO AND DESIGN. Monfort Packing Company. SN 283,264. Pub. 5-27-69. Filed 10-24-67.
- 874,792. PURETEST ETC. AND DESIGN. Pure Milk Company, d.b.a. Barber Pure Milk Company. SN 284,728. Pub. 5-27-69. Filed 11-13-67.
- 874,793. KNOTS. Sloan's Specialties Inc., d.b.a. The Knot Shop. SN 290,660. Pub. 5-27-69. Filed 2-8-68.
- 874,794. MINEX. Packet Research Corporation. SN 293,293. Pub. 5-27-69. Filed 3-14-68.
- 874,795. MPC AND DESIGN. Miami Provision Company. SN 299,689. Pub. 5-27-69. Filed 6-4-68.
- 874,796. BLACK KNIGHT AND DESIGN. Cher-Make Sausage Company. SN 300,559. Pub. 5-27-69. Filed 6-17-68.
- 874,797. TORRONCINI. Prince Macaroni Manufacturing Company. SN 302,122. Pub. 5-27-69. Filed 7-5-68.
- 874,798. BAY VIEW. National Food Marketers, Inc., d.b.a. National Food Marketers. SN 303,623. Pub. 4-1-69. Filed 7-25-68.
- 874,799. JUS. Rene Foods, Incorporated. SN 304,965. Pub. 5-27-69. Filed 8-12-68.
- 874,800. HI-N-LO. Popcorn Products, Inc. SN 305,978. Pub. 5-27-69. Filed 8-26-68.
- 874,801. N AND DESIGN. Nissin Shokuhin Kaisha Ltd. SN 306,105. Pub. 5-27-69. Filed 8-28-68.
- 874,802. SAMBA. Iceland Products, Inc. SN 306,147. Pub. 5-27-69. Filed 8-28-68.
- 874,803. BLUE CHANNEL. The Blue Channel Corporation. SN 306,424. Pub. 5-27-69. Filed 9-3-68.
- 874,804. TUNOVA. Carnation Company. SN 306,641. Pub. 5-27-69. Filed 9-6-68.
- 874,805. MARINER. Carnation Company. SN 306,642. Pub. 5-27-69. Filed 9-6-68.
- 874,806. MUSCO AND DESIGN. Musco Olive Products Co., Inc., d.b.a. Musco Olive Products, Inc. SN 307,852. Pub. 5-27-69. Filed 9-20-68.
- 874,807. KERR'S BUTTER SCOTCH AND DESIGN. Charms Company. SN 308,091. Pub. 5-27-69. Filed 9-24-68.
- 874,808. 2 PISTOLS (DESIGN). Rowntree and Company Limited. SN 308,468. Pub. 5-27-69. Filed 9-30-68.
- 874,809. HANDY. United Dairy, Inc., by assignment and change of name from The United Dairy Company. SN 311,994. Pub. 4-29-69. Filed 11-13-68.
- 874,810. PERSIAN GARDEN. Persian Garden Foods, Inc. SN 308,807. Pub. 5-27-69. Filed 10-3-68.
- 874,811. INVERDEX. Corn Products Company, by merger from Refined Syrups & Sugars, Inc. SN 308,811. Pub. 5-27-69. Filed 10-3-68.
- 874,812. ORPHALAC. Mark Morris Associates. SN 308,856. Pub. 5-27-69. Filed 10-4-68.
- 874,813. DIN'R. National Biscuit Company. SN 309,467. Pub. 5-27-69. Filed 10-11-68.

- 874,814. BODYBUILD. Carnation Company. SN 310,540. Pub. 5-27-69. Filed 10-25-68.
- 874,815. DEW SWEET. General Mills, Inc. SN 311,439. Pub. 5-27-69. Filed 11-6-68.
- 874,816. FUN PACK. General Mills, Inc. SN 311,441. Pub. 5-27-69. Filed 11-6-68.
- 874,817. TOP-PRO. Rico Sales Corporation. SN 311,522. Pub. 5-27-69. Filed 11-6-68.
- 874,818. ZIPPY. Safeway Stores, Incorporated. SN 315,976. Pub. 5-27-69. Filed 1-7-69.
- 874,819. MISCELLANEOUS DESIGN. Schelder Foods, Inc. SN 316,391. Pub. 5-27-69. Filed 1-13-69.
- 874,820. FAMILY TRADITION MAKES IT BETTER. Schelder Foods, Inc. SN 316,395. Pub. 5-27-69. Filed 1-13-69.
- 874,821. TOP CONDITION. Ralston Purina Company. SN 316,944. Pub. 5-27-69. Filed 1-21-69.
- 874,822. CAL-SUN. Saticoy Foods Corporation. SN 316,946. Pub. 5-27-69. Filed 1-21-69.
- 874,823. VIZIPAK. Mayfair Packing Company, d.b.a. Mayfair Packing Co. SN 317,186. Pub. 5-27-69. Filed 1-22-69.
- 874,824. HEALTH SPA. General Mills, Inc. SN 317,999. Pub. 5-27-69. Filed 1-31-69.

### Class 49—Distilled Alcoholic Liquors

- 874,825. YAVNOV. Mr. Boston Distiller Inc. SN 291,996. Pub. 5-27-69. Filed 2-27-68.
- 874,826. STEAK HOUSE. The Viking Distillery, Inc., d.b.a. The Viking Distillery. SN 292,031. Pub. 5-27-69. Filed 2-27-68.
- 874,827. CAPTAIN MIKE. F & A Distributing Company. SN 307,448. Pub. 5-27-69. Filed 9-16-68.
- 874,828. J. W. DANT. Schenley Distillers, Inc., d.b.a. The Dant Distillery Company. SN 307,509. Pub. 5-27-69. Filed 9-16-68.
- 874,829. WILD TURKEY (DESIGN). Austin, Nichols & Co., Incorporated (Delaware corporation), assignee of Austin, Nichols & Co., Incorporated (Virginia corporation). SN 307,822. Pub. 5-27-69. Filed 9-20-68.

### Class 50—Merchandise Not Otherwise Classified

- 874,830. CARPETOP. International Rubber Corporation. SN 270,787. Pub. 5-27-69. Filed 5-5-67.
- 874,831. FLOWER CRAFT AND DESIGN. General Crafts Corporation. SN 301,523. Pub. 5-27-69. Filed 6-27-68.
- 874,832. DIETZ AND DESIGN. R. E. Dietz Company. SN 304,769. Pub. 5-27-69. Filed 8-9-68.

### Class 51—Cosmetics and Toilet Preparations

- 874,833. STANWELL AND DESIGN. Poul Nielsen, d.b.a. Stanwell Briar Pipes. SN 220,168. Pub. 5-27-69. Filed 6-1-65.
- 874,834. ROHTO. Rohto Pharmaceutical Co., Ltd. SN 284,037. Pub. 5-27-69. Filed 11-2-67.
- 874,835. GARNIER CRISTAL COLOR. Laboratoire Garnier, Societe Anonyme. SN 286,945. Pub. 5-27-69. Filed 12-14-67.
- 874,836. FANFARON. Andree Biallot, Ltd. MULTIPLE CLASS (Classes 51 and 52). SN 293,662. Pub. 5-27-69. Filed 3-20-68.
- 874,837. IF. The Fuller Brush Company. SN 295,224. Pub. 5-27-69. Filed 4-9-68.



- 874,838. BIG SURF. Clairol Incorporated. MULTIPLE CLASS (Classes 51 and 52). SN 297,491. Pub. 5-27-69. Filed 5-7-68.
- 874,839. BITTER LEMON. Textron Inc. SN 302,777. Pub. 5-27-69. Filed 7-15-68.
- 874,840. TEXTRA. La Maur, Inc., d.b.a. The House of Style. SN 305,943. Pub. 5-27-69. Filed 8-26-68.
- 874,841. QUENCH. Bristol-Myers Company. SN 307,084. Pub. 5-27-69. Filed 9-11-68.
- 874,842. Q.O.N. Helene Curtis Industries, Inc. SN 309,380. Pub. 5-27-69. Filed 10-10-68.
- 874,843. NESCAFE. The Nestle-Lemur Company. SN 310,121. Pub. 5-27-69. Filed 10-21-68.
- 874,844. ALGENE. Dorothy Gray, Ltd. SN 310,281. Pub. 5-27-69. Filed 10-23-68.
- 874,845. X-PO. Faberge, Inc. SN 310,874. Pub. 5-27-69. Filed 10-30-68.
- 874,846. EUPHORIA. Faberge, Inc. SN 310,878. Pub. 5-27-69. Filed 10-30-68.
- 874,847. MERVILLE. Mercantile Stores Company, Inc. SN 311,789. Pub. 5-27-69. Filed 11-12-68.
- 874,848. STATIC. The Gillette Company. SN 317,185. Pub. 5-27-69. Filed 1-22-69.
- 874,849. SHAKE A LEG. Alberto-Culver Company. SN 318,494. Pub. 5-27-69. Filed 2-6-69.

### Class 52 — Detergents and Soaps

- 874,529. (See Class 6 for this trademark.)
- 874,836. (See Class 51 for this trademark.)
- 874,838. (See Class 51 for this trademark.)
- 874,850. MISCO-CARE. Misco Industries, Inc., d.b.a. Misco-Care Co. SN 282,599. Pub. 5-27-69. Filed 10-16-67.
- 874,851. CHOKE-EASE. American Grease Stick Company. SN 286,075. Pub. 5-27-69. Filed 12-4-67.
- 874,852. WYNN-SHIELD. Wynn Oil Company. SN 303,463. Pub. 5-27-69. Filed 7-23-68.
- 874,853. SOFT 'N BRIGHT. General Foods Corporation. SN 303,669. Pub. 5-27-69. Filed 7-26-68.
- 874,854. SCRAPPY. Paul S. Robitaille, d.b.a. I.A.C. Chemical Co. SN 298,476. Pub. 6-3-69. Filed 5-17-68.
- 874,855. BRIGHT 'N SOFT. General Foods Corporation. SN 303,671. Pub. 5-27-69. Filed 7-26-68.
- 874,856. WIG OUTLET INTERNATIONAL AND DESIGN. Wig Outlet International, Inc. SN 304,724. Pub. 5-27-69. Filed 8-8-68.
- 874,857. OBRITE. Oberg Chemical Corp. SN 305,562. Pub. 5-27-69. Filed 8-20-68.
- 874,858. QUENCH. Bristol-Myers Company. SN 307,083. Pub. 5-27-69. Filed 9-11-68.

### Service Marks

### Class 100 — Miscellaneous

- 874,779. (See Class 44 for this trademark.)
- 874,859. SMORGA-PIZZA. Shakey's, Inc. SN 260,086. Pub. 5-27-69. Filed 12-5-66.
- 874,860. CRA. Charles River Associates Incorporated. SN 261,919. Pub. 11-14-67. Filed 1-4-67.
- 874,861. RONALD McDONALD. McDonald's Corporation. SN 279,671. Pub. 5-27-69. Filed 9-5-67.
- 874,862. ALPHANUMERIC. Alphanumeric, Incorporated. SN 292,461. Pub. 5-27-69. Filed 3-5-68.
- 874,863. SEARCH-DATA SYSTEMIZED EXCERPTS, ABSTRACTS AND REVIEWS OF CHEMICAL HEADLINES. Compendium Publishers International Corp. SN 292,556. Pub. 5-27-69. Filed 3-6-68.

- 874,864. LIVING IDEAS. The Korman Corporation. SN 296,328. Pub. 5-27-69. Filed 4-23-68.
- 874,865. TELATTACK. American District Telegraph Company. MULTIPLE CLASS (Classes 100 and 103). SN 297,238. Pub. 5-27-69. Filed 5-3-68.
- 874,866. ANIMAL HEAD (DESIGN). Self-Serv Food Corporation, Inc. SN 299,700. Pub. 5-27-69. Filed 6-4-68.
- 874,867. AMERICA'S NUMBER ONE FUN AND FOOD PLACE. The Georgetown Corporation. SN 301,039. Pub. 5-27-69. Filed 6-21-68.
- 874,868. FANCIFUL DRAWING. Terry Corporation. SN 304,162. Pub. 5-27-69. Filed 8-1-68.
- 874,869. CAP'N QUICK'S. Terry Corporation. SN 304,164. Pub. 5-27-69. Filed 8-1-68.
- 874,870. ARKANSAS AP & L. Arkansas Power & Light Company. SN 305,030. Pub. 5-27-69. Filed 8-13-68.
- 874,871. JOHN BULL. The Gorton Corporation. SN 306,239. Pub. 5-27-69. Filed 8-29-68.
- 874,872. THE DINNER TABLE. The Dinner Table, Inc. SN 306,760. Pub. 5-27-69. Filed 9-6-68.
- 874,873. NIBLICK. The Niblick, Inc. SN 315,950. Pub. 5-27-69. Filed 1-6-69.
- 874,874. PAVILION (DESIGN). United States Franchise Corporation. SN 318,513. Pub. 5-27-69. Filed 2-6-69.

### Class 101 — Advertising and Business

- 874,875. COMPASS AND FLAG (DESIGN). American Industries, Inc. SN 176,990. Pub. 5-27-69. Filed 9-16-63.
- 874,876. MEDITAPE. Sieber & McIntyre, Inc. SN 246,612. Pub. 5-27-69. Filed 5-25-66.
- 874,877. MAP OF U.S.A. WITH SEAL ON LEFT ETC. (DESIGN). Active Sign Corporation of America, Inc. SN 247,864. Pub. 5-27-69. Filed 6-13-66.
- 874,878. MISCELLANEOUS DESIGN. Melandrea, Inc. SN 273,296. Pub. 5-27-69. Filed 6-7-67.
- 874,879. HOUSE OF GOLF. Hockenberger & Co., Inc. SN 275,663. Pub. 5-27-69. Filed 7-10-67.
- 874,880. HOT-LINE. McGraw-Hill, Inc. SN 282,381. Pub. 5-27-69. Filed 10-12-67.
- 874,881. THE RIVERGATE. Board of Commissioners of the Port of New Orleans. SN 288,272. Pub. 5-27-69. Filed 1-8-68.
- 874,882. THE RIVERGATE AND DESIGN. Board of Commissioners of the Port of New Orleans. SN 288,273. Pub. 5-27-69. Filed 1-8-68.
- 874,883. DAYMUDE ALBERSMEYER BUTLER AND DESIGN. Daymude Albersmeyer Butler Inc. SN 290,476. Pub. 5-27-69. Filed 2-7-68.
- 874,884. ARTISTIC. Artistic Dance Fashions, Inc. SN 290,938. Pub. 5-27-69. Filed 2-13-68.
- 874,885. CRS. Chilton Company. SN 293,357. Pub. 5-27-69. Filed 3-15-68.
- 874,886. DATAFILM. Datafilm Corporation. SN 293,363. Pub. 5-27-69. Filed 3-15-68.
- 874,887. PHARMSTAT. Pharmstat, Inc. SN 295,163. Pub. 5-27-69. Filed 4-8-68.
- 874,888. MISCELLANEOUS DESIGN. National Car Rental System, Inc. SN 295,434. Pub. 5-27-69. Filed 4-11-68.
- 874,889. ECONORUN. General Printing & Lithograph Co., d.b.a. Western Lithograph Company. SN 297,670. Pub. 5-27-69. Filed 5-8-68.
- 874,890. NCCS. Eugene Dietzgen Co. SN 299,113. Pub. 5-27-69. Filed 5-27-68.
- 874,891. ACTION. Eugene Dietzgen Co. SN 299,114. Pub. 5-27-69. Filed 5-27-68.
- 874,892. KEITH WELSH AND DESIGN. Keith Welsh, d.b.a. Keith Welsh Realtor. SN 299,711. Pub. 5-27-69. Filed 6-4-68.
- 874,893. EXECUTIVE RETRIEVAL. Challenger, Gray & Christmas, Inc. SN 301,707. Pub. 5-27-69. Filed 7-1-68.

- 874,894. RJ INC. AND DESIGN. Retirement Jobs, Inc. SN 302,447. Pub. 5-27-69. Filed 7-10-68.
- 874,895. MARSH. Marsh Supermarkets, Inc. SN 304,552. Pub. 5-27-69. Filed 8-7-68.
- 874,896. THE NATIONAL STEREOTAPE MUSIC GUILD. The National Stereotape Music Guild, Ltd. SN 305,280. Pub. 5-27-69. Filed 8-10-68.
- 874,897. SALES FORCE, INC. Sales Force, Inc. SN 306,038. Pub. 5-27-69. Filed 8-27-68.
- 874,898. PHOTO ISLAND. Fotomat Corporation. SN 308,954. Pub. 5-27-69. Filed 10-7-68.
- 874,899. THE QUALITY FOOD PEOPLE. Giant Food, Inc. SN 309,931. Pub. 5-27-69. Filed 10-18-68.
- 874,900. PEACOCK. Peacock Buick, Inc. MULTIPLE CLASS (Classes 101 and 103). SN 312,541. Pub. 5-27-69. Filed 11-19-68.

### Class 102 — Insurance and Financial

- 874,901. MSCC AND DESIGN. Merchants Shipper Credit Corp. SN 287,824. Pub. 5-27-69. Filed 12-29-67.
- 874,902. EQUICARE AND DESIGN. Old Equity Life Insurance Company. SN 291,892. Pub. 5-27-69. Filed 2-26-68.
- 874,903. H (DESIGN). The Heritage Fund, Inc. SN 312,387. Pub. 5-27-69. Filed 11-18-68.

### Class 103 — Construction and Repair

- 874,865. (See Class 100 for this trademark.)
- 874,900. (See Class 101 for this trademark.)
- 874,904. WE'LL DO ANYTHING FOR MONEY! AND DESIGN. Liberty Petroleum Co., Inc. SN 251,549. Pub. 5-27-69. Filed 8-2-66.
- 874,905. FIGURE OF RABBIT AND DESIGN. L. B. Foster Company. SN 284,644. Pub. 5-27-69. Filed 11-13-67.
- 874,906. AVCO AND DESIGN. Avco Corporation. SN 292,542. Pub. 5-27-69. Filed 3-6-68.
- 874,907. IMPS AND DESIGN. Instant Mobile Powerwash Service, Inc., assignee of Guardian Power Cleaning Corporation. SN 299,982. Pub. 5-27-69. Filed 6-7-68.
- 874,908. IMPS. Instant Mobile Powerwash Service, Inc., assignee of Guardian Power Cleaning Corporation. SN 299,983. Pub. 5-27-69. Filed 6-7-68.
- 874,909. SEAL-LOCK. David Dierstein, d.b.a. United States Casting Repair Co. SN 307,926. Pub. 5-27-69. Filed 9-23-68.

### Class 104 — Communication

- 874,910. SYMBOLIC 11. Cosmos Broadcasting Corporation, by change of name and assignment from Cosmos Broadcasting Corporation. SN 304,434. Pub. 3-25-69. Filed 8-6-68.
- 874,911. MTS 360. Management Television Systems, Inc. SN 306,018. Pub. 5-27-69. Filed 8-19-68.
- 874,912. MTS AND DESIGN. Management Television Systems, Inc. SN 306,019. Pub. 5-27-69. Filed 8-19-68.
- 874,913. CBS RADIO AND DESIGN. Columbia Broadcasting System, Inc. SN 312,952. Pub. 5-27-69. Filed 11-25-68.

### Class 105 — Transportation and Storage

- 874,914. AIR DISPATCH AND DESIGN. Air Dispatch, Inc. SN 271,018. Pub. 5-27-69. Filed 5-9-67.
- 874,915. FALCON AND DESIGN. Pan American World Airways, Inc. SN 278,444. Pub. 5-27-69. Filed 8-17-67.
- 874,916. DIRECT AND DESIGN. Direct Air Freight Corporation. SN 292,361. Pub. 5-27-69. Filed 3-4-68.
- 874,917. VALCAR. The Valcar Corporation. SN 297,228. Pub. 5-27-69. Filed 5-2-68.
- 874,918. SOLID SERVICE SYSTEM. Consolidated Forwarding Company, Inc. SN 298,709. Pub. 5-27-69. Filed 5-21-68.
- 874,919. TRAVEL WITH A PURPOSE. Educational Travel Company. SN 304,597. Pub. 5-27-69. Filed 8-7-68.

### Class 106 — Material Treatment

- 874,920. FORT SPOTLESS. United Merchants and Manufacturers, Inc. SN 283,832. Pub. 5-27-69. Filed 10-31-67.
- 874,921. MW AND DESIGN. Metal Wire Recovery Corporation. SN 299,571. Pub. 5-27-69. Filed 6-3-68.
- 874,922. ANSCOCHROME. GAF Corporation. SN 309,424. Pub. 5-27-69. Filed 10-11-68.

### Class 107 — Education and Entertainment

- 874,923. I'LL NEVER TELL. Reverend Harry Schlitt. SN 316,394. Pub. 5-27-69. Filed 1-13-68.
- 874,924. PACE AND DESIGN. Pace, Inc. SN 316,503. Pub. 5-27-69. Filed 1-14-69.

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| 72,480. "LENOIR'S ECZEMA REMEDY" ETC. ENCLOSED BY OVAL OUTLINE. Cl. 18 (Int. Cl. 5). 1-26-09. | 263,573. SECURITY. Cl. 46 (Int. Cl. 31). 11-5-29.                          |
| 74,289. LINOTYPE. Cl. 23 (Int. Cl. 7). 6-29-09.   | 263,758. DUKE. Cl. 39 (Int. Cl. 25). 11-12-29.                             |
| 254,135. HELEN OF TROY. Cl. 51 (Int. Cl. 3). 3-12-29.   | 263,897. LOTOL. Cl. 1 (Int. Cl. 17). 11-12-29.                             |
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| 256,656. PETIT PARIS. Cl. 46 (Int. Cl. 30). 5-21-29.  | 507,242. C.A.R.E. Cl. 50 (Int. Cls. 3, 5, 21, 25, and 29). 3-1-49.         |
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| 257,554. SLA. Cl. 6 (Int. Cl. 5). 6-11-29.  | 508,416. BRINDLEY'S MIXTURE FCG AND DESIGN. Cl. 17 (Int. Cl. 34). 4-12-49. |
| 257,679. REPRESENTATION OF CENTAUR FIGURE. Cl. 14 (Int. Cl. 6). 6-18-29.                      | 508,810. OSHKOSH AND DESIGN. Cl. 3 (Int. Cl. 18). 4-19-49.                 |
| 257,783. REPRESENTATION OF CENTAUR FIGURE. Cl. 13 (Int. Cl. 6). 6-18-29.                      | 508,817. LEON DESIGN. Cl. 38 (Int. Cl. 16). 4-19-49.                       |
| 257,795. SMART-MAID. Cl. 39 (Int. Cl. 25). 6-18-29.   | 508,840. FLORALINE. Cl. 43 (Int. Cl. 23). 4-19-49.                         |
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| 262,963. VANITY FAIR. Cl. 29 (Int. Cl. 21). 10-29-29.   | 510,196. ALBATRE. Cl. 51 (Int. Cl. 3). 5-31-49.                            |
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 514,742. CHERRY RIVET. Cl. 13 (Int. Cl. 6). 9-6-49.  
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American Grease Stick Co., Muskegon, Mich. 874,851, pub. 5-27-69. Cl. 52.  
American Home Products Corp., New York, N.Y. 874,581-2, pub. 5-27-69. Cl. 18.  
American Industries, Inc., Atlanta, Ga. 874,875, pub. 5-27-69. Cl. 101.  
American Olean Tile Co., Inc., Lansdale, Pa. 874,547, pub. 5-27-69. Cl. 12.  
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 Meyer & Lange, Inc., New York, N.Y., to Reese Finer Foods, Inc., Chicago, Ill. 256,656, ren. 8-12-69. Cl. 46.  
 Miami Provision Co., Miami, Fla. 874,795, pub. 5-27-69. Cl. 46.  
 Micrometrical Mfg. Co., from Micrometrical Mfg. Co., Ann Arbor, Mich. 751,644, cancl. Cl. 26.  
 Midwood Industries, Inc., Long Island City, N.Y. 874,731, pub. 5-27-69. Cl. 38.  
 Milprint, Inc., Milwaukee, Wis. 517,438, ren. 8-12-69. Cl. 2.  
 Milwaukee Cheese Co., Brookfield, Wis. 751,828, cancl. Cl. 46.  
 Minami, H. Y., d.b.a. H. Y. Minami & Sons, Guadalupe, to Y. Minami, d.b.a. H. Y. Minami & Sons, Santa Maria, Calif. 263,573, ren. 8-12-69. Cl. 46.  
 Minami, H. Y. & Sons: See—  
 Minami, H. Y.  
 Minami, Yataro: See—  
 Minami, H. Y.  
 Miner, W. E., Inc., Chicago, Ill. 874,593, pub. 5-27-69. Cl. 19.  
 Minnesota Mining & Mfg. Co., St. Paul, Minn. 874,503, pub. 5-27-69. Cl. 1.  
 Misco Industries, Inc., d.b.a. Misco-Care Co., Wichita, Kans. 874,850, pub. 5-27-69. Cl. 52.  
 Misco-Care Co.: See—  
 Misco Industries, Inc.  
 Mr. Boston Distiller Inc., Boston, Mass. 874,825, pub. 5-27-69. Cl. 49.  
 Mobley, Edward, Co., The: See—  
 Citizens Bank & Trust Co.  
 Mobley, Edward L., Jr.: See—  
 Citizens Bank & Trust Co.  
 Modern Maid, Inc., Chattanooga, Tenn. 874,700, pub. 5-27-69. Cl. 34.  
 Modutec Inc., Norwalk, Conn. 874,674, pub. 5-27-69. Cl. 26.  
 Mohasco Industries, Inc., d.b.a. The Fifth Carpet Co., Amsterdam, N.Y. 874,763, pub. 5-27-69. Cl. 42.  
 Molded Fiber Glass Body Co., Ashtabula, Ohio. 874,540, pub. 5-27-69. Cl. 12.  
 Molecular Research, Inc., Palm Beach Gardens, Fla. 874,701, pub. 5-27-69. Cl. 34.  
 Monarch Marking System Co., The, Miamisburg, Ohio. 874,724, pub. 5-27-69. Cl. 37.  
 Mondeaux Millwork Corp.: See—  
 Mondeaux Millwork & Supply Co.  
 Mondeaux Millwork & Supply Co., to Mondeaux Millwork Corp., Medford, Wis. 510,251, ren. 8-12-69. Cl. 12.  
 Monfort Packing Co., Greeley, Colo. 874,791, pub. 5-27-69. Cl. 46.  
 Monitor Controller Co., Rockland, Mass. 503,331, ren. 8-12-69. Cl. 21.  
 Monsanto Chemical Co., to Monsanto Co., St. Louis, Mo. 517,460, ren. 8-12-69. Cl. 6.  
 Monsanto Co.: See—  
 Monsanto Chemical Co.  
 Morehead Mills, Inc., Spray, N.C. 751,805, cancl. Cl. 43.

- Morito & Co. Ltd., Osaka, Japan. 874,855, pub. 5-27-69. Multiple Class (Classes 25 and 40).  
 Morris, Mark, Associates, Topeka, Kans. 874,812, pub. 5-27-69. Cl. 46.  
 Morton International, Inc.: See—  
 Morton Salt Co.  
 Morton Salt Co., to Morton International, Inc., Chicago, Ill. 516,178, ren. 8-12-69. Cl. 46.  
 Mor-Win Products, Inc., Los Angeles, Calif. 874,645, pub. 5-27-69. Cl. 23.  
 Motec Industries, Inc., Hopkins, Minn. 751,651, cancl. Cl. 26.  
 Motor Coach Corp., Nappanee, Ind. 874,594, pub. 5-27-69. Cl. 19.  
 Movado Watch Agency, Inc., New York, N.Y. 514,932, ren. 8-12-69. Cl. 27.  
 Mueller Chemical Works: See—  
 Mueller, Kenneth L.  
 Mueller, Kenneth L., d.b.a. Mueller Chemical Works, Kasota, to Vel-Tex Chemical Co., Inc., St. Paul, Minn. 510,674, ren. 8-12-69. Cl. 6.  
 Multi-Products Co.: See—  
 International Horseshoe Co., Inc.  
 Murphy Oil Corp., El Dorado, Ark. 874,557, pub. 3-11-69. Cl. 15.  
 Musco Olive Products Co., Inc., d.b.a. Musco Olive Products, Inc., Orlando, Calif. 874,806, pub. 5-27-69. Cl. 46.  
 Musco Olive Products, Inc.: See—  
 Musco Olive Products Co., Inc.  
 Nashboro Record Co., Inc., Nashville, Tenn. 874,719, pub. 5-27-69. Cl. 36.  
 National Aquarium Supplies & Accessories, Inc., Orange, N.J. 874,686, pub. 5-27-69. Cl. 31.  
 National Association of Real Estate Boards, Chicago, Ill. 515,199, ren. 8-12-69. Cl. 102.  
 National Automation Corp., Garden City Park, N.Y. 751,650, cancl. Cl. 26.  
 National Biscuit Co., New York, N.Y. 874,789, pub. 5-27-69. Cl. 46.  
 National Biscuit Co., New York, N.Y. 874,813, pub. 5-27-69. Cl. 46.  
 National Car Rental System, Inc., Minneapolis, Minn. 874,888, pub. 5-27-69. Cl. 101.  
 National Food Marketers: See—  
 National Food Marketers, Inc.  
 National Food Marketers, Inc., d.b.a. National Food Marketers, Blue Anchor, N.J. 874,798, pub. 4-1-69. Cl. 46.  
 National Institutional Food Distributor Associates, Inc., Smyrna, Ga. 874,788, pub. 5-27-69. Cl. 46.  
 National Marine Service Inc., St. Louis, Mo. 874,596, pub. 5-27-69. Cl. 21.  
 National Periodical Publications, Inc., New York, N.Y. 874,734, pub. 5-27-69. Cl. 38.  
 National Ring & Leather Corp., Mansfield, Ohio. 874,680, pub. 5-27-69. Cl. 28.  
 National Starch & Chemical Corp.: See—  
 National Starch Products Inc.  
 National Starch Products Inc., to National Starch & Chemical Corp., New York, N.Y. 515,589, ren. 8-12-69. Cl. 5.  
 National Stereotype Music Guild, Ltd., The, Chicago, Ill. 874,896, pub. 5-27-69. Cl. 101.  
 Natvar Corp., Woodbridge, N.J. 874,610, pub. 5-27-69. Cl. 21.  
 Naugatuck Chemical Co., The, to Uniroyal, Inc., New York, N.Y. 263,897, ren. 8-12-69. Cl. 1.  
 Nelson Knitting Co., Rockford, Ill. 511,192-3, ren. 8-12-69. Cl. 39.  
 Nelson, Stuart Co., Los Angeles, Calif. 874,744, pub. 5-27-69. Cl. 39.  
 Nestle-Lemur Co., The, New York, N.Y. 874,848, pub. 5-27-69. Cl. 51.  
 Niblick, Inc., The, Greensboro, N.C. 874,873, pub. 5-27-69. Cl. 100.  
 Nielsen, Paul, d.b.a. Stanwell Briar Pipes, Kyringe, near Ringsted, Denmark. 874,833, pub. 5-27-69. Cl. 51.  
 Nissin Shokuhin Kaisha Ltd., Takatsuki, Japan. 874,801, pub. 5-27-69. Cl. 46.  
 Nordberg Mfg. Co., Milwaukee, Wis. 751,629, cancl. Cl. 23.  
 North American Cement Corp., New York, N.Y., to Marquette Cement Mfg. Co., Chicago, Ill. 515,158, ren. 8-12-69. Cl. 12.  
 North Star Specialties Co., Minneapolis, Minn. 874,683, pub. 5-27-69. Cl. 31.  
 Norton Co.: See—  
 Behr-Manning Corp.  
 Oberg Chemical Corp., Tallahassee, Fla. 874,857, pub. 5-27-69. Cl. 52.  
 Old Equity Life Insurance Co., Evanston, Ill. 874,902, pub. 5-27-69. Cl. 102.  
 Olinkraft, Inc., West Monroe, La. 874,512, pub. 5-27-69. Cl. 2.  
 Oliver Corp., Chicago, Ill. 874,648, pub. 5-27-69. Cl. 23.  
 Olsen Magnetic, Inc., Mount Vernon, Ill. 874,606, pub. 5-27-69. Cl. 21.  
 Olsen, Tenius, Testing Machine Co., Willow Grove, Pa. 874,656, pub. 5-27-69. Cl. 26.  
 Optimization, Inc., Sun Valley, Calif. 874,599, pub. 5-27-69. Cl. 21.  
 Oregon Worsted Co., Portland, Oreg. 874,775, pub. 5-27-69. Cl. 43.  
 Organic Compost Corp., Germantown, Wis. 874,531, pub. 5-27-69. Cl. 10.  
 Oroweat Baking Co., Los Angeles, Calif. 515,000, ren. 8-12-69. Cl. 46.  
 Oshkosh Trunks & Luggage, Oshkosh, Wis., to MSL Industries, Inc., Chicago, Ill. 508,810, ren. 8-12-69. Cl. 3.  
 Oster, John, Mfg. Co., Milwaukee, Wis. 515,517, ren. 8-12-69. Multiple Class (Classes 21, 23, and 44).  
 Osto Pharmaceutical Co., Elizabeth, N.J. 874,584, pub. 5-27-69. Cl. 18.  
 Oxley Developments Co. Ltd., Ulverston, England. 751,594, cancl. Cl. 21.  
 Oxygen Equipment & Service Co., Chicago, Ill. 874,777, pub. 5-27-69. Cl. 44.  
 PPG Industries, Inc., Pittsburgh, Pa. 874,876, pub. 5-27-69. Cl. 26.  
 Pace, Inc., Silver Spring, Md. 874,924, pub. 5-27-69. Cl. 107.  
 Pacific Paper Products: See—  
 Lynn Pacific Corp., The.  
 Packet Research Corp., Andover, Mass. 874,794, pub. 5-27-69. Cl. 46.  
 Pan American World Airways, Inc., New York, N.Y. 874,915, pub. 5-27-69. Cl. 105.  
 Panhandler, Inc., Memphis, Tenn. 874,762, pub. 5-27-69. Cl. 42.  
 Pantou, Nakladatelstvi Svazu Cs. Skladatelu, Prague, Czechoslovakia. 874,717, pub. 5-27-69. Cl. 36.  
 Parke, Davis & Co., Detroit, Mich. 874,585, pub. 5-27-69. Cl. 18.  
 Parker Pen Co., The, Janesville, Wis. 510,520, ren. 8-12-69. Cl. 11.  
 Peacock Butch, Inc., Falls Church, Va. 874,900, pub. 5-27-69. Multiple Class (Classes 101 and 103).  
 Pedigo Pork Rind Co., Inc., Bowling Green, Ky. 874,625, pub. 5-27-69. Cl. 22.  
 Perry Mfg. Co., Mount Airy, N.C. 751,768, cancl. Cl. 39.  
 Persian Garden Foods, Inc., Escalon, Calif. 874,810, pub. 5-27-69. Cl. 46.  
 Peter, Strong & Co., Inc.: See—  
 Laclede Laboratories, Inc.  
 Pfizer, Chas., & Co., Inc.: See—  
 Coty, Inc.  
 Williams, C. K., & Co.  
 Pfizer, Chas., & Co., Inc., New York, N.Y. 874,586, pub. 5-27-69. Cl. 18.  
 Pfeuffer Corp.: See—  
 Enterprise Mfg. Co., The.  
 Pharmstat, Inc., Los Angeles, Calif. 874,887, pub. 5-27-69. Cl. 101.  
 Phillips Petroleum Co., Bartlesville, Okla. 874,510, pub. 5-27-69. Cl. 2.  
 Physics for Industry, Inc., Rochester, N.Y. 751,674, cancl. Cl. 26.  
 Picker Corp., White Plains, N.Y. 874,672, pub. 5-27-69. Cl. 26.  
 Pictorial Publishers, Inc., Indianapolis, Ind. 874,627, pub. 5-27-69. Cl. 22.  
 Plessey Airborne Corp., from Airborne Accessories Corp., Hillside, N.J. 874,598, pub. 5-27-69. Cl. 21.  
 Plymouth Rubber Co., Inc., Canton, Mass. 874,767, pub. 5-27-69. Cl. 42.  
 Plymouth Shoe Co., Middleboro, Mass. 751,775, cancl. Cl. 39.  
 Popcorn Products, Inc., Chicago, Ill. 874,800, pub. 5-27-69. Cl. 45.  
 Precision Diamond Tool Co., Elgin, Ill. 874,647, pub. 5-27-69. Cl. 23.  
 Prince Macaroni Mfg. Co., Lowell, Mass. 874,797, pub. 5-27-69. Cl. 46.  
 Procter & Gamble Co., The, Cincinnati, Ohio. 751,703, cancl. Cl. 29.  
 Professional Archers Association: See—  
 Professional Archers Association of America.  
 Professional Archers Association of America, by change of name Professional Archers Association, Hickory Corners, Mich. 751,848, cancl. Cl. 200.  
 Pure Milk Co., d.b.a. Barber Pure Milk Co., Birmingham, Ala. 874,792, pub. 5-27-69. Cl. 46.  
 Quaker Oats Co., The, Chicago, Ill. 257,338, ren. 8-12-69. Cl. 46.  
 Rabec, Inc., Fairview Park, Ohio. 874,539, pub. 5-27-69. Cl. 12.  
 Radiant Color Co., Richmond, Calif. 874,532, pub. 5-27-69. Cl. 10.  
 Raleigh Industries Ltd., Nottingham, England. 874,587, pub. 5-27-69. Multiple Class (Classes 19 and 22).  
 Ralston Purina Co., St. Louis, Mo. 874,821, pub. 5-27-69. Cl. 46.  
 Rangaire Corp., Cleburne, Tex. 874,597, pub. 5-27-69. Cl. 21.  
 Rangaire Corp., Cleburne, Tex. 874,698, pub. 5-27-69. Cl. 34.  
 Raytek, Inc., Mountain View, Calif. 874,659, pub. 5-27-69. Cl. 26.  
 Redeturf, Inc., Albany, Oreg. 874,501, pub. 5-27-69. Cl. 1.  
 Reefer's No Moth, Inc., to Colgate-Palmolive Co., New York, N.Y. 257,554, ren. 8-12-69. Cl. 6.  
 Reese Finer Foods, Inc.: See—  
 Meyer & Lange, Inc.  
 Refined Syrups & Sugars, Inc.: See—  
 Corn Products Co.  
 Reich, Jacques, d.b.a. Jacques Fourcy, Paris, France. 751,838, cancl. Cl. 51.  
 Reliable Electric Co., Franklin Park, Ill. 874,542, pub. 5-27-69. Cl. 12.  
 Reliance Gauge Column Co., The, to The Clark-Reliance Corp., Cleveland, Ohio. 516,550, ren. 8-12-69. Cl. 13.  
 Rene Foods, Inc., Daytona Beach, Fla. 874,799, pub. 5-27-69. Cl. 46.  
 Retirement Jobs, Inc., San Jose, Calif. 874,894, pub. 5-27-69. Cl. 101.  
 Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 874,577-80, pub. 5-27-69. Cl. 17.  
 Rico Sales Corp., Aliceville, Ala. 874,817, pub. 5-27-69. Cl. 46.  
 Ridings, Ted L., d.b.a. T.R. Imports, Nashville, Tenn. 874,608, pub. 5-27-69. Cl. 21.  
 Riso Optical Co., Inc., New York, N.Y. 751,680, cancl. Cl. 26.



- Robbins Floor Products, Inc., Tuscumbia, Ala. 751,559, can. Cl. 20.  
 Robinson Blower & Engineering Corp., San Martin, Calif. 751,724, can. Cl. 34.  
 Robitaille, Paul S., d.b.a. I.A.C. Chemical Co., Granby, Mass. 874,834, pub. 6-3-69, Cl. 52.  
 Rockwell-Barnes Co., Elk Grove Village, Ill. 515,251, ren. 8-12-69, Cl. 37.  
 Rockwell-Standard Co., Pittsburgh, Pa. 874,589, pub. 5-27-69, Cl. 19.  
 Rogers Corp., Rogers, Conn. 874,595, pub. 5-27-69, Cl. 21.  
 Rohm & Haas Co., Philadelphia, Pa. 510,723, ren. 8-12-69, Cl. 6.  
 Roho Pharmaceutical Co., Ltd., Osaka, Japan. 874,834, pub. 5-27-69, Cl. 51.  
 Ronrico Corp., San Juan, Puerto Rico. 751,831, can. Cl. 49.  
 Ross, Inc.: See—  
 Kustom Electronics, Inc.  
 Rossiger, H. P., & Co., Inc., New York, N.Y. 510,443, ren. 8-12-69, Cl. 6.  
 Rowntree & Co., Ltd., York, England. 874,808, pub. 5-27-69, Cl. 46.  
 Royce Chemical Co., East Rutherford, N.J. 515,076, ren. 8-12-69, Cl. 4.  
 Rubbermaid Inc., Wooster, Ohio. 874,506, pub. 5-27-69, Cl. 2.  
 "SIPAL," Societe de Personnes a Responsabilite Limitee, Lambertstraat, Bois d'Haine, Belgium. 731,240, can. Cl. 46.  
 Safety Motivations: See—  
 Evans, Charles T.  
 Safeway Stores, Inc., Oakland, Calif. 874,818, pub. 5-27-69, Cl. 46.  
 St. Lawrence Mfg. Co., Inc., Giffard, Quebec, Canada. 751,598, can. Cl. 22.  
 Sales Force, Inc., Knoxville, Tenn. 874,897, pub. 5-27-69, Cl. 101.  
 Salten, Howard, Forest Hills, N.Y. 874,559, pub. 5-27-69, Cl. 15.  
 Sandoz, Inc., Hanover, N.J. 874,525, pub. 5-27-69, Cl. 6.  
 Santucci, V. & A.: See—  
 Santucci, Vincent J.  
 Santucci, Vincent J., d.b.a. V. & A. Santucci, Avondale, Pa. 512,780, ren. 8-12-69, Cl. 46.  
 Saticoy Foods Corp., Saticoy, Calif. 874,822, pub. 5-27-69, Cl. 46.  
 Schenley Distillers, Inc., d.b.a. The Dant Distillery Co., New York, N.Y. 874,828, pub. 5-27-69, Cl. 49.  
 Schneider Foods, Inc., Baltimore, Md. 874,819-20, pub. 5-27-69, Cl. 46.  
 Schlitt, Harry, Reverend, Springfield, Mo. 874,923, pub. 5-27-69, Cl. 107.  
 Schrank, M. C., Co., Bridgeton, N.J., to M. C. Schrank Co., Inc., New York, N.Y. 255,062, ren. 8-12-69, Cl. 39.  
 Schrank, M. C., Co., Inc.: See—  
 Schrank, M. C., Co.  
 Schlutz, Jack, Inc., St. Louis, Mo. 751,795-6, can. Cl. 39.  
 Schmacher, Bernard P., Bismarck, N. Dak. 751,601, can. Cl. 22.  
 Science Materials Center, New York, N.Y. 751,634, can. Cl. 26.  
 Scientific Communications, Inc., Chicago, Ill. 874,733, pub. 5-27-69, Cl. 38.  
 Scovill Mfg. Co., Racine, Wis. 751,590, can. Cl. 21.  
 Scr-Fix Ltd., Warwick, England. 874,751, pub. 5-27-69, Cl. 40.  
 Sears, Roebuck & Co.: See—  
 La Resista Corset Co., The.  
 Sears, Roebuck & Co., Chicago, Ill. 874,715, pub. 5-27-69, Cl. 36.  
 Self-Serv Food Corp., Inc., Campbell, Calif. 874,866, pub. 5-27-69, Cl. 100.  
 Sexology Corp., New York, N.Y. 751,761, can. Cl. 38.  
 Shaker's, Inc., Burlingame, Calif. 874,859, pub. 5-27-69, Cl. 100.  
 Shell Oil Co., New York, N.Y. 751,500, can. Cl. 6.  
 Sieber & McIntyre, Inc., Chicago, Ill. 874,876, pub. 5-27-69, Cl. 101.  
 Simoniz Co., Chicago, Ill. 751,496, can. Cl. 4.  
 Simplex Shoe Mfg. Co.: See—  
 Simplex Shoe Mfg. Co., Inc.  
 Simplex Shoe Mfg. Co., Inc., from Simplex Shoe Mfg. Co., Milwaukee, Wis. 751,473, can. Cl. 1.  
 Singer Co., The, New York, N.Y. 874,649, pub. 5-27-69, Cl. 23.  
 Singer Mfg. Co., The, New York, N.Y. 751,659, can. Cl. 26.  
 Sloan's Specialties Inc., d.b.a. The Knot Shop, Drexel Hill, Pa. 874,793, pub. 5-27-69, Cl. 46.  
 Smallman, I., & Sons Co., New York, N.Y. 751,507, can. Cl. 8.  
 Societe Anonyme de la Benedictine, Distillerie de la Liqueur de l'Ancienne Abbaye de Fecamp, to Benedictine, Distillerie la Liqueur de l'Ancienne Abbaye de Fecamp, Fecamp, France. 259,082, ren. 8-12-69, Cl. 46.  
 Societe Peroche, Paris, France. 751,770, can. Cl. 39.  
 Solar Laboratories, Inc., Inglewood, Calif. 874,781, pub. 5-27-69, Cl. 44.  
 Solite Corp., Richmond, Va. 874,544, pub. 5-27-69, Cl. 12.  
 South Bend Tackle Co., Inc., South Otselic, N.Y. 874,613-17, pub. 2-13-69, Cl. 22.  
 Spalding, A. G., & Bros, Inc., Chicopee, Mass. 510,316, ren. 8-12-69, Cl. 22.  
 Sperry Rand Corp., New York, N.Y. 874,636, pub. 5-27-69, Cl. 23.  
 Spex Industries, Inc., Scotch Plains, N.J. 751,675, can. Cl. 26.  
 Sprague & Carleton, Inc., Houston, Tex. 874,687-94, pub. 5-27-69, Cl. 32.  
 Standard Hosiery Mills, Inc., Burlington, N.C., to Kayser-Roth Corp., New York, N.Y. 261,273, ren. 8-12-69, Cl. 39.  
 Standard Oil Co., Flemington, N.J. 874,558, pub. 5-27-69, Cl. 15.  
 Standard Oil Co., The, Cleveland, Ohio. 874,561-9, pub. 5-27-69, Cl. 15.  
 Standard Oil Co. of California, San Francisco, Calif. 874,702, pub. 5-27-69, Cl. 34.  
 Stanwell Briar Pipes: See—  
 Nielsen, Paul.  
 Steckman, Samuel, Fort Lee, N.J. 874,603, pub. 5-27-69, Cl. 21.  
 Steelcase, Inc., Grand Rapids, Mich. 874,695, pub. 5-27-69, Cl. 32.  
 Steven Labs, Inc., Clayton, Mo. 751,543, can. Cl. 18.  
 Stevens, Gerald K., Burbank, Calif. 874,620, pub. 5-27-69, Cl. 22.  
 Stevens, J. P., & Co., Inc., New York, N.Y. 874,761, pub. 5-27-69, Cl. 42.  
 Stevens, J. P., & Co., Inc., New York, N.Y. 874,766, pub. 5-27-69, Cl. 42.  
 Strachman Associates, Inc., New York, N.Y. 874,765, pub. 5-27-69, Cl. 42.  
 Strauss, Levi, & Co., San Francisco, Calif. 516,561, ren. 8-12-69, Cl. 39.  
 Sucrest Corp., New York, N.Y. 874,530, pub. 5-27-69, Cl. 6.  
 Sullivan Machinery Co., Inc., Michigan City, Ind. 874,637, pub. 5-27-69, Cl. 23.  
 Sun Chemical Corp., New York, N.Y. 510,370-1, ren. 8-12-69, Cl. 11.  
 Sun Chemical Corp., New York, N.Y. 510,764, ren. 8-12-69, Cl. 6.  
 Sun Corp., Barberton, Ohio. 874,626, pub. 5-27-69, Cl. 22.  
 Sure-Lup Balts: See—  
 Gilmore, Lawrence A.  
 Swiss Lab, Inc., Bedford Heights, Ohio. 874,537, pub. 5-27-69, Multiple Class (Classes 12, 16, and 34).  
 T.N.E. Inc., Jefferson County, Mo. 874,604, pub. 5-27-69, Cl. 21.  
 T.R. Imports: See—  
 Ridings, Ted L.  
 Tabiti Musique, Los Angeles, Calif. 751,747, can. Cl. 36.  
 Talon, Inc., Meadville, Pa., to Textron Inc., Providence, R.I. 514,673, ren. 8-12-69, Cl. 42.  
 Talon, Inc., Meadville, Pa., to Textron Inc., Providence, R.I. 514,840, ren. 8-12-69, Cl. 42.  
 Talon, Inc., Meadville, Pa., to Textron Inc., Providence, R.I. 514,843, ren. 8-12-69, Cl. 13.  
 Talon, Inc., Meadville, Pa., to Textron Inc., Providence, R.I. 514,994, ren. 8-12-69, Cl. 22.  
 Tecnifax Corp., Holyoke, Mass. 874,661, pub. 5-27-69, Cl. 26.  
 Telesco Brophy Ltd., Montreal, Quebec, Canada. 874,759-60, pub. 5-27-69, Cl. 41.  
 Terry Corp., Milwaukee, Wis. 874,868-9, pub. 5-27-69, Cl. 100.  
 Textron Inc.: See—  
 Talon, Inc.  
 Cherry Rivet Co.  
 Textron Inc., Providence, R.I. 874,839, pub. 5-27-69, Cl. 51.  
 Thermo King Corp., Minneapolis, Minn. 874,658, pub. 5-27-69, Cl. 26.  
 Timken Roller Bearing Co., The, Canton, Ohio. 517,520, ren. 8-12-69, Cl. 14.  
 Topco Associates, Inc., Skokie, Ill. 874,723, pub. 5-27-69, Cl. 37.  
 Topper Bakeries, Port Chester, N.Y. 751,822, can. Cl. 46.  
 Toyo Rayon Co., Ltd.: See—  
 Toyo Rayon Kabushiki Kaisha.  
 Toyo Rayon Kabushiki Kaisha, d.b.a. Toyo Rayon Co., Ltd., Tokyo-to, Japan. 874,776, pub. 5-27-69, Cl. 43.  
 Trablach, David E., New York, N.Y. 751,689, can. Cl. 28.  
 Triple Kleen Corp., Gadsden, Ala. 874,632, pub. 5-27-69, Cl. 23.  
 Trozac, Inc., Orem, Utah. 874,671, pub. 5-27-69, Cl. 26.  
 Turtle Wax, Inc., Chicago, Ill. 751,553, can. Cl. 19.  
 Twentieth Century-Fox Film Corp., New York, N.Y. 874,713, pub. 5-27-69, Cl. 36.  
 Ulano, J., & Co., Inc., Brooklyn, N.Y. 874,664-5, pub. 5-27-69, Cl. 28.  
 Ulmann, Bernhard, Co. Inc., Long Island City, to Indian Head Inc., New York, N.Y. 507,426, ren. 8-12-69, Cl. 40.  
 Ulmann, Bernhard, Co. Inc., Long Island City, to Indian Head Inc., New York, N.Y. 508,840, ren. 8-12-69, Cl. 43.  
 Ulmann, Bernhard, Co. Inc., Long Island City, to Indian Head Inc., New York, N.Y. 511,052, ren. 8-12-69, Cl. 43.  
 Ulmann, Bernhard, Co. Inc., Long Island City, to Indian Head Inc., New York, N.Y. 515,506, ren. 8-12-69, Cl. 43.  
 Ultra Carbon Corp., Bay City, Mich. 874,499, pub. 5-27-69, Multiple Class (Classes 1 and 23).  
 Unidicta Canada Ltd., Toronto, Ontario, Canada. 751,737, can. Cl. 36.  
 Union Carbide Corp., New York, N.Y. 874,607, pub. 5-27-69, Cl. 21.  
 Union Metal Works Ltd., Hong Kong. 751,587, can. Cl. 21.  
 Union Oil Co. of California, Los Angeles, Calif. 751,711, can. Cl. 32.  
 Uniroyal, Inc.: See—  
 Nautaguck Chemical Co., The.  
 Uniroyal, Inc., New York, N.Y. 874,706, pub. 5-27-69, Cl. 35.  
 United Dairy Co., The: See—  
 United Dairy, Inc.  
 United Dairy Inc., Martins Ferry, from The United Dairy Co., St. Clairsville, Ohio. 874,809, pub. 4-29-69, Cl. 46.  
 United Merchants & Manufacturers, Inc., New York, N.Y. 874,769, pub. 5-27-69, Cl. 42.  
 United Merchants & Manufacturers, Inc., New York, N.Y. 874,920, pub. 5-27-69, Cl. 106.

- United Steel & Wire Co., Battle Creek, Mich. 751,554, can. Cl. 19.  
 United States Casting Repair Co.: See—  
 Dipperstein, David.  
 United States Franchise Corp., San Francisco, Calif. 874,874, pub. 5-27-69, Cl. 100.  
 Universal American Corp., New York, N.Y. 751,620, can. Cl. 23.  
 Universal Compounding Co., Akron, Ohio. 751,810, can. Cl. 44.  
 Universal Controls, Inc., New York, N.Y. 751,618, can. Cl. 23.  
 Universal Electronics Labs. Corp., Hackensack, N.J. 751,860, can. Cl. 26.  
 V.I.P. Corp., Memphis, Tenn. 874,729-30, pub. 8-27-68, Cl. 38.  
 Vacationer Enterprises, Inc., Burlington, Vt. 751,758, can. Cl. 38.  
 Valcar Corp., The, Los Angeles, Calif. 874,917, pub. 5-27-69, Cl. 105.  
 Van Zile, Carl R., d.b.a. Van Zile Products Co., Lexington, Ky. 751,840, can. Cl. 52.  
 Van Zile Products Co.: See—  
 Van Zile, Carl R.  
 Vel-Tex Chemical Co.: See—  
 Mueller, Kenneth L.  
 Venus Esterbrook Corp., New York, N.Y. 874,623, pub. 5-27-69, Cl. 22.  
 Verbaleta Recorder Corp., Garden City, N.Y. 751,742, can. Cl. 36.  
 Verni, Melvin, d.b.a. Delta Records, Chicago, Ill. 751,736, can. Cl. 36.  
 Verson Mfg. Co., Dallas, Tex. 874,654, pub. 5-27-69, Cl. 23.  
 Victor Comptometer Corp.: See—  
 Worthington Ball Co., The.  
 Viking Distillery, Inc., The, d.b.a. The Viking Distillery, Albany, Ga. 874,826, pub. 5-27-69, Cl. 49.  
 Viking Distillery, The: See—  
 Viking Distillery, Inc., The.  
 Vogue Electronics & Appliance Corp., Brooklyn, N.Y. 751,575, can. Cl. 21.  
 Wachs, Paul, New York, N.Y. 751,694, can. Cl. 28.  
 Wallace, Edwin C., Port Washington, N.Y. 751,771, can. Cl. 39.  
 Walthour & Hood Co., Atlanta, Ga. 874,591, pub. 5-27-69, Cl. 19.  
 Warfman, Samuel H., d.b.a. Bocalav Co., New York, to Mauvel Ltd., New Rochelle, N.Y. 517,479, ren. 8-12-69, Cl. 51.  
 Washington Incinerator Sales & Service Inc.: See—  
 Compacager Corp.  
 Webster, G. L., Co., Inc., Cheriton, Va. 515,065, ren. 8-12-69, Cl. 46.  
 Weeks, Evert D.: See—  
 Armand Co., The.  
 Weitz, John, Designs, Inc., New York, N.Y. 874,748, pub. 5-27-69, Cl. 39.  
 Wellington Sears Co., New York, N.Y. 751,801, can. Cl. 42.  
 Welsh, Keith, d.b.a. Keith Welsh Realtor, Dayton, Ohio. 874,892, pub. 5-27-69, Cl. 101.  
 Welsh, Keith, Realtor: See—  
 Welsh, Keith.  
 Western Garment Co., Ripley, Tenn. 751,777, can. Cl. 39.  
 Western Lithograph Co.: See—  
 General Printing & Lithograph Co.  
 Weyerhaeuser Co., Tacoma, Wash. 874,543, pub. 5-27-69, Cl. 12.  
 Wheel Trueing Tool Co., Detroit, Mich. 874,646, pub. 5-27-69, Cl. 23.  
 Whitaker, Fred, Co., Philadelphia, Pa. 874,774, pub. 5-27-69, Cl. 43.  
 Whitman Publishing Co., Racine, Wis. 874,657, pub. 5-27-69, Cl. 26.  
 Whitman Publishing Co., Racine, Wis. 874,681, pub. 5-27-69, Cl. 29.  
 Whitman Publishing Co., Racine, Wis. 874,720, pub. 5-27-69, Cl. 37.  
 Whitman Publishing Co., Racine, Wis. 874,728, pub. 5-27-69, Cl. 38.  
 Wig Outlet International, Inc., Dallas, Tex. 874,856, pub. 5-27-69, Cl. 52.  
 Williams, C. K., & Co., assor. to C. K. Williams & Co., Easton, Pa., to Chas. Pfizer & Co. Inc., New York, N.Y. 510,974, ren. 8-12-69, Cl. 6.  
 Winegard Co., Burlington, Iowa. 874,609, pub. 5-27-69, Cl. 21.  
 Wolf Brothers & Co., Red Lion, to House of Windsor, Inc., Windsor, Pa. 509,916, ren. 8-12-69, Cl. 17.  
 Wooster Brush Co., The, Wooster, Ohio. 751,700, can. Cl. 29.  
 Work Wear Corp., Cleveland, Ohio. 874,738, pub. 5-27-69, Multiple Class (Classes 39 and 42).  
 Worthington Ball Co., The, Elyria, Ohio, to Victor Comptometer Corp., Chicago, Ill. 514,995-6, ren. 8-12-69, Cl. 22.  
 Wynn Oil Co., Azusa, Calif. 874,852, pub. 5-27-69, Cl. 52.  
 Young Conservatives of Illinois, Inc., Chicago, Ill. 751,849, can. Cl. 200.  
 Ziegler Chemical & Mineral Corp.: See—  
 American Asphalt Association.  
 Zukowski, Stanley, d.b.a. Jewels by Stanlee, Bristol, Conn. 751,785, can. Cl. 39.  
 Zylon Products Co., Inc., Pawtucket, R.I. 751,852, can. Cl. 2.



U.S. DEPARTMENT OF COMMERCE  
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

August 19, 1969

Volume 865

Number 3

PATENTS  
NOTICES

Board of Appeals Decisions Rendered in the Month of  
July 1969

Examiner affirmed	114
Examiner affirmed in part	19
Examiner reversed	33
Total	166

VACANCY ANNOUNCEMENT

Position: Deputy Assistant Commissioner for Patent  
Examining GS-1220-17

Duties:

As the top-ranking career official in the Patent Examining operation, assists in exercising the full range of administrative and managerial responsibility and authority possessed by the Assistant Commissioner for Patent Examining. Participates in the policy guidance, program planning, and procedural control of all subordinate program areas, and assumes full program responsibility in the absence of the Assistant Commissioner. Primary responsibilities involve the day-to-day direction of the activities of the Patent Examining Groups to ensure the consistent application of policy guidelines throughout the 16 Examining Groups, including those pertaining to patent practice, procedure and examining priorities. Within the framework of over-all objectives and broad plans for their accomplishment, exercises authority to coordinate programs, plans, and techniques, as well as organizational changes, staffing, and budget allocation, in order to maintain the effectiveness and efficiency of the Groups at the highest possible level.

Qualifications:

Candidates must possess a minimum of five years of comprehensive patent experience in examination, classification, prosecution, or responsible staff assignments of which at least one year was at or above grade GS-16 or the equivalent. A minimum of one year of significant administrative and managerial experience is also required. Additionally, candidates must have demonstrated effectiveness in the following: (1) Ability to develop goals and programs within existing laws to meet the objectives of the Patent Office and U.S. patent system; this would include ability to develop and apply policy guidelines, including those pertaining to patent practice and procedure, and the ability to synthesize policy goals and programs with operating practicalities to assist in the achievement of the most effective possible patent examination program. (2) Ability to plan, organize, and coordinate the activities of diverse organizational entities. (3) Capacity to effectively create complete budgetary programs, including capacity to approve or modify the budgetary, manpower, and program proposals of subordinate supervisors through in depth analysis of staffing, production, quality, backlogs, examining effectiveness, etc. (4) Ability to take effective and objective action based on thoroughly sound conclusions and to maintain harmonious relationships. (5) Ability in the practical application of the patent statutes, rules of practice, court decisions, etc.

monious relationships. (5) Ability in the practical application of the patent statutes, rules of practice, court decisions, etc.

Evaluation of Candidates:

All eligible candidates will be interviewed by an Evaluation Panel and evaluated on the basis of their degree of possession of the qualifications noted above, as well as total experience, education, training and potential. Awards, supervisory appraisal of past performance and potential will also be considered.

General Information:

Full consideration will be given to all qualified applicants without regard for their race, sex, religion, color, national origin, or lawful political affiliations. Candidates who are interested in being considered for this position must submit a completed SF-171, Personal Qualifications Statement, to the U.S. Patent Office, Personnel Division, Washington, D.C. 20231, not later than August 27, 1969. Copies of SF-171 may be obtained from any Civil Service Commission Regional Office or first class Post Office. Questions concerning this announcement should be referred to Mr. Bradford R. Huther, Area Code 703, 557-3635, Building No. 2, Room 2-9C-05, Crystal Plaza, Arlington, Virginia.

Certificates of Correction for the Week of Aug. 19, 1969

3,060,454	3,371,809	3,377,126
3,182,333	3,372,056	3,377,638
3,259,239	3,372,216	3,377,761
3,316,041	3,372,347	3,377,855
3,320,301	3,373,527	3,377,877
3,320,892	3,373,572	3,378,170
3,325,414	3,374,188	3,378,223
3,334,179	3,374,840	3,378,246
3,335,324	3,374,922	3,378,279
3,337,357	3,375,150	3,378,381
3,353,173	3,375,279	3,378,410
3,356,541	3,375,608	3,378,498
3,361,804	3,375,636	3,378,542
3,362,347	3,375,852	3,378,543
3,365,450	3,375,905	3,378,544
3,368,196	3,375,928	3,378,660
3,368,943	3,376,246	3,378,749
3,368,975	3,376,319	3,379,045
3,370,066	3,376,380	3,379,434
3,370,076	3,376,773	3,381,612
3,370,315	3,376,957	3,400,284
3,371,551		

Directory of Registered Patent Attorneys and Agents

The Patent Office has recently published a new edition of the Directory of Registered Patent Attorneys and Agents Arranged by States and Countries. The new edition shows the addresses furnished to the Committee on Enrollment as of

New Applications Received During June 1969

Patents	8843
Designs	562
Plant Patents	4
Reissues	46
Total	9455

Issue—August 19, 1969

Patents	1300—No. 3,461,463 to No. 3,462,762, incl.
Designs	64—No. 214,982 to No. 215,045, incl.
Reissues	5—No. 26,644 to No. 26,648, incl.
Total	1369



December 1968, of all attorneys, agents, and firms registered to practice before the Patent Office in patent cases. An added feature in the present edition is the use of a symbol to denote those registrants who are registered as patent agents.

The publication is on sale by the Superintendent of Documents, United States Government Printing Office, Washington, D.C., 20402, for \$1.50.

EDWIN L. REYNOLDS,  
July 25, 1969. Chairman, Committee on Enrollment.

#### Disclaimer

3,046,704.—Albert H. Dall, and George L. Grove, Cincinnati, Ohio. MACHINE TOOL SLIDE AND MOUNTING THEREOF. Patent dated July 31, 1962. Disclaimer filed July 1, 1969, by the assignee, The Cincinnati Milling Machine Co.

Hereby enters this disclaimer to claims 1, 2, 3 and 8 of said patent.

#### Rules of Practice in Patent Cases

[37 CFR Part 1]

##### Preexamination

Notice is hereby given that under the authority contained in section 6 of the Act of July 19, 1952 (66 Stat. 793; 35 U.S.C. 6), the Patent Office proposes to amend Part 1, Title 37, Code of Federal Regulations by adding thereto a new center heading reading "Preexamination" and a new § 1.98 relating to the submission of a patentability brief, as set forth below. This proposal would expedite the prosecution of applications and strengthen the presumption of validity of issued patents.

Parties who desire to present their views, objections, recom-

mendations, or suggestions in connection with this proposal are invited to do so by letter addressed to the Commissioner of Patents, Washington, D.C. 20231, on or before October 23, 1969. Oral comments may be presented at a hearing to be held on Thursday, October 23, 1969, at 9 a.m., d.s.t., in Room 34-3D50, Building 34, 2011 Jefferson Davis Highway, Arlington, Va. All persons wishing to be heard orally are requested to notify the Commissioner of Patents of their intended appearance.

##### PREEXAMINATION

#### § 1.98 Patentability brief.

(a) At the time of filing an application, or at such time as may be specified in an official notice, the applicant shall submit a patentability brief. The brief shall identify all relevant prior art that was specifically considered in the preparation of the application and shall further include an argument in support of patentability, explaining why the claims in such application are deemed patentable over the identified art. Copies of published prior art, other than patents of the United States, shall be submitted with the brief. The patentability brief shall not be construed as a representation that a search has been made or that no better art exists than that identified as having been specifically considered.

(b) If no prior art was considered in the preparation of the application, an express statement to that effect will be accepted in lieu of a patentability brief as specified in paragraph (a) of this section.

WILLIAM E. SCHUYLER, Jr.,  
Commissioner of Patents.

Approved: July 29, 1969.

MYRON TRAVIS,  
Assistant Secretary for Science and Technology.

[F.R. Doc. 69-9000; Filed, July 30, 1969; 8:48 a.m.]

Published in 34 F.R. 12532, July 31, 1969

## PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

### CONDITION OF PATENT APPLICATIONS AS OF JULY 28, 1969

PATENT EXAMINING GROUPS		Actual Filing Date of Oldest New Case Awaiting Action
*Denotes oldest new application.		
<b>CHEMICAL EXAMINING GROUPS</b>		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director.....	Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-03-67
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director.....	Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	*12-08-66
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—L. J. BERCOVITZ, Director.....	Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	2-13-67
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director.....	Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	1-06-67
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director.....	Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	1-19-67
<b>ELECTRICAL EXAMINING GROUPS</b>		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director.....	Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	1-02-68
SECURITY, GROUP 220—S. BOYD, Director.....	Ordinance, Firearms and Ammunition; Radar; Underwater Signalling; Directional Radio; Torpedoes; Seismic Exploring; Radio-Active Batteries; Nuclear Reactors; Powder Metallurgy; Rocket Fuels; Radio-Active Material.	*10-31-66
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director.....	Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	1-05-67
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director.....	Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	6-05-67
PHYSICS, GROUP 280—R. L. EVANS, Director.....	Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	10-11-67
DESIGNS, GROUP 290—S. BOYD, Director.....	Industrial Arts; Household, Personal and Fine Arts.	11-22-68
<b>MECHANICAL EXAMINING GROUPS</b>		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director.....	Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	4-01-68
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director.....	Manufacturing Processes; Assembling; Combined Machines; Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding; Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*12-01-67
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director.....	Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletary; Printing; Typewriters; Stationery; Information Dissemination.	1-03-68
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director.....	Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	7-01-68
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director.....	Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	4-26-68
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director.....	Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	2-05-68
Total number of pending applications (excluding Designs).....		183,624
Total number of Design applications pending.....		3,081

Expiration of patents: The patents within the range of numbers indicated below expire during August 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 600, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 263. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents..... Numbers 2,805,466 to 2,608,686, inclusive  
Plant Patents..... Numbers 1,117 to 1,123, inclusive



# DECISIONS IN PATENT AND TRADEMARK CASES

## U.S. Court of Customs and Patent Appeals

MINE SAFETY APPLIANCES COMPANY v. THE ELECTRIC STORAGE BATTERY CO.

No. 8055. Decided January 16, 1969

[56 CCPA —; 405 F.2d 901; 160 USPQ 413]

### 1. PATENT—TRADEMARK—PUBLIC DOMAIN.

"We do not, however, agree with the position taken in appellee's brief. He says, for one thing, that the Constitution 'grants' patent rights only for limited times. The Constitution grants no patent rights, it grants only authority to Congress to enact laws. He also argues, as is all too prevalent, that the patent laws put things into the public domain when patents expire. Patent laws function only to keep things out of the public domain temporarily. They have nothing to do with putting things into it. They say nothing about right to copy or right to use, they speak only in terms of right to exclude. 'Public domain,' moreover, is a question-begging legal concept. Whether or not things are in or out of the public domain and free or not free to be copied may depend on all sorts of legal concepts including patent law, anti-monopoly policy and statutes, the law of unfair competition, copyright law, and the law of trademarks and trademark registration. What we really do is to determine these legal rights; then we may express the ultimate conclusion by saying something is in the 'public domain'—or not in it. All we are concerned with here is the statutes pertaining to trademark registration and the case law construing those statutes."

### 2. TRADEMARK—REGISTRABILITY—ONLY EXISTING TRADEMARKS REGISTERED—LANHAM ACT.

"It is our understanding of the Lanham Act that it is for the registration, not the creation, of trademarks. Its terminology—indeed, the history of federal trademark statutes—presupposes the pre-existence of a trademark to be registered."

### 3. SAME—REGISTRABILITY—FUNCTIONAL RIB DESIGN ON SAFETY HATS.

"In any event, we are satisfied that the Board was correct in its conclusion, in view of the structural functionality of the rib design, its advertisement as a structurally advantageous feature, the sale by others of safety hats with similar if not identical rib designs, also promoted as functionally advantageous, and appellant's permissiveness in letting the Welsh Manufacturing Company sell hats with the identical design as its own hats, that the rib design is not in fact a trademark, notwithstanding the testimony of numerous witnesses that because of it they are able to recognize safety hats as being of appellant's manufacture. They testify to that effect as a matter of personal belief; but that carries no assurance that they really can tell who made the hat or who stands behind it merely from the appearance of the ribs."

### 4. SAME—DISTINCTIVENESS—REGISTRABILITY—RIB DESIGN.

"The Board also concluded on the record that the rib design had not 'become distinctive of applicant's goods in commerce.' This is but another way of saying it is not a trademark. Registration was therefore properly refused and the decision of the Board is affirmed."

### 5. APPEAL TO COURT OF CUSTOMS AND PATENT APPEALS—RECORD—ASSESSMENT OF COSTS.

"A few papers were added to the printed record on request of appellee, above and beyond others to the inclusion of which appellant consented. The cost of printing them is hereby taxed against appellee."

APPEAL from Patent Office. Opposition No. 41,973.

AFFIRMED.

Nims, Halliday, Whitman, Howes & Collison (Oliver P. Howes, Jr., Thomas A. Kain, of counsel) for appellant.

William J. Ruano for appellee.

Before WORLEY, Chief Judge, and Judges RICH, ALMOND, BALDWIN, and KIRKPATRICK<sup>1</sup>

RICH, J., delivered the opinion of the court.

This appeal is from the decision of the Patent Office Trademark Trial and Appeal Board, 150 USPQ 562 (1966),<sup>2</sup> sustaining an opposition by appellee to the registration of an alleged trademark on the Principal Register on appellant's application Serial No. 87,507, filed December 17, 1959.

The application describes the goods as "protective or safety helmets, hats, and caps \* \* \*." They are the type of "hard hat" worn by miners, construction workers, well drillers, and the like to protect the wearer's head from falling objects, bumps, and blows.

What is sought to be registered as a trademark is the configuration of the crown portion of the hat, which is dome-shaped, the alleged distinctive feature consisting of ribs or corrugations extending outwardly of the crown and arranged in a particular manner. There are two main ribs, extending from front to back and from side to side and intersecting at right angles, which divide the crown of the hat into four quadrants. In each quadrant there are two ribs forming an inverted "V" which points to but does not touch the intersection of the two main ribs. Thus there are, in effect, twelve ribs or upstanding corrugations extending from the central portion of the crown toward the brim and terminating short thereof. This configuration is illustrated in the Board's opinion and need not be repeated here.

Registration is sought under section 2(f) of the Trademark Act, 15 U.S.C. 1052(f), and a supporting affidavit was filed alleging "substantially exclusive and continuous use in interstate commerce for at least five (5) years next preceding the filing of this application." Use since October 1939 is claimed.

The configuration here alleged to function as a trademark and sought to be registered was the subject of Design Patent No. 118,432 to H. B. Lewis, issued Jan. 2, 1940, and expired Jan. 2, 1954, the claim, however actually covering the appearance of the entire hat including the rim portion.<sup>3</sup> Lewis also obtained a utility patent, No. 2,248,366, July 8, 1941, which expired in 1958 in which the drawings illustrate the identical ribbed crown design on a pressed sheet-metal hat and wherein the specification states, "The crown 21 of the hat may be embossed to provide reinforcing ribs 25."

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

<sup>2</sup> There were two prior decisions of the Board on a motion and renewed motion for summary judgment, both denied, 140 USPQ 671 (Dec. 20, 1963) and 143 USPQ 163 (Oct. 21, 1964). The latter was commented on in Derenberg's Eighteenth Year of the Lanham Act, 146 USPQ No. 6, p. 4 and the decision here on appeal in his Nineteenth Year, 150 USPQ No. 10, p. 3.

<sup>3</sup> We do not find it necessary herein to discuss again the legal effect of the existence and expiration of design patent protection. For our views on that matter, see *In re Mogen David Wine Corp.*, 51 CCPA 1260, 328 F.2d 926, 140 USPQ 575 (1964) and 54 CCPA 1086, 372 F.2d 539, 152 USPQ 593 (1967).

Although appellee's arguments here, as below, are based in part on the Supreme Court decisions in *Sears, Roebuck and Co. v. Stifel Co.*, 376 U.S. 225, 140 USPQ 524, and *Compo Corp. v. Day-Brite Lighting, Inc.*, 376 U.S. 234, 140 USPQ 528, and dicta in the opinions therein, we find it unnecessary, as did the Board, to consider their applicability. Cf. Judge Smith's concurring opinion in the second *Mogen David* case, supra.

[1] We do not, however, agree with the position taken in appellee's brief. He says, for one thing, that the Constitution "grants" patent rights only for limited times. The Constitution grants no patent rights, it grants only authority to Congress to enact laws. He also argues, as is all too prevalent, that the patent laws put things into the public domain when patents expire. Patent laws function only to keep things out of the public domain temporarily. They have nothing to do with putting things into it. They say nothing about right to copy or right to use, they speak only in terms of right to exclude. "Public domain," moreover, is a question-begging legal concept. Whether or not things are in or out of the public domain and free or not free to be copied may depend on all sorts of legal concepts including patent law, anti-monopoly policy and statutes, the law of unfair competition, copyright law, and the law of trademarks and trademark registration. What we really do is to determine these legal rights; then we may express the ultimate conclusion by saying something is in the "public domain"—or not in it. All we are concerned with here is the statutes pertaining to trademark registration and the case law construing those statutes.



Appellant's predecessor in business with respect to the hats here involved appears to have been the B. F. McDonald Company of Los Angeles which sold the Lewis hats, of the same design here sought to be registered. The McDonald Company later became a subsidiary of appellant. The hats have been sold as "McDonald Safe-T-Hats" and cap versions as "McDonald Safe-T-Caps."

The record shows, as the Board pointed out, that

Applicant's advertising and promotional material, like that of its predecessor, over the years, has been replete with references to the ribbing and corrugated design, but only for its function in strengthening the crown or in deflecting falling objects as, for example, "Vertically ribbed for extra strength without impairing ability to deflect falling objects," "strong duraluminum shells corrugated for maximum resistance to blows from falling and flying objects," and "In the Type 'T' Model the crown is corrugated for maximum resistance to blows from falling and flying objects \* \* \*"

In conjunction with this fact, there is an important admission by appellant, filed in response to a request for admissions, that "applicant has never stated in its advertising or in the advertising of its former subsidiary that the rib or corrugation design was a trademark."

The Board further pointed out that

Applicant first began to experience competition in the sale of aluminum safety hats and caps in the early 1950's (the design patent expired in 1954). Currently, there are numerous manufacturers and/or sellers of aluminum protective hats and caps with corrugations running radially outwardly from the top center. While slight differences exist in the corrugation arrangements, none of these competitors have advertised such arrangements as constituting their trademarks and, like applicant and its predecessor, they have alluded, in their advertising and promotional literature, only to the functional features of the designs in stiffening or reinforcing the crown and deflecting falling objects. One of appellant's competitors, The Fibre-Metal Products Company, advertised aluminum caps and hats with a crown design substantially similar to that of applicant in the trade publication, "National Safety News," in January 1959, a time prior to the filing of the subject application.

Appellant does not deny this. An episode of considerable significance, in our view, is the following, as reported by the Board:

Beginning in January 1960, after the subject application was filed, and continuing through July 1961, applicant sold about 15,000 aluminum protective hats and caps bearing the identical corrugation or design in issue to the Welsh Manufacturing Company of Providence, Rhode Island, a company unrelated to and under no control of applicant. Applicant permitted this company to advertise and sell these hats under its own name and trademark. These hats had no indication that they were of applicant's origin. This sale was made assertedly on the ground that Welsh was not in competition with applicant because Welsh distributed its hats through wholesale outlets to small users as distinguished from those large users contacted by applicant's sales personnel. According to Welsh's vice-president in charge of sales, Welsh has been for many years engaged in the sale of industrial safety supplies; and the hats and caps purchased from applicant were sold under the mark "Vanguard," and stickers bearing this mark were placed inside the hats; that these hats were promoted and advertised under this mark in nationally distributed trade publications and through the distribution of catalog pages and like material to safety supply distributors and distributors throughout the United States for redistribution to their customers; and that in view of the national distribution by Welsh of these hats through distributors located in all of the United States, Welsh's sales representatives were "running into applicant's sales people" at the customer-consumer level and were, in fact, competing for the sale of identical safety hats to substantially the same customers.

Appellant's brief has no answer to this situation, which clearly would make it impossible for anyone to know, merely from looking

at a hat, whether it originated with appellant or with Welsh Manufacturing Company, except to say that 15,000 hats were "*de minimis*" in view of its sales of 100,000 hats a year in each year from 1950 through 1960. Under all the circumstances here we cannot regard this as *de minimis*.

Furthermore, it appears that opposer-appellee has been selling hats with a substantially identical crown design at least since 1959, believing it had the right to do so. In answer to a question at oral argument, appellant's counsel indicated that nothing has been done to stop opposer's sales for the reason that counsel felt the attempt would not succeed, at least in the absence of such a federal registration as appellant is here seeking to obtain. This would seem to be very close to an admission that appellant does not have trademark rights in the rib design. [2] It is our understanding of the Lanham Act that it is for the *registration*, not the *creation*, of trademarks. Its terminology—indeed, the history of federal trademark statutes—presupposes the pre-existence of a trademark to be registered.

[3] In any event, we are satisfied that the Board was correct in its conclusion, in view of the structural functionality of the rib design, its advertisement as a structurally advantageous feature, the sale by others of safety hats with similar if not identical rib designs, also promoted as functionally advantageous, and appellant's permissiveness in letting the Welsh Manufacturing Company sell hats with the identical design as its own hats, that the rib design is not in fact a trademark, notwithstanding the testimony of numerous witnesses that because of it they are able to recognize safety hats as being of appellant's manufacture. They testify to that effect as a matter of personal belief; but that carries no assurance that they really can tell who made the hat or who stands behind it merely from the appearance of the ribs.

[4] The Board also concluded on the record that the rib design had not "become distinctive of applicant's goods in commerce." This is but another way of saying it is not a trademark. Registration was therefore properly refused and the decision of the Board is affirmed.

#### *Taxation of Costs*

[5] A few papers were added to the printed record on request of appellee, above and beyond others to the inclusion of which appellant consented. The cost of printing them is hereby taxed against appellee. **AFFIRMED.**

#### U.S. Court of Customs and Patent Appeals

IN RE YAWATA IRON & STEEL CO., LTD.

No. 8021. Decided December 5, 1968

[56 CCPA —; 403 F.2d 752; 159 USPQ 721]

#### 1. TRADEMARK—CONFUSING SIMILARITY—EVIDENCE—THIRD-PARTY REGISTRATIONS.

"Appellant has cited numerous third-party registrations of marks with the letter 'S' as a dominant characteristic surrounded by a design and used in conjunction with metal products. Appellant contends that inasmuch as these marks were permitted registration 'one over the other,' appellant's mark should also be allowed over the registration cited by the Board. Appellant's reliance on third-party registrations of somewhat similar marks is, as the Board said, not conclusive on the issue here involved. Those registrations, as appellant admits, are distinguished one from the other. The most they can establish is



that the use of the letter 'S' as a mark or part of a mark is not particularly distinctive in the metal field. This does not answer the question of likelihood of confusion, mistake or deception."

APPEAL from Patent Office. Serial No. 188,404.

AFFIRMED.

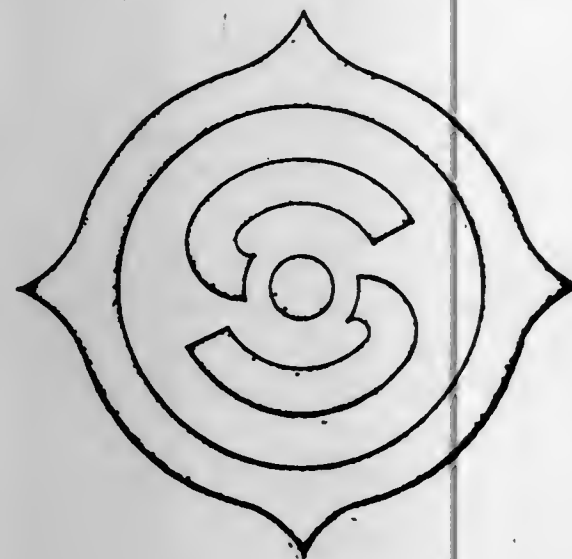
*Wenderoth, Lind & Ponack* (Ernest F. Wenderoth, Vincent M. Creedon, of counsel) for appellant.

*Joseph Schimmel* (George Roeming, of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, RICH, SMITH, ALMOND, and BALDWIN, Associate Judges

ALMOND, J., delivered the opinion of the court.

Yawata Iron & Steel Co., Ltd., appeals from the decision of the Trademark Trial and Appeal Board<sup>1</sup> refusing registration of the mark shown in appellant's application<sup>2</sup> for iron—namely, pig iron, sponge iron, cast iron, and ferro alloy; steel—namely, ordinary steel and special steel; semi-finished steel—namely, blooms, billets, slabs, sheet bars and tin bars; and finished steel products—namely, rails and accessories, bars and shapes, sheet piling, wire products, wire rods, plates, sheets, high tensile strength steels, hot extruded steels, stainless steels, and clad steels. Ownership of a Japanese registration is asserted. The mark described in the application and for which registration is sought on the Principal Register is reproduced below:



Refusal of registration was predicated on the ground that appellant's mark so resembles the design mark comprising the letter "S" within a circle (shown below) previously registered for carbon steel, alloy steel, semi-steel, and malleable and grey iron castings<sup>3</sup> as to be likely, when applied to appellant's goods, to cause confusion or mistake or deception.



<sup>1</sup> Board opinion abstracted, 150 USPQ 833.

<sup>2</sup> Serial No. 188,404, filed March 10, 1964.

<sup>3</sup> Registration No. 397,914, issued September 29, 1942.

There is no issue here as to priority of use or as to the identity of the competing goods of the respective parties. The sole issue is likelihood of confusion within the purview of section 2(d) of the Lanham Act, 15 U.S.C. 1052(d).

[1] Appellant has cited numerous third-party registrations of marks with the letter "S" as a dominant characteristic surrounded by a design and used in conjunction with metal products. Appellant contends that inasmuch as these marks were permitted registration "one over the other," appellant's mark should also be allowed over the registration cited by the Board. Appellant's reliance on third-party registrations of somewhat similar marks is, as the Board said, not conclusive on the issue here involved. Those registrations, as appellant admits, are distinguished one from the other. The most they can establish is that the use of the letter "S" as a mark or part of a mark is not particularly distinctive in the metal field. This does not answer the question of likelihood of confusion, mistake or deception.

After comment on the third-party registrations, the Board stated:

In the final analysis, we must look at the marks to determine whether there does in fact exist such similarity therebetween as would be likely to cause confusion or mistake or deception. \* \* \*

There are of course differences between the marks but when the marks are applied to the goods, these differences are apparently minimized. As cast on pig iron, the distinctive points of applicant's mark are not readily discernible and as stenciled on packages of hot strip coil \* \* \* the impression of applicant's mark is of an "S" within a circle. As we view the marks, as illustrated above, the impact of each is substantially identical—an "S" within a circle.

We conclude that in view of the substantial similarities between the marks and in view of the identity of the involved goods, confusion or mistake or deception is likely.

Appellant argues that inasmuch as the goods involved are not "over the counter" wares and are bought only by discriminating purchasers, likelihood of confusion is thereby minimized. Here, as noted, we have legally identical goods, hence the same class of purchasers, and marks which are quite similar in their essential features, as well as the fact that the goods as identified in the application are not restricted to any particular channel of distribution.

We are not persuaded of error in the decision of the Board, which decision is accordingly affirmed.

AFFIRMED.

Judge Smith participated in the hearing of this case but died before a decision was reached.

WORLEY, Chief Judge, dissenting.

I daresay that if this court had not had the benefit of the record, brief and argument no member would say that appellant's mark remotely resembles an "S" in the usual sense. To me it is but an arbitrary symbol which has no sound, spelling or meaning. It is, as appellant states:

\* \* \* a circular design having four outwardly extending points, spaced 90° apart at top, at the bottom, at the right and at the left. In the center of the circular device is a dot or disc. Above the central dot, in appellant's mark, there is a flattened arc extending upwardly to the right while below the dot or disc, at the center, and all inside of the circular device, there is another arc extending downwardly and to the left. Neither of the arcs is joined to the central dot or disc nor is either arc joined in any manner to the outer circular device.

I cannot believe that any of us, seeing the marks as actually used in the world of commerce, would be likely to assume the goods to which



the marks are applied emanated from a common source. This member of the court was obliged to stare intently at appellant's mark before discerning anything resembling the clearly defined "S" in the reference mark.

It must also be remembered that the instant goods, consisting of iron and steel products, are hardly in the class of "over the counter" items casually purchased by the average consumer. Granted that the channels of trade, as well as the purchasers, are the same, it would seem that those facts, as a practical matter, would not negate the care and discrimination the purchaser of such items would doubtless exercise if he were to purchase by brand name or symbol rather than price, specification, grade and other elements which are presumably the usual criteria in this field of commerce.

When the dissimilarities between the marks are considered along with the nature of the goods to which they are applied and especially the purchasers thereof, I see no likelihood of confusion. I would reverse.

### U.S. Court of Customs and Patent Appeals

IN RE EMIL UMBRIGHT

No. 8026. Decided December 12, 1968

[56 CCPA —; 404 F.2d 386; 160 USPQ 15]

#### 1. PATENTABILITY—REFERENCE—FOREIGN PATENT.

"\* \* \* we agree with the Solicitor that the German patent is a reference for all it clearly shows, *In re Moreton*, 48 CCPA 875, 288 F.2d 708, 129 USPQ 227, and further that all disclosures in a reference must be evaluated for what they fairly teach one of ordinary skill in the art, including nonpreferred embodiments, *In re Boe*, 53 CCPA 1079, 355 F.2d 961, 148 USPQ 507 \* \* \*."

#### 2. SAME—PARTICULAR SUBJECT MATTER—"PUMP."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Pump" as unpatentable over the prior art, is reversed.

APPEAL from Patent Office. Serial No. 407,272.

REVERSED.

*Curtis, Morris & Safford, A. Thomas S. Safford (Truman S. Safford, Roger L. Hansel, of counsel) for appellant.*

*Joseph Schimmel (Jere W. Sears, of counsel) for the Commissioner of Patents.*

Before WORLEY, Chief Judge, RICH, SMITH, ALMOND, and BALDWIN, Associate Judges

ALMOND, J., delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of claims 13 to 16 of appellant's application entitled "Pump."<sup>1</sup>

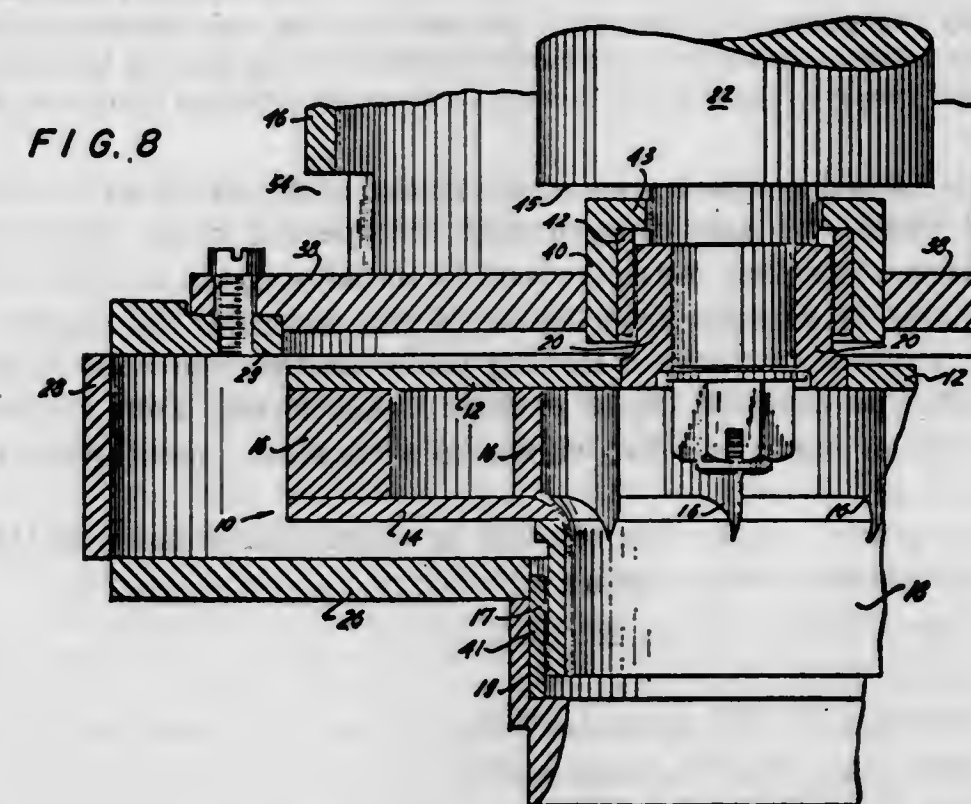
The invention relates to an improvement in a rotary impeller centrifugal pump and particularly to a pump capable of handling liquids containing substantial amounts of suspended solids. It is stated that in the past pumps have required frequent replacement due to suspended solids getting into close clearances on rotating or sliding parts, thus causing rapid wear and consequent loss of efficiency.

The present invention allegedly overcomes this problem by opening such clearances to an extent where the suspended solids can pass through without "grinding" between the relatively moving surfaces. High efficiency is maintained, despite the open clearances, by using an

<sup>1</sup> Serial No. 407,272, filed October 22, 1964.

enclosed impeller, particularly in combination with backward sloping vanes forming substantially constant cross-sectional impeller passages.

The pump impeller and impeller housing are shown in FIG. 8 of appellant's application.



Impeller rotor 10 is comprised of top and bottom plates 12 and 14 and a series of equally-spaced spiral blades 16. An intake throat continuous into the interior of the rotor 10 is shown at 18. The bore of central drive collar 20, carried by top plate 12, is fitted to the end of drive shaft 22. The latter extends upward and is journaled at spaced bearings to a stationary support structure, to which the pump housing is rigidly connected by tubular pedestal column 46. The impeller housing outer wall 28 is spiral for most of its periphery with gradually increasing radius and at one side becomes tangential extending along a tangent to a discharge outlet.

The most significant feature of the invention is described in the specification as follows:

An intake port and lower seal hub 19 is welded to bottom plate 26 to surround a central hole therein. A lower inlet, seal 41 is seated with a press fit in said lower seal hub 19.

An upper hub 40 is welded to top plate 38 to surround a central hole corresponding to that in plate 26 and has an inwardly directed annular flange 43 closely fitting the third step of the stepped drive shaft 22 with a clearance only sufficient to avoid friction and allow suspended solids to pass without grinding or jamming. An upper seal 42 is engaged in the hub 40 by a press fit and acts as a seal and bearing for the shaft 22, or more particularly, for drive collar 20 which is bolted onto shaft 22.

The seal bearings 41 and 42 and the corresponding journals (i.e., drive collar 20 and intake collar 17) have clearances which are sufficient to allow potentially abrasive or potentially jamming suspended particles to freely flow therethrough. As the drive collar 20 is a tight fit pressed home by the nut on the end of shaft 22, no leakage can occur there from the interior of the rotor. The relatively loose fit of the seal 42 on the shaft, however, would permit leakage of liquid upward from the space between the rotor 10 and the top plate 38 of the housing.

Claim 13 is illustrative:

13. A centrifugal pump adapted for handling liquid suspensions of particulate matter with low wear, long life, and high efficiency, comprising a pump housing, an enclosed impeller rotatable in said housing, a liquid suspension discharge out-



let leading from the peripheral portion of said housing, a rotatable shaft carrying said impeller mounted to one end and extending out an axial opening of said housing, said impeller having an axial inlet with external access through an axial opening of the pump housing, seal means for sealing the axial clearances between the housing and the shaft-and-impeller assembly, said seal means having clearances at least 0.003 inch wide which are just sufficient to allow substantially free passage of particulate suspended matter, said shaft-and-impeller assembly being so constructed and mounted relative to the housing as to prevent significant relative displacement thereby to maintain sufficient clearances at all times.

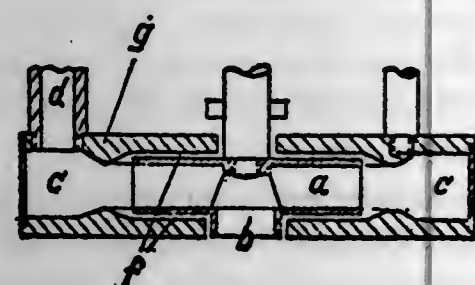
Claim 14 is dependent upon claim 13 and adds the limitation of the central intake hub extending through the opening in the pump housing. Claim 15 further restricts claim 14 in defining the location of the hub. Claim 16 depends from claim 14 and describes the impeller as further including backward sloping vanes shaped to provide constant cross-sectional area for liquid passage therebetween. Four claims directed to the pump and two claims to a transition mouthpiece have been allowed.

The appealed claims were rejected as unpatentable under 35 U.S.C. 103. The references relied upon are:

Saborio, 1,988,875, Jan. 22, 1935.  
Ardrey, 2,006,727, July 2, 1935.  
Murphy, 2,165,808, July 11, 1939.  
Umbricht, 2,890,660, June 16, 1959.  
Lung, 2,954,739, Oct. 4, 1960.  
Sweeney et al., 3,048,384, Aug. 7, 1962.  
Lung, 3,070,026, Dec. 25, 1962.  
Möhle (Germany), 809,758, Aug. 2, 1951.

In view of the Board's treatment of the rejection and the parties' arguments, we need only fully consider three of the cited references.

The German patent discloses two species of centrifugal pump functioning without mechanical friction in the absence of any stuffing box for the shaft that extends through the pump casing. The shaft is carried by a drive casing by vertically spaced roller bearings. The pump casing is fixed to the drive casing by means of bolts which function much as appellant's column 46. The species reproduced in the figure below has an enclosed impeller *a* with internal radial vanes, and also a central intake hub *b* extending out through an opening in the casing *g* opposite to the shaft. The drawing shows radial clearances between the shaft and hub *b* on the one hand and the casing *g* on the other. The specification indicates that the fluid pressure is balanced through the clearances *f* between the faces of impeller *a* and casing *g*, due to centrifugal force. In the other pump species this centrifugal effect is intensified by an arrangement where the faces of the impeller are provided with radial ribs intercepted by fixed annular ribs of the casing *g*. The specification is silent as to the nature of the material to be pumped.



Lung '026 discloses an enclosed impeller centrifugal pump intended to handle sandy water. The patentee discusses seal clearances thusly:

\* \* \* those portions of the impeller which operate as bearing surfaces with respect to surrounding portions of the diffuser or casing can be initially produced to provide adequate clearance therepast for particles of sand present in the water when the pump is first placed in use but which thereafter will swell to an extent establishing proper bearing relation with these surrounding parts.

It is desirable to maintain a clearance of the order of .020-.030 inch on a diameter for the hub in the bearing sleeve after the swelling of the impeller has been completed.

It is stated that it is significant for the purposes of the invention that "there are no bearings for the pump shaft except the support provided by the several impeller hubs in the bearing sleeves of their associated diffusers." This is said to mean that "the bearing fit will initially be too loose for normally preferred operation \* \* \*." In this regard, Lung further states:

\* \* \* since the shaft is not supported in a fixed radial position with respect to all of the diffusers, it can have some side play to provide greater clearance for sand particles on one side of the shaft than the other if such condition should be necessary, especially during the early period of use when both this clearance and the concentration of sand in the water are normally near their maximums.

Murphy discloses an enclosed impeller for a centrifugal pump, particularly for pumping heavy liquids such as "slip," having swept back vanes affording substantially uniform cross-sectional area of the fluid passageways therebetween.

The Examiner rejected claims 13 through 15 under 35 U.S.C. 103 as unpatentable over the German patent in view of Ardrey and Sweeney, with attention directed to the Lung patents. Claim 16 was rejected along with claims 13-15 combined with Murphy or Saborio.

In affirming the Examiner, the Board recognized that there was no need to rely on Ardrey, Sweeney, and Umbricht, in view of appellant's discussion of claim 13 in relation to the German patent, and went on to say:

\* \* \* we find the structure of claim 13 present in the German patent except for the qualification of the seal means being at least 0.003 inch wide for allowing substantial free passage of particulate suspended matter.

The Examiner has directed attention to the Lung patents in his answer and we note particularly Patent No. 3,070,026. The pump disclosed there is designed for pumping water containing sand \* \* \*. Although there is disclosed large clearances for the initial accommodation of large quantities of sand, the clearances are reduced by swelling of the impeller and maintained at a clearance of .020-.030 inch \* \* \*. Both impeller bearings, adjacent bearing sleeve 62 and flange 55 respectively, provide for clearances at least 0.003 inch wide as claimed by appellant.

We do not find the statement in the last four lines of claim 13 to structurally define any difference over the German patent as bearings are shown supporting the shaft and impeller in the German patent similar to appellant's bearing support and there is no reason to believe the structure would not prevent relative displacement to maintain any set predetermined clearance.

We are in agreement with the Examiner that it would be obvious to one with ordinary skill in the art with the teachings of the secondary references especially Lung, 3,070,026, to provide the claimed clearances in the pump structure of the German patent.

With respect to claim 16, the Board felt that:

\* \* \* the patents to Murphy and Saborio clearly show forming the liquid passages with substantially constant cross-section and this teaching in the art in



conjunction with the other secondary references makes it obvious to one with ordinary skill in the art to use such an impeller form in the German patent.

While considering appellant's patent (Umbricht) to be merely cumulative, the Board noted that it had given "careful consideration" to the Arnold affidavit concerning the operation of the device covered by that patent.

Appellant attacks the decision of the Board by arguing that the German patent, in addition to being silent about the nature of the material pumped, actually teaches away from the major limitation in claim 13 since the patent teaches a pump structure designed "to prevent the escape of pressurized fluid from the casing around the shaft" and specifically states "the fluid [pressure] is balanced through the clearance *f* \* \* \*." Furthermore, appellant argues that the figure of the German patent relied on is never identified and discussed in the specification and therefore nothing in the figure would suggest usefulness for pumping abrasive slurries. One skilled in the art, appellant alleges, would note that the figure is "an ambiguous, European-style, diagrammatic patent drawing which probably has its clearances over-emphasized \* \* \*."

Appellant argues that Lung, although disclosing a clearance after swelling of 0.020-0.030 inch, does not satisfy the claim requirement "to allow substantially free passage of particulate matter," since the patentee states that *initially* there is provided adequate clearance but *thereafter* there is swelling to an extent establishing proper bearing relation. Additionally, Lung is said to permit side play in the shaft, something which cannot be tolerated in appellant's pump where sufficient clearances must be *maintained*. Since Lung is the only one concerned with handling particulate matter in liquid, it is urged that his teaching should control in the combination.

The Solicitor counters by arguing that one skilled in the art would recognize that the embodiment shown in the figure of the German patent relied on is more prone to leakage about the shaft *m* and impeller intake hub *b*. If one were interested in using such a frictionless pump for handling liquids containing particulate material, he might well forgo the preferred embodiment and provide ample clearances exceeding 0.003 inch in the pump of the figure relied on.

Claim 13, the Solicitor contends, does not preclude relative displacement between the shaft-and-impeller assembly as shown by Lung, yet he also states that the Board discussed the final clause of claim 13 and found it shown by the German patent.

We cannot accept the Board's view or the Solicitor's arguments in support thereof. [1] While we agree with the Solicitor that the German patent is a reference for all it clearly shows, *In re Moreton*, 48 CCPA 875, 288 F.2d 708, 129 USPQ 227, and further that all disclosures in a reference must be evaluated for what they fairly teach one of ordinary skill in the art, including nonpreferred embodiments, *In re Boe*, 53 CCPA 1079, 355 F.2d 961, 148 USPQ 507, we find, as urged by appellant, that the German patent teaches a structure designed to prevent the escape of fluid and that it specifically states that "the fluid [pressure] is balanced through the clearance *f*." Significantly, we note that the figure relied on by the Patent Office is the only one which has the letter *f* applied to show the clearance. Thus, we agree that the Germany patent teaches the opposite of the major limitation of claim 13, or at best, is silent on the point of permitting leakage.

Moreover, we do not feel that the deficiency in the German patent is supplied by Lung. We are convinced, as appellant points out, that a consideration of the entire disclosure of Lung fails to reveal a teaching of appellant's invention. We stated in *In re Wesslau*, 53 CCPA 746, 353 F.2d 238, 147 USPQ 391, "It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art." It seems clear that Lung is concerned with providing adequate clearance for sand particles *initially* only and thereafter a proper bearing support is established. Lung teaches that it is significant that there are no bearings for the pump shaft except the support provided by the impeller hubs in the bearing sleeves of their associated diffusers. Lung states:

\* \* \* if the parts are fabricated to provide proper metal to metal bearing clearances, severe damage from silt [sand] might result. Conversely, if the parts were fabricated of metal in proportions providing adequate passage for sand particles through the bearing clearances, there would be too much play between these parts, which would cause excessive noise in operation as well as ultimately tending to result in damage to the parts as a result of this undue play.

Lung met this problem by making the impeller of swellable plastic. Appellant solves it by preventing, in the language of claim 13, "significant relative displacement thereby to maintain sufficient clearance at all times."

We are unable to sustain the Board's rejection on the basis of the record and arguments presented. [2] The decision is, therefore, reversed.

REVERSED.

Worley, *Chief Judge*, dissents.

Judge Smith participated in the hearing of this case but died before a decision was reached.

## U.S. Court of Customs and Patent Appeals

IN RE JOHN C. JUREIT

No. 8083. Decided December 5, 1968

[56 CCPA —; 404 F.2d 391; 159 USPQ 728]

### 1. CLAIM—CONSTRUCTION OF CLAIMS—WORDS AND PHRASES—"CONTINUOUS."

"Since, as pointed out by appellant, claim 17, and by dependence claims 18 and 19, call for a 'continuous \* \* \* beam,' we cannot agree with the Board's conclusions to the effect that 'claim 17 reads on the application of \* \* \* a fastener over a joint' and that 'The use of fasteners on both sides of a joint \* \* \* satisfies claim 18.'"

### 2. PATENTABILITY—OBVIOUSNESS—METAL PLATE FOR DEFECTIVE BEAMS.

"\* \* \* we are of the opinion that the Jureit disclosure of the use of metal plates to join two beams provides adequate basis for concluding that it would be obvious to one of ordinary skill in the art to use a plate of some sort to bridge a weakened portion of a beam and thereby strengthen the beam as a whole."

### 3. SAME—COMBINING REFERENCES—OBVIOUSNESS.

"In summary, we are of the opinion that, having Spreen and Jureit before him and desiring to remedy weakened portions of wood beams, it would be obvious to one of ordinary skill in the art to do what appellant has done."

### 4. SAME—PARTICULAR SUBJECT MATTER—"STRUCTURAL WOODEN MEMBER."

The refusal of certain claims in an application entitled "Structural Wooden Member," as unpatentable over the prior art, is affirmed.



APPEAL from Patent Office. Serial No. 282,300.

AFFIRMED.

*Leonard F. Stoll, Robert E. Le Blanc* for appellant.

*Joseph Schimmel (Lutrelle F. Parker, of counsel)* for the Commissioner of Patents.

Before WORLEY, Chief Judge, RICH, SMITH, ALMOND, and BALDWIN, Associate Judges

RICH, J., delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claims 17-19 of application Serial No. 282,300, filed May 22, 1963, entitled "Structural Wooden Member." No claim has been allowed.

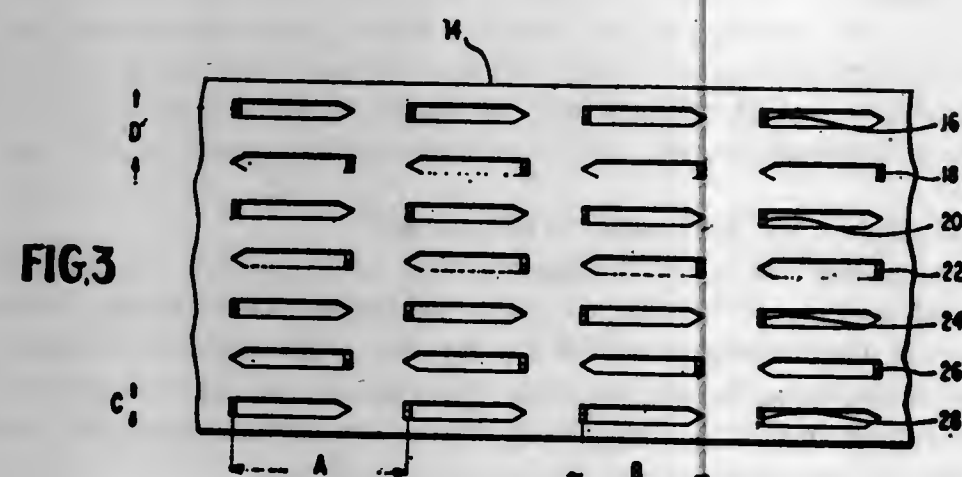
The invention relates to wooden beams used for structural purposes, such as house framing, and specifically to beams having defects or weaknesses, such as knots and notches. The purpose of the invention is to remedy the defects or weaknesses so as to upgrade the strength of the beams. This upgrading is accomplished, according to appellant's invention, by bridging the defective or notched portion of the beam with a metal plate from which a plurality of "slender, elongated, nail-like teeth" have been struck. The teeth are so situated that when driven or pressed into the beams to bridge the weakened portion they define a polygon on each of at least two sides of the weakened portion. The precise invention is defined by the three claims on appeal:

17. An elongated and continuous structural wooden beam having a portion intermediate the ends thereof with a lower load carrying capacity than the immediately surrounding portions, and at least one metal plate bridging said portion and and [sic] having a plurality of slender, elongated, nail-like teeth struck therefrom and embedded in said beam in said surrounding portions on two sides of said portion to transmit a structural load across said portion, said teeth having a length equal to at least six times the thickness of said plate and serving as the sole means to hold said plate in position and to transmit said load so that the load carrying capacity of the combination of said plate and beam and said first named portion is raised at least to the value of said surrounding portions, there being a plurality of teeth from said plate in each of said surrounding portions with the teeth embedded in each of said surrounding portions defining a polygon in each of said surrounding portions having a minimum dimension substantially no smaller than the minimum dimension of said first named portion.

18. An elongated structural wooden beam as set out in claim 17 and including a pair of said metal plates mounted on opposite sides of said beam.

19. An elongated structural wooden beam as set out in claim 17 wherein said portion of said beam with a lower load carrying capacity is a knot.

One embodiment of the plate employed in the claimed structure is shown in appellant's specification as follows:

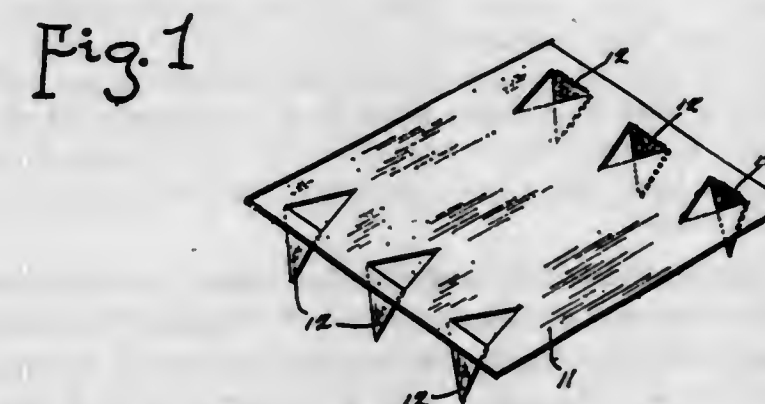


The sole issue is whether or not the claimed structure is obvious (35 U.S.C. 103) in view of two United States patents:

Spreen, 1,669,541, May 15, 1928.

Jureit, 2,877,520, Mar. 17, 1959.

Spreen discloses a metal plate or patch having triangular teeth struck out along opposite sides:



This plate is used to cover and seal deformities, such as knot holes, in lumber used in concrete forms; the plate covers the hole so that wet concrete will not leak from the form and thereby produce a corresponding deformity in the finished concrete. Appellant's prior patent, Jureit, discloses two types of metal connector plates used to join timbers in the construction of structural wooden frames:

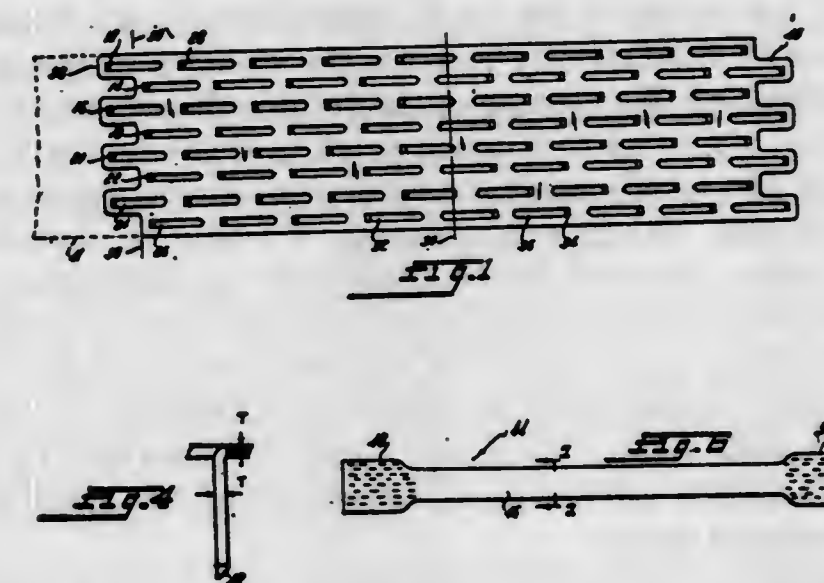


FIGURE 4 shows the details of a single tooth. The Jureit plates are very similar to those disclosed in the present application, particularly insofar as the shape, length, and arrangement of the teeth are concerned.<sup>1</sup>

In his answer, the Examiner stated, inter alia:

Spreen's knot hole patch is disclosed as being for the purpose of permitting the use of lumber containing knot holes in concrete form work wherein the patched lumber presents a relatively smooth surface and its imperfections thus are not reproduced in the concrete after the concrete has been poured, set and the forms have been stripped. Spreen is not concerned with the inherent lumber reinforcing attributes of his knot hole patch. It is considered obvious, however, that the lumber is stronger after the application of Spreen's patch than before and that should the strength of the lumber be of prime consideration, it would be obvious that more struck out prongs should be formed on opposite ends of the patch as in Jureit, for example, \* \* \* [quoting from Jureit]

<sup>1</sup> Appellant's specification contains the following reference to Jureit:

In order to provide adequate withdrawal resistance without undue destruction of wood fiber, it has been found that the teeth must be slender, elongated and nail-like in character, so as to act as true nails in the manner of the teeth disclosed in United States Patent No. 2,877,520.



"At least three rows of nails are necessary in order to produce a satisfactory structural joint since I have found that fewer rows are completely unsatisfactory in structural loading."

The Board said:

We have considered appellant's disclosure and arguments in connection with claims 17, 18 and 19 but are not convinced as to error in the Examiner's position. The fabrication of the Spreen fastener in the likeness of the Jureit fastener appears to be an obvious option and claim 17 reads on the application of such a fastener over a joint. Such relationship is fully presented by Jureit. The use of fasteners on both sides of a joint is a further expected option and satisfies claim 18. To patch over a knot by a metal plate is so notoriously old as to require no illustration and the inclusion of adequate area and fastening points to assure strength of the base timber is no more than an obvious application of the patented Jureit structure.

[1] Since, as pointed out by appellant, claim 17, and by dependence claims 18 and 19, call for a "continuous \* \* \* beam," we cannot agree with the Board's conclusions to the effect that "claim 17 reads on the application of \* \* \* a fastener over a joint" and that "The use of fasteners on both sides of a joint \* \* \* satisfies claim 18." [2] However, we are of the opinion that the Jureit disclosure of the use of metal plates to join two beams provides adequate basis for concluding that it would be obvious to one of ordinary skill in the art to use a plate of some sort to bridge a weakened portion of a beam and thereby strengthen the beam as a whole. We therefore reject appellant's first contention which is, in substance, that the references do not suggest a reason for one skilled in the art to wish to modify the Spreen patch so that it would substantially increase the strength of the lumber to which it is attached. We are also of the opinion that if one of ordinary skill in the art employed the Spreen patch to create such a bridge and found that it was insufficiently strong or that the triangular teeth did not have sufficient withdrawal resistance, it would be obvious to him to use the thicker plate and slender, elongated, nail-like teeth of Jureit.

Appellant also argues, giving various reasons, that the Jureit plates would be inadequate as patches for concrete forms. We need not discuss appellant's reasons because neither the Examiner nor the Board proposed a substitution of the Jureit plates for those used by Spreen; instead, the rejection is based on an adaptation of the Jureit teachings to the disclosure of Spreen.

[3] In summary, we are of the opinion that, having Spreen and Jureit before him and desiring to remedy weakened portions of wood beams, it would be obvious to one of ordinary skill in the art to do what appellant has done.

[4] The decision of the Board is therefore affirmed.  
AFFIRMED.

Judge Smith participated in the hearing of this case but died before a decision was reached.

#### U.S. Court of Customs and Patent Appeals

IN RE EDWARD FREDKIN v. EUGENE H. IRASEK

No. 7986. Decided June 27, 1968

[55 CCPA 1302; 397 F.2d 342; 158 USPQ 280]

#### 1. INTERFERENCE—BURDEN OF PROOF.

In an interference between Fredkin's patent and Irasek's application, Held that "Fredkin, as the junior party, has the burden of proving his case by a preponderance of the evidence."

#### 2. SAME—MATTER BEFORE BOARD OF PATENT INTERFERENCES—RIGHT TO MAKE— RULE 258—*Franklin v. Hopper* CONSTRUED.

"The cited case of *Franklin v. Hopper* involved an interpretation of Rule 258 of the Rules of Practice of the Patent Office. There a party was held not entitled to question before the Board certain aspects of his opponent's support for a count where he had neither raised the question by motion nor shown good reason for his failure to do so."

#### 3. SAME—SAME—SAME—ACTION *Sua Sponte* BY BOARD OF PATENT INTERFERENCES.

"While the cited cases indicate that the Board may act *sua sponte* in certain circumstances, they also indicate that there are limitations on such action. Thus, the Board is free to decline to consider a question of support which is not raised by a party even in a case where it would be appropriate for it to raise the question."

#### 4. SAME—REDUCTION TO PRACTICE—TEST DEVICE SHOULD INCLUDE LIMITATION OF COUNT.

"We think it is readily apparent that the demonstration did not constitute a reduction to practice of counts 1, 2 and 5. The device reduced to practice must include every limitation of the counts, *Kirkham v. Arden*, 50 CCPA 1205, 316 F.2d 242, 137 USPQ 370 (1963), and the apparatus demonstrated here obviously did not include 'means for automatically guiding the selected card apart from said stack along a predetermined path and thereafter returning the selected card to said stack.' Fredkin's manual operations in guiding the card and then returning it to the stack do not comply with the requirement for means for automatically performing the recited functions. See *Wilcox v. Danner*, 19 CCPA 802, 53 F.2d 711, 12 USPQ 16 (1932)."

APPEAL from Patent Office. Interference No. 94,210.

AFFIRMED.

*Rines and Rines, Robert H. Rines, David Rines, Nelson H. Shapiro* for appellant.

*Louis A. Kline (John T. Mailago, William T. Estabrook, Kemon, Palmer, Stewart & Estabrook, of counsel)* for appellee.

Before WORLEY, Chief Judge, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK<sup>1</sup>

WORLEY, Chief Judge, delivered the opinion of the court.

Fredkin appeals from the decision of the Board of Patent Interferences awarding Irasek priority of invention in an interference between Fredkin Patent No. 3,105,593<sup>2</sup> and an Irasek application.<sup>3</sup> [1] Fredkin, as the junior party, has the burden of proving his case by a preponderance of the evidence.

The interference involves five counts corresponding to claims 1-5 of the Fredkin patent. The issues include whether the Board erred in holding that the evidence Fredkin relies on to prove conception as to all the counts, and reduction to practice as to counts 1, 2 and 5, prior to the Irasek filing date was inadequate.<sup>4</sup> Also in dispute is whether the Board erred in holding that Fredkin was precluded from questioning the support in the Irasek application for certain recitations in counts 3 and 4.

The invention relates to apparatus for removing a selected information storage card from a stack of such cards, automatically guiding the selected card past information sensing means, and thereafter returning it to the stack. Counts 1, 3 and 4 read:

1. Selector apparatus having in combination, a stack of cards containing information at a predetermined position thereon, said cards having at predetermined regions thereof card-coding elements, said elements defining different patterns for the respective cards, a plurality of card-holding members adjacent cor-

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

<sup>2</sup> Issued October 1, 1963, on an application filed September 19, 1960.

<sup>3</sup> Serial No. 12,032, filed March 1, 1960.

<sup>4</sup> Since those holdings were determinative of the priority question, the Board did not consider Irasek's evidence of conception and reduction to practice prior to his filing date.



responding coding elements and having means for releasably coupling the holding members to coding elements of said cards, code-selective operating means for preventing the coupling of coding elements of a selected card with corresponding holding members, whereby the selected card may be separated from said stack, means for automatically guiding the selected card apart from said stack along a predetermined path and thereafter returning the selected card to said stack, and information-sensing means disposed along said path in alignment with said predetermined card position for scanning the information contained on the selected card as the selected card follows said predetermined path.

3. The apparatus of count 1, said information being arranged in a plurality of parallel tracks on said cards, said sensing means having plural scanning elements aligned with corresponding tracks as the selected card is moved along said path past said scanning elements.

4. The apparatus of count 1, said coupling means being magnetic.

Counts 2 and 5, like 3 and 4, are dependent on count 1. Count 2 describes the card-coding elements as "comprising" notches in the upper edge of the cards. Count 5 specifies that the information is stored magnetically, and that the sensing means is a magnetically sensitive pick-up.

For a fuller understanding of the invention, reference is made to FIG. 2 of the Fredkin patent:

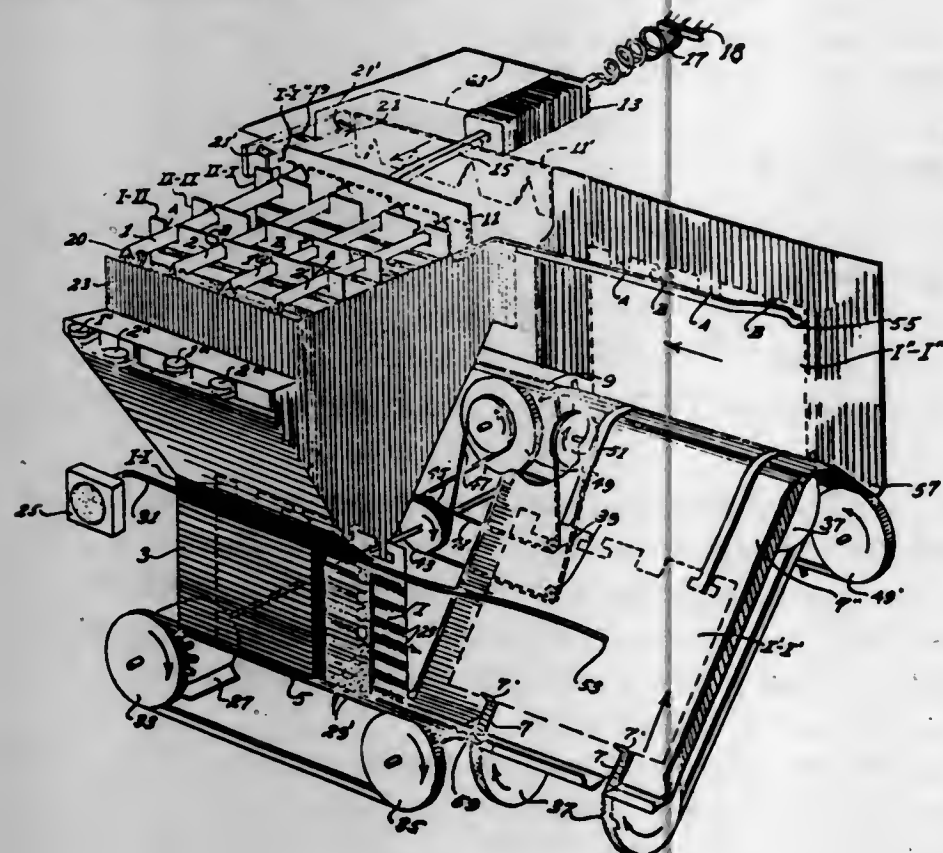


FIG. 2

FIG. 2 shows the invention applied to four cards, designated I—I, I—II, II—II and II—I, by way of illustration, although a larger number of cards is contemplated. The upper edge of each card has four slots, each of which is either straight sided as at A or has notched sides providing a narrowed opening as at B. The cards are normally supported in stacked vertical position on horizontal holding members which are disposed in the slots. The holders are inverted V-shaped longitudinal members hinged along their centers so that normally only the straight-sided slots in the cards are free for movement relative thereto, while the notches in the other slots restrain the cards from dropping out of the stack. Operating buttons 1', 2', 1'' and 2''' selectively operate pinchers 20 which compress the holders about their hinges to reduce the width of selected holders to permit slots with notched sides to move downwardly therefrom. The notches are arranged in a different combination on each card in accordance with a

binary code or the like. Thus, actuation of different combinations of buttons permits different cards to drop from the holders. In FIG. 2, card I—I has been selected and is shown being moved horizontally to the right on a belt 5 past a plurality of vertically-spaced magnetic detectors 29' which serve to detect information on a plurality of correspondingly disposed recording strips on the card. Belt 5 continues to move the card until it reaches dotted line position I'—I'. From there the card is moved by belts 7 having lugs 7' to a vertical position as shown at I'—I''. A belt 9 then carries the card to the left where it rests against a support 11'. The left edge of the card is pressed against a bar 21 to close electrical contacts 19 and thereby energize a solenoid 13 momentarily. The solenoid then acts through the armature 15 to move the surface 11' forward to a solid line position 11 to pass the slots over the free ends of the corresponding holders to restore the card to the stack.

In an alternate arrangement, Fredkin omits the coded slots earlier described. Instead, he provides a coded arrangement of what he describes as permanent magnets at the top of each card. Electrically magnetizable bars, which are provided to cooperate with the magnets to hold the cards, may be selectively deenergized for the purpose of releasing cards selected according to the code.

In his brief, Fredkin states that the issues as to counts 3 and 4, which relate to support in the Irasek application, "are the most clear cut" and discusses them first. We will do the same.

It appears that, during the motion period, Fredkin moved to dissolve the interference as to count 3 on the ground that:

Count 3 specifies "a plurality of parallel tracks on said cards" and "plural scanning elements aligned with corresponding tracks," which structure has not been disclosed, described, illustrated, or claimed in the original Irasek application, Serial No. 12,082, in interference; wherefore the party Irasek has no right to make the said count 3, the said count is unpatentable to Irasek, and there is, accordingly, no interference in fact with regard thereto, so that the interference should be dissolved as to count 3.

The Examiner denied that motion, finding that the Irasek application discloses a plurality of write (recording) heads and a plurality of read (reproducing) heads, with the path of movement of his cards as the cards pass the heads being such as to clearly teach the use of parallel recording paths or tracks.

Before the Board Fredkin asserted that count 3 should be interpreted as requiring *simultaneous* extraction of information from the plural tracks, and that Irasek does not disclose that feature. The Board agreed with the Examiner as to the matter raised in the motion to dissolve. However, it declined to consider whether the count requires simultaneous extraction of information from the plural tracks, stating:

\* \* \* Since these arguments were not raised by motion [to dissolve] under Rule 232(a), they are not proper for our consideration now. *Franklin v. Hopper* [50 CCPA 931, 312 F.2d 949], \* \* \* 136 USPQ 454.

[2] The cited case of *Franklin v. Hopper* involved an interpretation of Rule 258<sup>5</sup> of the Rules of Practice of the Patent Office. There

<sup>5</sup> 258. Matters considered in determining priority. (a) In determining priority of invention, the Board of Patent Interferences will consider only priority of invention on the evidence submitted. Questions of patentability of a claim generally will not be considered in the decision on priority; and neither will be patentability of a claim to an opponent be considered, unless the nonpatentability of the claim to the opponent \* \* \* relates to matters which have been determined to be ancillary to priority and must be considered, but a party shall not be entitled to raise such nonpatentability unless he has duly presented and prosecuted a motion under Rule 232 for dissolution upon such ground or shows good reason why such a motion was not presented and prosecuted. [Emphasis ours.]



a party was held not entitled to question before the Board certain aspects of his opponent's support for a count where he had neither raised the question by motion nor shown good reason for his failure to do so.

Before us, Fredkin again argues that count 3 requires simultaneous extraction of stored information from a plurality of tracks, and that the Irasek application does not disclose that feature. He also argues that Irasek himself conceded in his testimony that there is no such disclosure in his application. Fredkin avoids the question of whether he raised the matter of simultaneous scanning in his motion, electing to assert that he "did raise the very issue that this requirement in count 3 of the 'plural scanning elements' \* \* \* has not been disclosed."

Irasek argues that his application "contemplates not only 'plural scanning' of a plurality of channels, but also selective plural or singular scanning by any one head, all of the heads or any combination of the heads." He also questions whether the terminology of count 3 requires "simultaneous plural scanning."

Quite apart from those contentions, whether Irasek discloses plural scanning elements is a different question from whether he discloses, or count 3 requires, that plural scanning elements be read *simultaneously*, as the Board recognized.

For the reasons given by the Board, we are satisfied that it did not err in its treatment of Fredkin's contentions that Irasek lacks support for count 3. *Strashun v. Dorsey*, 52 CCPA 1726, 345 F.2d 201, 145 USPQ 476 (1965); *Franklin v. Hopper*, supra; *Anderson v. Walch*, 33 CCPA 774, 152 F.2d 975, 68 USPQ 215 (1956). Moreover, the charge that Irasek conceded that his application does not disclose simultaneous plural scanning is based on certain questions answered by Irasek on cross-examination, and careful scrutiny of the questions and answers relied on reveals no such concession. Although Irasek and another of his witnesses did state that certain test operations did not include simultaneous reading of plural tracks, such statements obviously are not concessions as to the content of the application disclosure.

Fredkin also argues that Irasek has no support in his application for the limitation of "said coupling means being magnetic" in count 4. The Board, pointing out that no motion to dissolve as to count 4 was made during the motion period, ruled that the question was not before it and declined to rule thereon.

Fredkin admits that he did not include count 4 in his motion to dissolve, referring to "a misunderstanding of the Irasek disclosure." However, he urges that "Irasek himself admitted during his testimony that there simply is no disclosure in the Irasek application \* \* \* of a magnetic coupling between a card holding member and coding elements adjacent thereto." It is Fredkin's contention that it was the duty of the Board, *sua sponte*, to rule on the matter because of the alleged admission, citing *Smith v. Foley v. Anderson v. Smith*, 1908 C.D. 210, 136 O.G. 847 (Comr. Pat. 1907); *White v. Wege*, 44 App.D.C. 495, 1916 C.D. 195, 227 O.G. 1107 (1916); and *Heuberger v. Becker*, 27 CCPA 746, 107 F.2d 601, 43 USPQ 404 (1939).

We think it plain that the action of the Board with respect to claim 4 should not be disturbed because the issue was not raised by appropriate motion. [3] While the cited cases indicate that the Board may act *sua sponte* in certain circumstances, they also indicate that there are limitations on such action. Thus, the Board is free to decline

to consider a question of support which is not raised by a party even in a case where it would be appropriate for it to raise the question. As this court stated in *Heuberger v. Becker*, supra:

It is clear that if the Examiner of Interferences [now Board of Patent Interferences] had not raised the question he could properly have ruled that this question would not be considered by him because of failure of appellee to raise it during the motion period.

Also, the Board could hardly have raised the present question *sua sponte* since it was in fact raised by Fredkin. See *Franklin v. Hopper*, supra.

It is also apparent that Irasek has not admitted that his application does not support count 4. The language in Irasek's testimony relied on by Fredkin as admissions involve decidedly different terminology than is present in count 4. Specifically, Irasek answered negatively as to whether he disclosed "magnetic, as distinguished from electro-magnetic, coupling means as the force between the rods supporting the cards and the notches of the cards" [Emphasis supplied]. Irasek does disclose the use of an electromagnet to turn cardholding rods to positions releasing the cards and contends that the claim language is broad enough to cover that construction. While Fredkin expresses the fear that Irasek will obtain a patent with an invalid claim, that question is not a matter which can be considered here. *Kleinman v. Steinbach*, 38 CCPA 924, 187 F.2d 743, 89 USPQ 151 (1951).

Turning to the question of priority, Fredkin contends that he reduced to practice the invention of counts 1, 2 and 5 prior to the Irasek filing date and that he conceived the invention of counts 1-5 prior to that date and proceeded diligently up to his own filing date. Concerning the asserted conception, the Board stated:

\* \* \* the Fredkin testimony establishes, at best, only the conception of the card dropping mechanism, and not of either the code-selective operating means or the automatic guiding means, particularly not the means for returning the card to the card supporting and dropping means. The conception of the specific construction of the latter two elements did not occur until after the Irasek filing date.

The evidence apparently relied on by Fredkin before us is a written disclosure made in December 1959 and a demonstration made in the presence of his attorney at about the same time. That demonstration is the act relied on for reduction to practice.

The aforementioned disclosure, apparently dictated in Fredkin's presence by his attorney, is dated December 29, 1959. It refers to a card selector system "in which notches are cut in the upper surface of the cards in a predetermined coded fashion." It also makes reference to hinged members passing through the notches to support the cards in such manner that selective collapsing of those members permits the selected card to fall from the stack. The cards are described as provided with magnetic tape whereby the card dropped from the stack may be moved laterally across a magnetic reproducing head to "play the information on the tape." The disclosure states:

The cards may then be returned by any well known mechanical gadget to place them on the hinges again in any desired order.

The demonstration involved crude apparatus representing the cards and card-holding members. The cards were five cardboard strips with coded notches cut therein. One card, a duplicate of one of the other four as to coding, had a horizontal strip of recording tape pasted thereon. The holding members were four narrow cardboard strips folded longitudinally along their centers to assume an inverted V-



shape. The ends of the strips rested on spaced box members with the cards suspended from the intermediate portion of the strips. Two other spaced boxes were disposed against the opposite edges of the stacked cards to serve as guide means.

Fredkin testified that, in the demonstration, he pinched the paper cardboard strips to cause the card having the strip of magnetic tape thereon to drop from the cardboard strips, moved the card by hand past a magnetic pick-up head connected to a meter or loud speaker and then "brought the card back over to the stack and put it back into the stack."

[4] We think it is readily apparent that the demonstration did not constitute a reduction to practice of counts 1, 2 and 5.<sup>6</sup> The device reduced to practice must include every limitation of the counts, *Kirkham v. Arden*, 50 CCPA 1205, 316 F.2d 242, 137 USPQ 370 (1963), and the apparatus demonstrated here obviously did not include "means for automatically guiding the selected card apart from said stack along a predetermined path and thereafter returning the selected card to said stack." Fredkin's manual operations in guiding the card and then returning it to the stack do not comply with the requirement for means for automatically performing the recited functions. See *Wilcox v. Danner*, 19 CCPA 802, 53 F.2d 711, 12 USPQ 16 (1932). At oral argument, Fredkin argued that the word "automatically" in the quoted term does not apply to the means for "returning" the card. We think that contention plainly is without merit since "for automatically" in count 1 obviously applies to both "guiding" and "returning." Even were that not the case, the demonstration apparatus lacked "means" for "automatically" guiding.

The matter of whether Fredkin's evidence proves conception involves a different question. Fredkin argued before the Board that conception may be regarded as complete if the inventor makes a disclosure which would enable a person of ordinary skill in the art to construct the apparatus without extensive research or experimentation, citing *In re Tansel*, 45 CCPA 834, 253 F.2d 241, 117 USPQ 188 (1958). The Board also acknowledged "testimony of Fredkin and Allen purporting to establish that card transport mechanisms were well-known at the time of Fredkin's alleged conception." It nevertheless concluded:

\* \* \* The record, however, fails to show a suitable card return means was then well-known, and establishes only Fredkin's expectation that some available device would work satisfactorily \* \* \*. It is our opinion that considerable experimenting would still be required in order to provide the dropping and transport mechanisms with a compatible return means, particularly since the card dropping mechanism was structurally unique and had not yet been completely designed. Conception requires more than the belief or expectation that the completed apparatus will successfully operate and must include means for producing the desired result. *Burson v. Vogel*, 29 App. D.C. 388, 1907 C.D. 669.

We are satisfied that the Board did not err in its conclusion. As stated in *Mergenthaler v. Scudder*, 11 App. D.C. 264, 81 O.G. 1417, 1897 C.D. 724:

\* \* \* The conception of the invention consists in the complete performance of the mental part of the inventive act. All that remains to be accomplished in

<sup>6</sup> There is no contention that the demonstration constituted a reduction to practice of counts 3 and 4, it being apparent that the apparatus did not include a plurality of tracks or scanning elements (count 3) or include any magnetic means (count 4). Other representative cases on the question of sufficiency of evidence of conception which we have considered here include *Land v. Dreyer*, 33 CCPA 1108, 155 F.2d 383, 69 USPQ 602 (1946); *Bac v. Loomis*, 45 CCPA 807, 252 F.2d 571, 117 USPQ 29 (1958), and *Summers v. Vogel*, 52 CCPA 718, 332 F.2d 810, 141 USPQ 816 (1964). It is unnecessary to discuss those cases in any detail since the present dispute is not concerned with what the law is but with how it applies to the particular facts.

order to perfect the act or instrument belongs to the department of construction, not invention. It is, therefore, the formation in the mind of the inventor of a definite and permanent idea of the complete and operative invention as it is thereafter to be applied in practice that constitutes an available conception within the meaning of the patent law.

The reference in the written disclosure to the use of "any well known mechanical gadget" leaves the structure to be used for automatically guiding and returning the cards entirely undisclosed. Likewise, the demonstration wherein the card was returned to the stack by hand identifies no particular structure for performing that operation.

Fredkin argues that equipment for the "means for automatically \* \* \* returning the selected card" to the stack was well-known, citing his testimony that:

I satisfied myself that that was a feasible way to do this, and my general experience as an engineer in the computer field was such that I felt I had familiarity with enough card holding machinery that moved cards around and put them in stacks, that I felt this was well-known enough in the art that I did not have to concern myself with demonstrating it.

He also states that witnesses, Dr. Allen, Dr. Swets and Mr. Ball, testified that the card-returning function "was in Fredkin's contemplation and oral description at that time."

However, we do not find that the evidence relied on establishes that a person of ordinary skill in the art could complete the invention as then disclosed without extensive research and experimentation. The record shows that the Board was correct in observing that Fredkin's card dropping mechanism was unique and not yet fully designed. The description of the prior art in the December 1959 disclosure reads:

Whereas previous card sorting devices have been employed such as those involving the use of rods passed through openings at the bottom of cards whereby operation of the rod separates all of the undesired cards from the desired cards leaving the same attached to the rod system; or correlative rods are withdrawn from the top or other positions of cards leaving behind only the desired card with the other cards falling away, there are inherent disadvantages in such a system. One such disadvantage lies in the fact that it is the correlative cards that are in effect moved and not the desired card which is separated from the holding mechanism and is thus available for the free operation of [sic] apart from that mechanism. Other proposals that have overcome this difficulty, however, have required the insertion and withdrawal of rods from an array of cards in order to have a free falling or otherwise freely accessible preselected card removed from the filing mechanism.

The disclosure itself thus indicates that prior art systems involved removing undesired rather than desired cards from the stack or insertion and withdrawal of rods, which arrangements would appear to be of little assistance in providing an automatic card return mechanism for Fredkin's system for dropping the cards. Also, the card-holding members were supported at both ends as late as the December 1959 demonstration whereas the embodiment shown later in the application has the holders mounted with one end free so that each returning card can be slid onto the holders from the end.

The record includes no evidence of any particular previously known card return system that might be adapted for use by Fredkin. Moreover, Fredkin's above-quoted statement that he felt card moving machinery was well-known enough in the art that he did not have to concern himself with demonstrating it is of little probative value as evidence that it was within the ability of one skilled in the art to complete his invention. The cited testimony of Allen, Swets and Ball actually adds nothing of significance to the December 1959 disclosure



as discussed previously. None of those witnesses testified that structure to enable a person of ordinary skill in the art to complete the invention was available at the time in question.

Finally, Fredkin states that his attorney was able to evolve the specific mechanism shown in the application without further help from Fredkin and argues that it is thereby shown that mechanism of the required type was well known. Whatever validity that argument might otherwise have had, it must fail for lack of support in the record. Thus FIG. 2 is the only figure of the application showing the card-return or transport system and the attorney himself testified that the system "was changed to the form of FIG. 2 after consultation with Mr. Fredkin."

The decision is affirmed.

**AFFIRMED.**

### U.S. Court of Customs and Patent Appeals

IN RE AXEL L. NIELSEN

No. 8027. Decided December 5, 1968

[56 CCPA —; 403 F.2d 758; 159 USPQ 723]

#### 1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"PUMP AND TANK COUPLING MEANS."

The decision of the Board of Appeals, refusing a certain claim to the combination of a tub, a pump and coupling means therefor as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 308,960.

**AFFIRMED.**

*Franklin E. Quale, George A. Degnan (Whittemore, Hulbert & Belknap, of counsel)* for appellant.

*Joseph Schimmel (Joseph F. Nakamura, of counsel)* for the Commissioner of Patents.

Before WORLEY, Chief Judge, RICH, SMITH, ALMOND, and BALDWIN, Associate Judges

BALDWIN, J., delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals,<sup>1</sup> affirming the Examiner's rejection of claim 26 in appellant's application<sup>2</sup> for Pump and Tank Coupling Means "under 35 U.S.C. 103" as unpatentable over Nielsen<sup>4</sup> in view of Steneck<sup>5</sup> and the showing of Hogue."<sup>6</sup>

#### The Invention

The subject matter of the application is reflected by claim 26 which has been subdivided here for clarity:

26. The combination in laundry tub or like equipment of  
a tub unit having a discharge member threaded in a standard pipe thread size,  
a pump unit having an intake member threaded in a standard pipe thread size and adapted to be placed in suspension from and in liquid communication with said discharge member of the tub unit, the threads of said members being external and internal and incapable of mating with one another, said pump unit also having a fixed discharge connection mounted in pre-

<sup>1</sup> The Board consisted of Messrs. Dracopoulos, Examiner-in-Chief, and Reynolds and Horton, Acting Examiners-in-Chief. Mr. Horton wrote the opinion of the Board.

<sup>2</sup> Serial No. 308,960, filed September 16, 1968.

<sup>3</sup> The Examiner's rejection of claims 19, 21, 23, 24 and 26 on the ground of undue multiplicity was deemed, by the Board, to have been overcome. Accordingly, the only rejection before this court is that of claim 26 under 35 U.S.C. 103.

<sup>4</sup> U.S. Patent 3,043,225, issued July 10, 1962.

<sup>5</sup> U.S. Patent 1,209,063, issued December 19, 1916.

<sup>6</sup> U.S. Patent 3,142,448, issued July 28, 1964, on an application filed January 30, 1961.

determined fixed angular position relative to said tub unit when the pump unit is thus suspended, and  
means completing a suspended connection of said pump unit intake member from said tub unit discharge member without requiring a substantial angular rotation of said discharge connection of the pump unit to or from said predetermined position relative to the tub unit, said last named means comprising

a tubular adapter in threaded mating engagement adjacent one end thereof with the threads of said pump unit intake member,  
a jam nut in threaded engagement with the threads of said tub unit discharge member,  
said nut having an internal radial flange within which said adapter is axially received for rotative motion of said nut about said adapter,  
said adapter having radially outwardly extending flange means adjacent one end thereof engaged with the flange of said jam nut to suspend the pump unit, said flange means being of an outer diameter to radially overlap the flange of said nut member and to radially inwardly clear the crests of the threads of the nut member, and  
a sealing washer interposed between said flange means of said adapter and a surface of said discharge member under axial compression when said jam nut is threadedly taken up on the threading of said tub unit charge member to suspend the pump unit.

#### The References

The Nielsen patent is appellant's prior patent and shows a laundry tub unit, a motor-driven pump unit, and a tubular adapter coupling the pump unit in liquid communication with the tub unit, these three being, as admitted by appellant in his brief before the Board, "the same general components as in the subject application." Although the Nielsen patent does not specifically disclose an installation in which the pump hangs from the tub, appellant has shown that, in practice, installations had been made with the pump suspended from the tub and that, as expressed in the present application, the Nielsen patent "contemplates a direct connection of a motorized pump unit to such fitting, with the pump unit suspended from the latter."

Steneck discloses a coupling for attaching a hot water tank to a water pipe. The coupling includes a sleeve member having an externally threaded lower end and an outwardly extending flange at the upper end, an annular sealing gasket cooperating with the outwardly extending flange, and an internally threaded jam nut having a lower, inwardly extending flange cooperating with the outwardly extending flange.

Hogue discloses a waste disposal unit attached to the bottom of a sink. The unit is supported and united to the sink through a coupling system which includes an annular ring member having an annular, inwardly extending flange which engages an outwardly extending flange on a cylindrical sleeve, and an annular sealing gasket cooperating with the outwardly extending flange.

#### The Rejection

The Examiner, in his answer, stated that the broad combination of a laundry tub, pump unit and coupling connecting the pump to the discharge fitting of the tub is old in the art as exemplified by the Nielsen patent, the only difference being that of the particular adapter connection. Moreover, appellant's application on appeal states that the present invention resides in an improved coupling for the pump and tub shown in his prior patent. Relying upon Steneck, the Examiner further alleged that the "specific tubular adapter coupling recited in appellant's claim 26 is an old and common connection in



the plumbing or pipe fitting art for joining two tubular members." The Examiner remarked still further:

In view of the teachings of Steneck it would be obvious to a person having ordinary knowledge of the plumbing or pipefitting art to substitute the tubular adapter 14, jam nut 19 and sealing washer (not numbered) of Steneck for the tubular adapter 34 of Nielsen. The tubular adapter coupling 14 and 19 of Steneck is inherently capable of suspending the pump unit 10 of Nielsen. \* \* \*

Appellant's general problem is the attachment of a pump unit to a tub discharge member *without rotation* of the pump unit with respect to the tub discharge member and the *suspension* of the pump unit from the discharge member. This problem is not unique to a laundry tub and pump unit combination. The attachment of a waste (garbage) disposal to a sink discharge member has the similar problem. The patent to Hogue discloses a disposal apparatus which is suspended from the sink discharge member \* \* \* [by a coupling means similar to that shown by Steneck and claimed by appellant].

#### Opinion

Appellant's prior patent discloses that the broad combination claimed, namely, a laundry tub, pump unit, and coupling connecting the pump to the tub discharge fitting, is old. The improved coupling for the pump and tub has three main components described in the application as being of a "basically standard production nature." These components are a tubular adapter, a jam nut, and a sealing washer and are disclosed by Steneck whose coupling appellant has "conceded in the record and orally before the Board of Appeals, is of a type generally similar in nature to appellant's coupling." The question is whether it would be obvious to substitute the Steneck type of coupling for that shown in appellant's prior patent.

We believe that the Board was correct in holding that it would have been obvious to substitute Steneck's coupling for the tubular adapter in Nielsen's patent. Hogue's use of a coupler similar to Steneck's to suspend a waste disposal unit from a sink drain fitting and to ensure a tight connection as well as proper orientation of the unit, teaches or demonstrates the feasibility of using a jam nut and sealing washer for coupling and suspension purposes. Thus, Hogue shows that a coupler similar to Steneck's can solve the problem of making a fluid tight suspension-type connection while simultaneously ensuring proper angular orientation. Hence, the teachings of Hogue appear to suggest the substitution of Steneck's coupler in Nielsen's combination; and accordingly, the invention defined in claim 26 is obvious within the ambit of 35 U.S.C. 103.

[1] The decision of the Board is affirmed.

AFFIRMED.

Judge Smith participated in the hearing of this case but died before a decision was reached.

#### U.S. Court of Customs and Patent Appeals

IN RE JOHN J. MELCHIORE AND ARCHIBALD P. STUART

No. 8091. Decided February 20, 1969

[56 CCPA —; 406 F.2d 1079; 160 USPQ 672]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—DOCUMENTS NOT CONSIDERED BY BOARD.

"The Board did not consider certain documents submitted to it after its decision. Nor do we here. *In re Cofer*, 53 CCPA 830, 354 F.2d 664, 148 USPQ 268 (1966)."

2. PATENTABILITY—PARTICULAR SUBJECT MATTER—"OXIDATION OF HYDROCARBONS." The decision of the Board of Appeals, refusing certain claims in an application entitled "Oxidation of Hydrocarbons" as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 225,833.

AFFIRMED.

Donald R. Johnson for appellants.

Joseph Schimmel (Jack E. Armore, of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, RICH, ALMOND and BALDWIN, Associate Judges

WORLEY, Chief Judge, delivered the opinion of the court.

The issue here is whether the Board of Appeals committed reversible error in sustaining the Examiner's rejection of claims 2-4, 6-10, 12-16, 18, 20 and 22-26<sup>1</sup> as unpatentable in view of certain prior art under 35 U.S.C. 103.

It appears from the record that it was known to prepare aromatic carboxylic acids from alkyl-substituted aromatic compounds in a liquid phase oxidation process employing nitrogen dioxide (NO<sub>2</sub>) as the oxidizing agent to convert the alkyl group to a carboxylic acid group. In that prior art process, NO<sub>2</sub> is itself converted or reduced to nitric oxide (NO), and the latter gas, after leaving the reaction vessel and removal of water vapor therefrom, is reacted with oxygen in a separate regenerating chamber to again form NO<sub>2</sub> which is then recycled to the alkyl aromatic oxidation process.

Rather than synthesizing or regenerating the NO<sub>2</sub> oxidizing gas *ex situ*—outside the alkyl aromatic oxidation zone—as in the prior art, appellants feed a mixture of NO and oxygen directly into the alkyl aromatic oxidation zone, forming the desired NO<sub>2</sub> *in situ*, as reflected in claim 22:

22. In a process wherein alkyl substituted aromatic compounds are oxidized with nitrogen dioxide in the presence of an inert organic solvent to form the oxidation products thereof, the improvement which comprises generating said nitrogen dioxide *in situ* by charging nitric oxide and oxygen to the reaction zone.

The NO effluent gas may be recovered and, after mixing with oxygen, is recycled directly to the alkyl aromatic oxidation zone. According to the specification, "it is necessary that small increments of NO or NO<sub>2</sub> be continuously introduced into the closed system" to the extent any NO gas is lost in such a continuous recycling system.

The Board agreed with the Examiner's application of the Fetterly,<sup>2</sup> O'Neill<sup>3</sup> and Gilman<sup>4</sup> references to the claimed subject matter. After pointing out (1) the various reactions expressly employed by Fetterly and O'Neill to generate NO<sub>2</sub> both *in situ* and *ex situ* in their oxidation

<sup>1</sup> Appearing in Serial No. 225,833, filed September 24, 1962, and entitled "Oxidation of Hydrocarbons."

<sup>2</sup> U.S. Patent 2,839,575, issued June 17, 1958. Fetterly discloses a process for oxidizing alkyl-substituted aromatic compounds which employs as an oxidizing agent a mixture of molecular oxygen and at least one compound selected from NO<sub>2</sub>, organic nitrates, or organic nitrites. The amount of NO<sub>2</sub>-releasing compounds present at any given time is less than 2% of the weight of the alkyl-substituted aromatic compound being oxidized. As one source of NO<sub>2</sub>, Fetterly employs the "mixture of nitrogen oxides," presumably NO<sub>2</sub> and NO, "obtained from the oxidation of ammonia." Or he may form NO<sub>2</sub> *ex situ* or *in situ* by thermal degradation of nitric acid vapor, organic nitrates or organic nitrites.

<sup>3</sup> British specification 823,437, published November 11, 1959. O'Neill discloses a process for oxidizing dialkyl benzenes to benzene dicarboxylic acids employing as an oxidizing agent NO<sub>2</sub> "alone or in combination with small amounts of other oxidizing agents such as air or other forms of molecular oxygen or for example nitrous fumes, which is a mixture of nitric oxide and nitrogen dioxide." "Alternatively," O'Neill states, "a nitrogenous substance may be used which liberates nitrogen dioxide under the oxidation conditions." He also discloses: "The off-gases from the reaction are found to be substantially nitric oxide alone and this can be oxidized with oxygen to regenerate the nitrogen dioxide, which can be re-used for further oxidation of organic compounds."

<sup>4</sup> Gilman, Organic Chemistry, vol. IV, pp. 1225-1229 (1953). The point for which the Gilman reference was cited is not in issue here. It need not be further discussed.



processes, as heretofore noted, and (2) the knowledge in the art that NO and oxygen react to produce NO<sub>2</sub>,<sup>5</sup> the Board considered it "clearly obvious to the chemist to employ \* \* \* [the latter] reaction for the liberation of nitrogen dioxide *in situ*" during the oxidation of the alkyl aromatic compound.

We think the Patent Office has established a *prima facie* case of obviousness which appellants' arguments, unsupported by evidence in the record as they are,<sup>6</sup> are insufficient to rebut. It seems to us that the prior art of record, rather than leading away from the claimed subject matter as appellants contend, would suggest the process here claimed to one of ordinary skill. Certainly, no reference of record deprecates the use of NO and oxygen mixtures as a feedstock to form NO<sub>2</sub> under the reaction conditions present in the alkyl aromatic oxidation zone. Nor is there any evidence of record which would give those in the art cause to believe that, as appellants urge, the reaction between NO and oxygen would not take place at sufficient rate and in sufficient amount to form the requisite quantity of NO<sub>2</sub> needed to effect oxidation under the reaction conditions present in the alkyl aromatic oxidation zone. While we appreciate appellants' arguments, we are not convinced the subject matter as a whole is unobvious.

[2] The decision is affirmed.  
AFFIRMED.

<sup>5</sup> Earlier, the Examiner too had noted that "it is well known that as soon as nitric oxide comes into contact with air, it forms brown fumes as a result of oxidation to nitrogen dioxide." See also Webster's Third New International Dictionary (1961) under "nitric oxide" and "nitrogen dioxide."  
<sup>6</sup> The Board did not consider certain documents submitted to it after its decision. Nor do we here. *In re Cofer*, 53 CCPA 830, 354 F.2d 664, 148 USPQ 268 (1966).

#### U.S. Court of Customs and Patent Appeals

JAMES C. FANG v. ELINOR M. HANKINS AND WILLIAM D. EMMONS

No. 7906. Decided July 18, 1968

[55 CCPA 1468; 399 F.2d 262; 158 USPQ 345]

##### 1. INTERFERENCE—BURDEN OF PROOF.

"Because Fang filed his application after the Hankins patent issued, he has the burden of proving priority beyond a reasonable doubt. *Conner v. Joris*, 44 CCPA 772, 241 F.2d 944, 113 USPQ 56 (1957)."

##### 2. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—INTERFERENCE—APPELLEE MAY CHALLENGE FINDINGS WITHOUT CROSS-APPEAL.

"Although Fang apparently thinks otherwise, it is clear that Hankins may challenge findings and conclusions of the Board which she regards as incorrect without filing a cross-appeal. See *Clauss v. Foulke*, 54 CCPA 1514, 379 F.2d 586, 154 USPQ 85 (1967); *Klemperer v. Price*, 47 CCPA 729, 271 F.2d 743, 123 USPQ 539 (1959)."

##### 3. INTERFERENCE—REDUCTION TO PRACTICE—UTILITY—35 U.S.C. 101.

"We cannot agree that the compositions of the counts were reduced to practice merely by making them in the present circumstances. Where, as here, no obvious usefulness satisfying the requirements of 35 U.S.C. 101 would be apparent to one of ordinary skill from the record, we agree with the Board that, without tests of an appropriate nature to determine the useful properties and to establish the usefulness of those polymers or copolymers, Fang has not proved that the *new and unobvious* subject matter of the counts was in fact useful *beyond a reasonable doubt* at any time prior to the filing date of the Hankins application fully describing the usefulness of that subject matter. Cf. *Reiners v. Mehlretter*, 43 CCPA 1019, 236 F.2d 418, 111 USPQ 97 (1956); *Muskat v. Schmelkes*, 31 CCPA 837, 140 F.2d 984, 60 USPQ 520 (1944)."

##### 4. SAME—SAME—ABANDONED EXPERIMENT.

"\* \* \* it is well established that, when there is a reasonable doubt as to whether there has been an actual reduction to practice, the inventor's subsequent conduct may demonstrate that the acts relied on as an actual reduction to practice amount only to an abandoned experiment. *Conner v. Joris* \* \* \*"

##### 5. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—RECORD—PRINTING COSTS.

Hankins has added certain material to the record. We regard approximately a third of that material to be properly part of the record and have considered it in reaching our decision, while the remaining material was unnecessary. Accordingly, one-third of the printing costs is assessed against appellant, and two-thirds against appellees.

Appeal from Patent Office. Interference No. 93,600.

AFFIRMED.

Raymond E. Blomstedt, A. Newton Huff, James T. Corle (Frederick Schafer, of counsel) for appellant.

John F. Bergin, Carl A. Castellano, John C. Martin, Jr. (Fidelman & Wolfe, of counsel), Alvin M. Esterlitz for appellees.

Before WORLEY, Chief Judge, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK.<sup>1</sup>

WORLEY, Chief Judge, delivered the opinion of the court.

Fang appeals from the decision of the Board of Patent Interferences, which awarded to the senior party, Hankins and Emmons (Hankins), priority of invention of the subject matter of thirteen counts corresponding to claims 1-5, 7, 9, 10, 12, 14, 15, 17 and 19 of the Hankins patent.<sup>2</sup> [1] Because Fang filed his application after the Hankins patent issued, he has the burden of proving priority beyond a reasonable doubt. *Conner v. Joris*, 44 CCPA 772, 241 F.2d 944, 113 USPQ 56 (1957).

The subject matter of the counts relates to certain monomeric acrylic acid and methacrylic acid esters of hydroxyalkyl oxazolidine compounds, polymers and copolymers of those monomers, and processes of preparing the monomers. Fang has presented testimony and documentary exhibits relating to activities beginning in March 1954 which, he contends, establishes reduction to practice of (1) the specific monomers<sup>3</sup> of counts 4, 5 and 7:3-methacryloxyethyl oxazolidine (hereafter MEO), 3-acryloxyethyl oxazolidine (AEO) and 3-methacryloxyethyl-2-spirocyclohexyl oxazolidine (MESO), respectively, all falling within the scope of count 1; (2) the polymers and copolymers of those monomers set forth in counts 2, 3, 9, 10, 12, 14 and 15; and (3) the processes of counts 17 and 19.

The Board held with respect to some of Fang's evidence that it did not prove beyond a reasonable doubt that the materials and processes of the counts were actually prepared and carried out. In those instances where the Board either found or assumed the compositions of the counts had been prepared, it held that Fang had not proved beyond a reasonable doubt that those compounds were useful at any time prior to Hankins' filing date. It is those holdings which frame the issues<sup>4</sup> before us.

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.  
<sup>2</sup> U.S. Patent 3,037,008, issued May 20, 1962 on an application filed July 5, 1960. Hankins presented no testimony establishing a date of invention earlier than that filing date, and accordingly is restricted thereto for conception and constructive reduction to practice.

<sup>3</sup> The parties have identified certain intermediates used in preparing those monomers: 3-hydroxyethyl oxazolidine and 3-hydroxyethyl-2-spirocyclohexyl oxazolidine as HEO and MESO, respectively.

[2] Although Fang apparently thinks otherwise, it is clear that Hankins may challenge findings and conclusions of the Board which she regards as incorrect without filing a cross-appeal. See *Clauss v. Foulke*, 54 CCPA 1514, 379 F.2d 586, 154 USPQ 85 (1967); *Klemperer v. Price*, 47 CCPA 729, 271 F.2d 743, 123 USPQ 539 (1959).



The story begins on March 30, 1954, when Nehf, Fang's assistant, reacted diethanolamine and cyclohexanone to form HESO, recording the results of that experiment on a page of Fang's notebook in evidence as Exhibit 6. Said the Board:

\* \* \* Exhibit 6 indicates that the HESO thus formed was refluxed with methylmethacrylate (and also with small amounts of hydroquinone and sodium) and that the material became "quite viscous" before the reaction was discontinued. With respect to this phase of the experiment Nehf testified:

Some MESO may have been prepared here since the reaction of the HESO with the methylmethacrylate did polymerize, and that would be what we would expect under the conditions that we ran this experiment.

It is noted that Exhibit 6 does not indicate that any product was recovered. Further, the record does not show that any analysis was made of any product that may have been formed. In our opinion the testimony of Nehf that "some MESO may have been prepared" is insufficient to establish beyond a reasonable doubt, that MESO was actually formed. \* \* \*

We find no error in that conclusion. Fang does not appear to press the matter seriously here.

On April 6-7, 1954, Nehf again reacted diethanolamine and cyclohexanone to form HESO, a known material in the prior art. About thirty six cubic centimeters of water was collected from the reaction mixture, corresponding to the theoretical amount of water expected if the reaction proceeded as planned. The product, identified by the code PRC-U93431 L-2 in Exhibit 7, was sent by Fang to Schwarzkopf Microanalytical Laboratory, an independent commercial laboratory, for a determination of the carbon, hydrogen and nitrogen content of the sample. The results, attested to by Drs. Otto and Francine Schwarzkopf, were consistent with the theoretical percentages of those elements in HESO. We may take the preparation of HESO as proved. Hankins does not argue otherwise.

The record shows nothing was done with that sample of HESO until some nine months later, when Gould, another of Fang's assistants, reacted HESO bearing the code PRC-U93431 L-2 with methylmethacrylate and small amounts of hydroquinone, sodium and methanol. The record shows that the type of reaction sought to be carried out is known as "ester interchange" or "transesterification," in which the methyl alcohol component of the methylmethacrylate ester is "exchanged" for HESO to form MESO. Gould and Fang testified that MESO was prepared. The product was designated PRCE-19149 in Exhibit 12, a notebook record of the experimental procedure dated January 25, 1955, and samples thereof were submitted to Dr. Merrill for a carbon and hydrogen content determination and to Walter for a bromine number determination, the latter being a measure of the amount of unsaturated carbon linkages present. Both Merrill and Walter testified with respect to the procedural aspects of those analyses which are set forth in Exhibits 17 and 18. It appears the product was also analyzed for its saponification number (an indication of its ester content) and subjected to infra-red analysis for a determination of its hydroxyl content, the results of which were recorded by Gould in Exhibit 16 along with the results of the carbon, hydrogen and bromine number analyses. The Board stated:

A controversy has arisen between the parties as to the hydroxyl content of PRCE-19149 as shown in Exhibit 16 and the significance thereof. It is stated in Exhibit 16 that "The hydroxyl content of this sample is in the same range as other samples submitted in this series (pp. 107, 108) according to I.R. analysis R.M.Z." The pages 107 and 108 appear as Exhibits 14 and 15. Gould testified that R.M.Z. were the initials of the analyst who reported the I.R. analysis.

Page 108 of the notebook (Exhibit 15) includes a similar statement as to hydroxyl content and refers to page 107 (Exhibit 14). Exhibit 14 states as an objective "To determine purity of 5-methylol-5 ethyl-2-methyl-2-ethyl-1,3-dioxane" and includes the statement "No starting material (1,1,1-trimethylol propane) can be detected in the sample by I.R. analysis."

It is contended by Fang the I.R. analysis in Exhibit 14 clearly shows that the sample did not contain hydroxyl groups and the necessary conclusion is that the sample analyzed did not contain either the starting hydroxy compound nor the hydroxy-containing compound named at the top of the exhibit. It is to be noted that Exhibit 14 does not include any statement that the material is free from all hydroxy containing compounds. It is stated only that no 1,1,1-trimethylol propane, the starting material, can be detected by the I.R. analysis. In our opinion this statement cannot be construed to mean that no hydroxyl group is present when the objective was to determine the purity of a compound stated to have a methylol (a hydroxyl containing) group. We find no basis for concluding that none of the compound named in Exhibit 14 was present. Since Exhibit 16 indicates that the hydroxyl content of the sample of PRCE-19149 is "in the same range as" the sample of Exhibit 14 (stated to be a hydroxyl containing 1,3-dioxane compound) we agree with Hankins et al. that the logical conclusion would be that the sample of Exhibit 16 contains hydroxyl groups to substantially the same extent as the hydroxy compound of Exhibit 14. Gould testified \* \* \* only that the hydroxyl content, as reported, is in the same range as other samples submitted in this series. It is conceded that MESO itself has no hydroxyl group.

Although both Gould and Chalmers, who signed Exhibits 14, 15 and 16 as a witness, testified (almost 10 years after the experiments and tests were performed) that it was their conclusion that the product tested (Exhibit 16) was MESO, it is our view that the showing in Exhibit 16 as to the hydroxyl content of the product raises a doubt as to whether the product PRCE-19149 was actually MESO. \* \* \*

Here Fang urges the Board erroneously assumed the PRCE-19149 product of Exhibits 12 and 16 contained hydroxyl groups without the benefit of any evidence that the products discussed in Exhibits 14-16 actually contained hydroxyl groups. Hankins points to a sentence<sup>5</sup> in Exhibit 14 indicating that the product reported to have been analyzed therein had an actual hydroxyl percentage of 7.9% uncorrected for acid number as compared to a calculated value of 9.05%. We think the Board was warranted in concluding that PRCE-19149 had a hydroxyl content "in the same range," viz, about 7.9%.

Alternatively, even if PRCE-19149 did have a hydroxyl content, says Fang, that fact is not necessarily inconsistent with that product being identified as MESO "because hydroxy compounds are obviously a common and natural impurity of MESO." He points out that the starting material, HESO, was an alcohol as was the solvent and theoretical by-product, methanol. It is his position that the infra-red analysis is not in conflict either with the testimony of Gould, Fang and Chalmers,<sup>6</sup> all of whom concluded that MESO had been prepared, or with the results of the carbon, hydrogen and bromine

<sup>5</sup> The sentence reads: "% X's OH uncorrected for acid No.=7.9, cal'd=9.05." No witness testified that this sentence has other than its obvious meaning. The theoretical hydroxyl content of the compound which is the subject of Exhibit 14 is indeed 9.05%. MESO has no hydroxyl content, as the Board noted, while HESO has a calculated hydroxyl content of 9.2%.

<sup>6</sup> Chalmers, who signed Exhibits 14-16 (but not Exhibit 12) as a witness, testified: Knowing the starting materials used in this preparation of MESO and looking at the values found and the theoretical values calculated, the values shown proved beyond reasonable doubt that MESO was prepared in this reaction and that the sample examined was MESO. The saponification number is the only value out of line with this assertion, and in this case the difference between the Du Pont values obtained is so large as to render the analysis meaningless.

Q 37. In answering the question concerning the conclusiveness of this analysis, did the type of reaction play any part in your answer? A. Yes, it did, to the extent that knowledge of the starting materials and of the type of reaction would lead to an implication as to the product. This implication is proved by the analytical data reported in Exhibit 16.



analyses, all of which are said to correlate or be consistent with the identification of PRCE-19149 as MESO.

While we have given full weight to the evidence Fang has submitted to prove that PRCE-19149 was properly deemed to be MESO, his burden here, however, is to prove that fact beyond a reasonable doubt. Hankins has called our attention to other matters which we think have relevance in determining whether Fang has satisfied his burden of proof:

(1) Hankins questions whether the alleged HESO (PRC-U93431 L-2) made by Nehf nine months before Gould used it in the experiment of Exhibit 12 was in fact still HESO. Gould testified that he obtained that material somewhere "either in the laboratory, Dr. Fang's laboratory, or in a refrigerator." Hankins observes that there is no testimony as to the stability of HESO.<sup>7</sup>

(2) Dr. Merrill testified that the relative accuracy or maximum discrepancy between the carbon content actually found upon analysis and the theoretical carbon content should be about 0.2%. The discrepancy between the found and theoretical values for PRCE-19149 is three to four times that amount.

(3) An analysis for nitrogen content was regarded as important in order to distinguish between starting material, such as HESO, and final product, such as MESO. Chalmers testified:

Q 25. \* \* \* If you had products which you thought to be one or another of these compounds [MEO, AEO, or MESO] and analyzed them for carbon, hydrogen and nitrogen, which determination would be most important, if any, that is, the carbon, the hydrogen or the nitrogen, and why? A. In the analysis of MESO, MEO or AEO prepared from HESO or HEO as starting materials, the nitrogen analysis would be the most important since it would be the most severely affected by the presence of starting oxazolidine as an impurity. The change in the carbon and hydrogen content is of the order of 10 percent whereas—

Q 26. You mean if the reaction goes as planned? A. If the reaction goes as planned; whereas the change in the nitrogen content is of the order of 30 percent of the value, the final nitrogen value. If the reaction did not go as planned, this would be reflected in an adverse nitrogen value.

A similar conclusion reached by Fang with respect to identifying MEO would appear to apply equally as well to MESO:

Q 378. Is the analysis for one of these elements more pertinent than that for the others in analyzing for this particular product? A. Yes. The particular important element in this analysis is the nitrogen analysis.

Q 379. And why is that? A. Because it will then distinguish between HEO and MEO that we intend to obtain.

Q 380. Could you explain further how the nitrogen analysis more clearly distinguishes those than the carbon and hydrogen analyses? A. In Exhibit No. 4 is shown clearly that MEO is a larger molecule than HEO. Therefore the percentage of nitrogen will differ markedly from MEO as against HEO.

There was no analysis for nitrogen content of PRCE-19149.

(4) As mentioned earlier, the saponification number was low, 131 in one determination and 151 in another as compared to 211 calculated. Exhibit 16 states that there was "(p)oor precision due to insufficient sample." Whose conclusion that was is not set forth. Dr. Merrill, who Fang says in his brief performed the saponification number determination, did not testify as to the reason for its inaccuracy.

Considering all the above factors, we agree with the Board that Fang has not proved beyond a reasonable doubt that PRCE 19149 prepared by Gould was in fact MESO. For that reason, the process

<sup>7</sup> In his brief before the Board, Fang appears to have stated: "Another deterrent to rapid development in this area was the fact that the intermediate materials HESO and HEO are unstable and cannot be kept for any length of time." [Emphasis added.]

carried out by Gould cannot be regarded as an actual reduction to practice of the process of producing MESO recited in counts 17 and 19,<sup>8</sup> nor can the copolymers which Gould made utilizing the alleged MESO be regarded as an actual reduction to practice of counts 2, 3 and 12. In view of our conclusion, we need not inquire further into whether the alleged MESO or the polymers made from it were useful.

Three and one-half years passed before further experimentation directed to a reduction to practice of the subject matter of the counts was conducted. Fang relies on certain experiments carried out by Mansi relating in general to the preparation of HEO, MEO and AEO, as well as polymers and copolymers of MEO and AEO, and also on Armour's experiments relating to the preparation of MESO. The experiments of Mansi which are of concern here were performed November 14-24, 1958, May 11-22, 1959, and June 15, 1959, while those of Armour were performed December 9, 1959.

For purposes of its decision, the Board, with one exception, either assumed or found that Mansi and Armour did in fact prepare the monomers and polymeric materials of the counts, as recorded primarily in Exhibits 29, 31A-B, 41A-D, 43A-C, 45 and 47. It found, however, "no evidence in the record which could be considered as establishing that these polymers were useful for any particular purpose." The Board also observed this court's decision in *Blicke v. Treves*, 44 CCPA 753, 241 F.2d 718, 112 USPQ 472 (1957), where it was stated:

\* \* \* A composition of matter cannot be a patentable invention unless it has utility. \* \* \* Accordingly, the invention of such a composition is not complete unless its utility is either obvious or is established by proper tests, regardless of whether the claims contain any specific reference to utility.

As this court has repeatedly stated, whether a composition of matter must be tested in order to establish a reduction to practice, and if so, what tests are necessary, is a question which must be decided on the basis of the facts of the particular case involved. \* \* \*

Said the Board:

\* \* \* We do not believe that the fact that a compound can be converted to a solid material (a polymer) without specifying what properties it may possess amounts to a showing of the utility of either the compound itself or the polymer. \* \* \*

Fang does not deny that the record shows nothing further was done with the new and unobvious polymers and copolymers said to have been prepared in the above exhibits. [3] We cannot agree that the compositions of the counts were reduced to practice merely by making them in the present circumstances. Where, as here, no obvious usefulness satisfying the requirements of 35 U.S.C. 101 would be apparent to one of ordinary skill from the record, we agree with the Board that, without tests of an appropriate nature to determine the useful properties and to establish the usefulness of those polymers or copolymers, Fang has not proved that the *new* and *unobvious* subject matter of the counts was in fact useful *beyond a reasonable doubt* at any time prior to the filing date of the Hankins application fully describing the usefulness of that subject matter. Cf. *Reiners v. Mehl-*

<sup>8</sup> We would so hold in any event. The counts require that the reaction between HESO and methylmethacrylate be carried out at temperatures of "about 100° to 130° C." Exhibit 12 shows that the reaction mixture temperature initially was 78° C. while at "shut down" two hours later the temperature was 104° C. While Fang testified to his conclusion from that exhibit that "at least part of the reaction was conducted above 100 degrees centigrade," he was not corroborated by Gould, who actually performed the experiment. For that reason also, it cannot be said that Fang has proved beyond a reasonable doubt that Gould reduced to practice the processes of counts 17 and 19.



*tretter*, 43 CCPA 1019, 236 F.2d 418, 111 USPQ 97 (1956); *Muskat v. Schmeltke*, 31 CCPA 837, 140 F.2d 984, 60 USPQ 520 (1944).

Fang further relies on experiments conducted by Mansi in December 1958 and January 1959, the results of which were recorded primarily in Exhibits 36A-C, 38, and 40. The Board analyzed with sufficient accuracy the testimony and documentary evidence relating thereto as follows:

It is also alleged that further preparations [of] HEO and MEO were carried out by Mansi on December 11 to 15, 1958, Exhibits 36A, 36B and 36C being the notebook record of these experiments. It appears that the product of these experiments designated by the code D49675 was subjected to analysis for carbon, hydrogen and nitrogen by the Schwarzkopf analytical laboratory and Mansi testified that from this analysis, he concluded that MEO had been prepared \* \* \*. Mansi testified \* \* \* that the product coded D49675 (MEO) was subjected to polymerization and copolymerization studies on December 17 and 18, 1958 and that solid materials were produced. Exhibit 38 shows that the MEO, and mixtures of MEO with methylmethacrylate and with styrene were heated with toluene and a catalyst, resulting in the production [of] viscous products in the case of MEO and mixtures of MEO with methylmethacrylate. Mansi testified that this work indicated that MEO copolymerizes with methylmethacrylate and that a homopolymer of MEO was formed.

Exhibit 40 is the notebook record of an experiment by Mansi performed on January 7, 1959 in which products of the above polymerization studies were coated onto "Bonderite 1000" panels and baked and the coated panels subjected to various tests. It appears that the panels were sent to "Physical Testing" for the Tukon hardness and "bump" test while Fang ran the curing tests \* \* \*. It is urged that this work showed that polymers and copolymers of MEO were found to be excellent in several respects, and that Fang's work is corroborated by Mansi. Hankins et al. urge that since the person running the Tukon hardness tests did not testify the results of these tests are hearsay.

Since it is our conclusion that the tests results shown in Exhibit 40 do not establish that the alleged polymers possess utility, it is unnecessary for us to consider whether these results have been properly corroborated. Both Fang and Mansi testified \* \* \* that the coating on panel number 1 was too thin and that a Tukon hardness test could not be run. It also appears that the coating on panel number 4 was also thin and did not pass the curing tests \* \* \*. In the case of panel number 2 Mansi testified " \* \* \* with the methyl ethyl ketone it was not cured, or it wiped off completely." With respect to panel number 3 it appears that the coating when subjected to methyl ethyl ketone exhibited slight crazing or "a sort of chicken feet-like appearance."

We note that there is no indication that Fang or Mansi, at the time the tests were run, considered these tests as showing that the coatings were satisfactory for their intended purpose. We do not believe that the record demonstrates that, at the time of his alleged reduction to practice, Fang had a conviction of success, *Ludwig v. Sohn et al.*, 51 CCPA 796, 801 O.G. 895, 1964 C.D. 127, 189 USPQ 500. In view of Fang's burden of proving his case beyond a reasonable doubt, we conclude that the utility of the alleged polymers shown in Exhibit 38 has not been established.

Our review of the record with due regard for appellant's arguments satisfies us that the Board did not commit the reversible error of which Fang complains. [4] We would simply add that it is well established that, when there is a reasonable doubt as to whether there has been an actual reduction to practice, the inventor's subsequent conduct may demonstrate that the acts relied on as an actual reduction to practice amount only to an abandoned experiment. *Conner v. Joris*, supra.

Here Fang's application in interference, filed after Hankins' patent issued, contained not only the claims of that patent but also every working example of that patent nearly verbatim. Curiously, Fang did not include in his application examples relating to the subject matter of Exhibits 36, 38 and 40. Fang also testified that, before he would make a suggestion that subject matter be patented, "I have to

remain convinced that an idea is a worthwhile suggestion before I make such a proposal." At best, the earliest suggestion to patent the present subject matter was made after Hankins' filing date. That is at least some indication, we think, that Fang did not regard the present subject matter "worthwhile" until that time, and that he did not have a conviction of success based on the evidence of record, particularly Exhibits 36, 38 and 40. There is, in our view, reasonable doubt that Fang reduced the subject matter of the counts to practice before Hankins' filing date.

One matter remains. [5] Hankins has added certain material to the record. We regard approximately a third of that material to be properly part of the record and have considered it in reaching our decision, while the remaining material was unnecessary. Accordingly, one-third of the printing costs is assessed against appellant, and two-thirds against appellees.

The decision is affirmed.

**AFFIRMED.**

KIRKPATRICK, J., took no part in the decision of this case.

### U.S. Court of Customs and Patent Appeals

IN RE COLGATE-PALMOLIVE COMPANY

No. 8095. Decided March 6, 1969

[56 CCPA —; 406 F.2d 1885; 160 USPQ 733]

#### 1. TRADEMARK—DESCRIPTIVENESS—"CHEW 'N CLEAN" FOR DENTIFRICE.

"With due respect to the Board's reasoning, we are unable to agree that the instant mark is so descriptive of the goods to which it is applied as to preclude registration. Granted that 'Chew 'n Clean' might well, and doubtless does, suggest a possible manner of use of the dentifrice, it is not merely descriptive of the dentifrice per se."

#### 2. SAME—MISDESCRIPTIVENESS—"CHEW 'N CLEAN" FOR DENTIFRICE.

"We note the Board's statement that if the mark [Chew 'n Clean for dentifrice] is not merely descriptive, 'the mark is then deceptively misdescriptive of the goods.' We do not think that necessarily follows. The Board gives no reason for its conclusion, and we are aware of none."

APPEAL from Patent Office. Serial No. 144,336.

**REVERSED.**

(*Bert A. Collison, Thomas A. Kain, Joseph F. Brisebois*, of counsel) *Nims, Halliday, Whitman, Howes & Collison* for appellant.

*Joseph Schimmel (Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, RICH, ALMOND and BALDWIN, Associate Judges

WORLEY, Chief Judge, delivered the opinion of the court.

Appellant's application<sup>1</sup> to register the mark "Chew 'n Clean" for "Dentifrice" has been refused by the Trademark Trial and Appeal Board<sup>2</sup> which stated:

\* \* \* Moreover, it is an established principle of law that the question of whether or not a given mark is merely descriptive cannot be considered in the abstract but must be considered in connection with the particular goods to which it is applied. \* \* \* When so considered, it is our opinion that "Chew 'n Clean" immediately and directly relates the information that applicant's dentifrice is a product that will clean the teeth when it is chewed, and is therefore merely

<sup>1</sup> Serial No. 144,336, filed May 11, 1962.

<sup>2</sup> Reported at 151 USPQ 587 (1966).



descriptive of the intended use thereof. If this is not in fact the case, as asserted by applicant, the mark is then deceptively misdescriptive of the goods and equally prohibited registration under the provisions of section 2(e)(1) of the act. Whether or not registration to applicant would prevent others from using the words "chew" and "clean" in their normal descriptive sense is not believed to be determinative of the question herein.

[1] With due respect to the Board's reasoning, we are unable to agree that the instant mark is so descriptive of the goods to which it is applied as to preclude registration. Granted that "Chew 'n Clean" might well, and doubtless does, suggest a possible manner of use of the dentifrice, it is not merely descriptive of the dentifrice *per se*.

[2] We note the Board's statement that if the mark is not merely descriptive, "the mark is then deceptively misdescriptive of the goods." We do not think that necessarily follows. The Board gives no reason for its conclusion, and we are aware of none.

The decision is reversed.

REVERSED.

### U.S. Court of Customs and Patent Appeals

IN RE JAMES W. FARMER

No. 8087. Decided February 20, 1969

[56 CCPA —; — F.2d —; 160 USPQ 671]

#### 1. PATENTABILITY — PARTICULAR SUBJECT MATTER — "SPRING DRIVEN TIMING SWITCH."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Spring Driven Timing Switch" as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 273,481.

AFFIRMED.

Leonard F. Stoll, Robert E. Le Blanc, Le Blanc & Shur for appellant.

Joseph Schimmel (Jere W. Sears, of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, RICH, ALMOND and BALDWIN,  
Associate Judges

WORLEY, Chief Judge, delivered the opinion of the court.

This appeal is from a decision of the Board of Appeals affirming the rejection of claims 18-28 in appellant's patent application<sup>1</sup> under 35 U.S.C. 103.

Appellant's invention relates to a self-contained, spring-driven timing switch of small size, suitable for switching applications in telemetry, programming, and space technology fields. Essentially the timing switch includes a clockwork watch movement in which the watch output shaft, instead of carrying a minute hand, is provided with a wiper arm or contact brush which is rotated successively over a plurality of circumferentially distributed, conductive segments in sequential electrical contact therewith. To provide sufficient torque to drive the contact brush, the watch movement is provided with a mainspring of greater torque than that normally provided in watch movements. Additionally, the watch movement operates at a beat frequency of at least 7.5 beats per second.

<sup>1</sup> Application of James W. Farmer, filed April 16, 1963, Serial No. 273,481, for "Spring Driven Timing Switch."

Claims 18-28 all recite specific numerical limitations as to the beat frequency. Claim 18 is representative:

18. A timing unit for driving an output shaft with a substantial load comprising an anchor escapement timing movement of less than one cubic inch having an operating frequency of at least 7.5 beats per second.

In addition, claims 26-28 include limitations relating to the details of the switching structure.

The Examiner rejected all the claims under § 103 as obvious in view of U.S. Patent No. 1,295,876 to Edmundson.<sup>2</sup> Edmundson discloses a man's wristwatch provided with pairs of electrical contacts adjacent each hour position of the watch, with the contacts in each pair being electrically bridged by the hour hand of the watch as it comes to the adjacent hour position. Any pair of contacts may be selectively connected to an electrical alarm circuit, so that the alarm circuit is operated when the hour hand of the watch reaches a particular hour selected on the watch.

The Board sustained the rejection of all claims under § 103, stating:

Admittedly time pieces are known to the art having a normal beat rate higher than 6 per second. See specification, page 5. It would seem obvious that such devices would require a mainspring having a higher torque than those having the lower beat rate.

We also note that the specification on page 4, lines 16 to 21 indicates that in conventional size watches an increase in the beat rate is accompanied by a stronger mainspring, this would indicate a mainspring with higher torque. Thus, it seems to us that the prior art recognized the necessity of tailoring mainspring torque and beat frequency to meet the load demands. Hence, the evaluation of particular torques and beat frequency for a particular load requirement would be well within the capability of one skilled in the art.

Here, appellant points out that Edmundson issued more than 44 years before the filing date of the instant application and states:

... it is not seen how such a modification can be reasonably held to be obvious if it has escaped the workers in the field during the some 44 intervening years subsequent to the issuance of the Edmundson patent.

Appellant also takes issue with the Board's position that devices having a higher than normal beat rate "would require a mainspring having a higher torque than those having the lower beat rate," by pointing out that in some larger time pieces (e.g., pendulum clocks) a stronger mainspring is often accompanied by a low beat rate. In any event, appellant argues, there is no teaching of increasing the mainspring torque in a watch mechanism to meet load demands and, in particular, to produce an output torque necessary for switching. Appellant also draws attention to the specific limitations in claims 26-28 relating to details of the switching structure which, it is argued, are not even remotely suggested by the Edmundson patent.

Responding to those arguments, the Solicitor contends that there is little significance in the long lapse of time since Edmundson issued, noting, as did the Examiner, that it is only since the comparatively recent growth of space technology that there has been any great need to provide an electrical switching device driven by a small size clockwork mechanism. He urges that Edmundson quite clearly discloses the basic concept of an electric switching device driven by a clockwork watch mechanism and argues that appellant's invention amounts to no more than obvious modifications of a conventional watch mechanism

<sup>2</sup> The Examiner also cited, but did not specifically apply, the following references:  
Tabet, U.S. Patent No. 2,971,066.  
Straumann, U.S. Patent No. 3,099,128.



that would be apparent to a skilled watch mechanic. The Solicitor states:

In the event that a conventional wrist watch movement were found to lack adequate output power to satisfactorily move a sweep contact in a missile-destined timer switch, several obvious alleviating steps might be taken. Perhaps the first that might be resorted to would be to strengthen the mainspring, which serves as the only source of driving energy when wound. However, the flow of stored energy from the wound mainspring to the output pintle is governed by the beat of the watch balance, which determines the advance of the escape wheel forming part of the gear train. \* \* \* This "throttle" on the rate of energy flow to the output pintle, or usable power, may be opened by increasing the beat of the balance. As noted by appellant, "[i]t is, of course, fundamental physics that the operating frequency of a timing unit is established by the balance and more specifically by the ratio of the rotary mass of the balance wheel to the restoring force (hairspring force)" \* \* \*. Accordingly, tailoring of the mainspring and beat of the watch movement, to yield greater output power at the sacrifice of running time, "would be well within the capability of one skilled in the art" \* \* \*.

It appears to us that that reasoning accurately analyzes the situation here in regard to the issue of obviousness. With regard to the particular details of the switching structure recited in claims 26-28, we note that appellant did not suggest that there was any patentable significance in those limitations before the Board and we do not feel that patentability can be rested upon them at this late stage.

As the rejection of all claims has been sustained under 35 U.S.C. 103, it is unnecessary for us to consider an alternative rejection of claims 18 and 19 under 35 U.S.C. 112 which the Board sustained.

[1] The decision is affirmed.  
AFFIRMED.

## PATENT SUITS

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2,531,374. (See D. 197,670.)

2,581,345. (See D. 197,670.)

2,775,274, A. E. Andersson, BARK-REMOVING MACHINE HAVING SELF-LIFTING BLUNT-EDGE TOOLS; 2,855,910, N. G. Leffer, BARKING MACHINE HAVING CENTRIPETALLY BIASED SCRAPERS AUTOMATICALLY SWUNG TO BARK-REMOVING POSITIONS BY AN ONCOMING LOG, filed Jan. 23, 1969, D.C. Ore. (Portland), Doc. C-69-42, *Kockum Industries, Inc. v. Brunette Machine Works, Ltd.* Order dismissing action on the ground that venue is improper, Feb. 20, 1969. Feb. 28, 1969, notice of appeal in the above entitled case filed by plaintiff.

2,792,295, M. M. Wright, HERBICIDAL GRANULAR PELLETS AND METHOD OF APPLYING THE SAME, filed Apr. 1, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c690, *Diamond Shamrock Corporation et al. v. Stauffer Chemical Company, Inc.*

2,855,910. (See 2,775,274.)

3,024,301, K. R. Walch, WIRING GRILLE, filed May 15, 1969, D.C., E.D. Mich. (Flint), Doc. 32796, *Panduit Corporation v. Taylor Electric, Inc. and Taylor Plastic Corp.*

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3,175,040, D. R. Von Recklinghausen, BALANCED-STEREO-PHONIC DEMODULATOR APPARATUS; 3,348,154, Fish and Von Recklinghausen, SIGNAL MIXING AND CONVERSION APPARATUS EMPLOYING FIELD EFFECT TRANSISTOR WITH SQUARE LAW OPERATION; Reg. No. 843,605 (FIELD EFFECT SCOTT AND DESIGN), H. H. Scott, Inc., Radio receiving apparatus, tuners, and transistorized oscillators and amplifying apparatus, filed Jan. 21, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69-127-CC, *H. H. Scott, Inc. v. Nikko Electric Corporation of America*.

3,208,631. (See 3,091,360.)

3,225,305, F. F. Offner, SYMMETRICAL TRANSISTOR AMPLIFIER WHICH IS SELF-COMPENSATING WITH RESPECT TO CHANGES IN TEMPERATURE, filed Sept. 22, 1968, D.C., N.D. Ill. (Chicago), Doc. 66c1710, *Beckman Instruments Inc. v. Technical Development Corp.* Defendant's motion for summary judgment with respect to count I granted; plaintiff's take nothing under count I and that count I be dismissed on the merits; plaintiff's own motion, count III of the complaint, as amended, dismissed without prejudice; on the court's own motion, count IV complaint, as amended, be dismissed on the merits; judgment on counts I and IV is entered in favor of the defendants, May 20, 1969.

3,228,629, K. P. Lee, YARDAGE COMBINE, filed June 2, 1969, D.C., N.D. Calif. (San Francisco), Doc. 51439, *Chromalloy American v. Machine Design Corporation*.

3,304,435, D. W. Norwood, PHOTOMETRIC DEVICE HAVING GREATER RESPONSE TO A PREFERENTIAL CENTRAL PORTION OF A SCENE, filed May 27, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69-1028-EC, *Donald W. Norwood v. Ehrenreich Photo-Optical Industries, Inc. et al.*

3,309,550, Glass, Hale and Bernhardt, HAY HARVESTING MACHINE; 3,325,961, Glass and Hale, same; 3,375,043, McCarty and Glass, HARVESTING DEVICE; 3,383,844, Glass, Hale and McCarty, DEFLECTOR STRUCTURE; 3,396,233,

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3,325,961. (See 3,309,550.)

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3,348,606, K. McConnell, PALLET RACK, filed May 21, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1097, *Interlake Steel Corporation v. Unarco Industries, Inc.*

3,351,073, R. G. Greff, COIFFURE PROTECTORS, filed July 29, 1968, D.C., N.D. Ala. (Birmingham), Doc. CA68-422-NE, *Richard Gregg Manufacturing Co., Inc. v. Ruth S. Rigney, doing business as Miracle City Beauty Salon and Wig Bar*. Order that patent is valid and infringed; defendant permanently enjoined, May 5, 1969.

3,375,043. (See 3,309,550.)

3,383,844. (See 3,309,550.)

3,396,233. (See 3,309,550.)

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3,394,465, C. E. Conkila, METHOD FOR REINFORCING TEXTILE GARMENTS, filed Nov. 18, 1968, D.C., S.D.N.Y.,

Doc. 68-C-4540, *The B. F. Goodrich Co. v. Mann Manufacturing, Inc.*

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D. 197,670, Sundberg and Dobson, PHONOGRAPH CABINET; D. 206,501, C. W. Sundberg, same; 2,531,374, E. F. Andrews, SELECTOR MECHANISM FOR AUTOMATIC PHONOGRAPHS; 2,581,345, same, AUTOMATIC PHONOGRAPH, filed Oct. 18, 1967, D.C., S.D. Fla. (Miami), Doc. 67-1058-C-JE, *The Seeburg Corporation v. Toran Enterprises, Inc.* Consent judgment, plaintiff is owner of Design Patent No. 197,670, Design Patent No. 208,501, Patent No. 2,531,374, and Patent No. 2,581,345. Defendant has infringed. Defendant's counterclaims against plaintiff dismissed with prejudice; injunction issued restraining defendant, May 12, 1969.

D. 204,905. (See 3,309,550.)

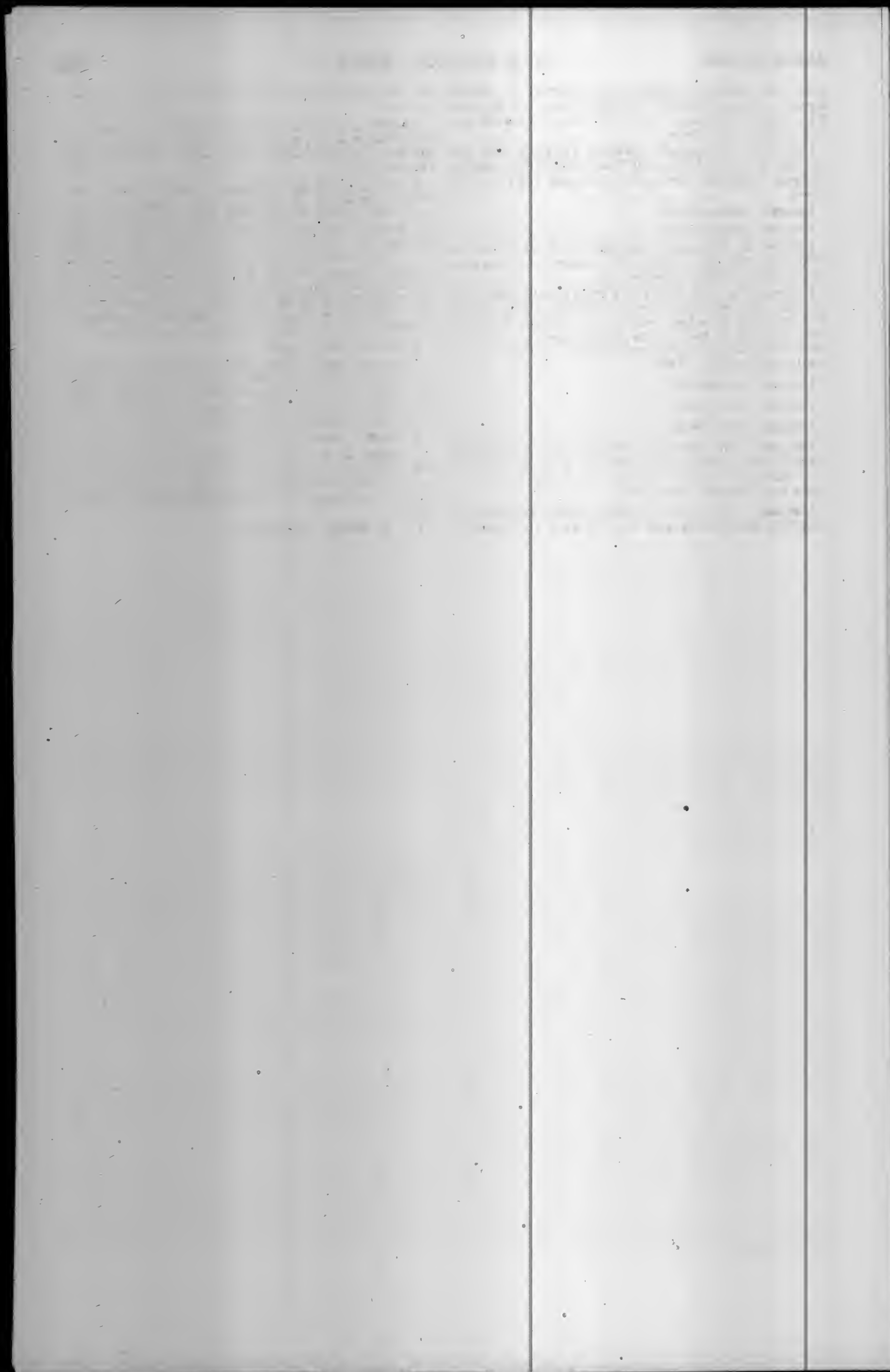
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Reg. No. 843,605. (See 3,175,040.)







## REISSUES

AUGUST 19, 1969

Matter enclosed in heavy brackets **[ ]** appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,644

### METHOD OF OPERATING AN ALKALI CHLORATE CELL

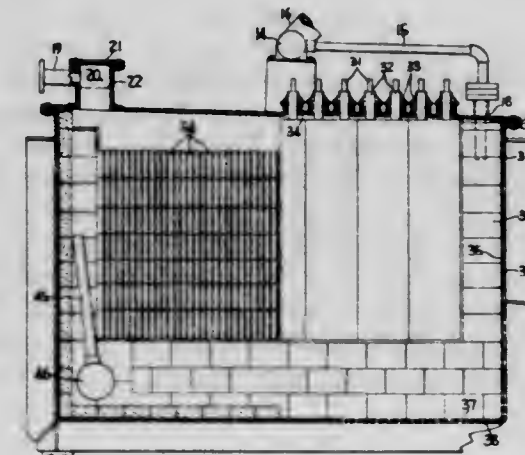
Sydney Forbes, Mount Lebanon, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Original No. 3,203,882, dated Aug. 31, 1965, Ser. No. 183,974, Mar. 30, 1962. Application for reissue Aug. 30, 1967, Ser. No. 669,345

Int. Cl. C01b 11/14; B01k 1/00

U.S. Cl. 204—95

9 Claims



A method of preparing alkali metal chlorates by electrolysis in an electrolytic alkali metal bipolar cell is described in which operation the electrolysis is conducted in a plurality of unit cells spaced apart from each other. The gaseous products of electrolysis are collected with brine at the cover which extends over all the units and the brine and gaseous products are passed along the cover surface to a common opening associated with all the cell units. The gaseous products and brine are then passed to a gas collection zone of reduced cross sectional area in relation to the cell and the gaseous products removed therefrom.

26,645

### METHOD OF RECOVERING FLUORINE, ALUMINUM AND SODIUM COMPOUNDS FROM ELECTROLYTIC FURNACE WASTES

Sven Gregert Terjesen and Arnfinn Ve, Trondheim, Norway, assignors to Elektrokemisk A/S, Oslo, Norway, a corporation of Norway

No Drawing. Original No. 3,374,054, dated Mar. 19, 1968, Ser. No. 646,736, which is a continuation of application Ser. No. 548,337, May 6, 1966, which in turn is a continuation of application Ser. No. 315,341, Oct. 10, 1963. Application for reissue Nov. 29, 1968, Ser. No. 785,828

Claims priority, application Norway, Oct. 11, 1962, 146,058/62

Int. Cl. C01f 7/50

U.S. Cl. 23—88

9 Claims

1. The method of recovering fluorine, aluminum and sodium compounds from aluminum electrolytic furnace wastes which comprises leaching said furnace wastes with an aqueous solution of alkali to extract said fluorine, aluminum and sodium compounds, mixing with the leach liquor at a pH from 7.5 to 13 a liquid containing hydrogen fluoride to form a precipitate of said fluorine, alumi-

num and sodium compounds without determining in advance the precise quantities of said compounds that are dissolved in said leach liquor, then mixing with the resulting precipitate-containing liquor at a pH from 2.0 to 5 a liquid containing aluminum trifluoride to form a further precipitate of said fluorine, aluminum and sodium compounds again without determining in advance the precise quantities of said compounds that are still dissolved in said precipitate-containing liquor, whereby substantially all of the fluorine, aluminum and sodium in said leach liquor and in said first and second liquids is recovered.

26,646

### BLANKED STRIP FROM WHICH FEMALE CONTACTS ARE TO BE FORMED FOR ELECTRICAL CONNECTING SYSTEM

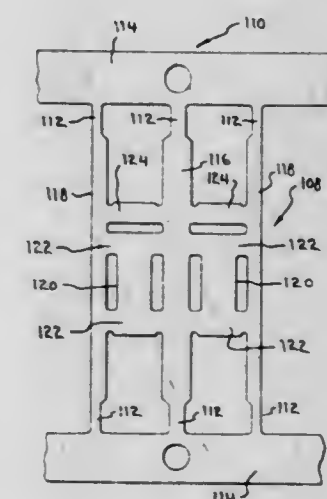
William Robert Evans, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Original No. 3,269,805, dated Aug. 30, 1966, Ser. No. 505,806, Nov. 1, 1965, which is a division of application Ser. No. 302,653, Aug. 16, 1963, now Patent No. 3,270,251, dated Aug. 30, 1966. Application for reissue July 11, 1968, Ser. No. 747,032

Int. Cl. B21c 37/00; H05k 7/10

U.S. Cl. 29—190

14 Claims



A blanked strip from which female contacts are to be formed comprising a plurality of unit blanks joined by a strip of resilient material, each unit blank being adapted to be formed into a generally tubular configuration.

26,647

### APPARATUS FOR CONTROLLING THE RATE OF FLOW OF LIQUIDS

Frank Welty, 4962 Lockwood Blvd., Youngstown, Ohio 44511

Original No. 3,335,749, dated Aug. 15, 1967, Ser. No. 442,053, Mar. 23, 1965. Application for reissue June 24, 1968, Ser. No. 748,577

Int. Cl. F16k 31/12

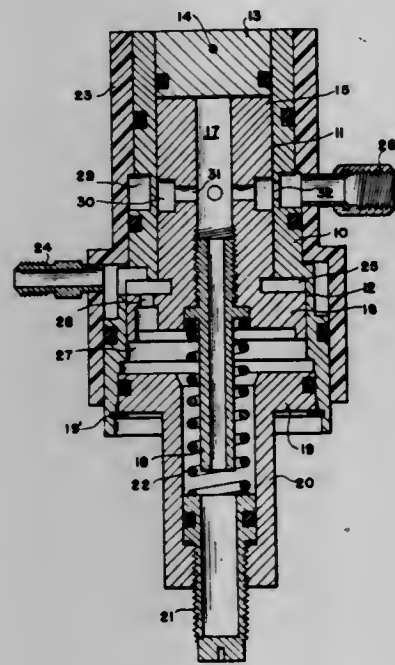
U.S. Cl. 137—504

4 Claims

A flow control device for liquids under varying pressure and having varying viscosity and having a biased



valving element controlling the flow of liquid there-through, the liquid path through said device arranged to

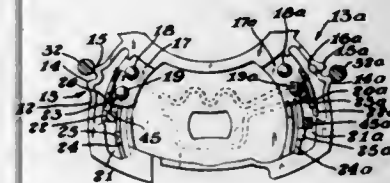


effect differential control pressures on opposite sides of said valving element.

**26,648**  
**AUTOMATIC CANCELLING TURN SIGNAL WITH AN INTERMEDIATE SIGNAL POSITION WHICH IS MANUALLY OPERABLE AND RELEASABLE**  
Walter Stoi, Warren, and Robert Thomson, Dearborn Heights, Mich., assignors, by mesne assignments, to Essex International Inc., a corporation of Michigan  
Original No. 3,284,592, dated Nov. 8, 1966, Ser. No. 494,623, Oct. 11, 1965. Application for reissue Oct. 18, 1968, Ser. No. 769,453  
Int. Cl. H01h 3/16

U.S. Cl. 200—61.34

18 Claims



Vehicle direction signal operating apparatus has an actuator movable manually from a neutral position to either one of two latched operating positions for operating selectively the vehicle's left or right direction signals and movable automatically from either operating position to the neutral position in response to operation of the vehicle's steering mechanism. Yieldable abutment means in the path of manual movement of the actuator from its neutral position toward either operating position arrests the actuator in an intermediate position in which a selected one of the left or right direction signals is operable. From either intermediate position the actuator may be returned automatically to its neutral position or alternatively to either of its latched operating positions.

## PATENTS

GRANTED AUGUST 19, 1969

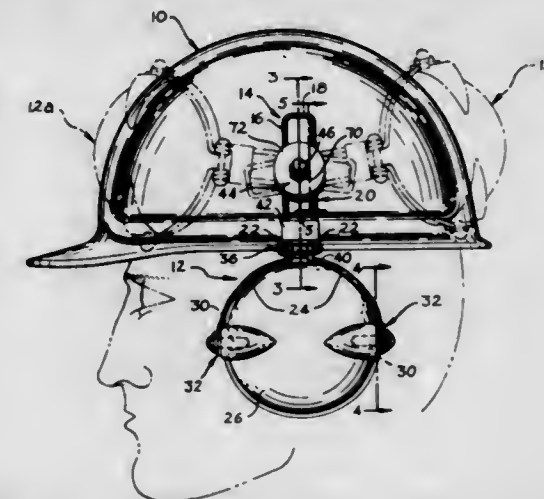
### GENERAL AND MECHANICAL

**3,461,463**  
**EAR PROTECTOR SUSPENSION DEVICES AND THE COMBINATION WITH HEADGEAR**  
Fred P. Beguin, Sturbridge, Mass., assignor to American Optical Company, Southbridge, Mass., a corporation of Delaware

Filed June 9, 1967, Ser. No. 644,884  
Int. Cl. A42b 1/08; H04r 1/10

U.S. Cl. 2—3

4 Claims



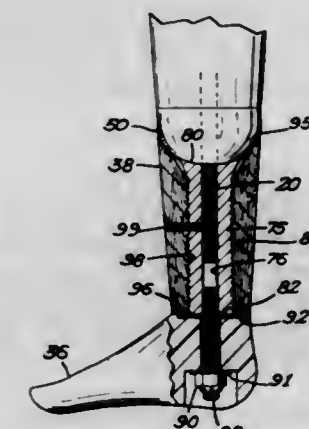
Suspension devices for adapting circumaural hearing protectors to headgear such as safety helmets and the like each including a lightweight adjustable main support of spring wire having pivotable headgear and hearing protector attachment means adjacent its respective proximal and distal ends and an intermediate flexure rendering the suspension device readily adaptable to all normally encountered shapes and sizes and headgear and universally adjustable thereon for selectively positioning the hearing protector in sealed relationship with the head about the ear of a wearer.

**3,461,464**  
**ARTIFICIAL LIMB HAVING INTERCHANGEABLE LEG SECTIONS AND LENGTH ADJUSTING MEANS**

Ronald C. Lindgren, 3943 Stacker Place, White Bear Lake, Minn. 55110  
Filed Feb. 15, 1967, Ser. No. 616,258  
Int. Cl. A61f 1/08, 1/02; F16b 7/10

U.S. Cl. 3—21

9 Claims



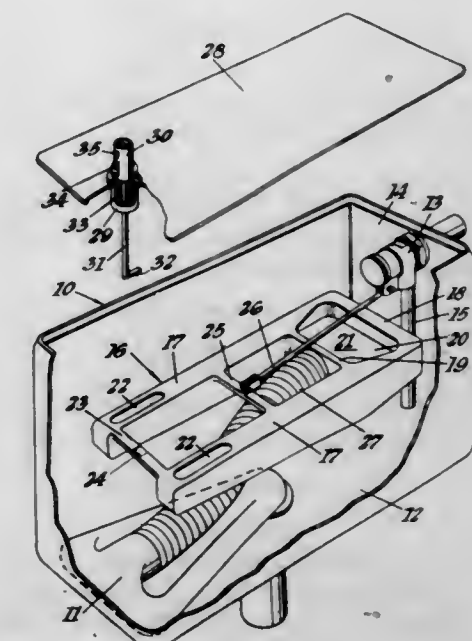
An artificial limb which will provide for interchangeability between an artificial foot and peg to enable the user to readily change the load bearing surface of the artificial limb for various activities without removal of

the remaining portion of the limb and without disturbing the adjustment of the same. In addition, the improved artificial limb includes means for accurately adjusting the length of the limb for variations in the stump upon which it is mounted due to temperature variations, atrophy and the like. The improvement in the artificial limb resides in the mounting of a threaded shaft through the socket portion and positioning a hemispherically shaped guide plate on the same to give any desired length to the limb and suitable shim means may be inserted between the peripheral edge of the hemispherical plate and the end of the socket portion.

**3,461,465**  
**APPARATUS FOR FLUSHING CISTERNS**  
Anthony Charles Fisher, 113 Wolmer Gardens, Edgware, England  
Filed July 12, 1966, Ser. No. 564,580  
Claims priority, application Great Britain, July 14, 1965, 29,808/65  
Int. Cl. E03d 1/34

U.S. Cl. 4—58

8 Claims



An apparatus for flushing cisterns which has a valve controlling the entry of water into the cistern and a water discharge fitting mounted on the floor of the cistern. A submergible float of general U-shaped configuration having hollow side members, an open-topped compartment communication with the interiors of the side members, a flexible conduit means interconnecting the open-topped compartment to the water discharge fitting and manual control means for submerging the float to effect flushing.

**3,461,466**  
**MULTIDOOR SHOWER ENCLOSURE**  
Joseph F. Weaver, Hazelwood, and Leo G. Stahlhut, Kirkwood, Mo., assignors to K-S-H, Inc., a corporation of Missouri

Filed Apr. 10, 1967, Ser. No. 629,471  
Int. Cl. E06b 7/02

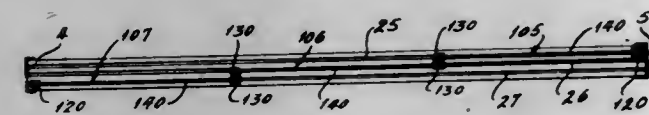
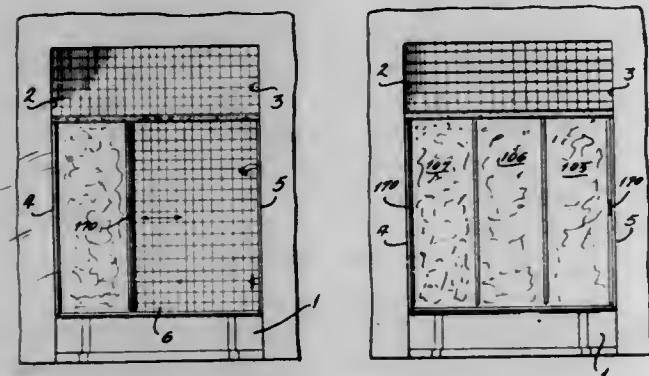
U.S. Cl. 4—149

6 Claims

A three panel tub door system with a tub rail, top rail, wall jambs connecting the tub rail and top rail, a polyvinyl chloride (PVC) extruded tub rail runner mounted



on the tub rail and a top rail runner mounted on the top rail, and three doors which include a relatively thin panel, slidably mounted within and between the tub rail runner and the top rail runner in three separate channels. Each door has along two long edges of its panel a stile at least one of which has a projecting lip which engages a complementary lip of a contiguous door stile. The stiles end short of the bottom edge of the door panel and the door panel rests for sliding on the bottom surface of the tub runner. The stiles are mounted on the panel edges by means of an extruded PVC spline with serrations complementary to serrations on inside surfaces of the stiles.



The tub rail and jamb members are cemented to wall and tub surfaces. The tub rail runner and top rail runner are arranged to snap into the tub rail and top rail respectively. A fascia panel is mounted in channels in the top rail.

A snap fit door handle is adapted to embrace the door stile. The doors are invertible, hence reversible for either right or left hand installation.

#### ERRATUM

For Class 7-14.25 see:  
Patent No. 3,461,469

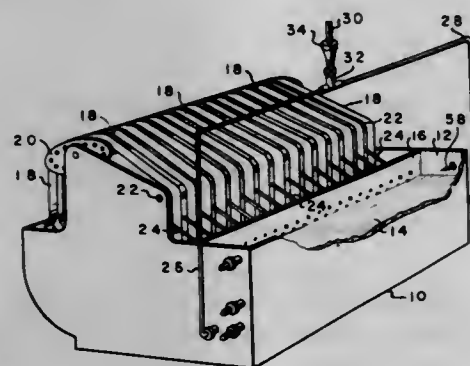
#### 3,461,467 BOIL CONTROL

Frederick H. Duncan, Clemson, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of South Carolina

Filed Oct. 27, 1967, Ser. No. 678,564  
Int. Cl. C09c 3/02

U.S. Cl. 8-158

8 Claims



This invention is directed to a boil control system for an atmospheric dye kettle. This system senses the boil level of the dye kettle to control the steam input to the dye kettle to control the boil level of the kettle.

#### 3,461,468 MODIFIED POLYESTERS HAVING IMPROVED DYELIGHTFASTNESS

Herbert S. Morgan, Jr., Apex, and Carl J. Setzer, Jr., Durham, N.C., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
No Drawing. Filed Feb. 15, 1965, Ser. No. 432,835  
Int. Cl. D06p 3/00

U.S. Cl. 8-165

4 Claims

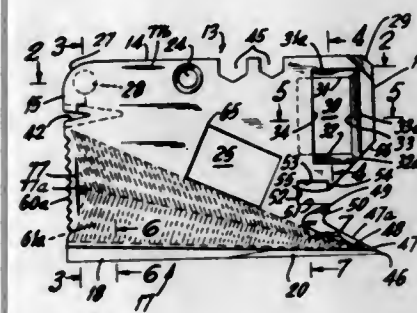
The dyelightfastness of polyester filaments modified with alkoxy polyalkylene glycols and polyhydroxy aliphatic compounds is improved by subjecting a previously dyed filament to a temperature between 130° C. and 175° C. for between 5 and 25 minutes.

#### 3,461,469 MULTIPURPOSE TOOLS AND WALLET HOLDERS THEREFOR

Jessie Morrison, 4 E. 2nd St., New York, N.Y. 10003  
Filed June 24, 1966, Ser. No. 560,284  
Int. Cl. B26b 11/00; B67b 7/44

U.S. Cl. 7-14.25

20 Claims



The tool comprises a substantially rectangular, flat plate formed with a wedge having a first inclined edge adjacent its lower edge extending to a notch connected to an end edge of the plate by a second inclined edge. The plate is formed with a pointed wedge at one end of the notch. The notch comprises a wrench opening. The first inclined edge is a cutting edge. The lower edge of the plate is a cutting edge. The plate is also formed with a rectangular opening having inner edges parallel to an end edge of the plate. A corner formed at the junction of an end edge and a side edge of the plate, comprises a screw driver edge. A face of the plate is formed with an inwardly curved recess for pressing down against heads or nails. The plate is formed with a second opening having parallel edges inclined to the end edges of the plate. A corner of the second opening is located at a point where the plate may hang at a balance with its upper edge in horizontal position. One of the end edges of the plate is formed with a V-shaped notch having a bevelled surface for prying up nails and tacks. One surface of the plate is formed with a serrated filing surface and also with a serrated match striking surface. The plate is snugly and slidably received in a rectangular pocket of a wallet. The plate is made of magnetized steel. The first inclined edge is formed with a hooked sharpened edge portion extending from the first inclined edge.

#### 3,461,470 THREAD-FORMING SCREW AND METHOD OF MAKING THE SAME

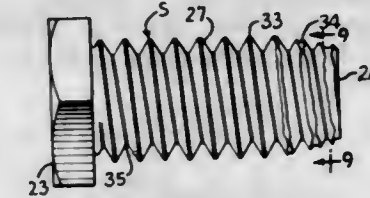
William A. Cochrum, Roselle, Ill., assignor to The Fastron Company, Franklin Park, Ill., a corporation of Illinois  
Filed July 7, 1966, Ser. No. 563,493  
Int. Cl. B23g 9/00; B21h 3/02; F16b 33/02

U.S. Cl. 10-10

2 Claims

A method of making a thread-forming screw comprises forcing a wire blank into a die cavity to form on the end of the blank a tapered lead section that has blending arcs, then while the blank is still in the die forming a head on the screw, and then separating the blank and die and there-

after roll-threading the blank to form a screw with a partially formed thread on the lead section and a fully



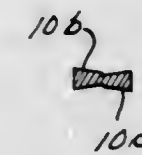
formed thread on the adjacent holding section of the screw.

#### 3,461,471 METHOD OF FORMING LOCK WASHERS BY ROLLING MULTIPLE SECTIONS FROM A SINGLE ROD

Charles N. Mellows, 9560 N. Lake Drive, Milwaukee, Wis. 53217  
Filed Apr. 3, 1967, Ser. No. 627,810  
Int. Cl. B21d 53/20; B23p 17/00

U.S. Cl. 10-86

5 Claims



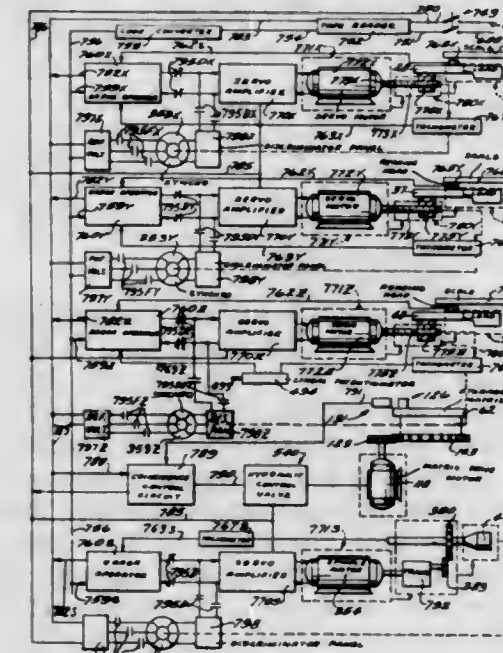
A continuous method of manufacturing relatively small size lock washers from oversize hot-rolled rod, which includes the steps of descaling the rod; drawing the rod to smaller diameter, but to a diameter which is larger than that required for the product; flattening the rod; rolling the flattened rod to multiple keystone cross-sections; separating the multiple sections from one another; and feeding the separated sections simultaneously and continuously to a plurality of lock washer manufacturing machines.

#### 3,461,472 MACHINE TOOL WITH AUTOMATIC TAPPING CONTROL

Robert K. Sedgwick, Waukesha, Wis., and Werner K. Behrendt, St. Anna-Garten, and Hans J. Baechle, Rockford, Ill., assignors to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin  
Original application Mar. 13, 1962, Ser. No. 181,226. Divided and this application Oct. 25, 1966, Ser. No. 589,330  
Int. Cl. B23g 1/04

U.S. Cl. 10-139

3 Claims



This invention relates to an improved automatic tapping control particularly adapted to be used in a machine

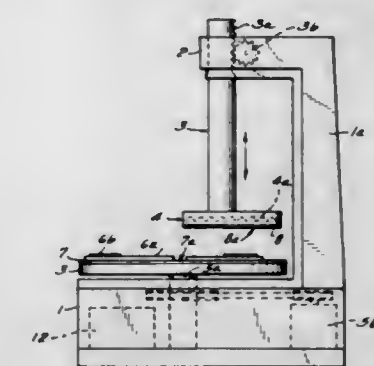
tool. A control member carried by the spindle for limited axial movement is connected to actuate a control for continuously modulating the axial spindle feed rate during a tapping operation. A tap is carried by the spindle for rotation and for limited axial control movement relative thereto for moving the tap control member to continuously modulate the preset axial feed rate of the spindle during a tapping operation.

#### 3,461,473 METHOD FOR TREATING ARTICLES OF LEATHER

Kurt Hacker, Stuttgart-Zuffenhausen, Erwin Koehl, Stuttgart-Weilimdorf, and Reinhold Weigle, Kornthal, Germany, assignors to Fortuna-Werke Maschinenfabrik Aktiengesellschaft, Stuttgart-Bad Cannstatt, Germany  
Filed May 31, 1967, Ser. No. 642,360  
Claims priority, application Germany, June 7, 1966, F 30,294, F 49,409  
Int. Cl. A43d; B30b 15/02

U.S. Cl. 12-146

5 Claims



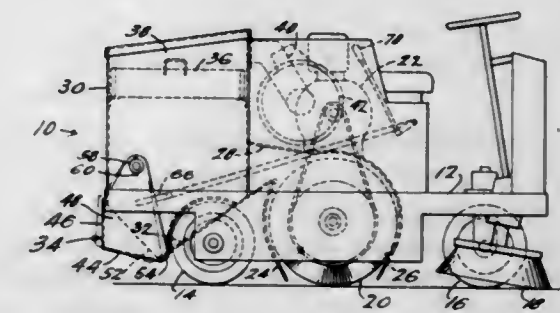
A rotary indexable carrier in a shoe making machine has a supporting surface composed of a succession of  $n$  plus 2 zones which can support groups of bondable blanks made of leather or the like. A heating member is movable up and down above the carrier and has a countersurface composed of  $n$  areas each of which registers with a zone when the carrier is idle. Blanks are treated in  $n$  stages while they register with successive areas of the countersurface. Two or more zones of the supporting surface are exposed at all times to facilitate removal of finished blank groups and loading of the carrier with fresh blanks.

#### 3,461,474 HOPPER FOR POWER SWEEPER

William McCandless, Toledo, Ohio, assignor, by mesne assignments, to The Scott & Fetzer Company, Lakewood, Ohio, a corporation of Ohio  
Filed Sept. 22, 1967, Ser. No. 669,747  
Int. Cl. E01h 1/04; B60p 1/00

U.S. Cl. 15-83

10 Claims

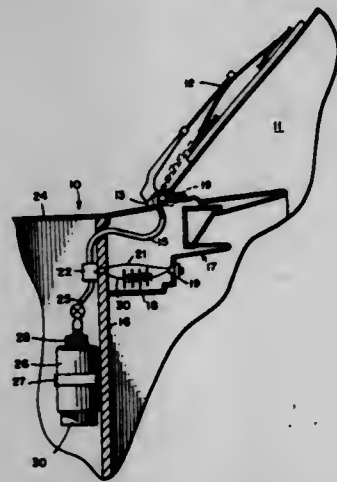


A power sweeper has a hopper which can be emptied relatively easily with minimum mechanism. The dumping door for the hopper is located at the bottom rear portion thereof with the door actually constituting part of the



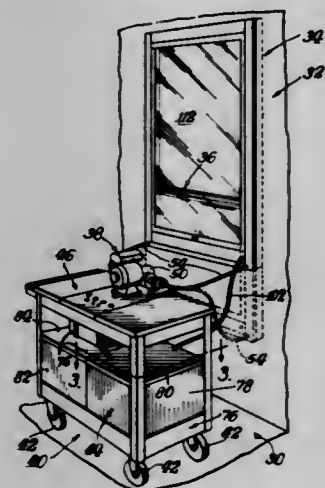
bottom of the hopper. The door is pivotally mounted on the sweeper and is simply swung to a position to the rear of the hopper to enable the contents thereof to be emptied by gravity. If the hopper is to be emptied into an elevated receptacle, it can be raised by relatively simple parallel linkage and fluid-operated cylinder arrangement.

**3,461,475**  
**WINDSHIELD WASHER APPARATUS**  
Robert V. Mathison, 5 Woodcrest Road,  
Asheville, N.C. 28804  
Filed July 10, 1967, Ser. No. 652,191  
Int. Cl. B60s 1/48; B67b 7/24  
U.S. Cl. 15—250.01



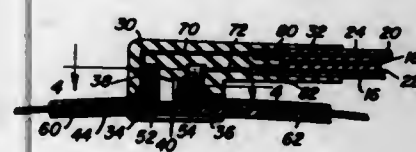
Windshield washer apparatus utilizing aerosol cartridges containing washing liquid or separate propellant gas cartridge and washing liquid vessel for spraying washing liquid on windshield wherein cartridge is replaceable when exhausted.

**3,461,476**  
**WINDOW WASHING APPARATUS**  
John North, 5530 S. Shore Drive,  
Chicago, Ill. 60637  
Filed June 23, 1967, Ser. No. 648,260  
Int. Cl. B60s 1/02; A47i 1/04, 1/02  
U.S. Cl. 15—250.04



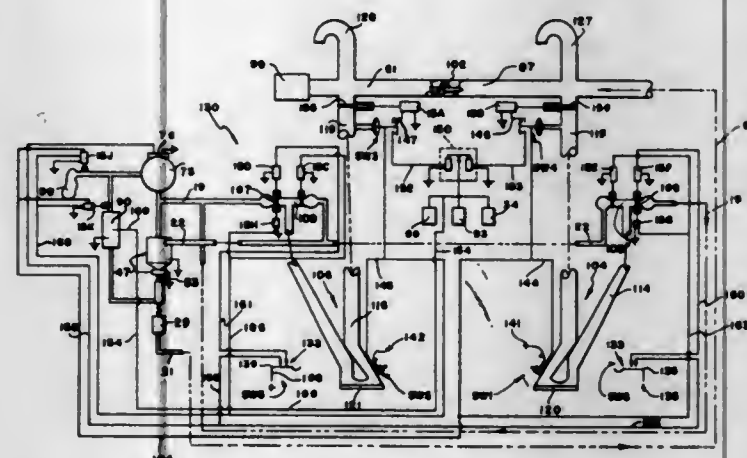
A window washing apparatus including a window case formed of a plurality of channels, one of which receives a window washing element to hide the same from view and two others of which mount and hide from view a drive means for moving the washing element along a window together with a portable cart mounting a motor and a washing liquid supply tank that are adapted to be releasably connected to the drive means and the washing element respectively to cause the washing element to wash the window and which then may be disconnected and moved on to other windows for washing the same.

**3,461,477**  
**HEATED WIPER BLADE**  
Jimmie Ray Ikner, Rte. 2, Box 139,  
Henderson, N.C. 27536  
Filed Jan. 30, 1968, Ser. No. 701,681  
Int. Cl. B60s 1/04, 1/34; A47i 1/16  
U.S. Cl. 15—250.06



The combination of a wiper arm including insulated conductor means extending therealong and a windshield wiper blade including an elongated rubber blade portion having an elongated longitudinally extending electrical resistance heating element embedded therein and an elongated generally arcuate mechanical backing member for the blade member supporting the latter at its opposite end. The backing member includes insulated conductor means extending from an area spaced generally centrally intermediate the opposite ends thereof to the opposite ends of the backing member with the remote ends of the insulated conductor means of the backing member electrically connected to the opposite ends of the electrical resistance heating element and the blade member and the mechanical backing member being removably supported from the arm member with the conductor means of the arm member and the conductor means of the backing member being electrically connected at the juncture between the backing member and the arm member.

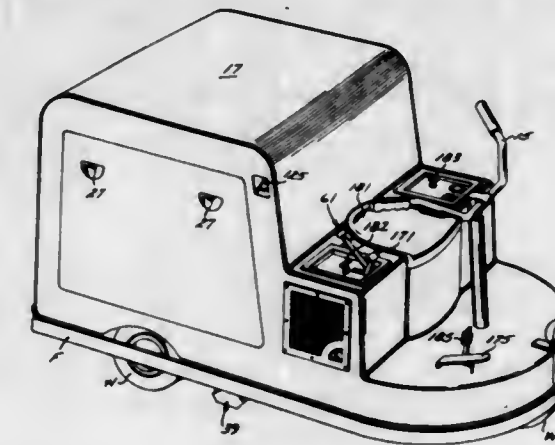
**3,461,478**  
**APPARATUS FOR CLEANING SURFACES**  
Bernard Taylor, 1611-A E. Central,  
Wichita, Kans. 67214  
Filed May 2, 1966, Ser. No. 546,684  
Int. Cl. A47i 5/38, 5/14; B08 3/00  
U.S. Cl. 15—302



This disclosure relates to a surface treating apparatus, and more particularly to an apparatus used to impel particles against the surface to be treated, for example to clean the surface. The surface treating apparatus is provided with a head means engageable with a surface being worked upon; a vacuum supply means connected to the head means to create vacuum pressure therein; and a particle supply means also connected to the head means whereby the vacuum pressure created through the vacuum supply means is usable to (1) remove particles and foreign debris from the area being worked upon, and (2) to pick up and convey the particles from the particle supply means through the head means against the surface being worked upon. Still, more specifically, this invention relates to an apparatus operable through the use of vac-

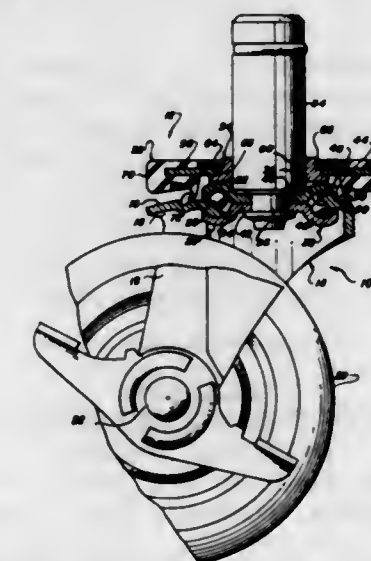
uum pressure to apply a coating of wax or the like to a given surface or to clean the surface by impelling and continuously removing the cleansing particles and loosened impurities from the surface.

**3,461,479**  
**TURF VACUUMING APPARATUS**  
Donald R. Tierney, Long Beach, Calif., assignor to William F. York and William S. Jensen, doing business as Turf-Vac, Long Beach, Calif., a partnership  
Filed July 25, 1967, Ser. No. 655,918  
Int. Cl. A47i 4/20, 7/00; E01h 1/08  
U.S. Cl. 15—339



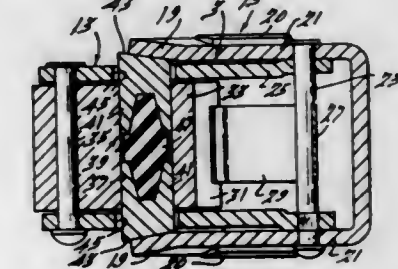
A turf vacuuming apparatus including a frame supported by a set of wheels. An intake scoop and debris bag are supported on the frame and the scoop is connected with the debris bag by ducting. A blower assembly creates a partial vacuum in the ducting for pulling air in through the scoop and exhausting it into the debris bag. The blower assembly is driven by an engine which engine also drives a hydraulic pump. A hydraulic motor is drivingly coupled with a pair of the wheels and is connected with the pump by conduit means which includes a flow control valve. Thus the speed of the apparatus can be controlled by the flow control valve while maintaining the blower at its optimum speed.

**3,461,480**  
**CASTER BUMPER ASSEMBLY**  
Robert E. Sheahan, Woodbridge, Conn., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia  
Filed Mar. 30, 1967, Ser. No. 627,098  
Int. Cl. B60p 33/00  
U.S. Cl. 16—18



A bumper assembly for a caster and having an annular resilient bumper member provided with a sealing portion.

**3,461,481**  
**HINGE**  
William V. Bachmann, St. Clair Shores, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware  
Filed June 24, 1966, Ser. No. 567,797  
Int. Cl. E05d 7/00, 11/00  
U.S. Cl. 16—140



Hinge and checking device for an automotive vehicle door, including a toggle linkage having on one of the links thereof friction members engageable with a friction surface for locking the door in a selected position. The linkage is connected to the door and the friction surface is on a mounting bracket attached to the vehicle body.

**3,461,482**  
**HIDE STRIPPING APPARATUS**  
Louis L. Crawford, Chicago, Thor E. Christensen, Maywood, and Vincent S. Sondej and Miles S. Bajcar, Chicago, Ill., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware  
Original application June 14, 1965, Ser. No. 463,530.  
Divided and this application Feb. 6, 1967, Ser. No. 630,163  
Int. Cl. A22b 5/16  
U.S. Cl. 17—21



Apparatus having an upstanding frame for holding a hide covered carcass and a roll movably mounted on the frame for engaging the hide to progressively strip the hide from the carcass.

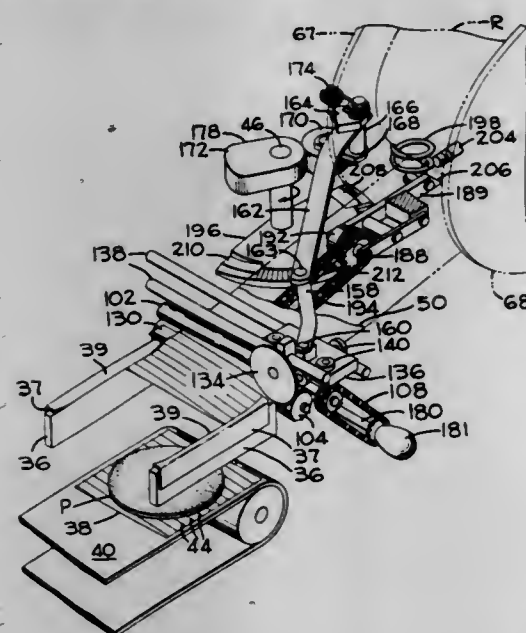
**3,461,483**  
**FOOD MOLDING MACHINE**  
Eugene F. Felstehausen, Hoopeston, Ill., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware  
Filed Dec. 1, 1966, Ser. No. 598,288  
Int. Cl. A22c 7/00; B65h 45/04; B31f 1/20  
U.S. Cl. 17—32

The leading end portion of a rolled web of separator material, such as waxed paper, is advanced into underlying relation to the patty discharge station of a food molding



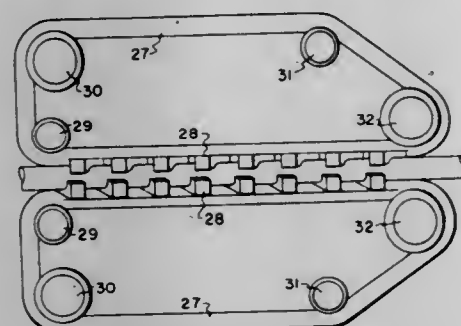
machine and is severed to form a separate sheet which intercepts the patty dropped thereon so that the patties in an accumulated stack of patties are separated from one another. A crimping roller transversely corrugates the

conveyor apparatus having a plurality of endwise aligned head and body receiving fish carriers, and in which the head receiving carriers have a nose engaging member movably mounted thereon and mechanism is provided for



web before it is severed to lend it beam strength so that thin, inexpensive web materials can be used, and to minimize contact with the patty so that there is less of the usual tendency of the patty and separator sheet to stick together.

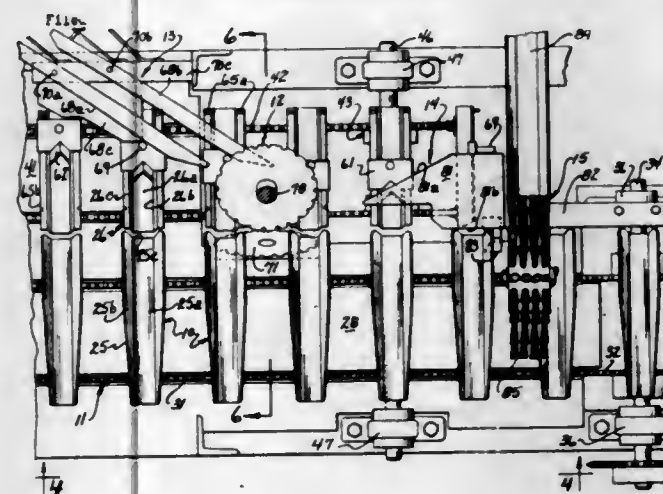
**3,461,484**  
**PROCESS FOR SHIRING SAUSAGE CASINGS**  
Lionel C. Arnold, Danville, Ill., assignor to Tee-Pak, Inc., a corporation of Illinois  
Original application July 13, 1966, Ser. No. 564,961.  
Divided and this application Apr. 10, 1968, Ser. No. 720,140  
Int. Cl. A22c 13/00, 11/02  
U.S. Cl. 17—49



A process for shirring synthetic tubular sausage casings comprises applying shirring forces equiangularly around the periphery of an inflated casing being shirred, the shirring forces being applied in discrete segments providing for the application of shirring force along a substantially continuous helical line. The process may apply the discrete shirring forces by means of belts or wheels having shirring lugs set at a substantial angle and engaging the entire periphery of the casing sequentially along a substantially helical line to cause the casing to be shirred in essentially continuous helical pleats.

**3,461,485**  
**FISH DEHEADING MACHINE**  
Melvin J. Crepeau, Escanaba, Mich., assignor to La Pine Brothers, Inc., Gladstone, Mich., a corporation of Michigan  
Filed Oct. 11, 1966, Ser. No. 585,841  
Int. Cl. A22c 25/12, 25/14  
U.S. Cl. 17—63  
18 Claims

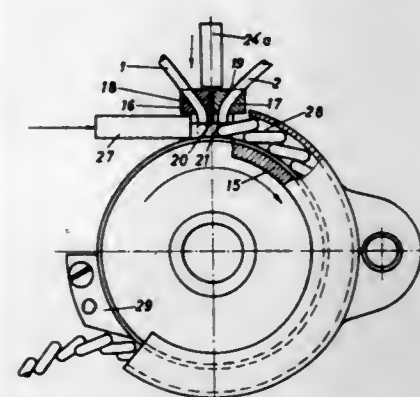
An apparatus for deheading fish in which the fish are advanced sidewise past the deheading station by a



moving the nose engaging member in a direction to shift the fish tailward until a preselected projection on the fish engages a fish locating means on one of the carriers to thereby longitudinally position the fish in the carriers as they are advanced toward the deheading station.

**3,461,486**  
**APPARATUS FOR MAKING A CONTINUOUS ROW OF SLIDE-FASTENER LINKS FROM A PLASTIC THREAD**

Hans Porepp, Am Rebberg, Wangen (Bodensee), Germany  
Filed Oct. 27, 1966, Ser. No. 590,080  
Int. Cl. B29d 5/00; A41h 37/06  
U.S. Cl. 18—1

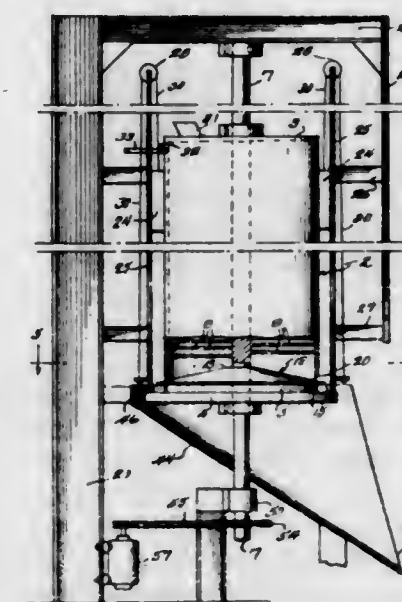


An apparatus for making interengaged coupling chains for a slide fastener, wherein a pair of mutually parallel, spaced thread guides, reciprocating synchronously and in opposite directions, are disposed in side-by-side relation above a base surface but are spaced therefrom by twice the thickness of the thread, and the thread guides have bores feeding the threads toward one another and the base surface while a coining cam compresses the thread against the base to form heads on the coupling elements; a slide advances the interengaged coupling lengths.

**3,461,487**  
**APPARATUS FOR PELLETIZING FINELY DIVIDED SOLIDS**  
Francis P. Miller, Houston, Tex., assignor to Continental Carbon Company, Houston, Tex., a corporation of Delaware  
Filed Dec. 6, 1966, Ser. No. 599,634  
Int. Cl. B29b 1/03; B29c 23/00  
U.S. Cl. 18—1  
5 Claims

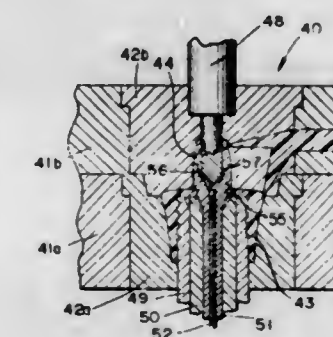
1. Apparatus for pelletizing finely-divided particulate materials comprising, in combination, a vertically inclined normally stationary cylindrical pellet-forming shell;

a closure plate secured to the upper end of said shell; means for permitting the introduction of the material to be pelletized to the interior of said cylindrical pellet-forming shell adjacent the upper end thereof; means for permitting the introduction of a wetting agent to the upper portion of the interior of said shell; a closure plate disposed adjacent to, but spaced from, the lower end of said shell; a rotatable shaft journaled in said closure plates and extending axially of said shell; a plurality of



agitating pins extending outwardly from said rotatable shaft toward the interior surface of said shell in a helical pattern and being separated from each pin by standard longitudinal spacing and angular disposition; and a disc of smaller diameter disposed immediately above the closure plate adjacent the lower end of said cylindrical pellet-forming shell; the periphery of said disc extending into close adjacency with respect to the space between the lower end of said cylindrical pellet-forming shell and the closure plate which is adjacent thereto.

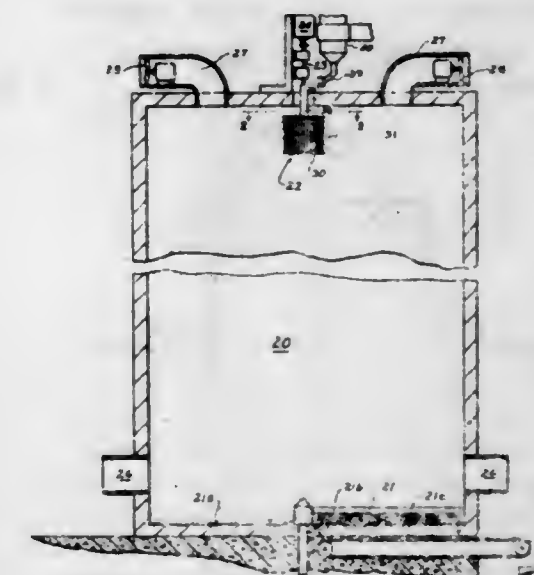
**3,461,488**  
**MOLD EJECTION ASSEMBLY TWO-PIECE CAP**  
Jack V. Croyle, Woonsocket, R.I., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware  
Filed Apr. 8, 1966, Ser. No. 541,202  
Int. Cl. B29f 1/00  
U.S. Cl. 18—2  
2 Claims



An injection mold for seriatim molding and assembling a dispensing closure. The mold has primary and secondary cavities and set of cores which is engaged with the component formed in the secondary cavity, and moves it into engagement with the component formed in the primary cavity.

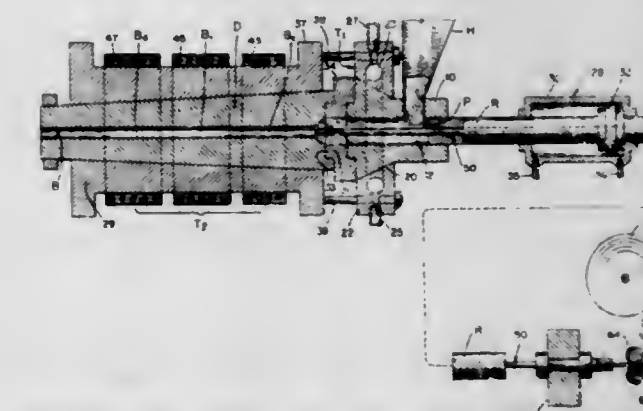
**3,461,489**  
**APPARATUS FOR PRILLING**  
Malcolm H. Tuttle, 56 Avon Road, New Rochelle, N.Y. 10804  
Filed Mar. 4, 1966, Ser. No. 531,658  
Int. Cl. B29c 23/00; B22d 23/08  
U.S. Cl. 18—2.6

7 Claims



Prills are formed from molten material by expelling hot melt through sets of orifices drilled through the outer wall of a rotating centrifugal distributor on spaced horizontal planes and along lines which are related to the tangent, at the point of discharge, to the circle described by the distributor as it rotates through angles which differ in magnitude progressively from the upper to the lower portions of the distributor so that jets of hot melt are discharged from the distributor along sets of lines respectively slanted toward the direction of rotation at the upper most plane of discharge and toward the other direction at the next lower plane of discharge, and at related speeds.

**3,461,490**  
**EXTRUDING MOLDING COMPOUNDS**  
Robert A. Cottingham, York, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania  
Filed Jan. 30, 1967, Ser. No. 612,475  
Int. Cl. B29f 3/04  
U.S. Cl. 18—13  
4 Claims



Apparatus for extruding thermoset material having a longitudinal element therein is provided. The tapered compression chamber for receiving partially polymerized thermosetting material includes a feed opening which is larger in dimensions than the discharge opening. A hollow mandrel prevents the partially polymerized material from contacting the longitudinal element. The thermosetting material polymerizes after it leaves the precompression chamber integrates with the longitudinal element which is drawn into the feed opening by the polymerized material.



3,461,491

**UNIFORMLY BLOW MOLDED CONTAINER NECK**

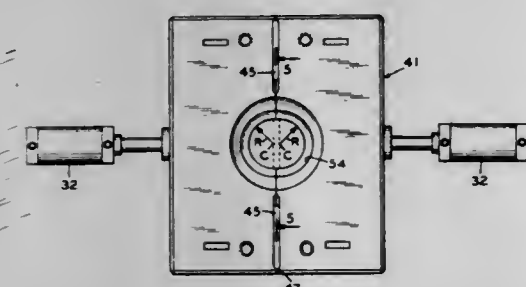
Frank G. Hohmann, Fort Lee, George D. Matthias, Belleville, Joseph R. Tino, Clifton, and Gerhard F. Wellmann, Mountain Lakes, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Jan. 12, 1967, Ser. No. 608,862

Int. Cl. B29c 3/00; C03b 9/26

U.S. Cl. 18—5

7 Claims



Mold cavity for making blow molded containers having substantially truly round interior neck finishes free of lumps and depressions. This is accomplished by making the neck portion 41 of the mold 33 out of round so as to compensate for uneven shrinkage; and providing a restriction 51 between the pinch-off portion of the mold 33 and the lay-flat cavity 45 so as to allow the plastic material to flow into the lay-flat cavity at a rate such as to avoid depressions or lumps on the internal surface of the neck of the container.

3,461,492

**SEGMENTED FIBER APPARATUS**

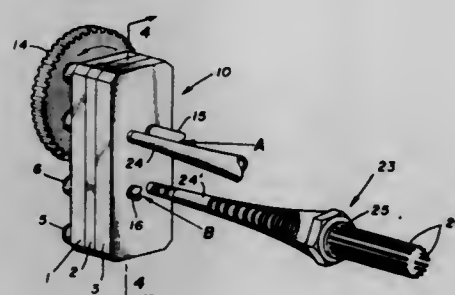
Paul D. Emerson, Raleigh, N.C., and Ernest P. Carter, Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Mar. 3, 1967, Ser. No. 620,389

Int. Cl. D01d 5/28; B29f 3/12

U.S. Cl. 18—8

4 Claims



A segmented fiber spinning apparatus characterized by a multi-gear meter pump which functions to receive two disparate spinnable mediums which are issued as at least two streams composed of alternate segments of such spinnable mediums, which streams are passed through a tapered conduit to thereby attenuate such segments to form transversely extending laminations of the desired thickness. The stream, as thus modified, is then passed through a conventional spinneret assembly, resulting in the extrusion of segmented filamentary articles which exhibit sharp lines of demarcation between adjacent segments. Segment length is readily controlled by variations in one or both gear tooth configuration and/or taper of the attenuating conduit.

**NOZZLE FOR PLASTIC MELTS**

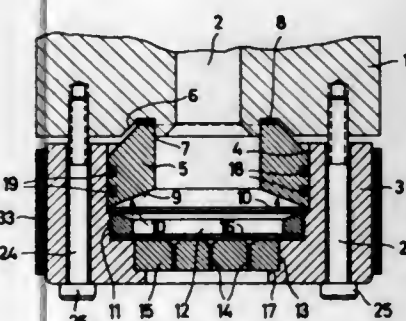
Karl Lassmann, Frankfurt am Main, Germany, assignor to Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen, Frankfurt am Main, Germany, a corporation of Germany

Filed Feb. 16, 1967, Ser. No. 616,694

Int. Cl. D01d 3/00

U.S. Cl. 18—3

5 Claims



A nozzle for plastic material having a feed member, a nozzle holder attached to the feed member, and a seal for the plastic material being extruded through the feed member and through the nozzle holder. A cylinder bore is provided in the nozzle holder and an axially slidable ring is positioned within the bore. A first face on the ring member provides a seal between the feed member and the nozzle holder. A second face on the ring member receives hydraulic pressure from the plastic material being extruded and applies pressure on the first face to provide the desired seal between the slidable member and the feed member.

3,461,494

**MANUFACTURE OF WELDING ELECTRODES**

Leopoldo Furlanetto, Albisola Mare, Savona, Italy, assignor to La Soudure Electrique Autogene Process Arcos, Brussels, Belgium, a corporation of Belgium

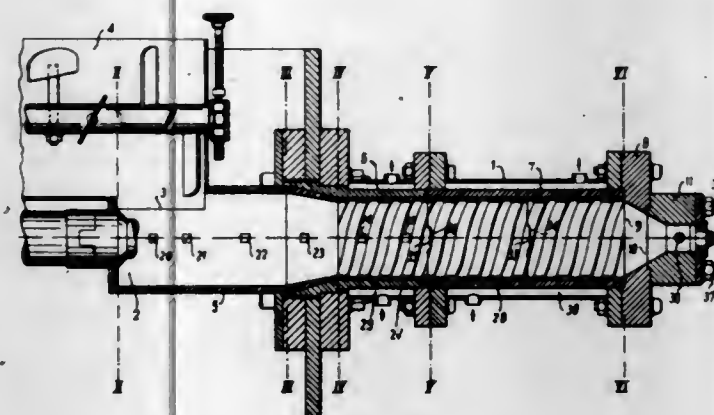
Filed Feb. 21, 1967, Ser. No. 617,706

Claims priority, application Italy, Mar. 3, 1966, 15,160/66

Int. Cl. B29f 3/01

U.S. Cl. 18—12

3 Claims



A screw press for making welding electrodes surrounded by a coating paste, having a cylindrical body and a screw with interrupted helical flights, there being opposed pins extending from the interior of the body into recesses at the interruptions, the outer diameter of the screw being substantially twice the diameter of the root, and successive interrupted helical flights being positioned so that when projected on a plane perpendicular to the axis of the screw, the adjacent ends of the successive flights overlap.

3,461,495

**PELLETIZING DIE PLATE**

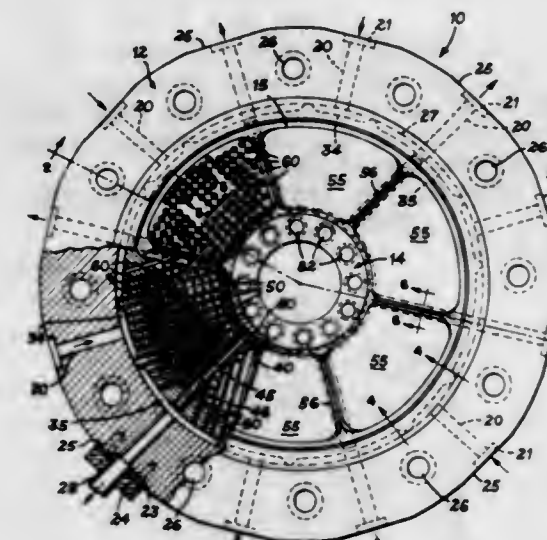
James L. Swickard, Toledo, and Hershel L. Curati, Fairfield, Ohio, assignors to The Black-Clawson Company, Hamilton, Ohio, a corporation of Ohio

Filed June 1, 1967, Ser. No. 642,880

Int. Cl. B29f 3/00

U.S. Cl. 18—12

11 Claims



A die plate for a plastic pelletizer having radially extending manifolds dividing the plate into arcuate segments for the purpose of applying heat to the die plate in which each segment is formed with parallel heated fluid passageways some of which intersect the manifolds on each side of the segment and some of which open into cavities providing for the return flow of heating fluid, in which extrusion orifices are arranged in parallel rows between the heating passageways to receive heat therefrom, and in which the die plate is formed with radial reinforcing ribs on the inlet side corresponding to the position of the radial manifolds.

3,461,496

**APPARATUS FOR EXTRUDING A SKIN COVERED, FOAMED THERMOPLASTIC**

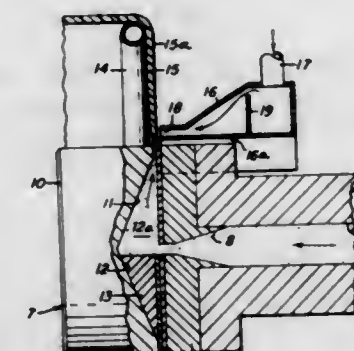
Thomas W. Winstead, Baltimore, Md. (Williamson Lane, Cockeysville, Md. 21030)

Filed Nov. 8, 1965, Ser. No. 506,805

Int. Cl. B29f 3/08; B29g 7/02

U.S. Cl. 18—12

11 Claims



Apparatus for extruding a sheet of foamed thermoplastic material having an expanded, cellular, inner structure and a thin, unexpanded, molecularly integrated skin of the same material covering at least one side thereof. The apparatus includes a die head having an elongated die orifice through which foamed thermoplastic is extruded, and immediately posterior to the die orifice, there is provided means for chilling one or both surfaces of the extrudate to prevent foaming thereof and form an integrated skin. The apparatus also includes means to prevent heat exchange between the chilling means and the die lips.

3,461,497

**EXTRUSION APPARATUS**

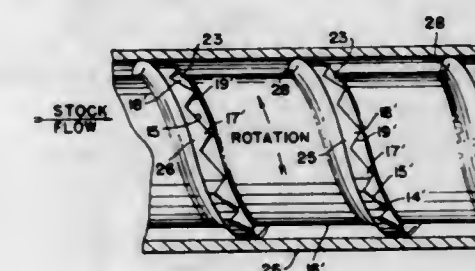
James Winston Geyer, 15660 Tacoma, Detroit, Mich. 48205

Filed Feb. 23, 1967, Ser. No. 617,872

Int. Cl. B29f 3/02

U.S. Cl. 18—12

12 Claims



Extrusion apparatus in which a screw rotating coaxially in a cylindrical barrel has a helical rib projecting transversely outwardly of the screw axis and coating with the barrel in treating and advancing material to be extruded axially along the barrel, the rib having a generally saw tooth-shaped surface configuration facing in the direction of advance of the material.

3,461,498

**PRESSURE INJECTION APPARATUS**

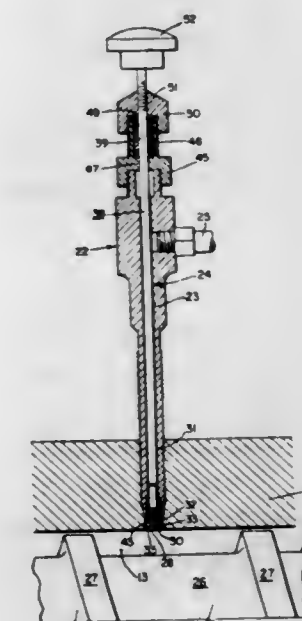
Lawrence T. Ramaika, Media, Pa., assignor to Scott Paper Company, Delaware County, Pa., a corporation of Pennsylvania

Filed Nov. 30, 1966, Ser. No. 597,912

Int. Cl. B29f 3/02, 3/04

U.S. Cl. 18—12

7 Claims



Pressure injection apparatus having a narrowed throat portion connecting a source of additive material under pressure to a pressure chamber the greatest dimension of the cross-section of which throat portion is between about 0.01 inch and about 0.02 inch whereby plugging of the apparatus is eliminated.

3,461,499

**APPARATUS FOR MAKING COAXIAL CABLE**

John J. Nevin, 469 Park Ave., Yonkers, N.Y. 10707, and Leo G. Dumire, 31 Hastings Lane, Stony Point, N.Y. 10980

Filed July 17, 1967, Ser. No. 653,947

Int. Cl. B29f 3/10

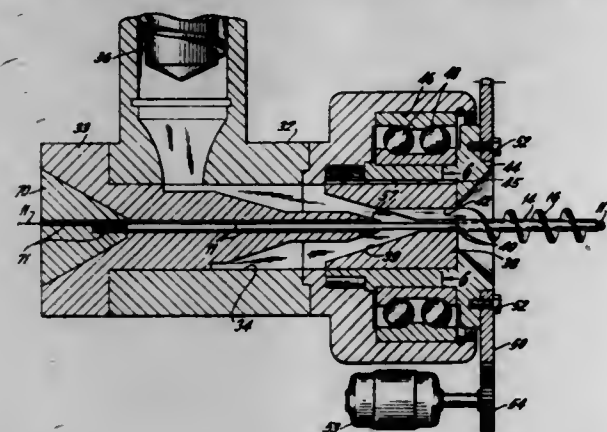
U.S. Cl. 18—13

6 Claims

An air dielectric coaxial cable includes a thin cylindrical center conductor supported by a concentric plastic insulating layer having a plastic helical web thereabout.



The cable is fabricated by forming a tubular center conductor of a thin metallic foil or tape, and employing a



rotary die to extrude the requisite insulating layer and web thereon.

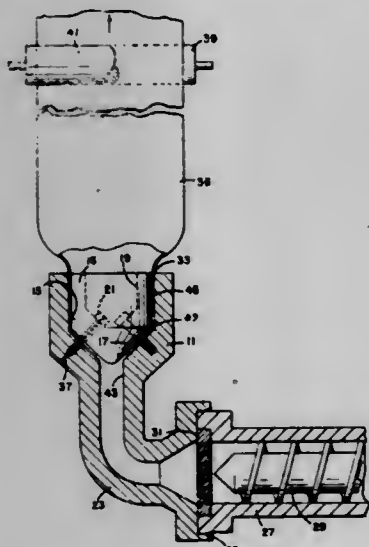
3,461,500

**EXTRUSION APPARATUS**

Harold A. Haley, Secane, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware  
Filed Mar. 2, 1967, Ser. No. 620,137  
Int. Cl. B29d 23/04

U.S. Cl. 18-14

2 Claims



Tubular-film extrusion apparatus having a mandrel supported within and in spaced relationship with a die body by pads covered with chemically inert, non-metallic, heat resistant plastic material.

3,461,501

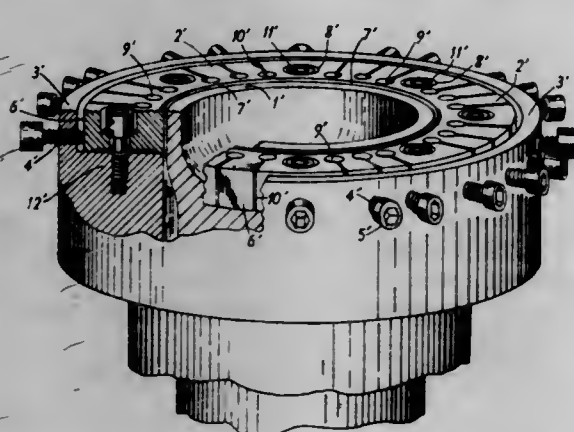
**BLOWN TUBULAR FILM DIES**

Donald F. Stewart, Florham Park, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Apr. 18, 1967, Ser. No. 631,816  
Int. Cl. B29d 23/04; B29f 3/00

U.S. Cl. 18-14

4 Claims



This application relates to a new type of die for extruding tubular film, the new feature of said die being

a flexible circular die ring which forms the outer surface of an annular extrusion orifice through which the tubular film is extruded. The die ring is perforated in such a manner as to allow the ring to flex inwardly when force is exerted upon its outer surface, thus allowing fine adjustment of the thickness of the tubular film being extruded around the entire periphery thereof.

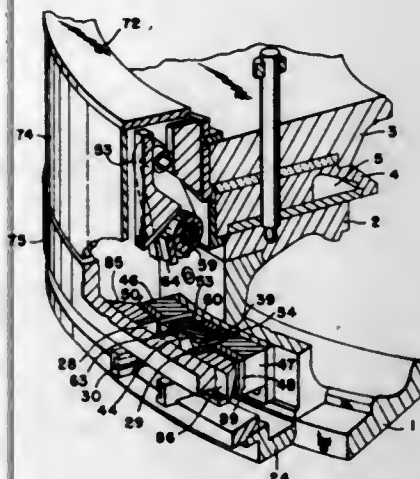
3,461,502

**TIRE CURING PRESS**

Leonard G. Turk and Armindo Cantarutti, Akron, and Stephen F. Breza, Cuyahoga Falls, Ohio, assignors, by mesne assignments, to AMK Subsidiary Corp., Akron, Ohio, a corporation of Ohio  
Filed Oct. 18, 1965, Ser. No. 496,930  
Int. Cl. B29h 5/02

U.S. Cl. 18-17

11 Claims



A tire curing press having upper and lower side wall mold sections and radially movable tread mold sections, said tread mold sections being moved by levers intermediately pivoted with the upper projecting ends of the levers engaging vertically movable cam slots, an annular axially movable ring which encloses the tread mold sections, such enclosing of the sections stressing the ring to create a centripetal force on the tread mold sections at least as great as the forces caused by internal curing pressures, and tire detecting means sensing the improper position of the tire as the press closes to initiate a tire straightening cycle.

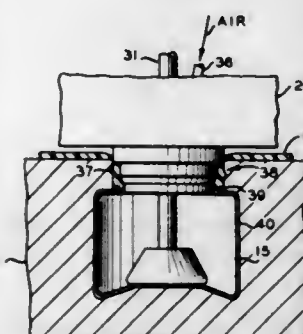
3,461,503

**MOLDING**

Calvin D. Dockery, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed Apr. 28, 1967, Ser. No. 634,721  
Int. Cl. B29c 17/00

U.S. Cl. 18-19

7 Claims



An apparatus for forming containers is provided having a mandrel for depressing heated thermoplastic sheet material into the upper neck portion of a mold to, for example, form external threads thereon. A raised shoulder is provided around the lower portion of the neck in

the mold cavity and cooperates with the inserted mandrel to thereby retard thermoplastic material flow from the formed neck as the body of the container is formed.

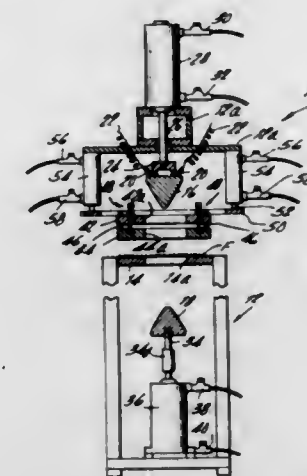
3,461,504

**FABRIC-FORMING APPARATUS**

Marvin Becker, 276 Newtown Turnpike, Wilton, Conn. 06897, and Harold Belmuth, 8 Highwood Lane, Westport, Conn. 06880  
Filed Nov. 30, 1967, Ser. No. 686,907  
Int. Cl. B29c 3/00, 17/50

U.S. Cl. 18-19

6 Claims



Apparatus for forming three-dimensional shapes in a fabric having a plastic content using two cooperating die members, one to shape the fabric and the other to support the shaped fabric during cooling to thereby minimize fabric distortion and shrinkage.

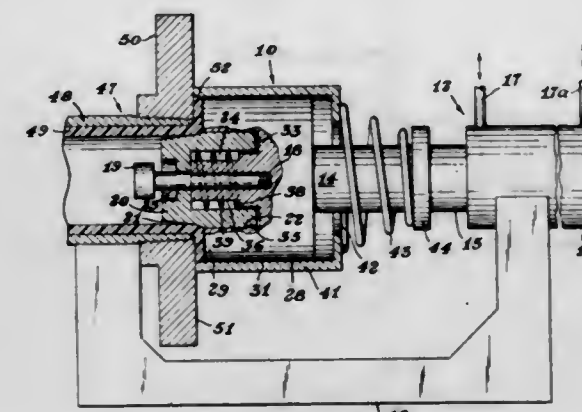
3,461,505

**APPARATUS FOR FLANGING OF THERMO-PLASTIC LINED PIPE**

Robert E. Schroeder, Essexville, Walter H. West, Bay City, and William F. Mick, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Original application Apr. 26, 1965, Ser. No. 450,622, now Patent No. 3,383,750, dated May 21, 1968. Divided and this application Jan. 2, 1968, Ser. No. 714,142  
Int. Cl. B29c 27/22

U.S. Cl. 18-19

4 Claims



Field flanging of thermoplastic lined pipe is accomplished using a tapered plug to support a heat softened liner during field flanging. The tapered plug is spring loaded and prevents formation of a ridge during molding of the flange.

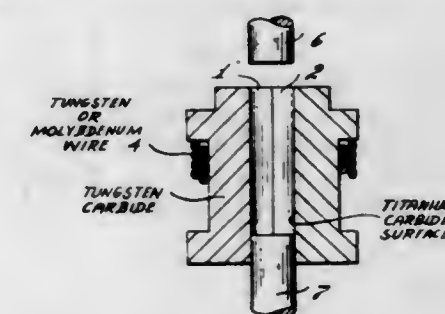
3,461,506

**DIE FOR HOT-PRESSING POWDERED METAL**

Richard E. Rice, Arlington, and George Warren Webb, Revere, Mass., assignors to Comstock & Wescott, Inc., Cambridge, Mass., a corporation of Massachusetts  
Filed Apr. 26, 1967, Ser. No. 633,779  
Int. Cl. B29c 1/02, 3/00; C04b 35/60

U.S. Cl. 18-47

5 Claims



A die having an inner surface which does not adhere to powdered metal when compressed under high pressure and temperature.

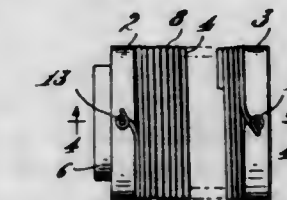
3,461,507

**DIE FOR HOT-PRESSING POWDERED METAL**

Richard E. Rice, Arlington, Mass., assignor to Comstock & Wescott, Inc., Cambridge, Mass., a corporation of Massachusetts  
Filed Apr. 26, 1967, Ser. No. 633,780  
Int. Cl. B29c 1/02, 1/16

U.S. Cl. 18-47

3 Claims



Apparatus for forming articles by hot-pressing powdered metal comprising a die made in a plurality of sections to facilitate finishing the interior surfaces before assembly, the sections being held together with substantially uniform tightness throughout the wide range of temperatures involved in hot-pressing.

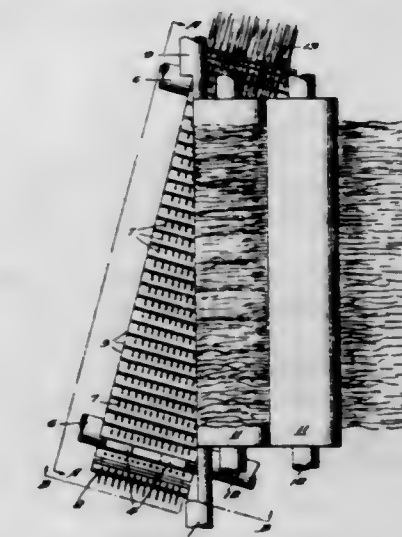
3,461,508

**ACUTE ANGLE TOW OPENER**

Paul Morrison Cole, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
Filed May 5, 1967, Ser. No. 636,460  
Int. Cl. D01d 5/00; B65h 51/00

U.S. Cl. 19-65

4 Claims



The apparatus spreads a continuous filamentary tow into a thin web and simultaneously deregisters the crimp to a



desired degree. A stationary bar is positioned above a slatted conveyor and at an acute angle to the direction of conveyor travel. The slats have backwardly inclined pins mounted in longitudinal rows which pass through mating grooves in the stationary bar. Pull rolls mounted parallel to the stationary bar forward the spread tow after it is forced under the stationary bar by the slatted conveyor.

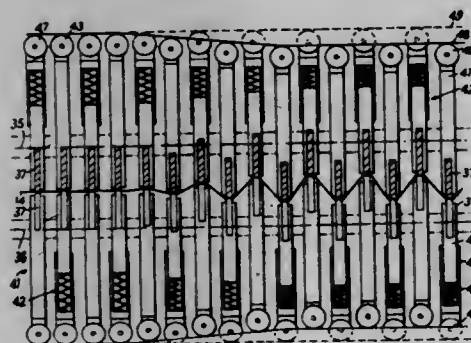
3,461,509

**TEXTILE PROCESS AND DEVICE**

Thomas Desmond Brown, Keighley, England, assignor to I.W.S. Nominee Company Limited, London, England  
Filed July 17, 1967, Ser. No. 653,838  
Claims priority, application Great Britain, July 22, 1966, 33,171/66  
Int. Cl. D01h 3/04

U.S. Cl. 19—66

13 Claims



Textile fibres are stretched by anchoring an assembly of such fibres, for example a sliver, to a carrier, across its width at a number of positions along its length, and while the assembly of fibres is being advanced by the carrier, stretching forces are applied between adjacent positions of anchorage, for example, by progressively moving the anchorage positions apart or by laterally displacing portions of the assembly of fibres between adjacent positions of anchorage. The process may be carried out in a device consisting essentially of a conveyor having gripping members spaced along its length and means for extending the length of the portions of the assembly of fibres held between adjacent gripping members, as the assembly of fibres is advanced by the conveyor. The length of such portions can be extended either by increasing the distance between adjacent gripping members as the conveyor moves or by bringing stretching members into engagement with the fibres between adjacent gripping members to displace and thereby stretch the fibres. The fibres can then be set in the stretched condition by appropriate techniques. The stretched and set fibres can be mixed with unstretched fibres in spinning, and the resulting yarn when relaxed, for example in hot water or aqueous solutions, then forms a bulked yarn.

3,461,510

**NONROTATABLE CABLE BUNDLING STRAP**

Harry J. Holmes, Basking Ridge, N.J., assignor to Thomas & Betts Corporation, Elizabeth, N.J., a corporation of New Jersey

Filed July 31, 1968, Ser. No. 749,000  
Int. Cl. B65d 63/00, 67/02

U.S. Cl. 24—16

9 Claims

The disclosure is directed to an article bundling strap capable of being mounted in a stacked fashion with provision to prevent rotation of one strap with respect to another. The bundling straps are provided with an additional tab wherein there is located an aperture for receipt of a fastening device for fastening one or more of the straps in stacked relationship, one atop the other, to a mounting surface. Mounted about the fastening device aperture are a plurality of radially spaced splines and keyways ar-

ranged to engage their opposite member in adjacent straps. Based upon the number of splines and keyways provided, a plurality of positions may be established between adjacent straps, for example, at positions of 90, 180 and 270



degrees with respect to one another. Splines and keyways may be fashioned in the material of the strap itself or may be fashioned in an insert placed within the additional tab, said insert also containing the aperture for receipt of the fastening device.

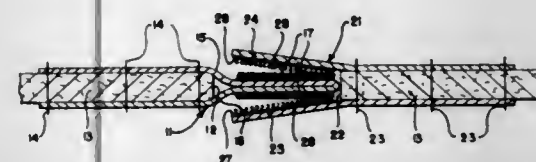
3,461,511

**FASTENING APPARATUS**

Joseph Perina, Cold Spring Harbor, N.Y., assignor to American Velcro, Inc., a corporation of New Hampshire  
Filed Jan. 12, 1968, Ser. No. 697,395  
Int. Cl. F16g 3/00, 17/04

U.S. Cl. 24—31

4 Claims



Fastening apparatus for releasably joining ends of belts including a first member secured to an end of one belt having a plurality of hooking elements on its outwardly facing surfaces and a second member secured to an end of another belt, the second member including two spaced apart portions having a plurality of complementary hooking elements on their inwardly facing surfaces, the first member being receivable between the portions of the second member and hooking elements of the first member being engageable with complementary hooking elements of the second member when the respective members are forced together in face-to-face relationship.

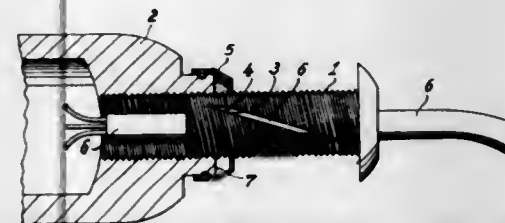
3,461,512

**LOCKING DEVICE**

Paul I. Hirsch, Heuberggasse 9, Vienna 1170, Austria  
Filed Apr. 4, 1967, Ser. No. 628,326  
Int. Cl. H01r 13/58

U.S. Cl. 24—126

4 Claims



A device for locking an element into position with a hollow threaded member through which the element is passed and which has two parallel slots making an acute

angle with the axis of the hollow member, a locking pin movable in the slots against the element to hold it in position and a nut means movable along the threaded member to force the locking pin to move in the slots and locks the element into position. Also disclosed are detent means associated with the nut by which the locking pin is retained in position after the nut is removed.

3,461,513

**SEPARABLE FASTENING DEVICE**

Laurent H. Girard, Bedford, N.H., Clive E. Hockmeyer, Lowell, Mass., and Marcel C. Ouellette, Manchester, N.H., assignors to American Velcro, Inc., a corporation of New Hampshire  
Filed Feb. 20, 1967, Ser. No. 617,265  
Int. Cl. A44b 17/00

U.S. Cl. 24—204

9 Claims



A separable fastening device having a very large number of closely spaced hooking elements of the hook and loop type such that pressing opposed surfaces of two fastening members together in face-to-face relation will engage a large number of hooks and loops; the hooking elements are formed of metal and in preferred forms are operable at temperatures from cryogenic temperatures to above 1000° F.

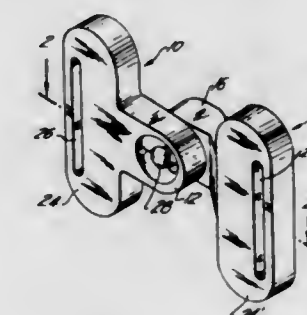
3,461,514

**SNAP MEMBER**

Enid Morris, 24 W. 57th St., New York, N.Y. 10019  
Filed Apr. 19, 1967, Ser. No. 631,941  
Int. Cl. A44b 17/00, 19/00

U.S. Cl. 24—204

8 Claims



Snap member is formed of one portion having at least one female element of resilient material formed with a hole of given diameter and depth therein, and another portion having at least one male element provided with a pinlike extension comprising a shank portion of substantially the same diameter and length as the corresponding diameter and depth of the hole formed in the female element and an enlarged head portion located at the free end of the shank portion. The pinlike extension is insertable through the hole of the female element so that the shank portion thereof lies within the hole and the enlarged head portion thereof extends out of the hole. At least the portion having the female element is formed of plastic material which can have the same color as that of a web to which the portion is attachable. One of the portions can be located on a zipper slide and the other portion at the terminus of the zipper whereat the slide is located in the closed condition of the zipper.

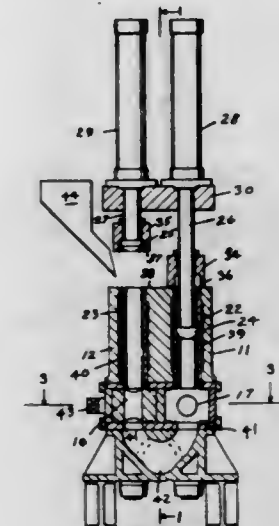
3,461,515

**CONTINUOUS EXTRUSION MACHINE**

Heinz Cornberg, Erie, Pa., assignor to Erie Foundry Company, Erie, Pa., a corporation of Pennsylvania  
Filed Oct. 10, 1966, Ser. No. 585,639  
Int. Cl. B28b 3/24

U.S. Cl. 25—15

2 Claims



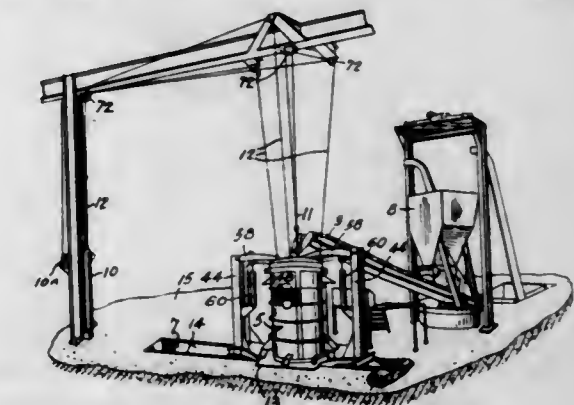
This invention relates to an extrusion machine made up of two cylinders with a piston in each cylinder. The pistons can be completely retracted from the cylinders so that plastic material can be fed selectively into either cylinder. The cylinders are connected through a plug valve to an extrusion die. The plug valve has two ports; one port can connect or disconnect one of the cylinders from the passage to the extrusion die, the other port can connect or disconnect the other cylinder from the passage to the extrusion die. The ports in the plug valve are arranged ninety degrees from each other so that one port is closed when the other is open. The ports are both partly open simultaneously so that the plastic material is never completely shut off or completely connected from both cylinders at the same time. A synchronizing mechanism is provided connecting the plug valve to the actuating mechanism for the cylinders so that the proper port in the plug valve is always connected to the cylinder feeding material at a particular time.

3,461,516

**APPARATUS FOR MOULDING CONCRETE PIPES**  
Eugene Boucher, Joliette, Quebec, Canada, assignor to S. Vessot Company Limited, Joliette, Quebec, Canada  
Filed Oct. 5, 1966, Ser. No. 584,574  
Claims priority, application Canada, July 22, 1966, 966,171

Int. Cl. B28b 1/10, 1/30; B22c 9/24  
U.S. Cl. 25—30

9 Claims



Apparatus for making vibrated concrete pipe including an internal core and a vibrated outer casing, the internal core being set on a base plate and a socket forming



pallet closes the lower end of the annular cavity between the core and outer casing. The base plate together with the core, and the socket forming pallet are separately rotated with a circular reciprocating motion in opposite directions from each other. The upper end of the annular cavity between the core and outer casing is closed by a spigot forming ring and is caused to rotate with a circular reciprocating motion while being pressed downwards, simultaneously with vibration of the outer casing.

3,461,517

**CASKET GASKET**

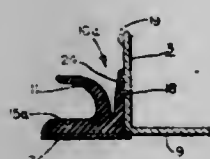
Eli S. Eisenhard, Boyertown, Pa., assignor to Boyertown Burial Casket Company, Boyertown, Pa., a corporation of Pennsylvania

Filed Dec. 27, 1966, Ser. No. 604,846

Int. Cl. A61g 17/02; E06b 7/16

U.S. Cl. 27-17

1 Claim



A gasket for effecting a seal between the lid and base portion of a casket is in the shape of a single arc in transverse section arising from an extended base. This basic shape is modified for use in cut-lid caskets by the addition of an upwardly extending flange portion along one edge of the base facing the convex portion of the arc.

3,461,518

**APPARATUS FOR GUIDING A PLURALITY OF THREADS ONTO A THREAD PACKAGE**

Willem Stelwagen and Jan J. J. Hoekstra, Arnhem, Netherlands, assignors to American Enka Corporation, Enka, N.C., a corporation of Delaware

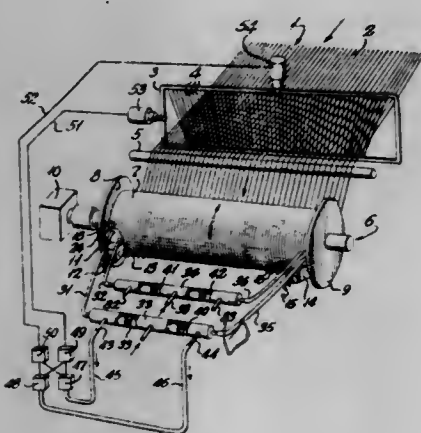
Filed May 8, 1967, Ser. No. 636,768

Claims priority, application Netherlands, May 12, 1966, 6606476

Int. Cl. D02h 5/00

U.S. Cl. 28-32

18 Claims



An apparatus for guiding a sheet of parallelized threads that are simultaneously wound to a thread package which comprises guide means through which the threads of the sheet are passed, driving means for imparting at least one corrective movement to the guide means so that at least part of the sheet of threads makes a movement in its plane transverse to the direction of travel of the threads, and detecting means for supplying a control signal to the

driving means which is representative of the selvage build of the package and which causes the driving means to move the guide means whereby a deviating selvage build is selectively corrected.

3,461,519

**APPARATUS FOR HEAT-TREATING TEXTILES**

Josef Raschle, Butschwil, Switzerland, assignor to Heberlein Patent Corporation, New York, N.Y., a corporation of New York

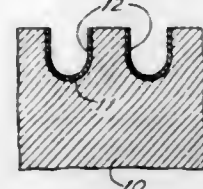
Filed Jan. 5, 1967, Ser. No. 607,434

Claims priority, application Switzerland, June 6, 1966, 81,119/66

Int. Cl. D02j 13/00

U.S. Cl. 28-62

11 Claims



This invention relates to apparatus for use in the heat treatment of textiles, typically to form textured textile materials, and to the process for using the same. The apparatus comprises a heat-transfer member having a relatively thin coating of a heat-resistant polymeric material having a low surface energy. Fillers may be incorporated into the polymeric coating. The apparatus may have a grooved surface, adapted to receive textile yarns.

3,461,520

**SLUB CATCHER**

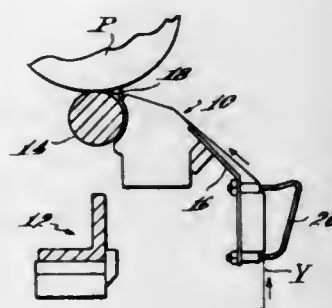
Samuel L. Abbott, Wilton, N.H., assignor to Abbott Machine Co., Inc., Wilton, N.H., a corporation of New Hampshire

Filed Nov. 13, 1967, Ser. No. 686,371

Int. Cl. D01h 11/00

U.S. Cl. 28-64

12 Claims



A slub catcher having a passage through which yarn is drawn as it is wound onto a package, the passage being of the kind designed to trap long slubs and to permit short slubs to pass through.

3,461,521

**PROCESS FOR MANUFACTURE OF YARNS**

Brewster B. Eskridge, Asheville, Francis J. Fisher, Candler, and Jackson A. Moore and Dewaine A. Rhash, Asheville, N.C., assignors to American Enka Corporation, Enka, N.C., a corporation of North Carolina

Filed Nov. 24, 1967, Ser. No. 685,395

Int. Cl. D04h 3/00

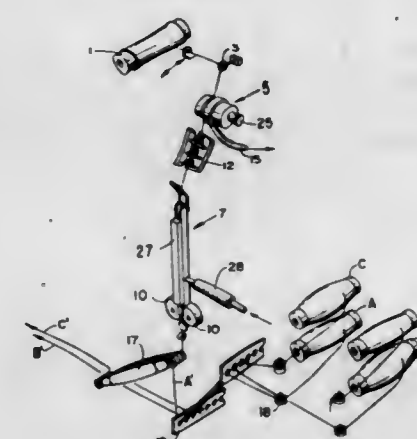
U.S. Cl. 28-72.11

6 Claims

A textured yarn or strand having exceptional properties can be obtained by deforming thermoplastic filaments,

heat setting the filaments while deformed, and thereafter annealing the deformed and heat set filaments with moist

elongated metallic member, moving the insulation-coated metallic member and a hollow metallic tube, having an inner diameter greater than the outer diameter of the insulation-coated member, axially relative to one another so as to locate the metallic tube around the insulation-coated member, heating the metallic tube in zones pro-



heat while under sufficient tension to prevent significant contraction and to remove internal stress imparted by the deforming operation.

3,461,522

**METHOD OF MANUFACTURING ELECTROLUMINESCENT DISPLAY DEVICES**

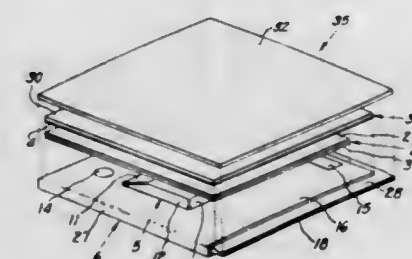
Vincent Vodicka, South Euclid, Ohio, assignor to General Electric Company, a corporation of New York

Original application Jan. 18, 1966, Ser. No. 565,833, now Patent No. 3,384,770, dated May 21, 1968. Divided and this application Oct. 30, 1967, Ser. No. 678,889

Int. Cl. H01j 9/00

U.S. Cl. 29-25.11

9 Claims



A method of making an electroluminescent display device comprises the steps of applying segmented electrode and terminal contact area patterns on one face of an apertured organic plastic insulator sheet and respectively located on opposite sides of a transverse fold line thereof and circuit lead area patterns on the other face of the insulator sheet each electrically connected through apertures in the insulator sheet with respective ones of the segmented electrode and terminal contact area patterns, folding over the insulator sheet upon itself along its fold line with its electrode and terminal contact area patterns facing outwardly, and then assembling the folded insulator sheet together with a phosphor layer over its segmented electrode face and a light-transmitting front electrode layer over the phosphor layer.

3,461,523

**METHOD OF PRODUCING A MULTI-LAMINATED TUBE**

Martin Peehs and Heinz Stehle, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed Nov. 4, 1966, Ser. No. 592,193

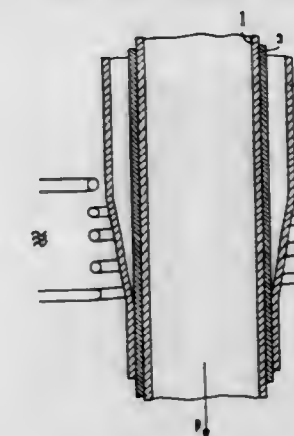
Claims priority, application Germany, Nov. 6, 1965, S 100,398

Int. Cl. H01j 9/18; B23p 3/00

U.S. Cl. 29-25.13

8 Claims

1. Method of producing a multilaminated tube having at least one electrically insulating lamination, which comprises spraying a layer of insulating material on an



gressively along the length thereof to a temperature at which the material of the metallic tube is in plastic state, and simultaneously applying tensile stress to the metallic tube in the longitudinal direction thereof so as to deform the plastic material in the heated zones whereby the metallic tube is shrink-fitted onto the insulation-coated metallic member.

3,461,524

**METHOD FOR MAKING CLOSELY SPACED CONDUCTIVE LAYERS**

Martin P. Lepselter, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Nov. 2, 1966, Ser. No. 591,641

Int. Cl. H01g 13/00

U.S. Cl. 29-25.42

8 Claims



Method for making a pair of closely spaced conductors comprising the steps of depositing successive layers of conductor, filler material, and conductor on a substrate; selectively etching away the filler material and eliminating any exposed pinhole shorts. The method is particularly useful in the fabrication of thin film capacitors and crossovers because of the relative ease with which pinhole shorts can be eliminated.

3,461,525

**SELF-INDEXING TURRET**

Eugene F. Gourley, Meadville, Pa., assignor to McCroskey Tool Corporation, Meadville, Pa., a corporation of Pennsylvania

Filed Jan. 8, 1968, Ser. No. 696,414

Int. Cl. B23b 29/24; B23q 17/00

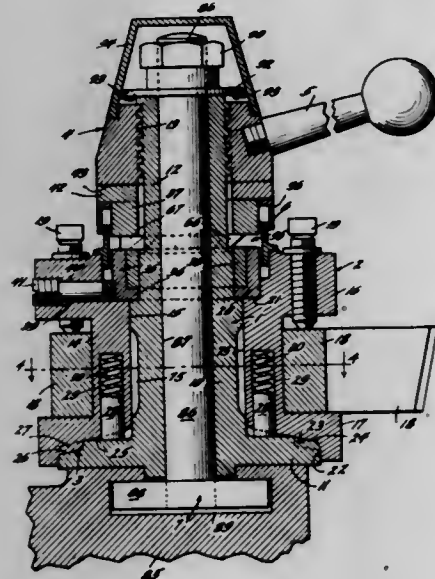
U.S. Cl. 29-35.5

18 Claims

A rugged clutch-controlled adjustable mounting of multiple tool holders of the indexable turret type on a machine tool component in a manner to make possible the ready movement of a selected one of a plurality of cutting tools carried thereby for operation on a workpiece. This rapid and easy movement of tool-carrying turret is executed by a simple to-and-fro movement of the turret-manipulating handle, which in one direction of movement, first releases



the turret from its locked position on its mounting column to permit the following movement of the handle to shift the turret to any one of multiple indexed increments. The return movement of the handle serves to lock the turret in its indexed position without disturbing the setting of the latter. More particularly, a clutch assembly, composed of three members, is disposed between the handle and the turret body, and these members are so arranged that a rotation of the handle in one direction,



with a possible "throw" of approximately 120°, releases the turret body for rotary movement after approximately 20° and permits indexing thereafter at three points, spaced for example, 30°, 60° and 90° from the previous position. A reverse rotation of the handle locks the turret in its newly indexed position and sets the clutch parts for a repeated cycle of operation. The mountings of the clutch components are so designed as to permit small radial adjustments which compensate for wear of the parts and assure correct positioning of the handle lever at all times.

3,461,526

**AUTOMATIC GEAR BURNISHING FIXTURE**

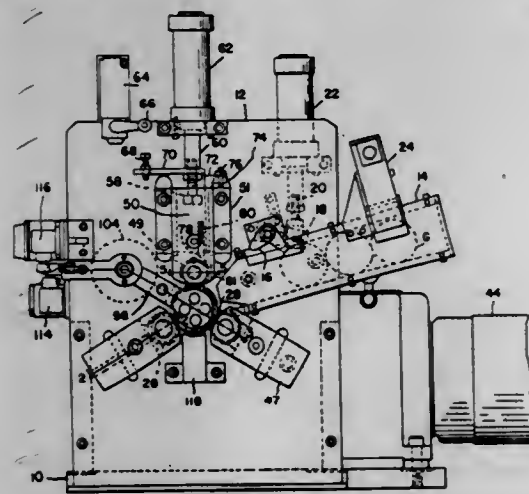
Carl H. Motz, Harper Woods, and Russel W. Anthony, Detroit, Mich., assignors, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware

Continuation-in-part of application Ser. No. 513,300, Dec. 13, 1965, which in turn is a continuation-in-part of application Ser. No. 335,971, Jan. 6, 1964. This application June 27, 1967, Ser. No. 649,331

Int. Cl. B24b 39/00

U.S. Cl. 29—90

16 Claims



A gear burnishing fixture comprising three burnishing gears one of which is movable toward and away from the other two to provide for advance of a work gear into the burnishing zone, the movable gear being mounted on a carrier and preferably associated with brake means effective

to oppose rotation of the movable gear except when it is fully meshed with a work gear.

3,461,527

**ROLLS FOR ROLLING MILLS**

Per Olof Strandell, Bockstigen 3, Nasby Park, Sweden

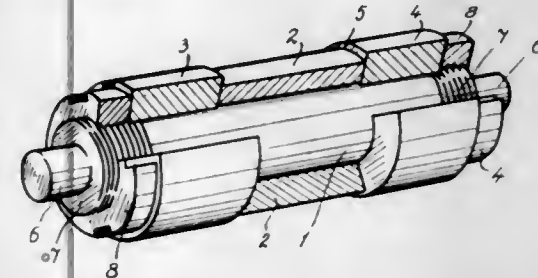
Filed Feb. 6, 1967, Ser. No. 614,227

Claims priority, application Sweden, Feb. 9, 1966, 1,659/66

Int. Cl. B21b 27/00, 31/08

U.S. Cl. 29—123

1 Claim



An arrangement in working rolls for rolling mills of the type which present a roll core and a roll ring capable of being attached to the core, the roll ring being made of some hard material, such as hard metal or ceramic material. The roll ring according to the arrangement is mounted with a clearance fit on the roll core and is secured to the same by pressure means which act axially against the flat end surfaces only of the roll ring, the pressure means imparting to the roll ring the force necessary for fixing and pre-stressing the said ring so that it is capable of withstanding the rolling forces.

3,461,528

**METHOD OF PRODUCING A ROTARY JOINT BETWEEN AT LEAST TWO MEMBERS HAVING A ROTATIONALLY SYMMETRICAL CONSTRUCTION AT THE JOINT**

Artur Diederichs and Wolfgang Pieper, Würzburg, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany

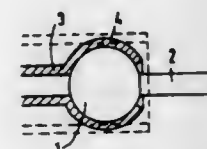
Filed Sept. 14, 1966, Ser. No. 579,346

Claims priority, application Germany, Sept. 14, 1965, S 99,399

Int. Cl. F16n 15/00

U.S. Cl. 29—149.5

11 Claims



Method of producing a lubricated rotary joint between two members having rotationally symmetrical construction at the joint location includes coating one of the members with a layer of lubricating material having a thickness corresponding to the spacing between the two members and deforming one of the members about the other by means of a high-intensity forming operation so as to secure the members to one another with the layer of lubricating material retained therebetween.

3,461,529

**METHOD OF MAKING A BEARING**

Horace B. Van Dorn, Kensington, Conn., assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Delaware

Filed Oct. 14, 1966, Ser. No. 586,883

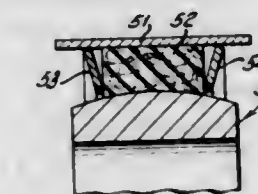
Int. Cl. B21d 53/10

U.S. Cl. 29—149.5

5 Claims

The invention contemplates an improved method for making a bearing in which a molded mass of bearing

material, which may include plastic, is the load-carrying element of one bearing member at the bearing interface. The load capacity of this element is enhanced by a particular configuration of walled metallic structure which



inherently confines, reinforces and protects the molded element, while at the same time continuously subjecting the molded element to compressional stress. The claimed method inherently develops the desired residual compressional stress.

3,461,530

**METHOD OF MANUFACTURE OF TANKS FOR FLUIDS UNDER PRESSURE**

Jean Georges Cadion, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France

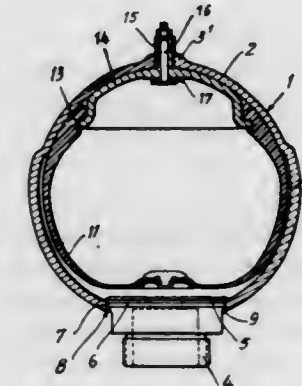
Filed Jan. 4, 1967, Ser. No. 607,191

Claims priority, application France, Jan. 13, 1966, 45,814; July 4, 1966, 68,060

Int. Cl. B21d 53/00; B21k 29/00

U.S. Cl. 29—157

5 Claims



A tank and method of manufacturing for fluid under pressure of the accumulator type with an internal deformable partition to form a gas filled chamber and a fluid pressure chamber. A disc of sheet metal is deformed in the cold in two stages comprising a first stage of stamping said disc to form a blank with a cylindrical portion and a domed bottom having a small orifice at one extremity in which the partition is secured and open at the other extremity. A second stage constricts the cylindrical portion of the blank to a spherical shape until an axial orifice of minimum diameter is obtained. An end closure member is secured in said axial orifice by said constricting of the cylindrical portion.

3,461,531

**METHOD OF MAKING A TUBULAR PRODUCT**

William J. De Gain, 4228 Phillip, Detroit, Mich. 48215

Continuation-in-part of application Ser. No. 565,223, July 14, 1966. This application Mar. 9, 1967, Ser. No. 621,948

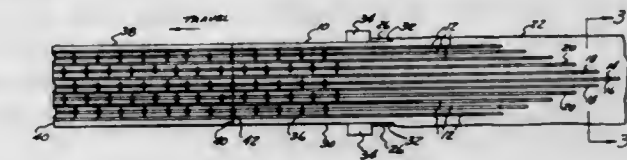
Int. Cl. B23k 31/02; F16d 9/06

U.S. Cl. 29—163.5

21 Claims

A method for making a tubular product having axially spaced annular ridges from a sheet of flat stock. The method comprises progressively advancing a sheet of flat stock between a series of coining stations. Each coining station squeezes an elongated indentation in the stock

extending in the direction of the stock advance. The indentations are connected by successive stations so that a series of continuous parallel grooves are formed. The center groove is formed in each transverse section of stock by the initial die and the remaining grooves formed in pairs in successive steps in laterally outward progression from the center groove section. Each fully grooved transverse section of stock advances to a trimming station



where the opposite edges are reduced to an even width. The grooved stock is then perforated with a pattern chosen to accommodate the finished product and cut to a predetermined length. The leading trailing edges of the grooved blanks are joined together to form a tubular blank with the grooves forming annular rings about the axis of the tube. An expanding mandrel then radially enlarges alternate grooves to form a series of annular ridges.

3,461,532

**WIRE BEADER**

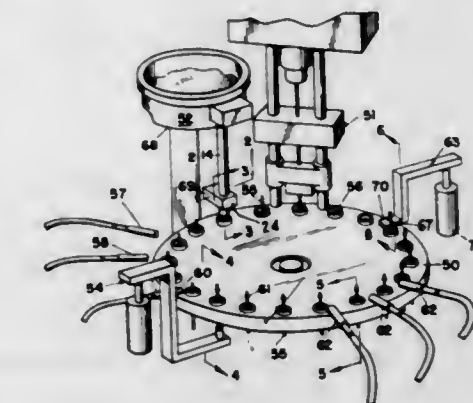
Robert A. Lybarger, Saegertown, Pa., assignor to Glass-Tite Industries, Inc., Providence, R.I., a corporation of Rhode Island

Filed May 24, 1965, Ser. No. 458,031

Int. Cl. B23p 19/04; B23q 17/10

U.S. Cl. 29—203

9 Claims



The invention disclosed herein is a bead loader wherein beads are fed from a feeder to a platform. The bead is moved over the platform to a position where the opening of the bead is over a slot which is aligned with the opening. The wire is pushed through the slot, up through the bead and the wire with the bead on it is then moved away from the platform. The bead may be sealed to the wire in any suitable manner.

3,461,533

**CONTACT TERMINAL EXTRACTION TOOL**

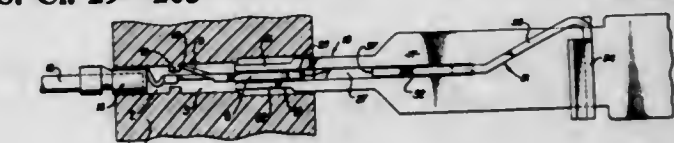
John W. Anhalt, La Crescenta, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed Mar. 31, 1967, Ser. No. 627,461

Int. Cl. B25b 27/00

U.S. Cl. 29—203

9 Claims

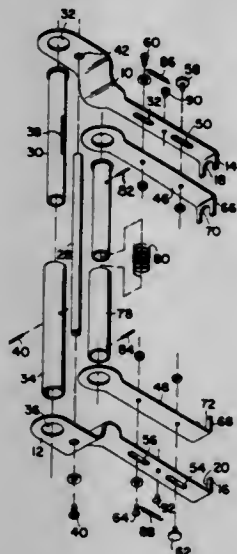


Microelectronic connectors utilizing contact terminals locked within a body of insulating material are used extensively in the electronics and related industries. The



contact terminals are small and fragile and subject to destruction by mishandling and other causes. To insure proper connection between mating contacts it is the practice to lock the connectors within the connector body. A defective contact terminal must be removed from the connector body however, and because of its small size and locked relationship to the connector body this poses a problem. The extraction tool forming the subject matter of this invention is designed for insertion into the bore occupied by the contact terminal to release the locking mechanism that releasably locks the contact terminal within the bore. The tool additionally incorporates means for imposing a propelling force on the contact terminal once it has been released for extraction.

**3,461,534**  
**DISCONNECT TOOLS**  
Bertram Greenspan, 112 Della Lane,  
Philadelphia, Pa. 19115  
Filed Apr. 24, 1967, Ser. No. 637,313  
Int. Cl. H01r 7/00; B25b 27/14  
U.S. Cl. 29—206



An apparatus for separating mating electrical connectors having spaced pairs of telescoping ears engageable within the connector construction, a slide handle operable to apply linear separating forces to the sliding ears and a push bar capable of varying the spacing between the ears to accommodate connectors in a wide range of sizes.

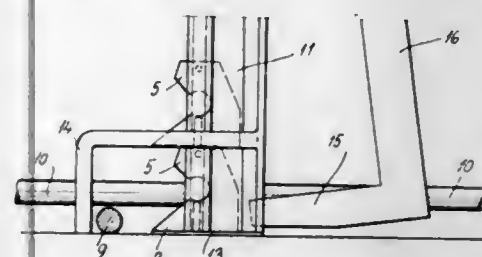
**3,461,535**  
**ROTARY TYPE SWAB ASSEMBLING MACHINE**  
Carl F. Avery, Jr., Ernest A. Pearson, and Lloyd V. Winters, Rockford, Ill., assignors, by mesne assignments, to Medical Supply Company, Rockford, Ill., a corporation of Missouri  
Filed Dec. 7, 1966, Ser. No. 599,841  
Int. Cl. B23p 19/00  
U.S. Cl. 29—208



This machine has a round table which is indexed from station to station, receiving at one station a closed end tube, open end up, for a medicament applicator, into which is fed at the next station a frangible ampule or vial of liquid medicament, and at a following station a cylindrical swab is inserted. A droplet of liquid solvent is added at the next station which, before its evaporation, helps cement the swab in place by rendering tacky a coat-

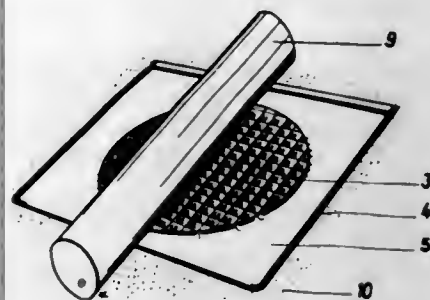
ing on the inside of the tube at the open end. A tubular cover is applied at the next station, after which the completed article is discharged at a last station. All assembling operations take place simultaneously on different tubes at the various stations around the table. Thus, while one tube is being fed onto the table at the first station, an ampule is fed into a second tube at the second station, and a swab is being fed into a third tube over an ampule at a third station, while a swab in a fourth tube is being wetted by solvent at fourth station for cementing of the swab to the tube lining, and still another tube is receiving a cap fed thereto at a fifth station, while a sixth completely assembled applicator is being ejected at the sixth station. An actuator reciprocates vertically relative to the center of and in timed relation to the indexing of the table and has radially extending arms spaced circumferentially and vertically to operate the feed means for the respective stations.

**3,461,536**  
**TOOL FOR JOINING REINFORCING BARS**  
Mats Folke Skold, Nacka, Sweden (% H. Skolds Patentbyrå AB, Folkstorgsgatan 22, Stockholm, Sweden)  
Filed Sept. 15, 1966, Ser. No. 579,551  
Claims priority, application Sweden, Sept. 16, 1965, 12,065/65  
Int. Cl. B23p 11/02, 19/04  
U.S. Cl. 29—212



A retaining member for elevating concrete reinforcing bars above the surface of a concrete mould form and which bars extend at substantially right angles across one another, the elevation of the two bars at the point of crossing causing the bars to be forced into recesses in the said member and thereby gripped and retained in their elevated and crossed relationship by said member, and a tool for positioning said member.

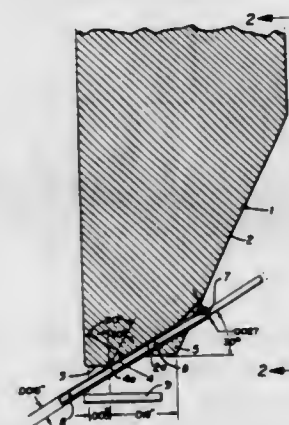
**3,461,537**  
**SEPARATION OF INDIVIDUAL WAFERS OF A SEMICONDUCTOR DISC**  
Johannes Lotz, Heilbronn, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany  
Filed Nov. 22, 1966, Ser. No. 596,117  
Claims priority, application Germany, Nov. 23, 1965, T 29,823  
Int. Cl. B23p 17/00; B65b 31/00, 63/00  
U.S. Cl. 29—413



There is disclosed herein a method for separating a semiconductor disc into individual wafers by scoring

the disc and breaking it along the scoring lines while maintaining the wafers in their respective relative positions adjacent to each other.

**3,461,538**  
**PROCESS FOR MANUFACTURING WELDING DEVICES FOR SEMI-CONDUCTORS**  
Leslie E. Worcester, Sunnyvale, and Lewis P. Webster, Mountain View, Calif., assignors to Diatron Pacific, a corporation of California  
Filed Feb. 27, 1967, Ser. No. 623,499  
Int. Cl. B23k 31/02, 35/12, 29/00  
U.S. Cl. 29—423



Our invention relates to a process for the manufacture of welding devices as used in the micro-electronic industry, sometimes referred to as "molecular electronics." It covers devices used with machines for welding very fine wire conductors or leads made of such material as gold, silver or palladium onto the body of semi-conductors such as silicon or germanium by ultra-sonic or similar methods as widely applied in this industry.

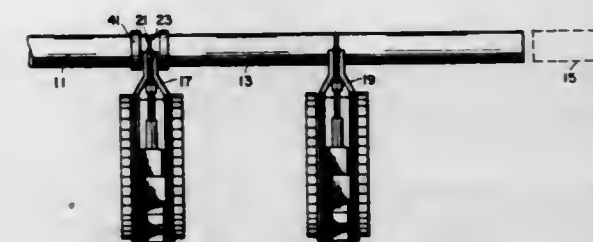
These devices are used to feed and hold in position the very fine wire involved while it is being welded to the semi-conductor by the ultra-sonic or other method, and require great precision of manufacture in addition to the very small dimensions involved. Specifically, the invention discloses a process for providing a hole of very small diameter and substantial length through a very hard material such as tungsten carbide, efficiently and economically, but with great precision.

**3,461,539**  
**METHOD OF CONNECTING A FIBERGLASS ROD-LIKE MEMBER TO A METALLIC TERMINAL**  
Charles E. Napple, Rockville, Md., assignor to the United States of America as represented by the Secretary of the Navy  
Filed Sept. 26, 1966, Ser. No. 582,476  
Int. Cl. H02g 15/22; B23p 19/00  
U.S. Cl. 29—461



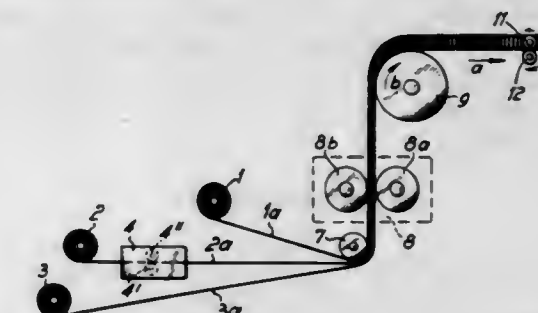
A method of connecting a fiberglass rod type structural member and a metallic end terminal having a longitudinal bore therethrough by inserting one end of the rod through the bore, fraying the end of the rod, coating both the bore interior and the frayed end of the rod with a bonding agent, and positioning the frayed end of the rod within the terminal bore.

**3,461,540**  
**SYSTEM FOR WELDING PIPELINES**  
Perry J. Rieppel, Worthington, and Jerome W. Nelson, Upper Arlington, Ohio, assignors to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware  
Filed May 23, 1966, Ser. No. 552,318  
Int. Cl. B23k 35/02; B23p 11/00  
U.S. Cl. 29—493



1. A system for building pipelines which comprises supporting a first pipe section at an end where a further section is to be added by forming a joint, bringing the further section into close end-to-end proximity and in general axial alignment with the first section, establishing initially a narrow gap of highly uniform width between the adjacent pipe ends throughout their full periphery, maintaining the uniform gap by means of feelers inserted in said gap and an automatic corrective mechanism responsive to said feelers inserted in said gap, supporting the pipes by applying external support forces, and automatically controlling said forces to keep the gap dimensions substantially uniform throughout the joint periphery during welding, removing said feelers from said gap, and thereafter forming a girth weld around the gap in a single pass.

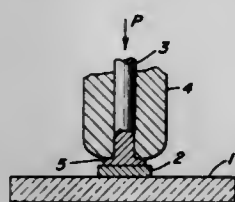
**3,461,541**  
**PROCESS AND APPARATUS FOR MAKING A CONTINUOUS LAMINATED STRUCTURE HAVING A CORRUGATED LAYER**  
Jean Melzer, 36 Vogler Strasse, Weinheim an der Bergstrasse, Germany  
Filed Sept. 27, 1965, Ser. No. 490,471  
Claims priority, application Germany, Sept. 26, 1964, M 62,578  
Int. Cl. B21d 39/00; B23p 19/04  
U.S. Cl. 29—455



A honeycomb sandwich plate is made by superimposing three continuous metal sheets, the middle sheet carrying a herringbone pattern of transversely spaced longitudinal rows of slots. The slots are parallel to each other in each row and obliquely inclined relative to the direction of sheet elongation, the direction of inclination alternating in successive rows. The perforate strips of the middle sheet between the slots are alternately welded to the top and bottom sheets respectively, and the welded laminate is moved arcuately over an idler roller by tension applied to the bottom sheet, whereby the middle sheet is expanded. The top sheet may be omitted.



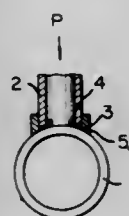
**3,461,542**  
**BONDING LEADS TO QUARTZ CRYSTALS**  
 David Schoenthaler, Whitfield, Reading, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York  
 Filed Jan. 6, 1966, Ser. No. 519,027  
 Int. Cl. B23k 21/00, 31/02  
 U.S. Cl. 29—470.1



This invention relates to a method of making a mechanical and electrical connection between a conductor wire and the surface of a quartz crystal. A metal lamina is interposed between the wire and the crystal surface, pressure is applied between the wire and the crystal, and the wire is vibrated parallel to the crystal surface to produce a mechanical and electrical connection therebetween.

6 Claims

**3,461,543**  
**BRAZING PROCESS**  
 Isojiro Nakakubo, Tokyo, and Takeharu Watanabe, Narashino, Japan, assignors to Yawata Welding Electrode Co., Ltd., Tokyo, Japan, a company of Japan  
 Filed Dec. 6, 1965, Ser. No. 511,788  
 Claims priority, application Japan, Dec. 4, 1964, 39/68,096; Jan. 8, 1965, 40/565  
 Int. Cl. B23k 1/04  
 U.S. Cl. 29—498.5



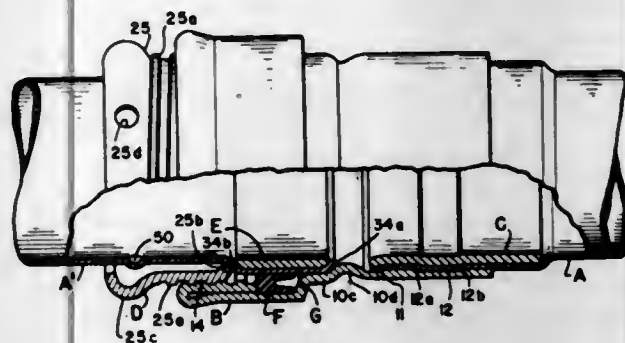
A brazing process is provided in which a layer of flux is disposed between the metal surfaces to be joined and a brazing solder is placed adjacent to the surfaces. A solid heat generating agent formed to match the shape of the surfaces to be joined is then placed about the surfaces to be joined. Upon ignition, the heat generating agent melts the solder and the flux. The metal surfaces are first cleaned by the flux and then the melted brazing solder is drawn into the space between the metal surfaces to effect the braze.

4 Claims

**3,461,544**  
**PROCEDURE FOR MAKING QUICK ASSEMBLY COUPLING**  
 Clyde E. Rickard, Pittsburgh, Pa., assignor to McDowell Manufacturing Company, Millvale, Pa., a corporation of Pennsylvania  
 Original application July 24, 1961, Ser. No. 126,079, now Patent No. 3,183,021, dated May 11, 1965. Divided and this application Mar. 8, 1965, Ser. No. 437,709  
 Int. Cl. B21d 39/00; B23p 11/02  
 U.S. Cl. 29—507

1. A method of forming an open end portion of a pipe member of substantially uniform diameter along its length into a coupling part which comprises, outwardly-expanding the wall of the open end portion into an expanded cylindrical open end portion of larger diameter while forming a re-entrant shoulder between the inner end of the expanded open end portion and the adjacent por-

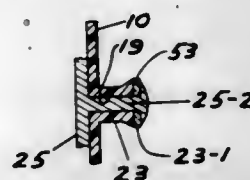
tion of the pipe member, forming a hollow cylindrical member into a coupling body having an outwardly-expanded forward open end portion of enlarged diameter and a back open end mounting portion of smaller diameter connected by a re-entrant shoulder with the forward open end portion, forming at least one banding groove within the inner periphery of the back open end mounting portion, supporting the coupling body from its forward open end portion while moving the open end mounting portion of the pipe member endwise within the back open end mounting portion of the coupling body, radially-outwardly expanding the open end portion of the pipe



member into tight abutment within the inner periphery of the back open end mounting portion of the coupling body, driving a reinforcing cylindrical ring into a position within the inner periphery of the open end portion of the pipe member through the forward end portion of the coupling, and radially-outwardly deforming a wall band of the ring and an abutting wall band of the open end portion of the pipe member within the banding groove portion of the back open end mounting portion of the coupling body to securely mount the coupling body to extend forward of the open end portion of the pipe member.

**3,461,545**  
**METHOD FOR FASTENING METAL PARTS TO THERMOPLASTIC OBJECTS**  
 George F. Bush, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware  
 Filed Apr. 17, 1967, Ser. No. 631,387  
 Int. Cl. B21d 39/00; B23p 11/00  
 U.S. Cl. 29—509

3 Claims



A method for fastening a metal part having a projecting stud to a thermoplastic object having a boss thereon with an aperture therethrough which comprises inserting said stud through said aperture and simultaneously upsetting the inserted end of said stud, melting a portion of the thermoplastic boss encompassing said aperture, and sealing said stud and said thermoplastic object in watertight relationship.

**3,461,546**  
**TUNNEL DIODE MANUFACTURING APPARATUS**  
 Francis Boulet, Bures-sur-Yvette, and Jean Polledri, Sainte-Genevieve-des-Bois, France, assignors to Compagnie Generale d'Electricite, Paris, France  
 Filed May 25, 1966, Ser. No. 552,908  
 Claims priority, application France, May 31, 1965, 18,996  
 Int. Cl. H01l 7/00

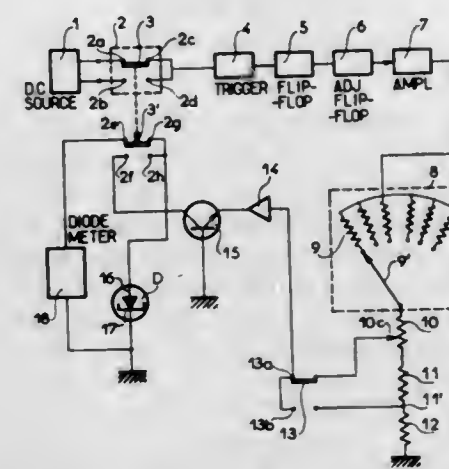
U.S. Cl. 29—569  
 An apparatus is described for use in the manufacture of tunnel diodes and comprises a first selector switch for

7 Claims

developing a single trigger signal pulse at an operator's discretion and applying a shaped, current pulse of known magnitude and time duration to a tunnel diode to be formed. For this purpose, a first monostable multivibrator is coupled to the output of the first selector switch for producing a second trigger signal pulse of greater time duration than the maximum time duration of the closing of the first selector switch. A second adjustable monostable multivibrator is coupled to the output and con-

A process for measuring the abruptness of a junction comprises subjecting the junction to a varying voltage, directing radiation at the junction of a wave-length not less than the absorption threshold, and measuring the modulation of radiation transmitted through the junction.

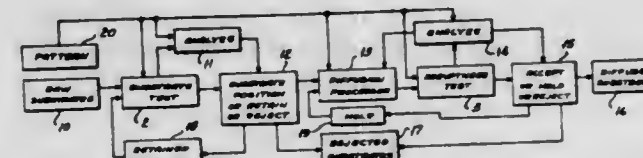
Apparatus for measuring the bulk lifetime of excess carriers and for measuring junction abruptness include radiation sources producing very narrow beams so that each measurement can be made at a plurality of discrete points.



trolled by the first monostable multivibrator and produces an adjustable time duration current pulse. An adjustable impedance network is operatively coupled to the output of the second adjustable monostable multivibrator and serves to develop at its output an adjustable time duration current pulse of known magnitude. A second selector switch connects the adjustable time duration, known magnitude current pulse appearing across the output of the adjustable impedance network to the tunnel diode to be formed.

**3,461,547**  
**PROCESS FOR MAKING AND TESTING SEMICONDUCTIVE DEVICES**  
 Robert A. Di Curcio, Rockville, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware  
 Filed July 13, 1965, Ser. No. 471,678  
 Int. Cl. B01j 17/00; H01l 7/00  
 U.S. Cl. 29—574

6 Claims

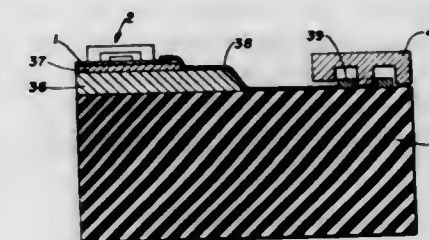


A process for making semiconductor devices includes measuring the bulk lifetime of excess carriers at a plurality of discrete points in a substrate, forming a junction in the substrate at a point where the lifetime measurement is satisfactory, and measuring the abruptness of the junction at a plurality of discrete points. If the abruptness measurements are not satisfactory, the process includes the further forming of the junction and the regulation of subsequently formed junctions.

A process for measuring the bulk lifetime of excess carriers in a substrate comprises partially saturating the surface recombination centers, producing excess carriers within the substrate, and measuring the time-constant of recombination of the excess carriers.

**3,461,548**  
**PRODUCTION OF AN ELECTRICAL DEVICE**  
 Hans-Jürgen Schütze and Klaus Hennings, Ulm (Danube), Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany  
 Filed July 29, 1965, Ser. No. 475,806  
 Claims priority, application Germany, July 29, 1964, T 26,691; Nov. 23, 1964, T 27,468  
 Int. Cl. B01j 17/00; H05k 3/00  
 U.S. Cl. 29—577

20 Claims



A method of fabricating a microminiaturized circuit arrangement by forming a solid-state circuit having a semiconductor body in which at least one circuit element is formed, placing a self-supporting insulating body on the surface of the solid-state circuit, and then at least partially electrically isolating the circuit elements from one another by removing material from the semiconductor body.

**3,461,549**  
**METHOD FOR MANUFACTURING SEMICONDUCTOR DEVICES**  
 Kazuo Fujimoto, Ashiya-shi, Japan, assignor to Matsushita Electronics Corporation, Osaka, Japan, a corporation of Japan  
 Filed Feb. 28, 1967, Ser. No. 619,270  
 Claims priority, application Japan, Mar. 9, 1966, 41/14,492  
 Int. Cl. B01j 17/00; H05k 13/00  
 U.S. Cl. 29—577

4 Claims



A method for manufacturing semiconductor devices, particularly suitable for manufacturing plastic encapsulated semiconductor devices, in which the device comprises an insulating stem provided with a plurality of ridges having recessed portions and metallized surfaces. The semiconductor elements are mounted in the recessed portions and are connected by leads to the surfaces of the ridges. The resulting assembly is sealed with a sealing material, such as a resin, thereby enhancing mass production.

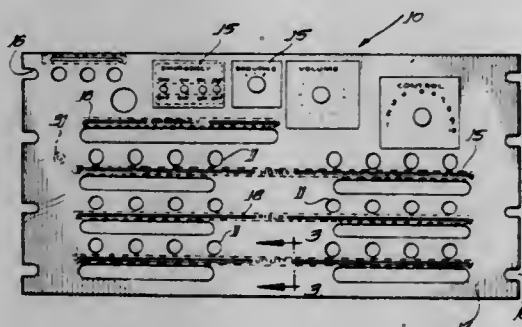


**3,461,550**  
**METHOD OF FABRICATING SEMICONDUCTOR DEVICES**  
 Monti E. Aklufi, 489 1st Ave.,  
 New York, N.Y. 10016  
 Filed Sept. 22, 1965, Ser. No. 489,208  
 Int. Cl. B01j 17/00; H01l 5/00  
 U.S. Cl. 29—578 6 Claims



A process for making semi-conductors and the semi-conductors themselves is disclosed. The process includes forming an adherent, continuous nonconductive layer mask on a formed plane surface of a semi-conductor body of a given conductivity type, placing a thin enough porous etch resisting film over the layer mask to achieve a plurality of randomly placed holes extending through said etch resisting film to said nonconductive layer mask, etching at least one window by said holes through said layer mask to said semi-conductor body and removing said etch resisting film. The process also includes delineating a junction by introducing through at least one window an impurity of opposite conductivity type as said semi-conductor body and providing an ohmic contact through the window and an ohmic contact on the underside of said body.

**3,461,551**  
**METHOD OF MAKING AN ILLUMINATED PANEL**  
 John J. Kaup, Chicago, Ill., assignor to Felsenthal Instruments, Inc., Chicago, Ill., a corporation of Illinois  
 Original application Sept 19, 1963, Ser. No. 309,977, now Patent No. 3,284,941, dated Nov. 15, 1966. Divided and this application July 20, 1966, Ser. No. 576,164  
 Int. Cl. B29d 3/00  
 U.S. Cl. 29—592 6 Claims

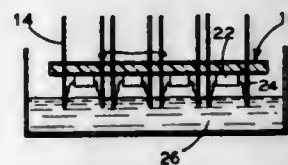


A method of manufacturing an illuminated panel employing a pair of plates, one of which is recessed in its rear portion to accommodate luminescent light panels which are embedded in the recessed areas after being appropriately treated to transmit light. The rear plate portion is used to fully enclose and hermetically seal the entire panel.

**3,461,552**  
**ELECTRICAL ASSEMBLY**  
 Edgar Wolf, New Hyde Park, Edward H. Lan, Old Westbury, and Evelyn Berezin, New York, N.Y., assignors to Digitronics Corporation, Albertson, N.Y., a corporation of Delaware  
 Filed Jan. 19, 1966, Ser. No. 521,651  
 Int. Cl. H05k 3/32  
 U.S. Cl. 29—626 4 Claims

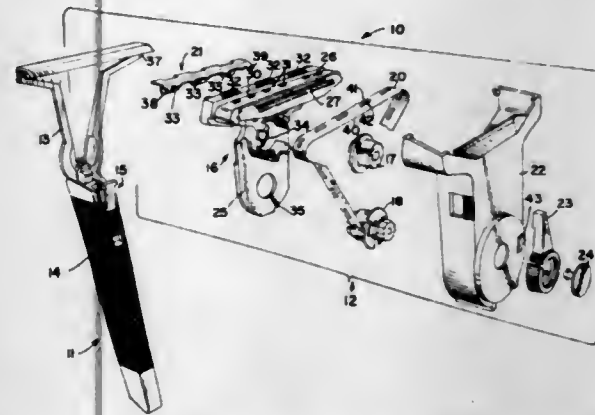
An electric circuit assembly in the form of a board on which are mounted and interconnected electronic components is manufactured by printing a conductive pattern on at least one surface of a board of insulative material. Pins are inserted in the board according to a geometric

pattern, with at least some of the pins extending from both surfaces of the board. Some of the pins intersect the conductive pattern. Components, such as integrated circuits having a body portion and leads extending therefrom are positioned against the boards. In particular, the body portions of the components are adjacent one surface of the boards while the leads extend parallel to and longitudinally about the extending portions of the pins so that the



components are maintained in position by the frictional engagement of the leads and pins. The assemblage of the board and pins, and components is dip or wave soldered so that only the component leads and abutting pin portions project into the molten solder. When the assemblage is removed from the molten solder mechanical and electrical connection is established between the leads and adjacent portions of the associated pins.

**3,461,553**  
**RIBBON-TYPE RAZOR WITH A SPECIFIC TYPE SPOOL**  
 Thomas F. Bombero, Shelton, Conn., assignor to Ever-sharp, Inc., Milford, Conn., a corporation of Delaware  
 Filed Aug. 12, 1966, Ser. No. 576,497  
 Int. Cl. B26b 21/26; B65h 75/28  
 U.S. Cl. 30—40.1 7 Claims

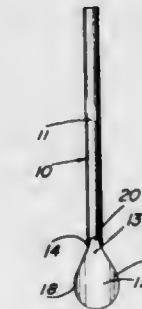


A ribbon-type razor having at least one blade spool which includes a principal body portion, a slot defined by a side wall on the body portion and a movable side wall portion which may be moved into a position parallel with the side wall portion on the body. A tooth-like projection, in position of use, extends between the side walls defining the slot and through an aperture in the blade. Preferably, a spool is molded with the movable side wall portion in an open position, the blade is moved into registry with the projection, and the movable side wall is folded to a position adjacent the body, thereby defining a slot for the blade, while the projection serves to lock the movable side wall to the other portion of the body and hold the blade in place. The projection is preferably elongated and disposed away from the center line of the slot.

**3,461,554**  
**COMBINATION DRINKING STRAW AND SPOON**  
 Ardashus A. Aykanian, Willbraham, Mass., assignor to Flexible Plastic Straw Corporation, Ludlow, Mass., a corporation of Illinois  
 Filed Feb. 12, 1968, Ser. No. 704,644  
 Int. Cl. A47j 43/28  
 U.S. Cl. 30—141 1 Claim

A combination drinking straw and spoon is comprised of a tubular body which provides a drinking straw member having a spoon member integrally and flexibly attached thereto at one end portion thereof by means of a

flexible interconnecting web portion with the parts being so designed and constructed that the tubular drinking straw and spoon member may be used as a drinking straw in a conventional manner. The spoon member may be bent at a substantial angle relative to the longitudinal axis of the tubular drinking straw member to enable the combination drinking straw and spoon to be used for drinking liquids as well as for sipping milk shakes, crushed ice drinks, and the like, from the bottom of a glass, cup or other container, with the spoon member lying generally



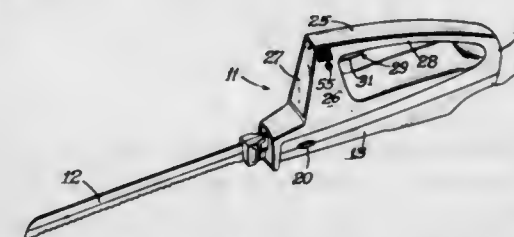
parallel to the plane of the bottom of the container and with the liquid being drawn up from the open lower end of the tubular body of the drinking straw member. The spoon member is normally disposed in a plane parallel to the longitudinal axis of the tubular body of the drinking straw member and the flexible interconnecting web portion and the spoon member have sufficient innate strength and rigidity to enable the spoon member to be used as a spoon for eating ice cream, ice mixes and the like, without bending under the weight of the edible food product on the spoon member.

**3,461,555**  
**CABLE-CUTTING PLIERS WITH LEADING TOOTH**  
 Bedrich V. Bliznak, 15025 Saticoy St., Apt. 7,  
 Van Nuys, Calif. 91405  
 Filed Oct. 18, 1967, Ser. No. 676,150  
 Int. Cl. B26b 13/16, 13/28  
 U.S. Cl. 30—254 3 Claims



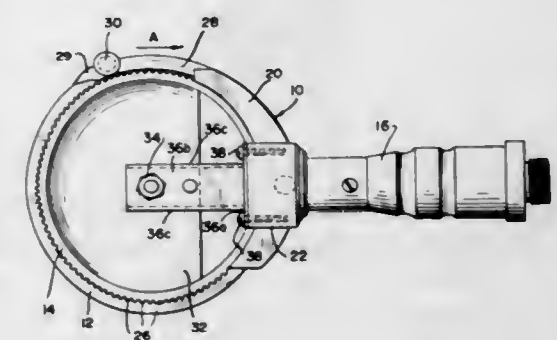
A pliers for cutting multi-strand telephone cables, or the like, the opposing blades of said pliers having opposite concave cutting edges at the throat, opposite straight cutting edges at the mouth, and one blade having a leading tooth between the two sets of cutting edges.

**3,461,556**  
**TRIGGER SWITCH FOR ELECTRIC APPLIANCE**  
 Worthy L. Chambers, Lombard, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois  
 Filed July 10, 1967, Ser. No. 652,322  
 Int. Cl. B62b 7/00; H01h 9/06, 13/08  
 U.S. Cl. 30—272 12 Claims



A trigger switch for an electric appliance having a simple lock or safety supported by the appliance housing and being movable between a trigger locking and trigger movement positions.

**3,461,557**  
**DEPTH-OF-CUT CONTROL MEANS FOR MEAT TRIMMERS AND THE LIKE**  
 Arthur F. Behring, Sioux Falls, S. Dak., assignor, by mesne assignments, to John Morrell & Co., Chicago, Ill., a corporation of Delaware  
 Filed Mar. 6, 1967, Ser. No. 621,406  
 Int. Cl. B26b 3/03  
 U.S. Cl. 30—276 3 Claims



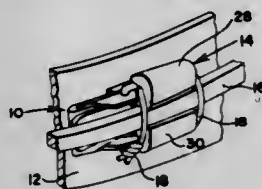
This invention relates to cutting devices, and more particularly to a meat trimmer for skinning or dehairing animal carcasses and defatting pieces of meat. The device is adapted to be manually held and manipulated for cutting a strip-like section or slice from a work body by drawing the tool thereacross and includes an annular support lying substantially in a flat plane and supporting an annular cutting blade mounted for rotation in the direction of its own circumference. A handle is rigidly fixed to the support and extends radially outwardly therefrom. The support and blade extend in a continuous relation around, and lying outside of a common axial opening through which the severed section passes during the cutting thereof from the work body as the blade rotates and the support means is manually drawn across the work body substantially in said plane to sever the section therefrom. The cutting blade is provided with a peripheral circular cutting edge adjacent one end of the common axial opening. A depth control plate is provided and adjustably mounted by means of a bracket secured to the annular support at one point of the circumference thereof, the bracket extending radially outwardly over the common axial opening. The depth control plate is convex in shape whereby its marginal portions are curved outwardly away from the cutting edge of the cutting blade. The depth control plate has a marginal circular portion concentric to the common axial opening and of a slightly smaller diameter than the cutting blade whereby the severed section from the work body passes between the blade and the depth control plate. An adjusting bolt extends from the depth control plate through the mounting bracket for adjusting the plate toward and away from the bracket generally in the direction of the axis of the common axial opening of the support and cutting blade to vary the distance between the plate and blade to vary the thickness of the section severed from the work body. A stabilizer pin is secured to the control plate and slidably received in an opening in the mounting bracket to prevent rotation of the plate when the same is being adjusted.

**3,461,558**  
**ORTHODONTIC ROTATION APPLIANCE**  
 Frank R. Miller, 502 Mount Olive, Bradbury, Calif. 91010, and Raymond E. Dillberg, 6152 N. Encinita, Temple City, Calif. 91780  
 Filed Apr. 3, 1962, Ser. No. 184,759  
 Int. Cl. A61c 7/00  
 U.S. Cl. 32—14 4 Claims

1. An orthodontic rotation appliance for assembly with a tooth bracket and an arch wire, comprising a spring member defining a fold, fastening means engaging the

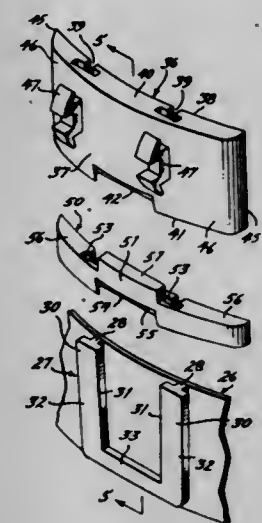


fold and adapted to removably connect the spring member to the tooth bracket on a tooth, said spring member having a resilient extending portion adapted to be positioned to be stressed between the arch wire and the tooth bracket, and said spring member having means adapted solidly to engage surfaces of the tooth bracket to provide



solid securement of the spring member to the tooth bracket, whereby said resilient extending portion constitutes a cantilever element extending from the tooth bracket and bearing against the arch wire, whereby the stress in the resilient extending portion produces torsional force on the bracket tending to rotate the tooth about its axis.

**3,461,559**  
**ORTHODONTIC APPLIANCE**  
Elliott Silverman, 4829 Atlantic Ave., Ventnor, N.J. 08406, and Morton Cohen, % Medical Arts Bldg., Jenkintown, Pa. 19046  
Filed Jan. 13, 1966, Ser. No. 520,383  
Int. Cl. A61c 7/00  
U.S. Cl. 32-14 7 Claims

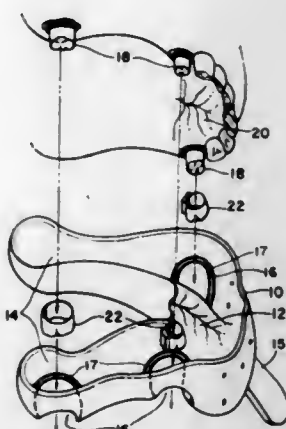


This invention is essentially concerned with an orthodontic appliance wherein a socket is fixed to a band about a patient's tooth, the socket extending longitudinally of the tooth having one end open and provided with a central window facing away from the band. A carrier is removably inserted in the socket with its central portion exposed through the window and a bracket extends from the central carrier portion externally of the window and is provided with a laterally extending open-ended passage for receiving an orthodontic wire.

**3,461,560**  
**METHOD OF FORMING A PROSTHETIC DENTAL APPLIANCE AND AN IMPRESSION TRAY THEREFOR**  
Norman A. Hana, Vancouver, Wash., assignor to Deklin Dental Laboratory Company, Portland, Oreg., a corporation of Oregon  
Filed Apr. 20, 1967, Ser. No. 632,269  
Int. Cl. A61c 9/00, 13/08  
U.S. Cl. 32-17 12 Claims

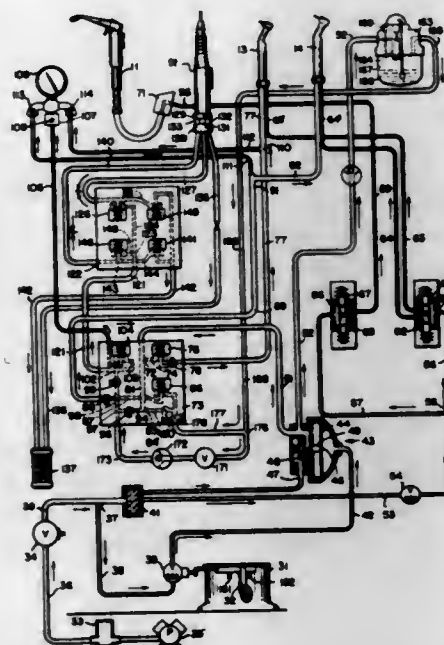
A plastic tray is formed from a plaster model of a patient's mouth, such tray being individually adapted for

taking a further impression of the patient's mouth. This tray has a tissue bearing area, e.g. corresponding to the patient's palate, and is relieved elsewhere for receiving impression-taking material. The tray is also provided with a plurality of apertures corresponding to the abutment teeth to which a partial appliance is to be attached. The



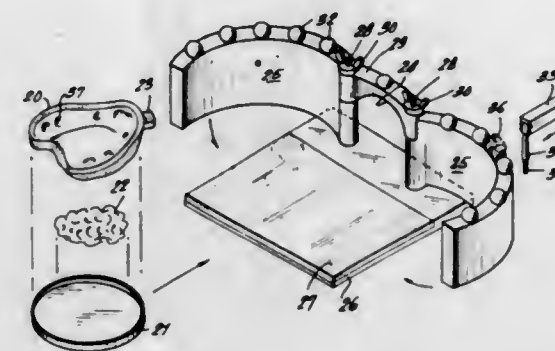
impression tray is placed in the mouth with the abutment teeth extending therethrough, and with crowns seated upon such abutment teeth, after which a compound lock is made between such tray and the crowns to form a rigid pattern from which an accurate model of mouth can be made for the construction of the appliance.

**3,461,561**  
**FLUID CONTROL SYSTEM FOR DENTAL INSTRUMENTS**  
John J. Valeska, Rochester, Donald N. Spencer, Pittsford, and Edson L. Kummer, Rochester, N.Y., assignors to Sybron Corporation, Rochester, N.Y., a corporation of Delaware  
Filed Feb. 1, 1965, Ser. No. 429,398  
Int. Cl. A61c 1/08  
U.S. Cl. 32-28 2 Claims



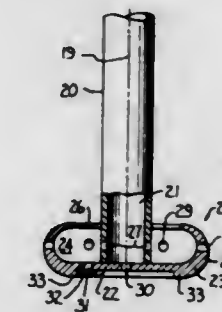
In a control system for dental drilling equipment including a source of pressurized air and a plurality of dental units requiring air for operation, the improvement of means for reversing the flow of air to a dental handpiece to enable a reversal of the direction of rotation of the handpiece. The reversing means consists of two parallel sets of conduits and means for reversing the flow of air in said sets.

**3,461,562**  
**DENTAL RESTORATION DIE AND MODEL JIG**  
Abraham J. Cooper, 1 DeKalb Ave., Brooklyn, N.Y. 11201  
Filed Dec. 14, 1965, Ser. No. 513,732  
Int. Cl. A61c 9/00  
U.S. Cl. 32-40 4 Claims



A dental restoration die fabricating device in which the dental impression is carried within a cup of ferrous material, a magnetic member holds the cup to the base of the device and an upstanding wall supports dowels in an oriented position while a die forming material is poured around the dowels into the cavities in the impression.

**3,461,563**  
**ROTARY DENTAL TOOL**  
Milton E. Nelson, 2631 Danville Highway, Alamo, Calif. 94507  
Filed Oct. 18, 1966, Ser. No. 587,595  
Int. Cl. A61c 3/00, 1/00  
U.S. Cl. 32-59 7 Claims

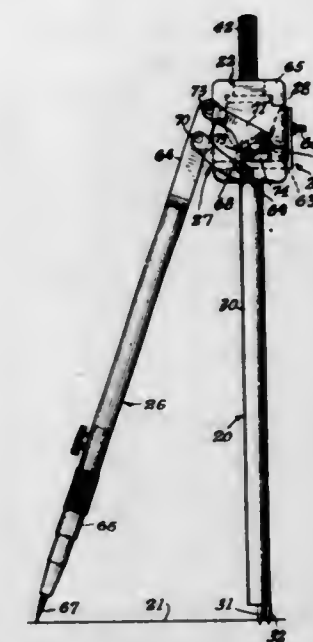


Lightweight, dynamically balanced rotary dental tools of varying abrading capacity, designed for high-speed operation and an improved distribution of coolant fluid from within the tool to the tooth surface being worked upon and characterized with a cup-shaped coolant chamber for receiving and centrifugally dispensing coolant to the working surface of the tool.

**3,461,564**  
**ELLIPSE-FORMING COMPASS**  
Robert M. O'Malley, 11311 Osborne St., Lakeview Terrace, Calif. 91342  
Filed Aug. 5, 1968, Ser. No. 750,103  
Int. Cl. B43i 11/04  
U.S. Cl. 33-30 8 Claims

An ellipse-drawing or -scribing instrument having a post for nonrotational separable engagement with a surface and provided at its upper end with a finger-rotatable housing for a pivotally-mounted presettable disc for adjusting the ratio of short and long diameters of an ellipse to be scribed on such surface by means of slide means engageable by the periphery of said disc, said disc projecting and allowing a slide of said slide means to retract as

the housing is rotated, a marking or scriber leg connected by linkage to the housing and moved relative to the post



to scribe an ellipse conforming to the ratio adjustment, and an adjuster for setting the slides of said slide means to set the leg to the size of ellipse desired.

**3,461,565**  
**MASON'S LINE STRETCHER**  
George T. Harris, S. Rte. 3, Box 68, Farmington, N. Mex. 87401  
Filed Apr. 18, 1968, Ser. No. 722,456  
Int. Cl. B44d 3/00  
U.S. Cl. 33-86 6 Claims



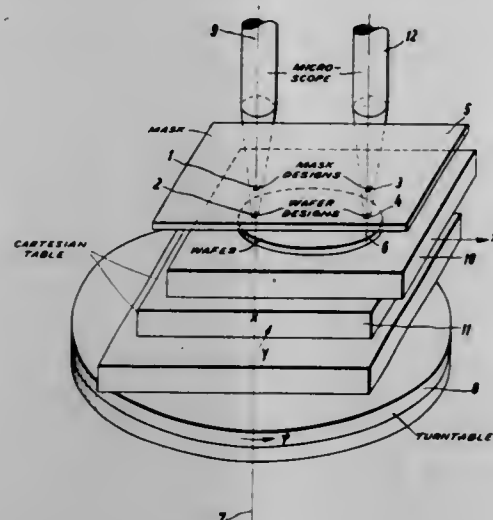
A multipurpose line stretcher for anchoring a mason's line. The line stretcher includes a wide body and two depending legs spaced to straddle a masonry unit or a portion thereof. An extension of the body serves as a tongue for attaching a mason's line.

**3,461,566**  
**ALIGNING METHOD AND APPARATUS**  
Dieter Gerstner, Heilbronn, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany  
Filed Aug. 19, 1966, Ser. No. 573,545  
Claims priority, application Germany, Aug. 20, 1965, T 29,257  
Int. Cl. G01b 5/14  
U.S. Cl. 33-180 3 Claims

Method and apparatus for aligning a semiconductor disc or wafer with a mask, each of which have a plurality of designs, where at least two of the designs on the mask must be aligned with corresponding designs on the disc. Two designs on the mask and the corresponding two designs on the disc are chosen which are spaced apart as far as possible from each other. The alignment, which is effected by bringing the two designs on the mask into alignment with the two designs on the disc, is accomplished in two steps by bringing one design on the mask and one design on the disc into alignment with each other



and then rotating the mask and the disc with respect to each other about a pivot axis that passes through the



already aligned designs until the other design on the mask is aligned with the other design on the disc.

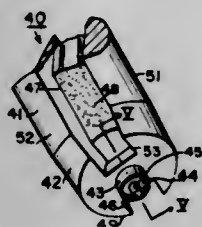
3,461,567

**THERMAL DIE MARKER**

Philippe Villers, Vestal, and Woodrow L. Hayes, Binghamton, N.Y., assignors to Singer-General Precision, Inc., a corporation of Delaware

Filed Aug. 9, 1966, Ser. No. 571,277

Int. Cl. B26f 1/32; B23q 35/02; B23b 49/02  
U.S. Cl. 33—189 3 Claims



A heated die for marking thermoplastic materials having a working face from which extend marking elements consisting of a projection having a flat end surface and a sharp-edged annulus circumscribing the projection. Means are provided for rapid heating and cooling of the die.

3,461,568

**GYROCOMPASS**

Shin-ichi Kawada, Yokohama-shi, Japan, assignor to Kabushiki Kaisha Tokyo Koki Seizosho (Tokyo Koki Seizosho Co., Ltd.), Tokyo, Japan

Original application June 18, 1964, Ser. No. 376,020, now Patent No. 3,321,841, dated May 30, 1967. Divided and this application Mar. 30, 1967, Ser. No. 627,062

Claims priority, application Japan, June 19, 1963, 38/32,220

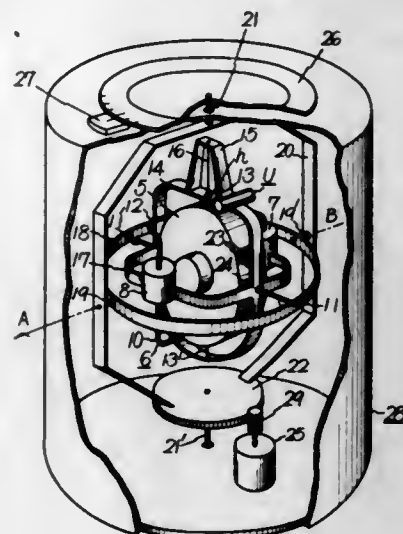
Int. Cl. G01c 19/38, 19/40

U.S. Cl. 33—226

4 Claims

A gyrocompass having an integral torque generator rotatably mounted on a conventional gyro in accordance with movement of the gyro, said integral torque generator including a cylindrical vessel and a particle movably positioned within said cylindrical vessel so as to produce a torque with respect to time for eliminating errors such,

for example, as a latitudinal error caused by the earth rotation and an error caused by mass unbalance of a gyro



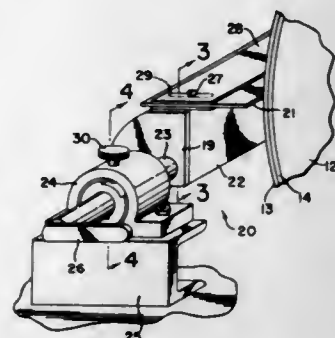
3,461,569

**PAPER WEB DRYERS**

Gene John Kottick, Pointe Claire, Quebec, Canada, assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 23, 1967, Ser. No. 677,438

Int. Cl. F26b 13/08  
U.S. Cl. 34—116 3 Claims



A web width foil is positioned near or adjacent a dryer cylinder conducting a paper web in the space forming an entrance to a "pocket." The foil prevents an inducement of excessive air which tends to deform or "billow" the web in the length between the dryers causing breaks.

3,461,570

**TEACHING DEVICE**

Arnfinn Johansen, Ammerudveien 5, Oslo, Norway

Filed Dec. 7, 1964, Ser. No. 416,267

Claims priority, application Norway, Dec. 23, 1963, 151,374/63

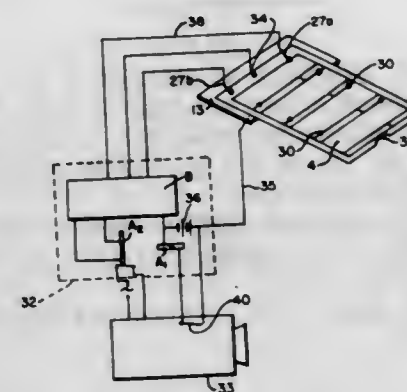
Int. Cl. G09b 1/04

U.S. Cl. 35—9

5 Claims

1. A teaching device comprising a lockable case, a carrier of sheet material in a stack, having visible educational matter contained in said case, feeding means for advancing the said carrier past a reading area, said feeding means being only capable of moving the carrier forwards, auxiliary apparatus for reproducing educational matter, said carrier having markings, and starting means actuatable by said carrier markings for starting said auxiliary apparatus for reproducing said educational matter which is provided with markings, and said auxiliary ap-

paratus being adapted to be stopped by said markings on said education matter, characterized in that said markings on said carrier are positioned in a staggered relation in a first and a second of two lines extending in the direction of feed, separate sensing means for each of these lines, auxiliary control means, said apparatus being so



arranged that after one of the sensing means has sensed a carrier marking and caused starting of the reproducing apparatus, said auxiliary control means makes this sensing means inoperative, but enables the other sensing means to sense the next carrier marking which is positioned in the line for this other sensing means.

3,461,571

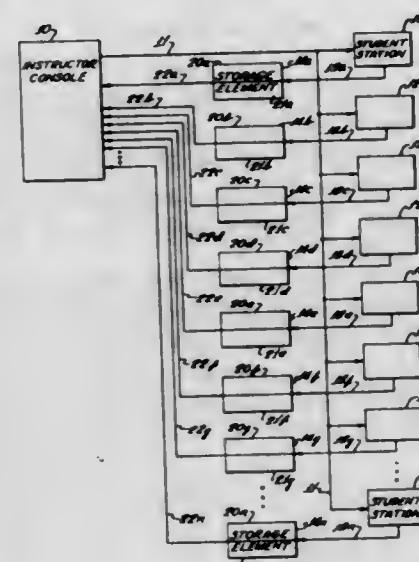
**TEACHING SYSTEM**

Dean H. Luxton, Newport Beach, Calif., assignor to

Robert E. Corrigan

Filed May 17, 1966, Ser. No. 550,851

Int. Cl. G09b 3/00, 7/00  
U.S. Cl. 35—9 43 Claims



A teaching system for classroom instruction includes an instructor station and a plurality of student stations. The teaching station has switch means operable to select the correct answer response to a question and each student station has switch means for selecting any one of a plurality of possible answer responses. An electrical signal is sent from the instructor means to each student station indicating the correct response, a comparison is made at the student station, and the student receives a confirmatory private tactile stimulus if his answer response was correct. If the student receives no stimulus, he may continue to select additional answer responses until he finds the correct one which will be confirmed by the stimulus. A printer at the instructor station permanently records a diagnostic profile showing whether each individual student responded to each individual question, and whether the student's first answer selection to each ques-

tion was correct or incorrect. Meters at the instructor station also indicate the percentage of students responding to the most recent question and the percentage of students responding correctly to that question.

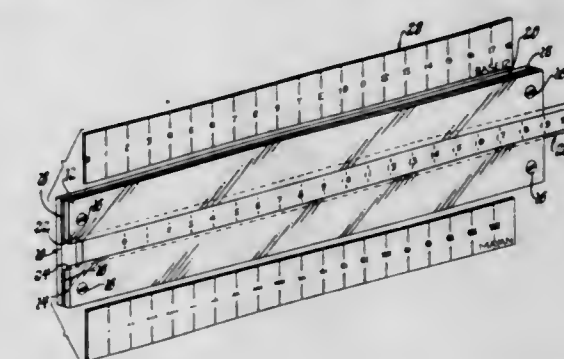
3,461,572

**INSTRUCTIONAL DEVICE**

Arthur D. Schmidt, Leadville, Colo., and Keith L. Shuert, Rochester, Mich., assignors to Oakland Community College, Bloomfield Hills, Mich., a corporation of Michigan

Filed Oct. 27, 1967, Ser. No. 678,683

Int. Cl. G09b 19/02, 1/28; G06g 1/02  
U.S. Cl. 35—31 4 Claims



An instructional device in which a base member has mounted thereon in spaced relation a pair of spaced cover members. A slide member is slidably disposed between the cover members. Numbering systems are indicated on scales slidable between each of the cover members and the base member as well as on the slide member, and transversely aligned so that the symbols of one system may be compared with the symbols of another system. Simple arithmetic computations may be carried out by movement of the slide member relative to the cover members.

3,461,573

**MODERN MATHEMATICS DEMONSTRATION UNIT**

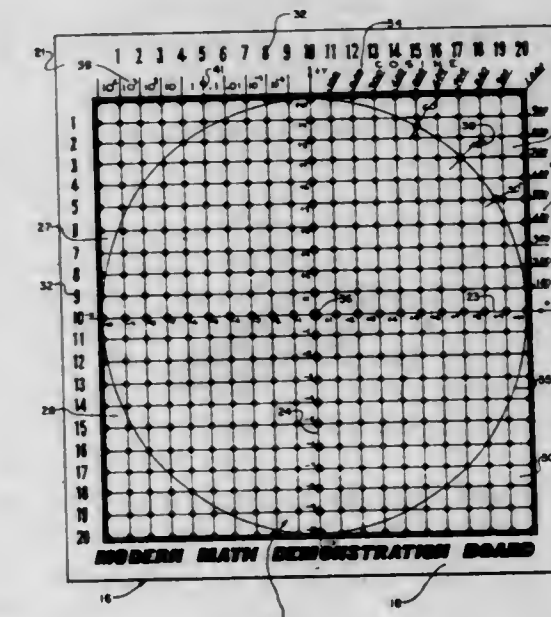
Willard O. Stibal, 1601 Whittier, Emporia, Kans. 66801

Continuation-in-part of application Ser. No. 444,465, Mar. 31, 1965. This application Sept. 5, 1967, Ser. No. 665,465

Int. Cl. G09b 23/04

U.S. Cl. 35—34

12 Claims



A board has a coordinate graph with equal unit areas and X and Y axes dividing same into quadrants. One quadrant has trigonometric indicia along the top and side,



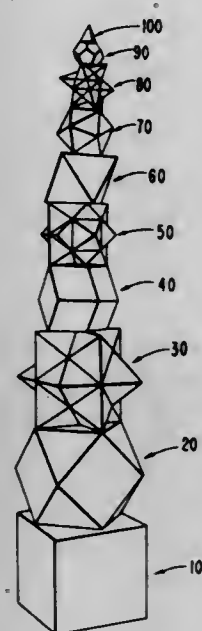
and angle indicia corresponding to the trigonometric. Another quadrant has numerical base indicia adjacent an upper edge. Volumetric unit members increasing in size by one volumetric unit from one to several units, and mathematical symbol elements are attachable in use to the board. The volumetric unit is equal to the cube of a unit area of the coordinate graph.

### 3,461,574 EDUCATIONAL TOY

Marget A. Larsen and Earl E. Sickler, San Francisco, Calif., assignors to Intrinsics, Inc., San Francisco, Calif., a corporation of California  
Filed July 10, 1967, Ser. No. 652,056  
Int. Cl. A63h 33/08

U.S. Cl. 35—73

15 Claims



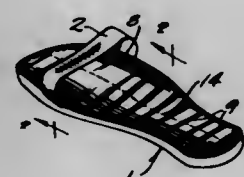
An educational toy including a plurality of polyhedra, all of different size and configuration and all but the smallest formed of two telescopically interfitting members and including in descending order of size: a hexahedron, a cuboctahedron, a stellated rhombic dodecahedron, a rhombic dodecahedron, an interpenetrated hexahedron and octahedron, an octahedron, an icosahedron, a stellated dodecahedron, a dodecahedron, and a tetrahedron.

### 3,461,575 SOLE FOR FOOTWEAR

John C. Tead and Doris F. Tead, both of Rte. 1, Box 54, Nashotah, Wis. 53058  
Filed Apr. 28, 1967 Ser. No. 634,677  
Int. Cl. A43b 13/02, 3/12

U.S. Cl. 36—30

2 Claims



A beach slipper includes a sole formed of a substantial number of layers of a relatively fine mesh. The edges of the mesh are folded and sewed to form a neat appearing slipper edge. A foot strap is secured to the forward portion of the sole for attachment to a person's foot. The built-up mesh sole provides a generally continuous supporting or foot portion which readily allows water and the like to pass therethrough. The mesh is formed of fiber glass strands coated with plastic.

The top and bottom mesh layer is formed with grouped strands extending in one direction to define the mesh openings.

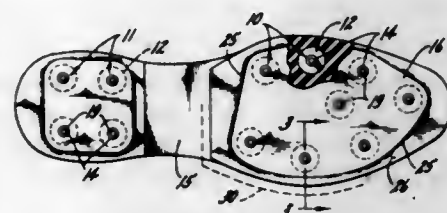
The sole may be formed by partially sewing the top and lower layers along the edges to form a pocket open at one end and inserting a plurality of inner layers before sewing of the open end.

### 3,461,576 SPIKED SHOE SOLE

Bruce W. Hubbard, deceased, late of Oak Park, Ill., by Ruth Florin Hubbard, executrix, Oak Park, Ill., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut  
Continuation-in-part of application Ser. No. 563,216, July 6, 1966. This application Oct. 30, 1967, Ser. No. 684,890  
Int. Cl. A43c 15/02, 15/04; A43b 13/04

U.S. Cl. 36—67

3 Claims



Relates to a shoe sole or heel construction having downwardly projecting spikes with heads embedded in and supported by a layer of an elastomer composition with substantially the full lengths of the spike shanks projecting from the bottom of the layer.

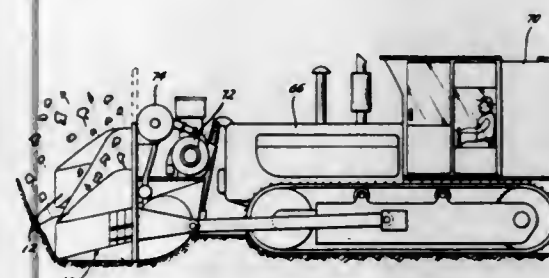
### 3,461,577 METHOD OF AND AN APPARATUS FOR DISPLACING MATERIALS

John M. Clark, Jr., Robinson W. Brown, and Roger H. Hemion, San Antonio, Tex., assignors to Southwest Research Institute, San Antonio, Tex., a non-profit corporation of Texas

Filed Dec. 15, 1965, Ser. No. 514,057  
Int. Cl. E02f 1/00, 5/02; E21c 37/14

U.S. Cl. 37—1

11 Claims



A method and apparatus for repetitively displacing material by placing a closed combustion chamber adjacent the material and providing an explosion in the chamber for creating high pressure gases therein and opening the chamber to direct the gases against and fragment and move the material, and repeating the cycle. A combustion chamber having a pointed portion adapted to be pushed into the material to be displaced and which includes a plurality of openings in communication with the combustion chamber, and providing valve means for sealing off the combustion chamber until a predetermined pressure buildup and explosive force occurs in the chamber, and thereafter opening the valve means so that the

high pressure and temperature gases created by the explosion flow through the openings and rupture the soil into fragments. The combustion chamber openings normally including louvers covering the openings for preventing the openings from being blocked by the material, but opening upon an increase in pressure in the combustion chamber.

### 3,461,578 V-PLOW WITH HITCH

Cornells van der Lely, Zug, Switzerland, and Ian Archie MacKinnon, Streetsville, Ontario, Canada, assignors to C. van der Lely N.V., Maasland, Netherlands, a Dutch limited-liability company

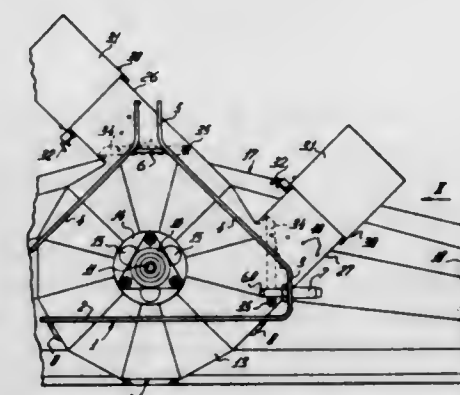
Filed Jan. 4, 1966, Ser. No. 518,597

Claims priority, application Netherlands, Jan. 6, 1965, 6500070

Int. Cl. E01h 5/09; A01b 59/048

U.S. Cl. 37—43

4 Claims



A snow plow structure having a collector with a fan positioned at the rear of the plow. A conveyor leads from the forward part of the plow to a discharge fan. The fan has a housing on which a hitch is mounted. The hitch can be coupled to the three point lifting device of a tractor so that the lower two hitching points are lower than the conveyor.

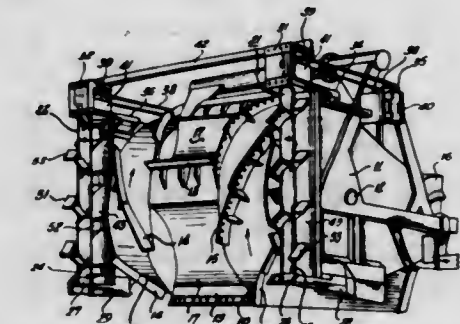
### 3,461,579 AUXILIARY FEEDERS FOR EXCAVATING AND LOADING MEANS

Herbert H. Turner, Boscobel, Wis. 53805  
Filed Dec. 29, 1965, Ser. No. 517,330

Int. Cl. E02f 3/24; E21c 13/00, 1/00

U.S. Cl. 37—189

2 Claims



Auxiliary digging and throwing members for feeding aggregate into a rotary excavating and loading machine, comprising vertical shafts on either side of the main machine, the shafts carrying a plurality of cutting and throwing blades mounted in a discontinuous helix about the vertical shafts to dig aggregate and throw it upwardly and outwardly into the main excavator.

### 3,461,580 LOAD CONTROL MEANS FOR BUCKET WHEEL EXCAVATORS

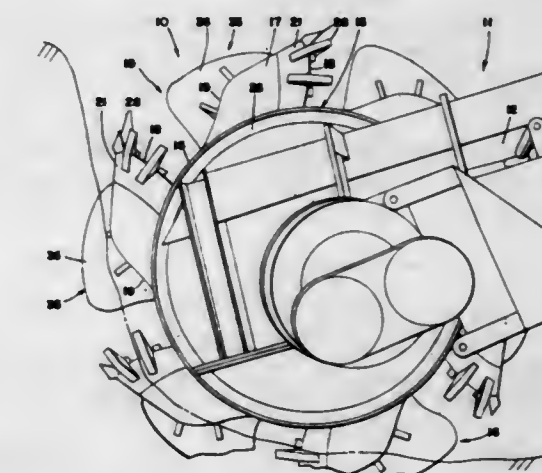
Otto E. Sebold, Ridgewood, N.J., assignor to McDowell-Wellman Engineering Co., Cleveland, Ohio, a corporation of Ohio

Filed Feb. 14, 1966, Ser. No. 527,217

Int. Cl. E02f 3/64, 3/81

U.S. Cl. 37—189

1 Claim



A device for controlling the type of material admitted to the buckets of a bucket wheel excavator. The load control device according to this invention comprises a blocking means, such as a plate, mounted ahead of each bucket mouth and within a bucket loading zone so that large chunks of material or rock are prevented from entering the bucket mouth.

### 3,461,581 PLASTIC CARD AND METHOD OF MAKING SAME

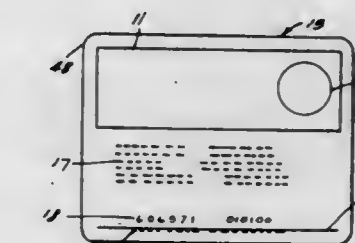
Robert Hoffmann, Chicago, Ill., assignor to Placard-Chicago Corporation, Chicago, Ill., a corporation of Illinois

Filed Apr. 10, 1967, Ser. No. 629,803

Int. Cl. G09f 3/02

U.S. Cl. 40—2.2

11 Claims



The illustrated card is made by printing on first thermoplastic sheets an array of identical indicia representing the format for each of a group of cards, and by causing a computer to print out on a web of second transparent thermoplastic sheets individual data for the respective cards arranged so that each data location on the second sheet will register with a format location on the first sheet. After thermoplastic cover sheets are applied to outer printed surfaces of the superimposed first and second sheets, the sheets are fused together and then severed into individual card units.

### 3,461,582 SCROLL-SCANNING DEVICE

John R. Perkins, Wayne, Maine 04284  
Filed May 25, 1967, Ser. No. 641,382

Int. Cl. G09f 11/28; B65h 17/02

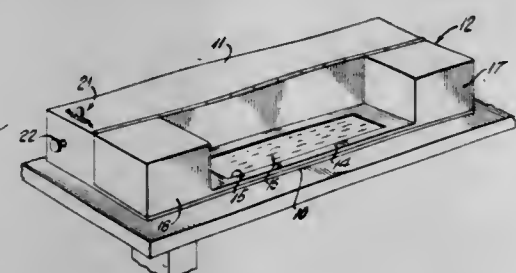
U.S. Cl. 40—31

11 Claims

This invention is concerned with a ready electrically operated selective display of a length of scroll material



between two reels. The mechanism is simple and fool-proof and provides independent adjustments for take-up speed and for rewind speed. The arrangement is such that



the drive mechanism for one direction of scroll movement in no sense interferes with that which may have been selected for the other direction.

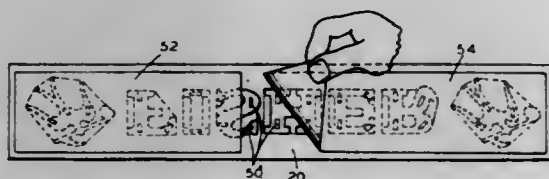
3,461,583

## DISPLAY PACKAGE

Ernest A. Buck, 31 Green St., New Berlin, N.Y. 13411  
Filed Dec. 19, 1966, Ser. No. 602,806  
Int. Cl. G09f 7/12

U.S. Cl. 40—125

6 Claims



Display assembly including a frame of light cellular material with apertures cut therein to frictionally receive indicia in a predetermined arrangement, the indicia having adhesive on one end temporarily covered by a release sheet, so that on removal of the release sheet, the letters can simultaneously be applied to a surface for adherence thereto, after which the frame is slid off. In one modification the frame comprises two identical members aligned and spaced to hold indicia of greater height.

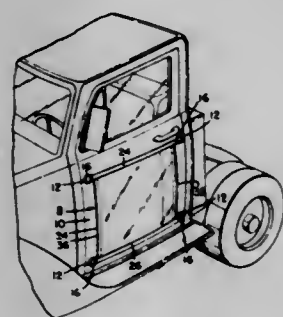
3,461,584

## SIGN HOLDER FOR APPLICATION TO VEHICLE DOORS

Minor E. Wilson, Batavia, Ohio, assignor to Wilson Seat Company, Cincinnati, Ohio, a corporation of Ohio  
Filed Feb. 17, 1967, Ser. No. 618,278  
Int. Cl. G09f 7/60

U.S. Cl. 40—129

18 Claims

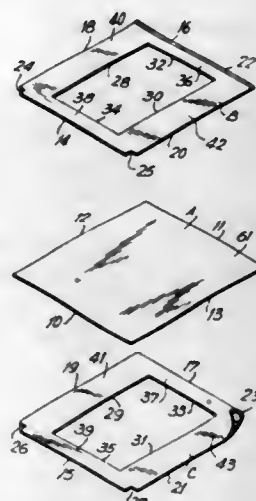


The sign holder is flexible to overlie flat or curved vehicle doors which may vary in size and contour. It provides protection for an inserted sign against adverse weather, and includes an inner transparent flap for retaining a sign or advertising sheet against accidental dislodgement by air movement, vibration, or other external forces directed thereto. Simplicity, economy, and serviceability are emphasized, and the holder may be rolled or folded for economical shipment and storage.

3,461,585  
PICTURE MOUNTING ARRANGEMENT  
Robert H. Roberts, Flushing, N.Y.  
(37 Moultrie St., Brooklyn, N.Y. 11222)  
Filed Sept. 27, 1967, Ser. No. 670,956  
Int. Cl. G09f 1/12

U.S. Cl. 40—158

6 Claims



The base of the mounting construction consists of a central stiff base member on each side of which are positioned frame members, the inner edges of which are imprinted with gold leaf, with the outer edges being incut at their corners. These sheets are then assembled by a stitching arrangement to engage an edge covering of gold or other decorative plastic sheet materials, and particularly gold covered Mylar, which is a polyethylene terephthalate.

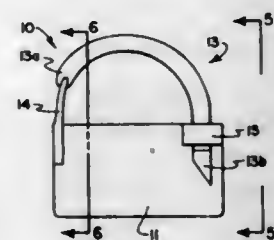
3,461,586

## METHOD OF AND TAG FOR IDENTIFYING ANIMALS

Lloyd R. Yaune, Ashby, Nebr. 69333, and Rowland W. Rider and Edwin Q. Cannon, Jr., Salt Lake City, Utah; said Rider and said Cannon assignors to said Yaune  
Filed May 4, 1967, Ser. No. 636,066  
Int. Cl. G09f 3/06

U.S. Cl. 40—300

5 Claims



A method of identifying animals by attaching easily observed identification tags to their noses, and a tag for such purpose having a clasp adapted to be passed through the tissue between animal nostrils and having a body portion on which clearly observable identification marking can be placed.

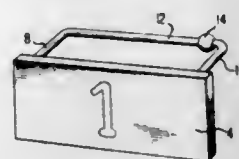
3,461,587

## IDENTIFICATION TAG FOR LIVESTOCK ANIMALS

John Rickels Ham, Rte. 2, Elmore City, Okla. 73035  
Filed May 8, 1967, Ser. No. 636,771  
Int. Cl. G09f 3/60

U.S. Cl. 40—300

12 Claims



An animal identification tag includes an indicia-carrying plate adapted to lie flat against the nose portion of

the animal. A pair of parallel arms extend rearwardly from the plate and a cross arm member is attached to the parallel arms in parallel relation to the plate.

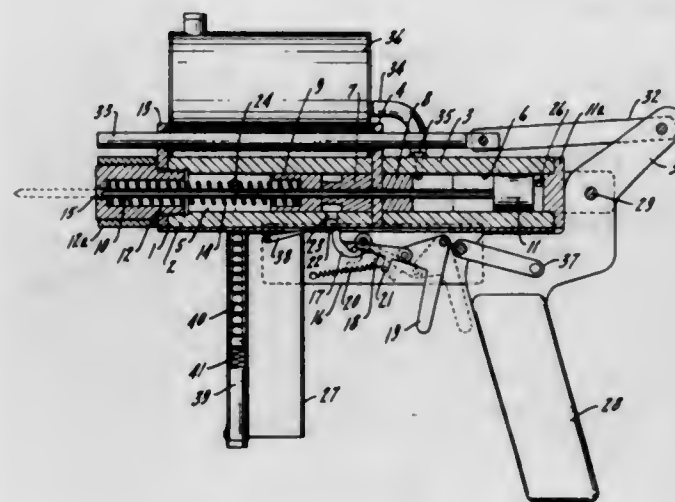
3,461,588

## EXPLOSIVELY OPERATED INJECTION GUN FOR TREATING TREES

Nels J. Johnson, 912 Pitner Ave.,  
Evanston, Ill. 60202  
Filed Mar. 1, 1968, Ser. No. 709,767  
Int. Cl. F41c 3/00; B27k 3/10; A01g 29/00

U.S. Cl. 42—1

6 Claims



A hand gun using an explosive cartridge for injecting systemic fungicides, pesticides, antibiotics, and other chemicals into trees. The gun is held against the tree, a trigger is pulled, a cartridge fires in a chamber to generate pressure enough to force a needle through the bark into the tree, gas pressure then forces a liquid through the needle into the tree. A plunger is then pulled back by hand to withdraw the needle from the tree, eject the fired cartridge and reload the gun with a new cartridge and a measured supply of liquid.

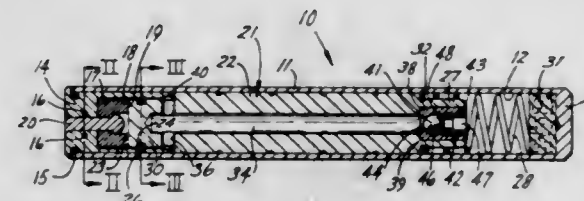
3,461,589

## FIREARM RECOIL REDUCER WITH AN INERTIA MEMBER HAVING VALVE MEANS THEREIN

Italo D. Vironda, 194 N. Wabash,  
Battle Creek, Mich. 49017  
Continuation-in-part of application Ser. No. 706,021,  
Feb. 16, 1968, This application Sept. 20, 1968,  
Ser. No. 761,269

Int. Cl. F41c 23/00  
U.S. Cl. 42—74

9 Claims



A recoil mechanism for a firearm having a sleeve fixedly positioned within the stock of the firearm and an inertia member slideably positioned within the sleeve, and maintained within one end thereof by a releasable holding means, such as a magnet. The recoil forces, which cause the sleeve to move relative to the inertia member, overcome the releasable holding force between the inertia member and the sleeve, thereby resulting in the absorption of a substantially large recoil force. Spring means bias the inertia member back into engagement with the sleeve to re-establish the releasable engagement there-

between. The inertia member further includes a passageway in communication with the sleeve adjacent opposite ends of the inertia member, which passageway contains a one-way check valve therein. The check valve prevents flow of air therethrough as the inertia member is moved during firing while permitting air to freely pass there-through during return movement of the inertia member toward its original position.

3,461,590

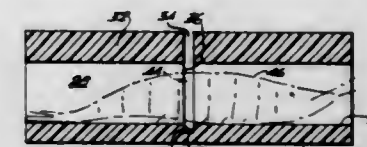
## DEVICE FOR ATTACHING A SHRIMP-LIKE BODY TO A FISHING HOOK

Woodbury A. Gindele, 515 SW. 64th Ave.,  
Miami, Fla. 33144

Filed Sept. 16, 1968, Ser. No. 762,255  
Int. Cl. A01k 97/00, 83/06

U.S. Cl. 43—4

7 Claims



A device for use in tying a line about the mid-point of a shrimp-like body which includes a body member having a socket to receive the shrimp-like body and a slot extending across the body so as to be circumposed completely around the socket for receiving a string before a shrimp is placed in the socket. The string is then tied about the body of the shrimp and the body is then withdrawn from the socket to accommodate attachment to the hooked end of a fishing line without severe injury to the shrimp.

3,461,591

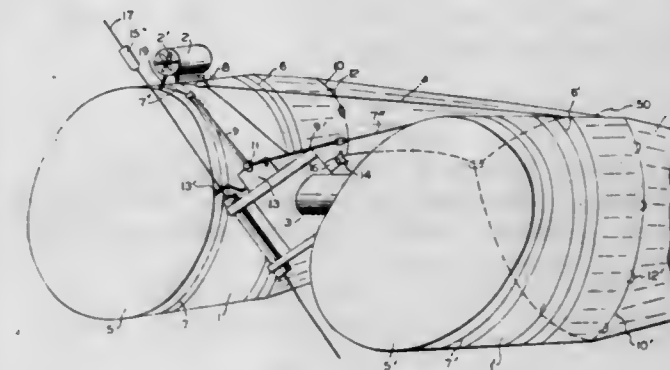
## UNDERWATER SAMPLING APPARATUS

Daniel M. Brown, La Jolla, and John A. McGowan, Del Mar, Calif.; said Brown assignor to the Regents of the University of California, Berkeley, Calif.

Filed Nov. 3, 1967, Ser. No. 680,542  
Int. Cl. A01k 73/04, 73/06

U.S. Cl. 43—8

8 Claims



Sampling nets adapted to be towed under water and to open and close at predetermined times under the control of release mechanisms and flow meter devices to obtain the desired samples of plankton and the like.

3,461,592

## CONDITION RESPONSIVE DEVICE

Soichiro Makino, 68 1-Chome Higashima-chi,  
Koganei-shi, Tokyo, Japan

Filed May 18, 1966, Ser. No. 551,029  
Int. Cl. A01k 97/12, 93/00

U.S. Cl. 43—17

4 Claims

A condition responsive and indicating device for use with fishing gear to signal the presence of a fish on the



fishing line. A switch is located at a remote location on the line and is electrically connected to a control which



is responsive to condition changes caused by an opening and closing of the switch contacts.

### 3,461,593 FISHING ROD

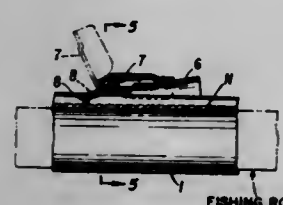
Leon P. Martuch, 4102 Jefferson Ave., and Leon L. Martuch, 1209 Glendale, both of Midland, Mich. 48640  
Filed Sept. 22, 1967, Ser. No. 669,734  
Int. Cl. A01k 87/00; A63b 53/10, 53/12  
U.S. Cl. 43—18 12 Claims



A fishing rod made of generally hollow tubular configuration in which is disposed a reinforcing member that can be readily rotated or moved to different positions so that the fishing rod is provided with varying degrees of stiffness. In this manner, the rod may be made more flexible or less flexible as desired in order to vary the action of the rod during fishing.

### 3,461,594 SEATING DEVICE FOR FISHING REEL

Ryuichi Ohmura, Shizuoka, Japan, assignor to Fuji Kogyo Company Limited, Shizuoka, Shizuoka Prefecture, Japan, a Japanese company  
Filed Jan. 28, 1966, Ser. No. 523,764  
Claims priority, application Japan, Oct. 26, 1965, 40/65,642  
Int. Cl. A01k 87/06  
U.S. Cl. 43—22 3 Claims



A seating device for mounting a fishing reel on a fishing rod including a hollow body adapted to fit over a fishing rod and having a pair of flat tracks on its upper surface, a pair of guide grooves extending therealong

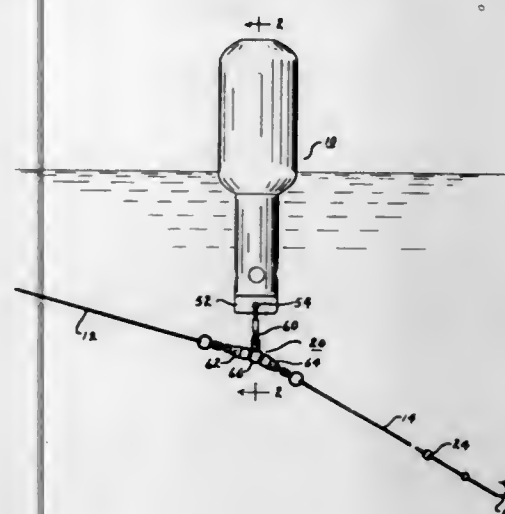
beneath the tracks, and a depressed portion between the tracks having axially spaced laterally extending notches thereon. A tapered socket is fixed at one end of the body to accommodate one leg of a fishing reel base. A moveable socket has intumed end portions engageable in the guide grooves and also has a resilient tongue at one end directed toward but biased away from the notches. A pressure piece, which cooperates with the tongue, is pivoted to the moveable socket for movement between a first position in which the tongue is out of engagement with any notch and allows the moveable socket to slide along the hollow body to fit over the other leg of a fishing reel base, and a second position in which the piece presses such tongue into the then underlying notch to hold the reel on the seating device.

3,461,595  
FISHING LURE  
Carl W. Roza, 119 Clarendon Ave.,  
Pikesville, Md. 21208  
Filed Dec. 15, 1966, Ser. No. 602,000  
Int. Cl. A01k 85/00, 95/00  
U.S. Cl. 43—42.39 2 Claims



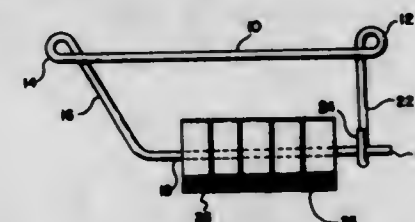
A fishing lure having a longitudinal and transverse concave-convex spoon portion. Intermediate the ends of the spoon portion, a weight portion is mounted on and transversely coextensive with the concave side of the spoon portion. The weight portion is eccentric to both the longitudinal and transverse axes of the lure, and causes the lure to assume a substantially vertical position in the water.

3,461,596  
FLOAT AND CASTING DEVICE  
Verland H. Green, 1602 Fox Farm Road,  
Warsaw, Ind. 46580  
Filed Dec. 22, 1966, Ser. No. 603,895  
Int. Cl. A01k 93/00, 91/02  
U.S. Cl. 43—43.1 8 Claims



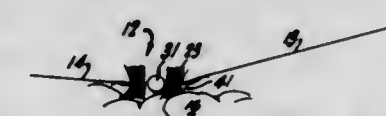
A float and casting device for a fishing line including an elongated tubular member with a solid weight slidably disposed therein and a float around the member near one end thereof. The weight is moved to the float end during casting and is automatically moved to the other end to upright the float when it is placed in the water.

3,461,597  
ADJUSTABLE WEIGHT SINKER FOR  
FISHING LINES  
Philip H. Hobson, Box 742, Evergreen, Colo. 80439  
Filed June 23, 1967, Ser. No. 648,268  
Int. Cl. A01k 95/00  
U.S. Cl. 43—43.14 6 Claims



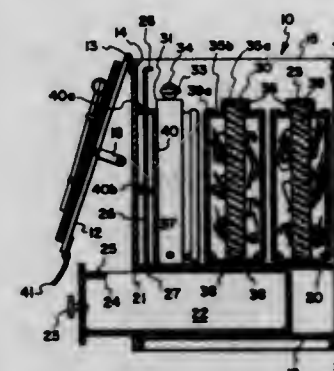
A frame member having means for attachment to a fishing line including a weight holding elongated portion integral with the frame member at one end and having a releasable closure means at the other end, whereby annular-shaped weights may be mounted on the elongated portion of the frame member. The frame may be made of spring wire, having a safety-pin type catch in a position to engage the releasable closure means for releasably holding the weights on the elongated portion, and it includes an angled leading edge extending from the frame to the elongated portion to prevent hangup of the line on snags.

3,461,598  
WEIGHT FOR FISHING LINE  
John H. Brewster, 2227 Burney Way,  
Sacramento, Calif. 95821  
Filed Mar. 27, 1967, Ser. No. 626,127  
Int. Cl. A01k 95/00  
U.S. Cl. 43—44.97 4 Claims



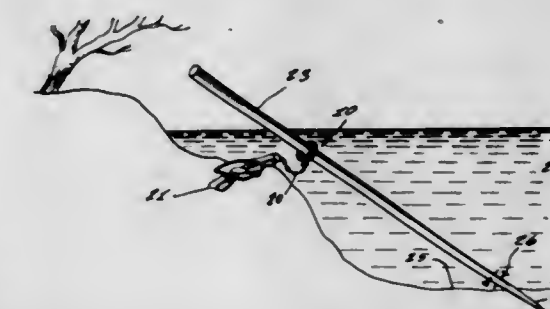
A fishing line weight having a core of two wires twisted together so as to anchor a plurality of radially extending bristles. A lead weight is mounted on the core intermediate the core ends, the maximum radial dimension of the weight being less than the length of the adjacent bristles.

3,461,599  
TACKLE CHEST  
Ronald R. Sylvester, 902 East 12650 South,  
Draper, Utah 84020  
Filed Mar. 8, 1967, Ser. No. 621,597  
Int. Cl. A01k 97/06, 97/00  
U.S. Cl. 43—57.5 2 Claims



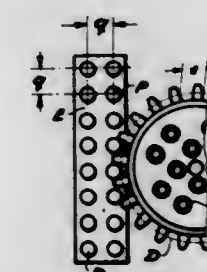
A chest for use by fishermen and the like comprising a large box for receiving individual storage compartments, and a drawer, and locking means to prevent inadvertent withdrawal of the storage compartments and drawer. The individual storage compartments provide easily accessible, broad faces to which lures and the like can be attached and smaller compartments are provided with means for attaching them to a fisherman's belt.

3,461,600  
TRAP-CHAIN LOCK RING  
Francis Boudreau, 144-B Spruce St. N.,  
Timmins, Ontario, Canada  
Filed Feb. 26, 1968, Ser. No. 708,200  
Int. Cl. A01m 23/26 3 Claims



An attachment for an animal trap including a ring that is secured to the trap chain, the ring being radially slidable downwardly along a pole imbedded at its lower end within a body of water. The ring in one form has a weighted portion while other forms have pointed projections which makes it difficult to slide upwardly. An animal caught in the trap will upon struggle descend to the bottom of the water and be not able to ascend again, thus drowning.

3,461,601  
COG WHEEL FOR A MODEL BUILDING SET  
HAVING BLOCKS WITH EVENLY SPACED  
PROJECTIONS  
Knut Moller Kristiansen, Billund, Denmark, assignor  
to Interlego A.G., Zug, Switzerland  
Filed Feb. 3, 1966, Ser. No. 524,694  
Claims priority, application Denmark, Mar. 1, 1965, 1,054/65  
Int. Cl. A63h 33/00, 33/04, 31/00  
U.S. Cl. 46—16 6 Claims



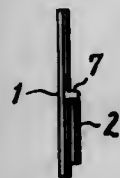
A cog wheel for a toy building set which has a plurality of building blocks having evenly spaced projections from one side of the building blocks. The cogs on the wheel are arranged in such a manner that the teeth will engage the projections of a building block to make a rack and pinion gear arrangement. The radius  $r$  of the pitch circle of the cog wheel is equal to an integral multiple of the space between adjacent projections of the building block.

3,461,602  
SELF-SUPPORTING ROOFING ELEMENTS  
WITH CONNECTING MEANS  
Heinz Hasel, Industriestrasse, Reichartshausen, Baden,  
Germany, and Otto Wolf, Pfaffenhalde 27, Kirchheim,  
Teck, Wurttemberg, Germany  
Filed Feb. 10, 1965, Ser. No. 431,648  
Claims priority, application Germany, Feb. 12, 1964, H 51,653  
Int. Cl. A63h 33/10, 33/12 3 Claims

Toy building elements for the assembly of a roof structure, the individual elements being essentially h-shaped in a side elevation view, wherein the hook portion of the

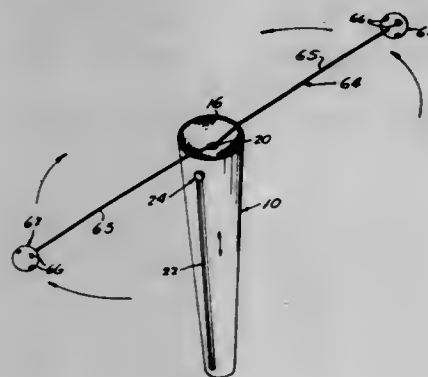


h is provided on the underside of the element in the form of a resilient tongue and both the upper portion and tongue portion are identically formed with embossed longitudinal impressions which cause the individual elements to appear U-shaped in a transverse sectional view. Between the longitudinal impressions, the tongue portion is



slotted longitudinally to form two separate tongue portions. Additionally, elements are provided for use at ridge portions of a roof structure which have a cylindrical portion at one end of the element, the cylindrical portion having a bore at one end and a projection at the other end so that several elements may be interlocked at the ridge of the roof.

**3,461,603**  
**WHIRLING-WHISTLING TOYS**  
Gar Lee Rowell, Rte. 1, Box 88, Loris, S.C. 29569  
Filed Aug. 19, 1966, Ser. No. 573,528  
Int. Cl. A63h 5/00, 33/40  
U.S. Cl. 46—52 5 Claims

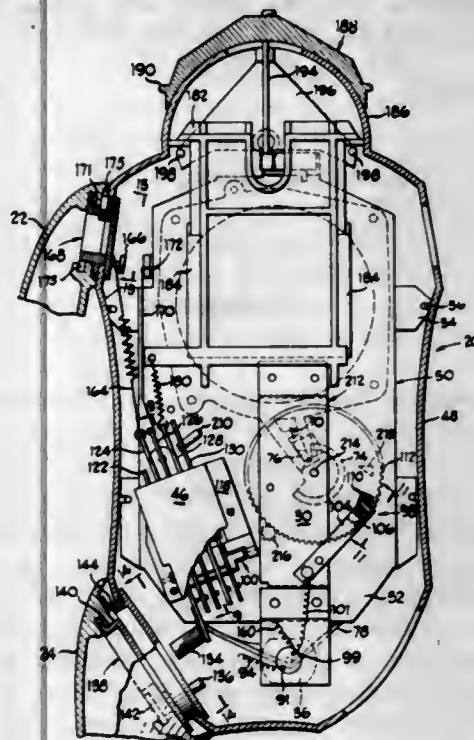


A sounding toy consisting of a hollow handle with a concave top wall, a grommet being mounted in a central aperture in said top wall. A cord has two flights extending through the grommet with apertured hollow balls secured to the respective outer ends of the flights. A rigid retracting device is mounted in the handle with the cord secured thereto so that the balls are retracted when the retracting device is moved. In one version, the retractor consists of a slide engaged in a slot in the handle. In another version the retractor is a reel journaled in the handle with a tensioning spring and a releasable clutch to hold the reel in a tensioned position.

**3,461,604**  
**SOUND REPRODUCING MECHANISM**  
Marvin I. Glass, Chicago, Gunars Little, Lombard, and Peter Aleksa, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership  
Filed Jan. 16, 1967, Ser. No. 611,532  
Int. Cl. A63h 33/26  
U.S. Cl. 46—232 8 Claims

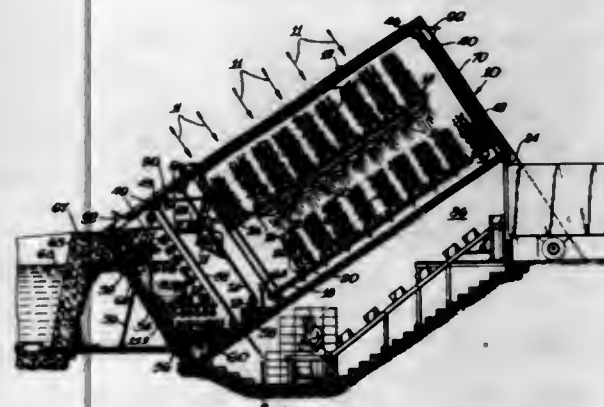
A motor operated sound reproducing mechanism which is subject to actuation through movement of any one of a plurality of control means to effect the reproduction of a predetermined one of a plurality of messages, and which

includes means for preventing interruption of the operation of the sound reproducing mechanism in the event



that another one or more of the actuating means is activated during the reproduction of said one message.

**3,461,605**  
**GREENHOUSE**  
Lawrence E. Stanhope, Rte. 1, Box 303, Road J, Highway 64, Swanton, Ohio 43558  
Filed Nov. 4, 1966, Ser. No. 592,141  
Int. Cl. A01g 9/14, 9/24  
U.S. Cl. 47—17 11 Claims



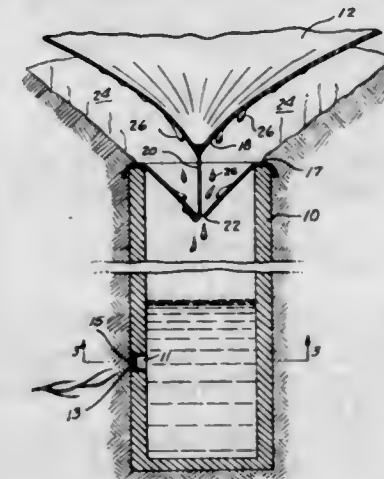
A greenhouse has a top wall inclined for being only southerly disposed with a first inclined growing area under a transparent portion of the top wall and with a second inclined growing area under the first area.

This invention relates to a greenhouse or other structure for enclosing a growing area and particularly to such a greenhouse which effectively utilizes the sun's rays for its growing area.

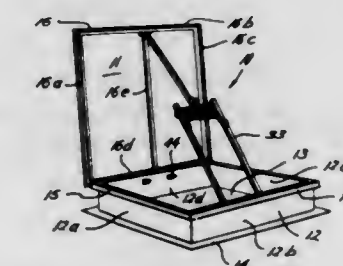
**3,461,606**  
**ROOT WATERING DEVICE**  
John A. Calola, Rte. 2, Box 440, Elsinore, Calif. 92530  
Continuation-in-part of application Ser. No. 471,223, July 12, 1965. This application Feb. 17, 1967, Ser. No. 621,390  
Int. Cl. A01g 29/00; B01d 3/00  
U.S. Cl. 47—48.5 6 Claims

A root watering device including a receptacle buried in an opening in soil below an upward conical extension of the opening. A plastic shield having a dependent conical

cal portion covers the opening with a space between the dependent conical portion of the shield and the conical extension of the opening to permit the earth emanations from the opening to condense on the underside of the shield. The receptacle is provided with a side aperture for entrance of a tree root and a top aperture for en-



**3,461,607**  
**SMOKE AND HEAT VENT**  
Kiyoshi Sandow, Baytown, George H. Allen, La Porte, and Thomas L. Anderton, Pasadena, Tex., assignors to Plasteco, Inc., a corporation of Texas  
Filed Aug. 11, 1967, Ser. No. 659,956  
Int. Cl. E05f 15/20  
U.S. Cl. 49—7 23 Claims

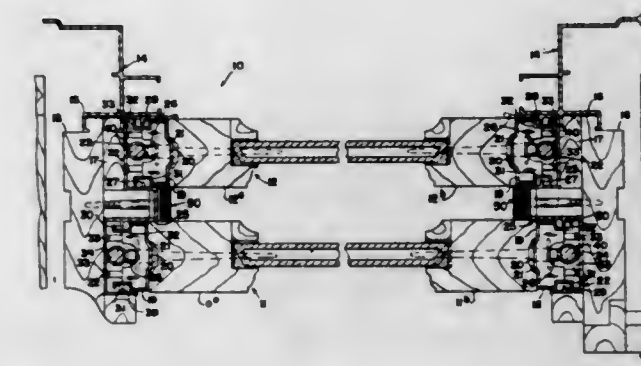


A vent including a frame and hinged cover for mounting with an opening in a building, house, or structure. The cover is pivoted about hinges to an open position when a fusible link is melted by heat or when a manual release means is actuated. A latch means for the cover is mounted opposite from the hinges and a means for opening the cover when the latch is released is disposed so as to exert a lifting force on the cover adjacent the latch means and opposite from the hinges to eliminate twisting or torque forces on the cover when latched or during lifting. The cover can be easily relatched by resetting the latch means and by then simply pushing the cover down to its closed position.

**3,461,608**  
**TILT WINDOW ASSEMBLY WITH BALANCE GUIDES**  
Waldo O. Johnson, Wooster, Ohio, assignor, by mesne assignments, to Georgia-Pacific Corporation, Portland, Ore., a corporation of Georgia  
Filed Nov. 20, 1967, Ser. No. 684,232  
Int. Cl. E05d 15/22  
U.S. Cl. 49—161 8 Claims

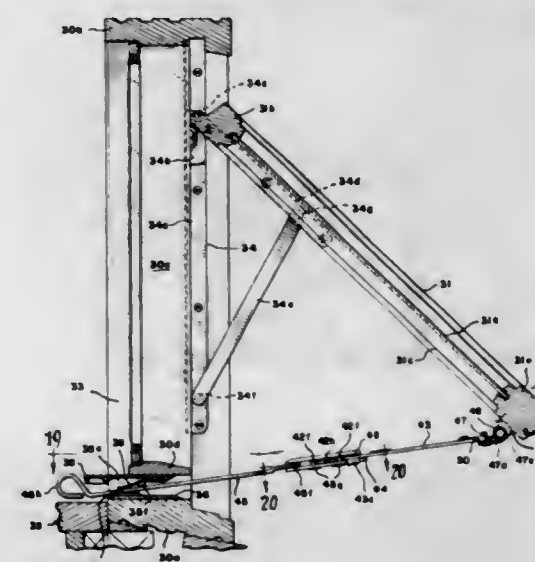
The novel window assembly of the invention includes a pair of vertically extending jamb liners and an upper and

a lower sash slidably operably engaging the jamb liners. A balance guide of substantially the length of each of the sashes engages each vertical rail of the sashes and extends laterally outwardly therefrom to engage the jamb liners, and slide spring means are operably carried by the balance



guides and engage the jamb liners for resiliently supporting the sashes. The assembly normally includes pivotal means that secure the balance guides to the sashes adjacent the lower ends thereof and the jamb liners are laterally inwardly offset in the portions thereof engaging the upper sash to facilitate inward tilting of the window sashes.

**3,461,609**  
**MANUAL OPERATOR FOR AWNING SASH WINDOWS**  
Henry P. Armstrong, Islington, Ontario, Canada, assignor to Truth Tool Company, a Minnesota corporation  
Filed June 3, 1968, Ser. No. 733,938  
Int. Cl. E05f 11/00  
U.S. Cl. 49—324 19 Claims



A window operator for an awning-type, outwardly hinged window sash in which a pair of actuating arms are pivotally supported by a supporting means and extend therefrom for swinging movement relative to the frame and adapted for connection to the window sash. A manual handle lever is pivotally connected to the supporting means for oscillatory rotation of less than one complete turn about an axis parallel to but spaced from the arm pivots. The lever is adapted to be longitudinally extended perpendicular to the window sash to effect ejection of the supporting means to open the window. Motion transmitting means are supported in part by the supporting means and interconnected to the handle lever and to the sash actuating arms to effect swinging movement of the arms upon rotational movement of the handle lever.



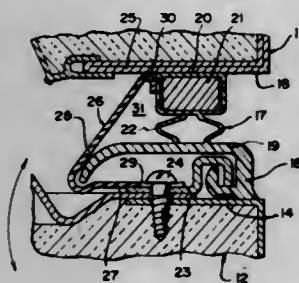
### 3,461,610 GASKET BRACE

Harold P. Peters and John T. Woods, Evansville, Ind., assignors to Whirlpool Corporation, a corporation of Delaware

Filed Sept. 28, 1967, Ser. No. 671,296  
Int. Cl. F25d 23/02

U.S. Cl. 49—478

12 Claims



A gasket brace for bracing a flexible magnetic gasket against roll-over during the closing of a door to insure a positive seal. The illustrated gasket is used on a refrigerator door and the brace is associated with the portion of the gasket at the hinged side of the door. The brace extends longitudinally of the gasket and bears against the inner side of the magnet holding portion of the gasket. It is adapted to be readily installed in the field and is mounted on the door by the means for mounting the magnetic gasket thereon.

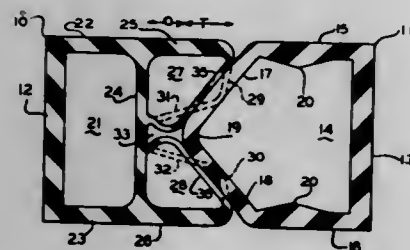
### 3,461,611 SAFETY SEAL FOR SLIDING DOORS

Daniel E. Axe, Fayetteville, N.Y., assignor to The O. M. Edwards Company, Inc., Syracuse, N.Y., a corporation of New York

Filed Oct. 12, 1967, Ser. No. 674,812  
Int. Cl. E06b 1/14, 7/16

U.S. Cl. 49—483

2 Claims



A pair of extruded rubber door edges for center-closing sliding doors which comprise a male member for one door and a female member for the other. The members are hollow with large longitudinally extending chambers for safety reasons. The male member has a blunt V-shaped nose received in a narrower V-shaped notch in the female member formed by hollow portions on either side thereof. The walls of the hollow portions contacting the nose are thinner than the other walls of the female member and those of the male member so as to collapse for forming a seal with the nose.

### 3,461,612 GRINDING MACHINE

Alfred T. Parrella, Newtown, Paul Palubniak, Easton, and Gene R. Gagliardi, Bethany, Conn., assignors to Farrel Corporation, Ansonia, Conn.

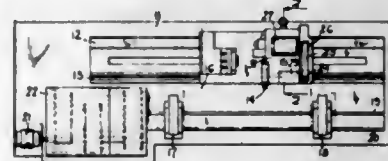
Filed Oct. 18, 1966, Ser. No. 587,578  
Int. Cl. B24b 5/16, 49/10, 51/00

U.S. Cl. 51—49

11 Claims

Apparatus for controlling the movement of a grinding

wheel as it moves along the length of a cylindrical work-piece to define a crown thereon where the grinding wheel



head is tilted toward and away from the roll by a linearly movable piston under control of a generated crown signal.

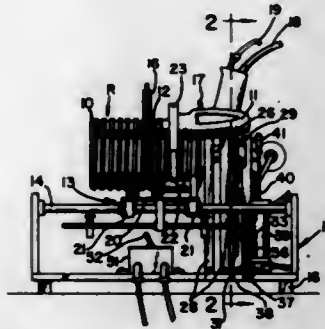
### 3,461,613 HELICAL GROOVE FINISHING DEVICE

Bradley A. Schnepf, Beaverton, Mich., assignor to Brown Machine Company of Michigan, Inc., Beaverton, Mich., a corporation of Michigan

Filed May 23, 1966, Ser. No. 552,144  
Int. Cl. B24b 5/00, 29/00, 37/00

U.S. Cl. 51—50

9 Claims



A machine for polishing a groove formed on the outer surface of a cylinder. A polishing wheel automatically moves back and forth over the groove in response to a groove engaging guide attached to the wheel. Reversing means are provided to automatically reverse the direction of rotation of the cylinder when the polishing wheel reaches the end of the groove or groove portion being finished.

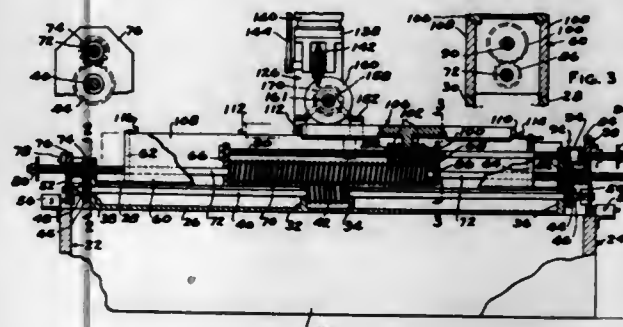
### 3,461,614 DEVICE FOR FORMING PARTS SUCH AS GEARS AND SPLINES

William R. Neubarth, Centerline, Mich., assignor of one-third to Elway P. Gray, Royal Oak, and one-third to Joseph B. Whitmore, Inkster, Mich.

Filed Sept. 7, 1966, Ser. No. 577,628  
Int. Cl. B24b 5/18

U.S. Cl. 51—52

10 Claims



A feed mechanism for forming parts by stock removal such as gears and splines without the use of a master part which includes a feed mechanism for converting rotational motion to linear motion in an accurate and precise manner to obtain the translation of a particular work part in response to rotary input, the system including, in

addition to a stock removing tool, a base, a slide table movable longitudinally on the base, a control slide movable on the slide table, the work being mounted on the slide table and rotated by relative motion between the control slide and the table, this motion being accomplished by a worm and gear mechanism associating the base, the slide table and the control slide.

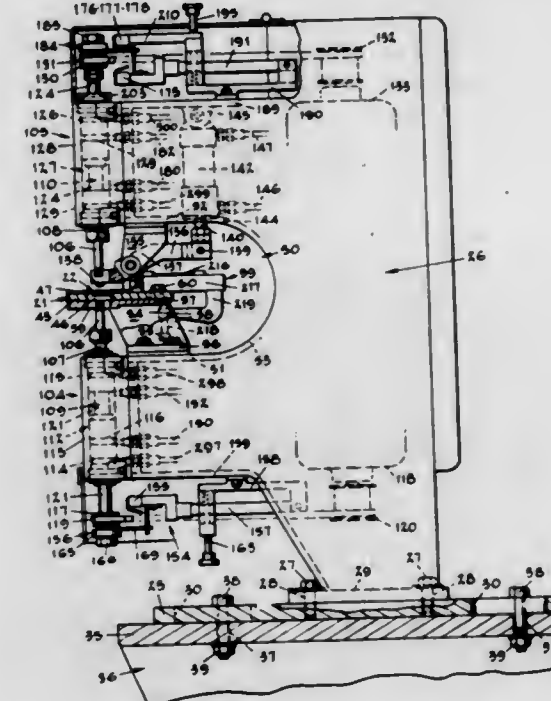
### 3,461,615 DRILLING MACHINES

Charles W. Ferguson and Robert H. Welker, Perrysburg, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Filed Mar. 24, 1966, Ser. No. 537,097  
Int. Cl. B24b 7/00, 9/00; B28d 1/02

U.S. Cl. 51—81

8 Claims



A machine for simultaneously drilling a plurality of holes in sheets of glass or other materials. A first plurality of drills are located beneath the sheet and a second plurality of drills above said sheet in axial alignment with the first plurality of drills. Means are also provided for clamping the sheet to be drilled in position on a horizontal support and for subsequently ejecting the drilled sheet from said support. The machine is placed in operation by accurate location of the sheet to be drilled on the support which initiates automatic and sequentially timed operation of (a) means for clamping the sheet in position, (b) means for moving the first plurality of drills simultaneously toward the sheet and their subsequent withdrawal therefrom, (c) means actuated by each of the first plurality of drills for moving the aligned drill of the second plurality of drills toward and away from the sheet, and (d) means actuated upon movement of the second plurality of drills to their inoperative position for releasing said clamping means and for actuating the sheet ejector means to effect removal of the sheet from said support.

### 3,461,616 METHODS AND APPARATUS FOR SHARPENING RAZOR BLADES OR SIMILAR CUTTING TOOLS

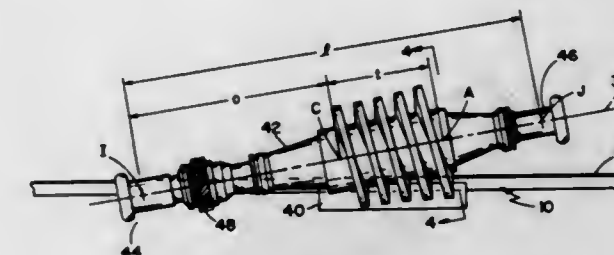
Warren I. Nissen, Topsfield, and Robert M. Atwater, Weymouth, Mass., assignors to The Gillette Company, Boston, Mass., a corporation of Delaware

Filed Oct. 14, 1966, Ser. No. 586,873  
Int. Cl. B24b 3/48, 1/00; B26b 21/54

U.S. Cl. 51—87

12 Claims

Razor blade sharpening apparatus includes two honing wheels of modified frustoconical configuration that are



five inches long, and have a radius of 2.800 inches at their larger ends and a radius of 2.712 inches at their smaller ends. The wheels are mounted for rotation about parallel axes that are inclined at a tilt angle of 5° relative to a blade path defined by a blade holder. A spiral helix formed on the surface of each wheel defines a series of lands that are interengaged to define a nip when the wheels are juxtaposed in honing position. This apparatus produces a smoothly curved convex final facet with an included angle of about 28° at the ultimate tip of the sharpened edge of razor blade stock.

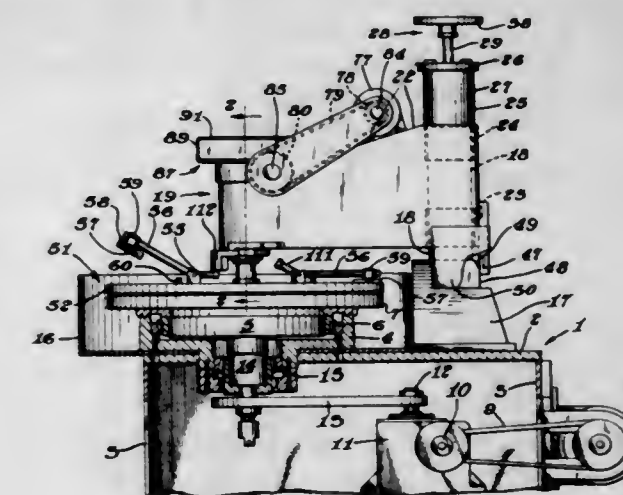
### 3,461,617 METHODS AND APPARATUS FOR LAPPING WORKPIECES

Dale W. Wright, Saginaw, Mich., assignor to Miles Machinery Company, Saginaw, Mich.

Filed Aug. 18, 1965, Ser. No. 480,574  
Int. Cl. B24b 7/02, 9/00

U.S. Cl. 51—121

17 Claims



A lapping machine having a rotatable, annular lapping wheel and a workpiece support for holding a workpiece against the wheel, the workpiece support including driving means for rotating the support relatively to the wheel in such manner that the workpiece traces a path relative to the wheel which is selectively circular or sinusoidal.

### 3,461,618 GRINDING DEVICE WITH WORKPIECE LOCATING MECHANISM

Melvin H. Lill, Okemos, and Weldon B. Ellege, Lansing, Mich., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Dec. 20, 1965, Ser. No. 515,107  
Int. Cl. B24b 7/00, 9/00, 19/00

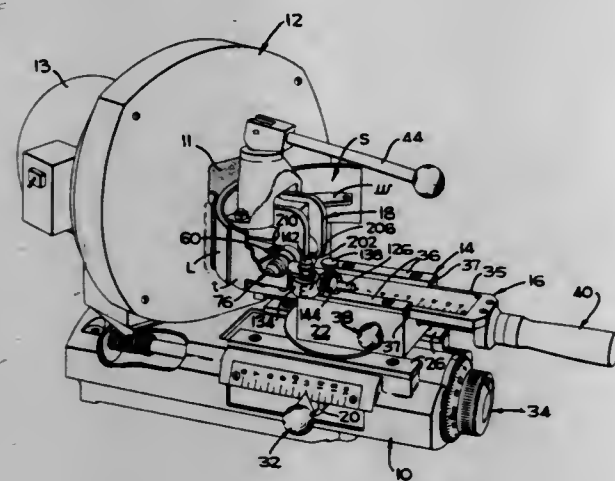
U.S. Cl. 51—124

3 Claims

A device for grinding semi-circular brake shoes has a rotatable grinding wheel and has a work holder pivotal about an axis. The work holder has a clamping assembly with four spaced positioning projections to engage the brake shoe centrally and locate the brake shoe in one direction in the clamping assembly before clamping. A

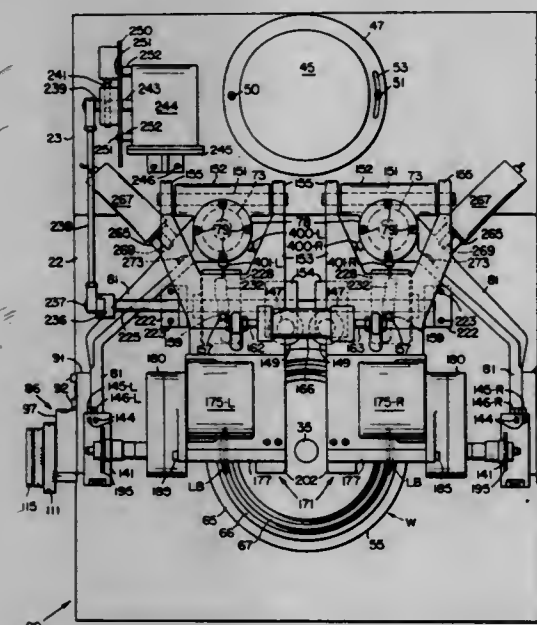


work positioner for locating one end of the brake shoe in the clamping assembly before clamping has a positioning lug to engage the eye at one end of the brake shoe. The work positioner has a sleeve mounted on the clamping assembly transverse to said one direction. The



sleeve is transversely adjustable, for coarse transverse positioning of the lug, and receives a micrometer bar therein which is transversely adjustable in the sleeve for fine transverse positioning of the lug. The lug is adjustably mounted on a slide bar which extends perpendicularly from the micrometer bar.

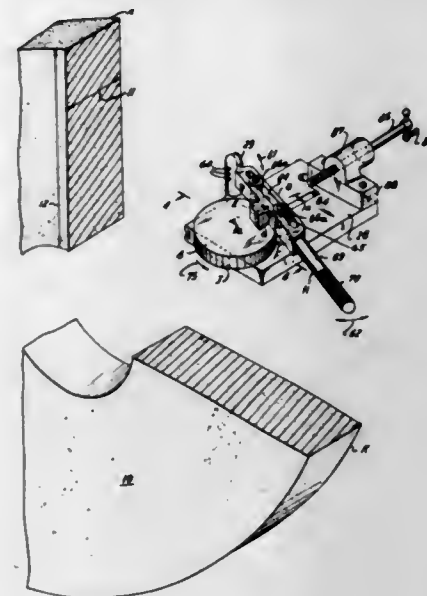
**3,461,619**  
**EDGE-GRINDING MACHINE FOR LENSES**  
Gordon K. Hurlbut and Antoine F. Gagne, Binghamton, N.Y., assignors to Textron Inc., Providence, R.I., a corporation of Rhode Island  
Filed May 10, 1966, Ser. No. 548,893  
Int. Cl. B24b 7/00, 9/00, 17/00  
U.S. Cl. 51-127 16 Claims



In this machine two lens blanks can be ground simultaneously with a grinding wheel comprising three removable, annular, coaxial grinding sections. The outermost section has a plane top surface perpendicular to the axis of the wheel for rough grinding the blanks to size or for grinding rimless lens blanks. The middle section has a symmetrical V-shaped groove for rough grinding blanks which are to be mounted in frames. The innermost section is for finish grinding the last-named blanks. The two lenses during grinding are supported at opposite sides of a plane

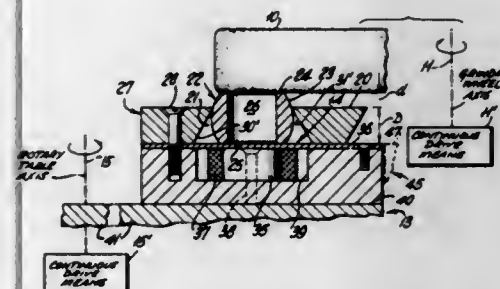
containing the axis of the wheel and are generally coaxial. They are swung out of engagement with the wheel to move them from one section of the wheel to another thereof.

**3,461,620**  
**GRINDING MACHINE FOR GRINDING ALLOY DISCS**  
Donald C. Garlitts, Braeburn, Pa., assignor to Continental Copper & Steel Industries, Inc. (Braeburn Alloys Steel Division), Braeburn, Pa., a corporation of Delaware  
Filed Jan. 30, 1967, Ser. No. 625,889  
Int. Cl. B24b 5/00  
U.S. Cl. 51-129 4 Claims



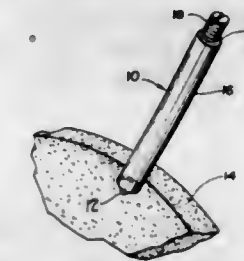
The present disclosure relates to processing of alloy discs which comprises grinding them to circular shape by pressing them against a vertical revolving grindstone.

**3,461,621**  
**MACHINE FOR FACE-GRINDING BEARING RINGS OR THE LIKE**  
Albert A. Bradlau, Plainville, Conn., assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Delaware  
Filed June 27, 1967, Ser. No. 649,291  
Int. Cl. B24b 5/00, 41/06  
U.S. Cl. 51-134 19 Claims



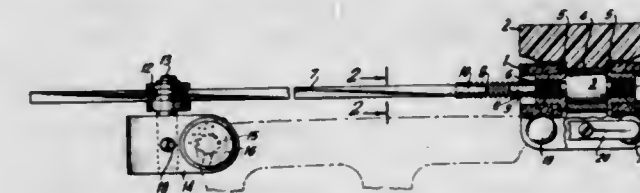
A machine for face-grinding bearing rings, wherein the flat end face of a relatively large abrasive wheel is relied upon for grinding. Rings to be ground are positioned, axial-end up, on the annular ring-supporting surface of a relatively large turntable, in such partial overlap with the grinding surface as to assure a given grinding period for each ring brought (by turntable rotation) into the overlap region. Each ring is held by wedge action in the tapered slot defined between spaced finger elements fixed to the annular turntable surface, and magnet action at this surface may enhance chucking action.

**3,461,622**  
**DOP STICK**  
Brooks B. Rayford, Springfield, Ohio  
(614 E. 140th St., Cleveland, Ohio 44110)  
Filed May 5, 1966, Ser. No. 547,825  
Int. Cl. B24b 19/00, 47/00; B25b 11/00  
U.S. Cl. 51-229 5 Claims



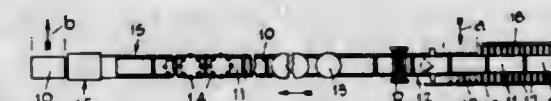
A device for mounting a small workpiece such as a gem wherein the workpiece is applied to an elongated member having a gas-filled chamber and the pressure is reduced within the chamber by means of a screw mounted plunger to thereby hold the workpiece. Additional mounting devices are provided for mounting small workpieces of a variety of sizes.

**3,461,623**  
**ICE SKATE BLADE HONER**  
Kurt W. Koehnlein, 42 DeHaven Drive, Yonkers, N.Y. 10703, and Herbert R. Klenck, 108-07 103rd Ave., Richmond Hill, N.Y. 11418  
Filed Sept. 14, 1967, Ser. No. 667,850  
Int. Cl. B24b 19/00, 23/00  
U.S. Cl. 51-241 11 Claims



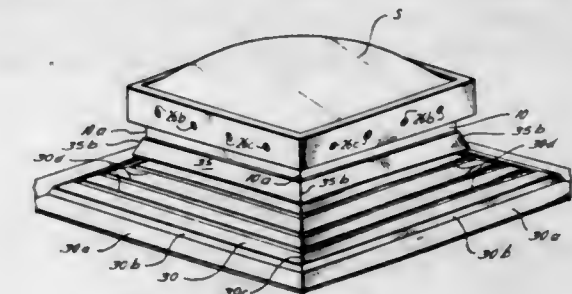
A cylindrical honing stone rotatably attached to a retaining carriage which, in operation, is slid back and forth along the blade edge. A twisted rigid rod similar to the type utilized to spin a child's top, is employed to rotate the stone as the carriage is moved along the blade. A flexible link joins the stone and rod to permit the stone to follow the curved blades employed by figure skates.

**3,461,624**  
**MOUNTING GLASS SHEETS**  
John W. Grosskopf, Jr., Perrysburg, Arthur G. Thayer, Rossford, and Robert H. Welker, Perrysburg, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio  
Filed Dec. 6, 1965, Ser. No. 511,912  
Int. Cl. B24b 19/00, 7/00, 9/00  
U.S. Cl. 51-277 6 Claims



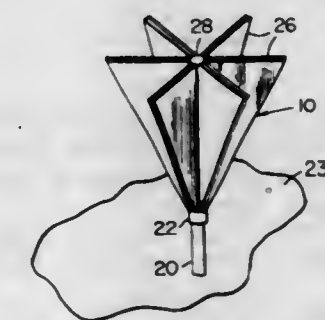
Mounting glass sheets upon surfacing tables by moving a plurality of the tables along a fixed path in end-to-end relation, moving the glass sheets along a path converging with the surface of the tables to bring the sheets into face-to-face relation therewith, and applying a fluid suspension of a bedding material between the sheets and surface before the sheets engage the surface.

**3,461,625**  
**SELF-FLASHING SKYLIGHT CURB CONSTRUCTION**  
Kiyoshi Sandow, Houston, Tex., assignor to Plasteco, Inc., a corporation of Texas  
Filed Dec. 29, 1967, Ser. No. 694,523  
Int. Cl. E04d 13/14, 3/38, 1/36  
U.S. Cl. 52-58 5 Claims



A self-flashing skylight curb construction wherein a sloping flange is provided integrally with the curb and which slopes downwardly from the curb to the roof for receiving roofing material thereon, and wherein a flashing gripper is disposed on said curb above said flange for bending downwardly over the ends of the roofing material, whereby the flashing is secured to the frame of the skylight so as to assure a water-tight seal around the skylight.

**3,461,626**  
**HINGED, COLLAPSIBLE, STRUCTURAL COVER**  
James B. Aitken, Orinda, Calif., assignor to Instant Structures, Inc., a corporation of California  
Filed Dec. 7, 1966, Ser. No. 599,881  
Int. Cl. E04b 1/346, 7/16, 1/32  
U.S. Cl. 52-71 12 Claims



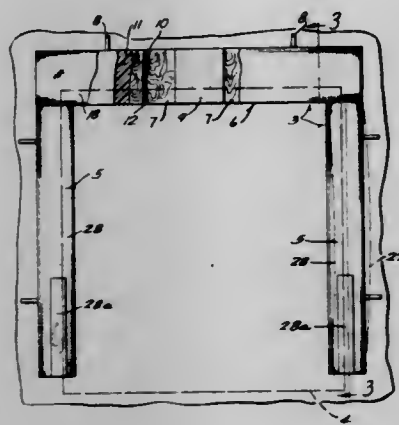
A building and method of making the same wherein a plurality of hingedly interconnected sections are movable from stacked positions into expanded positions whereby the sections can form a building when they are secured to a supporting surface. One type of building that can be formed with the expanded sections utilizes an upright shaft for supporting the expanded sections in an elevated position, whereby sidewall means may depend from locations adjacent to the outer peripheries of the sections. Another type of building utilizing the invention includes fastening means for securing the outer peripheries of the sections to a supporting surface when the inner peripheries of the sections are above the supporting surface.

**3,461,627**  
**SEALING DEVICE FOR LOADING DOCKS AND THE LIKE**  
Gary L. Conger, 3043 W. Mason St., Green Bay, Wis. 54301  
Filed Sept. 18, 1967, Ser. No. 668,452  
Int. Cl. E06b 1/56, 1/32; E04h 12/18  
U.S. Cl. 52-204 14 Claims

A dock shelter includes a generally inverted U-shaped pad assembly formed of individual top and side walls or with integral walls. Blocks or pads of a polyurethane

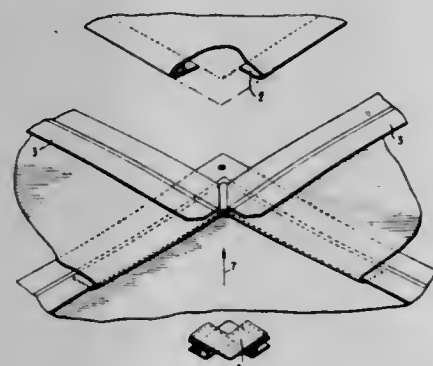


plastic are connected to a mounting frame and interconnected by a similar U-shaped front mounting wall assembly. A continuous polyurethane sealing pad is secured to a mounting wall which is attached to the front mounting wall assembly. Linkages including a chain and spring are connected between the frame and front mounting wall assembly to transfer the weight of the sealing pad to the support and thereby prevent the tendency of the sealing pads to sag. The total assembly may be covered with a suitable canvas or the like. In an alternative struc-



ture, the corner blocks or pads are connected to the mounting support and a framework of pipe or the like is secured to the forward ends of the pad and covered with a canvas to define the opening generally in accordance with that of a truck or the like. The dock shelter again accommodates the truck movement and provides a relatively firm seal therebetween. The sealing structure is thus permitted to move with respect to the building with the truck and without relative motion between the sealing pad and the truck.

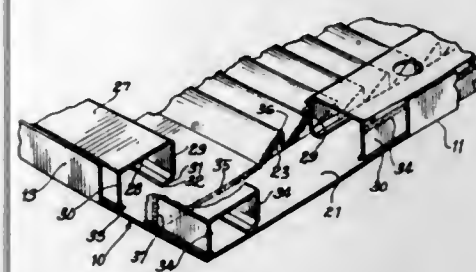
**3,461,628**  
**THERMOPLASTIC ROOF SHINGLES**  
Michael Wlenand, Slegburg, and Franz Primessing, Mondorf, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany  
Filed Nov. 25, 1966, Ser. No. 596,877  
Claims priority, application Germany, Nov. 26, 1965, D 48,759  
Int. Cl. E04c 1/24  
U.S. Cl. 52—309 12 Claims



The present disclosure is directed to thermoplastic roof shingles having a particular construction. The shingles are bent toward one side in a hook-like manner in the region of two adjacent edges, while a hook is also provided in the region of the other two edges by means of a marginal strip running along the entire length of the edges in the marginal zone of the shingle. Accordingly, the shingles may be interconnected by means of their hooks with the marginal strip of adjacent shingles. The shingles also have truncated edges at the corners adjacent to the corner zone containing a nail hole or the like. The crack between the

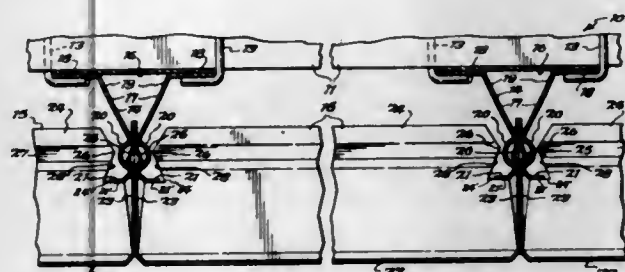
truncated sides when the shingles are laid may be sealed off by means of corner wedges having a construction as shown in FIGURES 4 and 5.

**3,461,629**  
**SHUTTER STRUCTURE**  
Lester L. Smith, Peoria, Ill. (% Home Comfort Products Co., P.O. Box 68, Princeville, Ill. 61559)  
Filed Oct. 20, 1967, Ser. No. 676,869  
Int. Cl. E04g 9/00  
U.S. Cl. 52—314 6 Claims



An ornamental shutter made from a thin sheet of molded plastic material stiffened by channel-sectioned members arranged in the form of a rectangular frame and cemented to the sheet rather than to one another by easily applied parallel beads of appropriate cement.

**3,461,630**  
**CEILING CONSTRUCTION**  
Patrick R. Lovullo, Buffalo, N.Y., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware  
Filed Dec. 7, 1964, Ser. No. 416,201  
Int. Cl. E06b 3/54; E04c 1/10, 1/30  
U.S. Cl. 52—493 8 Claims

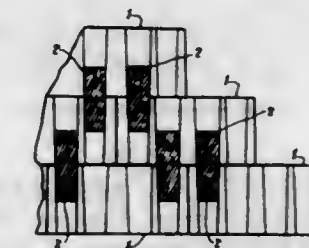


A ceiling pan construction including a face with both end flanges and side flanges extending perpendicularly therefrom, embossments in said end flanges for releasably engaging mating portions in legs of associated T bars, and apices on the ends of said side flanges lying substantially abreast of and facing said embossments for engaging said legs of said T bars in the event said T bars move out of engaging relationship with said embossments.

**3,461,631**  
**COMPLEMENTARY MODULES AND STRUCTURES THEREFROM**  
Anthony Brugnola, 2012 5th St., Palmetto, Fla. 33561; Kathrine W. Brugnola, administratrix of said Anthony Brugnola, deceased  
Filed Jan. 16, 1967, Ser. No. 609,445  
Int. Cl. E04c 1/10, 1/30  
U.S. Cl. 52—585 7 Claims

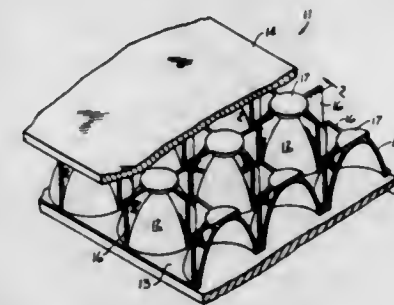
The invention relates to blocks, adapted to being assembled, without mortar or other cementitious material into a homogeneous and self-aligned structure, by using complementary modules, which are partially inserted into cavities of said block, whereby any two contiguous blocks

within the course of a structure thus assembled, are inter-off of the truck by means of cranes which attach to the linked one to the other by means of said modules, thus cable engaging means, without any substantial deformation.



effectively constructing a structural unit to resist disruptive forces.

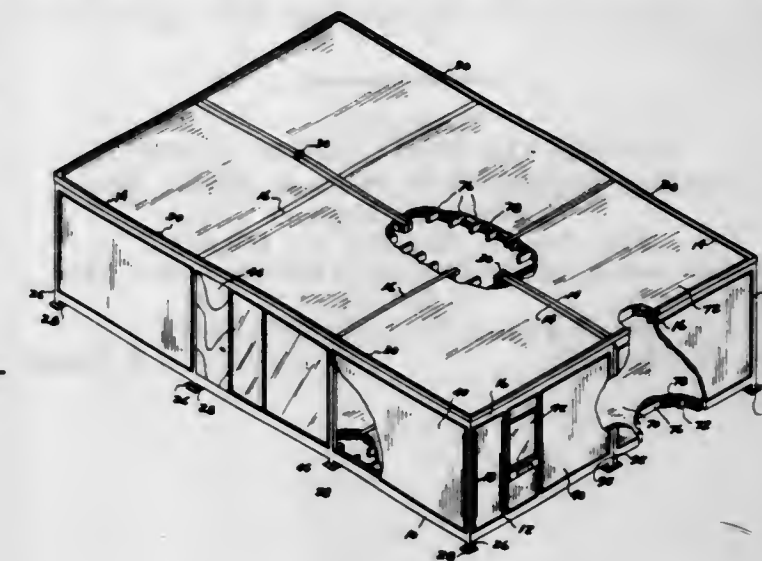
**3,461,632**  
**LIGHTWEIGHT CELLULAR STRUCTURAL MATERIAL**  
Robert G. Kuhne, 41880 Covington Drive, Fremont, Calif. 94538  
Filed Oct. 18, 1965, Ser. No. 497,135  
Int. Cl. E04c 2/34, 1/06; E04b 2/28  
U.S. Cl. 52—615 10 Claims



A lightweight cellular structural material is described in which the hoop stresses caused in each cell by a compressive load on the material are equal throughout the axial length of such cell whereby the structural material can withstand without rupturing a much greater compressive load than structural materials having conventional cells. Each cell has a curvature substantially that of the surface of revolution obtained by the rotation of a catenary curve on its own axis, and web members extend axially of each cell between it and a facing sheet disposed in engagement with the vertices of the cells. The members are integrally connected to their associated cells and terminate at their upper edges at the facing sheet to distribute compressive loads on the facing sheet evenly over the surface of the cells.

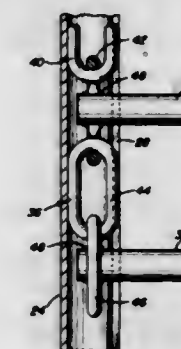
**3,461,633**  
**PREFABRICATED BUILDING STRUCTURE**  
Robert L. Ziegelman, 4066 W. 13 Mile Road, Royal Oak, Mich. 48072, and Norman H. Ziegelman, 24700 Harden, Southfield, Mich. 48075  
Filed May 13, 1965, Ser. No. 455,536  
Int. Cl. E04h 1/02, 9/06  
U.S. Cl. 52—643 3 Claims

A prefabricated building structure consists of at least a pair of sections formed of steel beams aligned horizontally and vertically, and arranged in a three-dimensional, closed, rectangular pattern by welded, moment resisting joints, in the manner of a plurality of Vierendeel trusses. Each section is enclosed by flooring, roofing, or curtain wall panelling on all sides except those which will abut the other sections. Each section has cable engaging means attached to the beams which form its upper surface so that the units may be fabricated at a factory site and transported to a building site on a truck or the like. The framing arrangement allows the sections to be lifted



tion of the building structure. The sections are joined together on their open sides and drawn together with bolting systems.

**3,461,634**  
**COLLAPSIBLE GRILL**  
J Curtis Earl, 3022 E. Diamond, Phoenix, Ariz. 85008  
Filed Dec. 29, 1967, Ser. No. 694,542  
Int. Cl. A47j 37/06; F24b 3/00  
U.S. Cl. 52—645 10 Claims



A collapsible grill comprising a plurality of grill rods, each of the opposite ends of which are interconnected, respectively, with interconnected links, preferably in the form of two chains. The chains are supported by tubes, each having a longitudinally extending slot for receiving links of the chain to retain the rods in spaced grill-like position.

**3,461,635**  
**BUILDING WALL SECTIONS APPROXIMATING A PREDETERMINED CURVATURE AND METHOD OF MAKING THE SAME**  
John K. Hughes, Scarborough, Maine (% Loyal Corp., 131 Ocean St., South Portland, Maine 04106)  
Filed Apr. 26, 1967, Ser. No. 633,833  
Int. Cl. E04h 12/14, 12/20; E04b 1/04



Building wall sections and method of making the same, the wall sections comprising polygonal frames that are angularly disposed relative to each other in at least one



direction to approximate a predetermined curvature and consisting of hubs and members first loosely connected to ensure that the hubs lie on a theoretical curved surface corresponding to that curvature and then rigidly interconnected.

### 3,461,636 ELONGATED STRUCTURAL UNITS

Geoffrey Benjamin Hern, Bycroft, Bircher, near Leominster, England

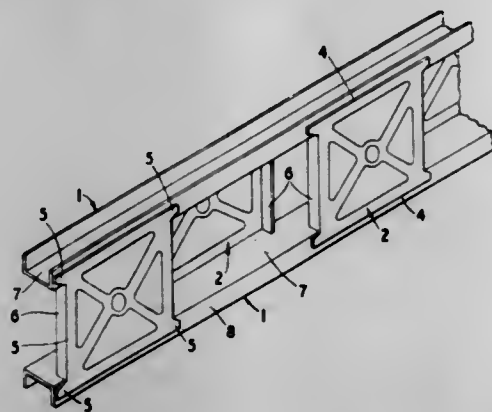
Filed June 1, 1965, Ser. No. 460,005

Claims priority, application Great Britain, June 5, 1964, 23,320/64

Int. Cl. E04c 3/08, 3/32; E04h 12/10

U.S. Cl. 52—650

3 Claims



An elongated structural unit is formed by two parallel longitudinal chord members and separate web elements located between the chord members and having marginal edges which are secured to the chord members, the web elements consisting of rectangular sheet metal plates with reinforcing flanges extending between and bracing opposite facing surfaces of the chord members, the web elements being staggered to provide discontinuous side walls which alternate from side to side along the unit.

### 3,461,637 INSULATED MOLDING FASTENER

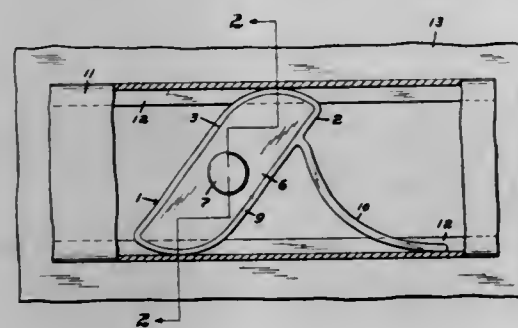
Arnold O. Jansson, Arlington, Mass., assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed Apr. 10, 1964, Ser. No. 358,852

Int. Cl. E04c 2/38; E04f 19/02; F16b 23/00

U.S. Cl. 52—718

8 Claims



1. An installation comprising in combination an apertured support, a molding having opposed intumed flanges and a fastener securing said molding to said support, at least said molding and said support being of dissimilar metals which might become corroded if in contact with one another under corrosion causing conditions, said fastener including a molding engaging member of flexible, noncorrodible material spanning the distance between said intumed flanges, a rigid reinforcing member of corrodible material encompassed by the portions of said molding engaging member which engage said molding, said re-

inforcing member being substantially coextensive with said molding engaging member to resist flexing of said molding engaging member, means located behind the support securing the fastener to the support, and means associated with said molding engaging member isolating the engaged portions of said molding from said support.

### 3,461,638 STRUCTURAL MEMBER

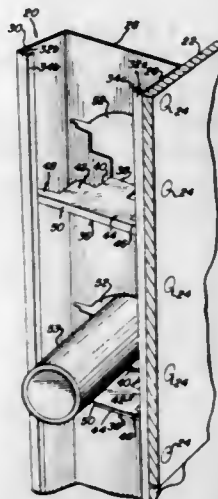
Henry A. Balinski, Hoffman Estates, Ill., assignor to United States Gypsum Company, Chicago, Ill., a corporation of Delaware

Filed Dec. 30, 1966, Ser. No. 606,318

Int. Cl. E04c 3/30; E04h 1/00

U.S. Cl. 52—732

15 Claims



An elongated structural member comprising a web with at least one flange extending laterally from the web. At least one truss element is struck from the web and the truss element extends laterally from the web and includes a portion disposed adjacent a distal portion of the flange to brace the flange.

### 3,461,639 FOUNDATION WALL CONSTRUCTION AND METHOD OF CONSTRUCTING SAME

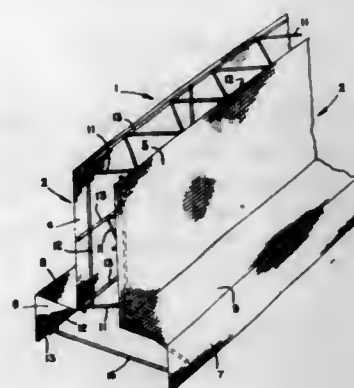
Ronald Earl Merrill, P.O. Box 122, Camas Valley, Oreg. 97416

Filed May 9, 1967, Ser. No. 637,111

Int. Cl. E04g 21/02; E02d 27/02, 15/04

U.S. Cl. 52—744

3 Claims



This disclosure includes concrete wall construction wherein mesh-like members are manufactured to a desired footing and wall configuration and where, upon deposit of a quantity of concrete material intermediate the mesh-like members, the latter will serve as a form to determine the shape of the footing and wall being formed and will ultimately become a part of the wall structure.

### 3,461,640 METHOD AND APPARATUS FOR SHIRING FLEXIBLE MATERIAL ONTO CYLINDRICAL SECTIONS

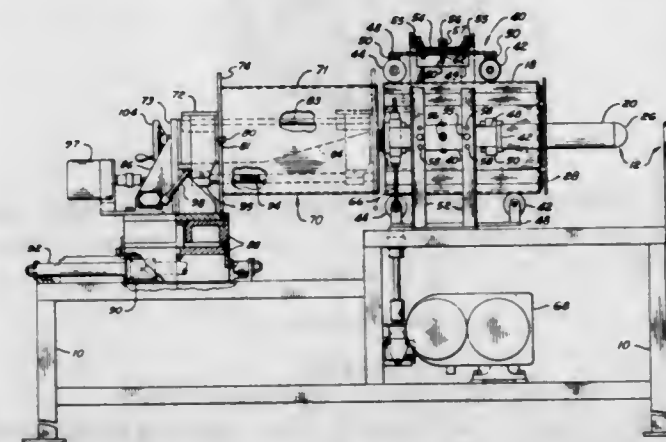
Ernest A. Bonami, Western Springs, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois

Filed Dec. 29, 1965, Ser. No. 517,267

Int. Cl. B65b 15/00, 61/00

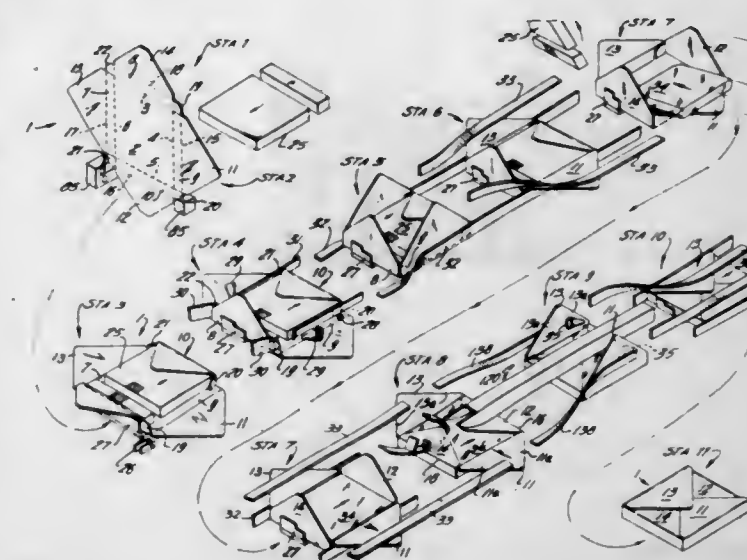
U.S. Cl. 53—3

11 Claims



Apparatus and method for stretching and gathering flexible tubular stockinette type materials onto shirred cylindrical sections having a cross-sectional area large enough to pass product through, such as hams, etc. in a subsequent bagging operation.

mandrel in cooperation with guide means which are positioned adjacent the path of movement of the mandrel.



A conveyor also assists in formation of the carton around the mandrel. The mandrel is removed from the carton and after filling the carton is closed and sealed.

### 3,461,643 METHOD AND APPARATUS FOR COUNTING AND DISPENSING SOLID ORAL MEDICATION

Sheldon A. Strand, Anaheim, Calif.

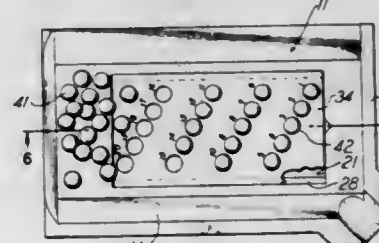
(7530 Milliken Road, Middletown, Ohio 45042)

Filed May 31, 1966, Ser. No. 553,926

Int. Cl. B65b 1/04, 3/04, 19/18

U.S. Cl. 53—37

6 Claims



A shallow counting tray has a central recess which receives a pallet indented to hold a quantity of pills. A walled floor of the tray is substantially coplanar with the upper surface of the pill-receiving pallet. Pills in the tray are moved into the cavities in the pallet by shaking the tray. A transparent or translucent cover for the pallet seals the pills within the pallet, making a pill package. The cover is slidable on the pallet and the cavities thereof are sequentially numbered. The cavities are so arranged that sliding the cover progressively releases a single pill while covering other pill-filled cavities sufficiently to prevent the removal of a second pill until the cover is removed another increment. The numbered cavities can indicate either the number of pills removed or the number of pills remaining.

### 3,461,641 PACKAGING OF SYNTHETIC RUBBER BLOCKS

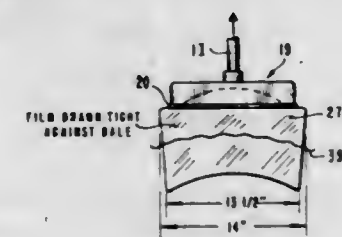
Arnold R. Zubik and John C. Mosley, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Original application June 11, 1964, Ser. No. 374,390, now Patent No. 3,321,889, dated May 30, 1967. Divided and this application Dec. 5, 1966, Ser. No. 599,291

Int. Cl. B65b 63/02, 1/20, 13/20

U.S. Cl. 53—24

2 Claims



A block of rubber material is packed in a carton using a shallow, box-like member having an open bottom smaller than and of substantially the same shape as the upper surface of the block by encapsulating the block in a film of substantially gas-imperious material, lowering the box-like member onto the upper surface of the material, drawing the central portion of the upper surface of the block up into the box-like member by reducing the pressure in the box-like member and within the block to constrict the block, lowering the block into the carton, and releasing the low pressure within the block.

### 3,461,642 METHOD AND MACHINE FOR FORMING AND SEALING A CARTON

Jacobus Joseph Langen and Marinus Jacobus Maria Langen, Rexdale, Ontario, and Ernest Topler, Toronto, Ontario, Canada, assignors to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Oct. 21, 1966, Ser. No. 588,434

Int. Cl. B65b 43/00, 5/02, 1/02

U.S. Cl. 53—29

8 Claims

A method and machine for forming and sealing a carton from a flat carton blank. The carton is formed by a

### 3,461,644 APPARATUS AND METHODS FOR MANUFACTURING A SIMULATED BLISTER PACK

Lionel Tinfow, 24 Oak Place, North Caldwell, N.J., and Sidney V. Winton, 5572 Netherland Ave., New York, N.Y.

Filed Oct. 22, 1965, Ser. No. 501,908

Int. Cl. B65b 7/06, 51/26

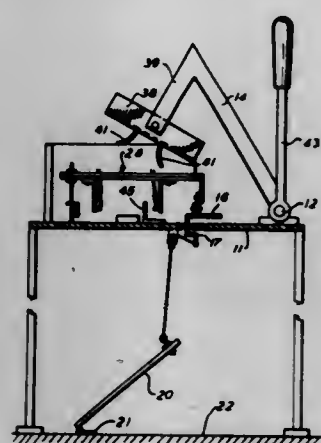
U.S. Cl. 53—39

3 Claims

Apparatus and methods for manufacturing a simulated blister pack wherein the ends of a tubular thermoplastic



member are radiantly heated to tacky plasticity and thereafter engaged by relatively cool deforming means to

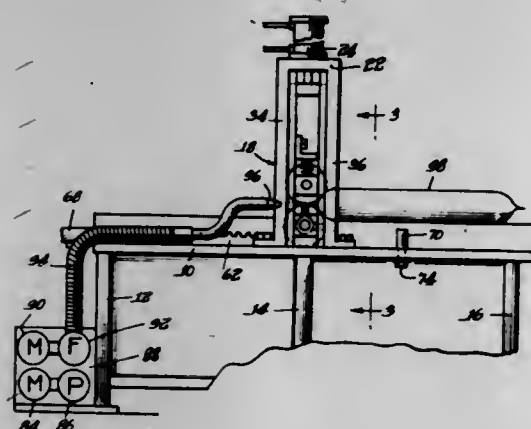


deform the said ends into engagement with itself, the ends cooling while so engaged, sufficiently to permit sealing with itself.

### 3,461,645 PACKAGING MACHINE

Harold I. Snyder, R.R. 3, Dover, Ohio 44622  
Filed Oct. 22, 1965, Ser. No. 501,706  
Int. Cl. B65b 51/16, 31/00, 61/04  
U.S. Cl. 53—112

5 Claims



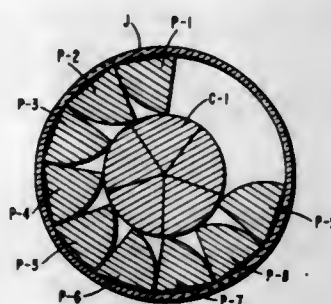
The machine comprises mechanism for heat sealing plastic bags with internal pressure. A pair of pressure rolls clamps one end of a plastic bag, containing an article, and previously sealed at its opposite end, a first heat seal is formed responsive to the pressure engagement, the rolls are then rotatably actuated to compress the air within the package, and after a predetermined movement a second heat seal is formed; after which the package between the heat seals may be severed.

### 3,461,646 PICKLE PACKING MACHINE

Malcolm S. Lane, Baltimore, Md., and Dale A. Hawk, Crosswell, Mich., assignors to Borden, Inc., New York, N.Y., a corporation of New Jersey  
Filed July 6, 1967, Ser. No. 651,529  
Int. Cl. B65b 5/06; B26d 4/00  
U.S. Cl. 53—123

61 Claims

A machine for slicing pickles into longitudinal slices and for packing the slices into jars in an arrangement comprising a complete sliced pickle surrounded by a ring of pickle slices whose inner surfaces face outwardly, the machine including a means for successively feeding individual pickle slices into a jar and a mechanical finger means for positioning and holding each successive slice in a fixed position against the wall of said jar until the

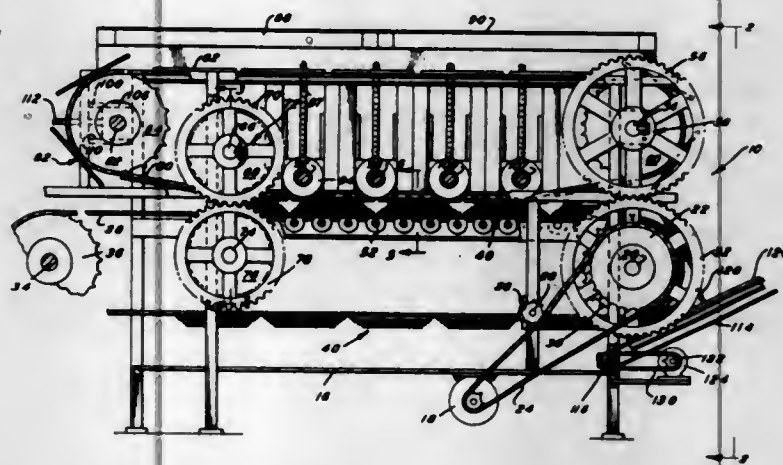


without separating the slices from each other, and then packing the unseparated slices into the space circumscribed by the outer ring of slices.

### 3,461,647 HEAT SEALING APPARATUS

Russell R. Haines, Haddonfield, N.J., assignor to Paper & Corrugated Specialties Co., Pennsauken, N.J., a corporation of Pennsylvania  
Continuation-in-part of application Ser. No. 185,092, Apr. 4, 1962. This application Sept. 27, 1965, Ser. No. 490,291  
Int. Cl. B65b 51/18; B65g 15/16  
U.S. Cl. 53—373

8 Claims



Heat sealing apparatus having first and second endless conveyors, with die plate members at spaced points along one conveyor and mating platen members at spaced points along the other conveyor. At least one conveyor is driven by a gear which can be angularly adjusted with respect to its drive shaft. The platen member is provided with a cover made from a material such as Teflon. Back-up rollers are provided for each of the guide plate and platen members.

### 3,461,648 PACKAGING APPARATUS

George H. Ashton, St. Louis, Mo., assignor to Bemis Company, Inc., Minneapolis, Minn., a corporation of Missouri

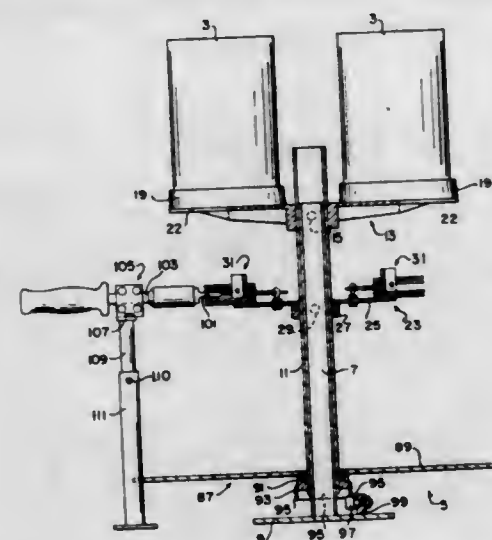
Filed Aug. 28, 1967, Ser. No. 663,574  
Int. Cl. B65b 43/26, 9/12, 51/30

U.S. Cl. 53—183

11 Claims

Apparatus for packaging items, particularly produce, in heat-sealable plastic tubular open-mesh netting comprises a turret rotatable about a vertical axis having a loading tube platform at its upper end. A series of spaced loading tubes carried by the platform each register with an opening in the platform. Each tube holds on the exterior thereof a supply of rucked netting which is fed upwardly over the top of the tube and down through the respective opening in the platform. A series of clamping units are carried by a supporting platform beneath the loading tube platform and rotate with the loading tube

platform. There is one clamping unit for each of the tubes, and each unit comprises upper and lower sets of clamping jaws spaced from each other so that the netting can be bunched and held between the upper and



lower sets of jaws of the clamping unit. A heated sealing and severing blade is engageable with the bunched portion of the netting between the upper and lower sets of clamping jaws to segment the netting and form a seal on both segments of the netting.

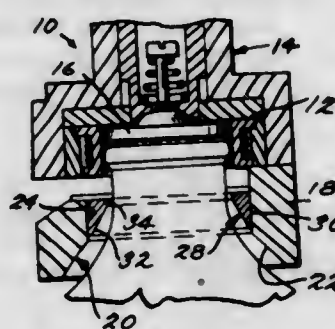
### 3,461,649 CAPPING APPARATUS FOR ACCOMMODATING BOTTLES WITH AND WITHOUT BUMPER ROLLS

Joseph W. Ermer, Jr., Lutherville, and William C. Kesler, Baltimore, Md., assignors to Crown Cork and Seal Company, Inc., Philadelphia, Pa., a corporation of New York

Filed May 31, 1967, Ser. No. 642,542  
Int. Cl. B65b 7/28

U.S. Cl. 53—201

7 Claims



Apparatus for capping bottles which is selectively operable to accommodate bottles having conventional bumper rolls or plastic bottles devoid of bumper rolls by selectively utilizing bottle guiding structure of a size to engage the bumper roll of a bottle or an adapter ring attachment mounted therein of a size to engage the periphery of the pouring lip of a bottle devoid of a bumper roll.

### 3,461,650 METHOD OF DISCHARGING DUST PRECIPITATED IN AN ELECTROSTATIC PRECIPITATOR

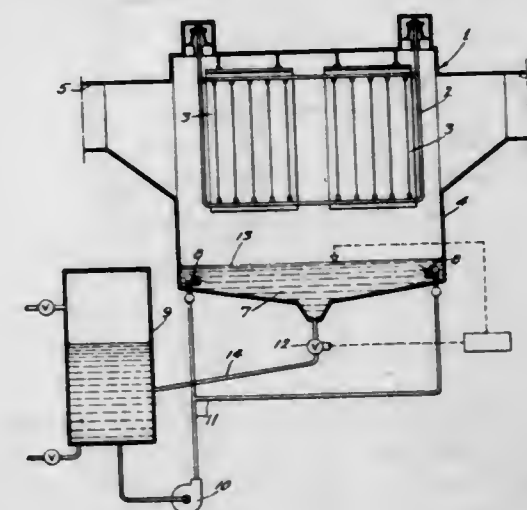
Gösta Mildh, Vaxjö, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden  
Filed Mar. 29, 1966, Ser. No. 538,428

Claims priority, application Sweden, Mar. 31, 1965, 4,122/65  
Int. Cl. B03c 3/00, 3/88

U.S. Cl. 55—12

3 Claims

A method for recovering dust precipitated from a gas stream in an electrostatic precipitator where the dust is collected in a dissolving basin immediately below the pre-



cipitator, continuously injecting dissolving liquid into the basin to cause a swirling movement of the liquid solvent therein; and controlling the discharge from the basin to

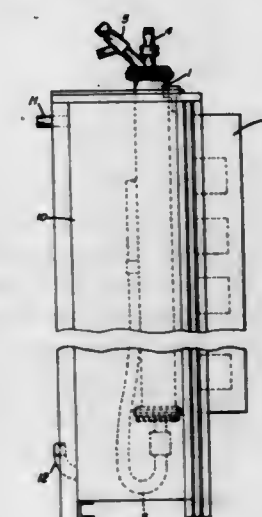
### 3,461,651 FILTER ARRANGEMENT

Jack van Ingen, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Continuation-in-part of application Ser. No. 522,175, Jan. 21, 1966. This application June 28, 1967, Ser. No. 652,649

Int. Cl. B01d 19/00

U.S. Cl. 55—199

2 Claims



A filter which has ultrasonic vibrations transmitted to the filter screen to improve filtration.

### 3,461,652 STEAM SEPARATOR OF AXIAL FLOW AND CENTRIFUGAL SEPARATION TYPE

Takeshi Sato, Hitachi-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan  
Filed Oct. 19, 1965, Ser. No. 497,702

Int. Cl. B01d 45/12

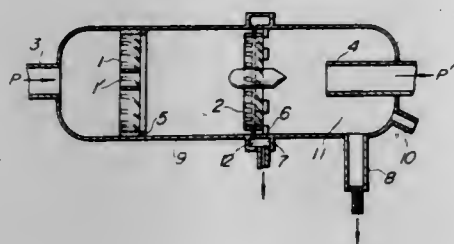
U.S. Cl. 55—448

9 Claims

An axial flow and centrifugal separation steam separator having a cylindrical steam passage body with a steam inlet at one end and a substantially identical cross section steam outlet at the other end. A first set of radially extending guide vanes produces a gyratory motion in the



axially moving steam and is provided with a central axial aperture of substantially one half the diameter of the inlet conduit. A second set of radially extending guide vanes are disposed axially downstream from the first set with an inlet angle substantially equal to the outlet angle of



the first set for increasing the gyratory motion of the steam. A first annular drain slit is disposed radially outside of the second set of guide vanes and a second drain is provided downstream with a small steam outlet to prevent reverse flow.

3,461,653

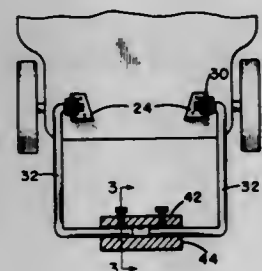
**ADJUSTABLE SAFETY DEVICE**

Harry H. Miller, 288 Standing Stone Ave., and Clerf W. Grove, R.F.D. 3, both of Huntingdon, Pa. 16652  
Filed Dec. 27, 1965, Ser. No. 517,521

Int. Cl. A04d 35/26

U.S. Cl. 56—25.4

2 Claims



This invention is an adjustable safety bar attachable to power lawn mowers. The device acts as a bumper to prevent the lawn mower from being accidentally drawn over the user's foot. The device is comprised of two U-shaped bars adjustably attached to the lawn mower by screw means and extending outwardly therefrom.

The outer end portions of the U-shaped bars fit into a sleeve and are secured thereto by screw bolts extending through the sleeves to the U-shaped bars.

3,461,654

**MECHANISM FOR RAISING AND LOWERING CUTTER UNIT AND FOR CONCURRENTLY CONTROLLING OPERATION OF THE CUTTER UNIT**

Günter F. Plamper, Cleveland, Ohio, assignor to The M. T. & D. Company, a corporation of Ohio  
Filed Mar. 15, 1967, Ser. No. 623,320

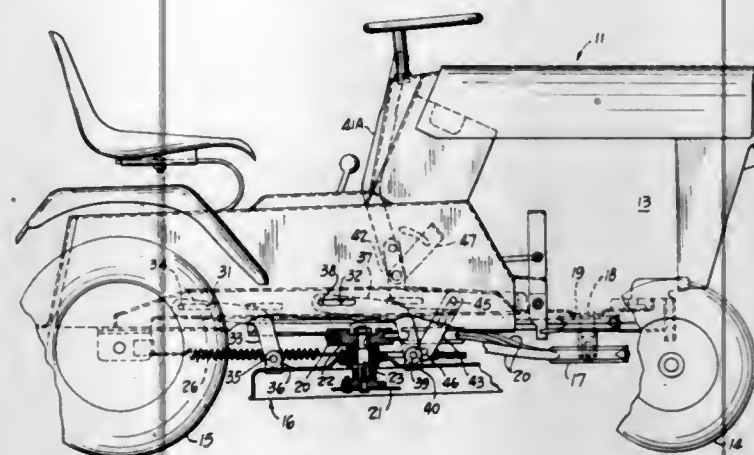
Int. Cl. A01d 35/26

U.S. Cl. 56—25.4

14 Claims

Mechanism for a tractor-carried cutter unit having a blade-rotating pulley connected by a belt with a motor-driven pulley carried by the tractor, the axes of the pulleys being spaced apart and the belt being reeved about them for rotation of the blade-rotating pulley which in turn rotates a blade in a generally horizontal plane, the mechanism including link means in parallelogram form for suspending the cutter unit from the tractor in a plane generally parallel to the tractor frame, lever means carried by the tractor for raising and lower-

ing the cutter unit to desired elevation relative to the tractor frame, biasing means urging the cutter unit in a first direction to maintain tension on the belt reeved about said pulleys, the lever means including means for moving the cutter unit in an opposite direction when raised to elevated position against the urging of the biasing means to loosen tension on the belt at such elevated



3,461,655

**AGRICULTURAL MACHINES**

Cornelis van der Lely, Zug, Switzerland, assignor to Texas Industries Inc., Willemstad, Curacao, Netherlands Antilles, a limited-liability company of the Netherlands

Filed July 19, 1965, Ser. No. 472,878

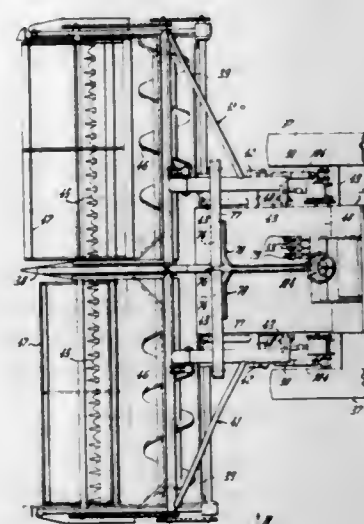
Claims priority, application Netherlands, July 28, 1964, 6408591; Sept. 29, 1964, 6411285

The portion of the term of the patent subsequent to June 3, 1985, has been disclaimed

Int. Cl. A01d 67/00, 75/28

U.S. Cl. 56—208

11 Claims



A harvester having one or more mowing and crop gathering members pivotably connected for being lifted to a combine. Hydraulic rams connecting the harvester and the crop gathering members are adapted to reduce the weight of the gathering members by increasing the hydraulic fluid pressure in the rams. The hydraulic fluid pressure and thus the effective pressure of the gathering

member on the ground is maintained at a desired constant level which is controlled by a control member located, together with a gauge connected to the hydraulic ram, near the operator's seat. The operator is therefore informed of and is able to control the effective pressure of the gathering members on the ground.

3,461,656

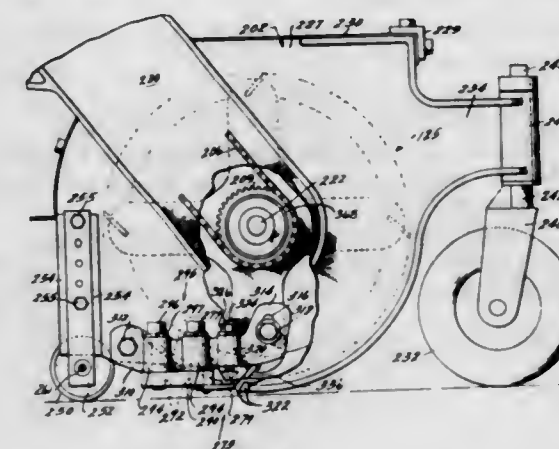
**BED PLATE ADJUSTMENT MEANS RELATIVE TO A LAWMOWER REEL**

Carl van Ausdall, Box 178, Bradenton, Fla. 33508  
Filed Oct. 24, 1965, Ser. No. 504,792

Int. Cl. A01d 55/20, 35/24

U.S. Cl. 56—249

3 Claims



A bracket member for a reel-type lawnmower comprising end portions the first of which functions as a fulcrum, the second of which functions as a securing means to a wall journaling a reel for a lawnmower, a central portion securing the bracket to a bed plate knife means, structure in the second end portion functioning to adjustably secure that end to the wall, and means centrally located of the end portions adapted to cooperate with an adjunct of the wall whereby pivoting of the bracket member about such fulcrum provides for adjusting the relationship between the bed plate knife means and the blades of the reel.

3,461,657

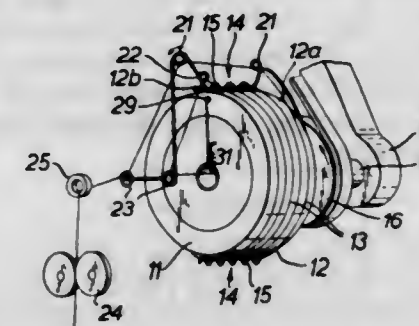
**TEXTILE APPARATUS**

Frederick Scragg, Trinity, Jersey, Channel Islands, Walter Parker, Wilmslow, and David Leslie McNeight, Macclesfield, England, assignors to Ernest Scragg & Sons Limited, Macclesfield, England, a British company, and Scragg A.G., Zug, Switzerland, a Swiss company  
Filed Oct. 27, 1967, Ser. No. 678,579

Int. Cl. D01h 13/26; D02g 3/02

U.S. Cl. 57—34

22 Claims



A method and apparatus for heating yarn. An advancing yarn is convoluted about a heated surface of a body at a first position thereof so as to form at least one coil about the heated surface. The body is maintained stationary and the coil is shifted laterally of itself from the first position to a second spaced position on the heated surface. Thereupon, the thus-heated yarn is removed from the body at the second position.

3,461,658

**TEXTILE STRAND TREATMENT**

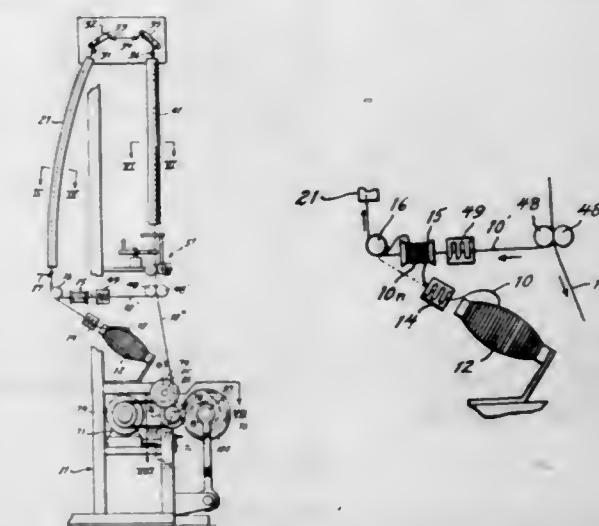
Frederick J. E. Hampel, East Greenville, Pa., assignor to Techniservice Corporation, Lester, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 609,586, Jan. 16, 1967. This application June 12, 1968, Ser. No. 736,473

Int. Cl. D01h 13/26; D02g 3/02

U.S. Cl. 57—34

18 Claims



A textile strand is bulked by being formed into a loop configuration, with a plurality of lengths of the strand adjoining one another in the loop configuration, with the adjoining strand lengths twisted about one another, and is heated while so twisted and then separated.

3,461,659

**METHOD AND APPARATUS FOR TWISTING YARN**

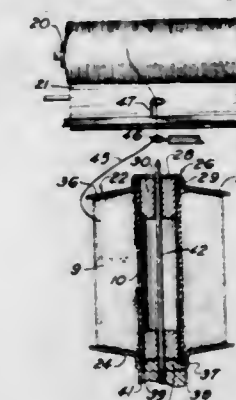
Thomas W. Greason, Westover Subdivision, Greenwood, S.C. 29646

Filed Oct. 14, 1966, Ser. No. 586,707

Int. Cl. D01h 7/02; D07b 3/02

U.S. Cl. 57—62

5 Claims



An apparatus for twisting yarns and at the same time preventing the pick-up of foreign particles which discolor the yarns comprising two caps respectively disposed at the ends of the tube upon which the yarn is wound, said caps having sloped or inclined flanges which cover and abut both ends of the yarn package on the tube.

3,461,660

**TANGENTIAL BELT DRIVE FOR SPINDLES ON SPINNING AND TWISTING FRAMES**

Klaus Nimtz, Krefeld, Gustav Franzen, Neersen, and Willi Helmes, Krefeld, Germany, assignors to Palitex Project-Company G.m.b.H., Krefeld, Germany

Filed Dec. 6, 1965, Ser. No. 511,861

Claims priority, application Germany, Dec. 7, 1964, P 35,632

Int. Cl. D01h 13/00, 13/08

U.S. Cl. 57—105

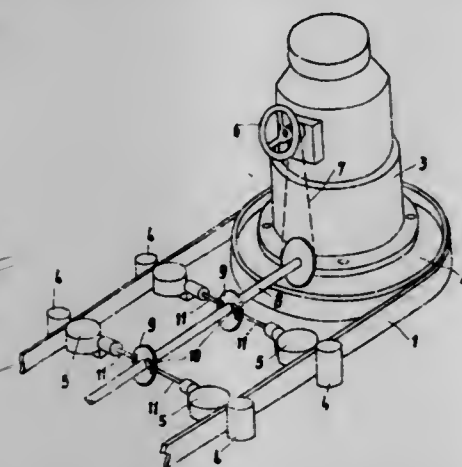
13 Claims

A belt drive for the spindles in a spinning and twisting



frame comprising pressure rollers located between or facing the wharves of the spindles the pressure being ap-

A method for manufacturing an improved cordage product comprising, for example, the steps of (a) forming a polyolefin sheet having talc dispersed therein in an



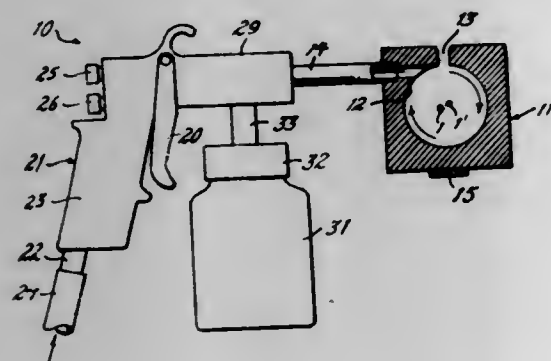
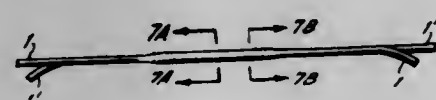
plied to the belt by the pressure rollers or by the wharves through a central control in dependence upon the speed of the driving belt.

### 3,461,661 TEXTILE STRAND SPLICE AND METHOD OF FORMING SAME

Malcolm F. Irwin, Philadelphia, and Frederick J. E. Hampel, East Greenville, Pa., assignors to Techniservice Corporation, Lester, Pa., a corporation of Pennsylvania  
Continuation-in-part of application Ser. No. 645,410, June 12, 1967. This application May 16, 1968, Ser. No. 729,819

Int. Cl. D06c 29/00  
U.S. Cl. 57-142

8 Claims



Multifilament textile strands are spliced in an elongated chamber open at both ends and having a conduit for directing fluid, such as air and sometimes a resin, into the chamber to rotate circumferentially. The resulting splice has substantially constant diameter throughout.

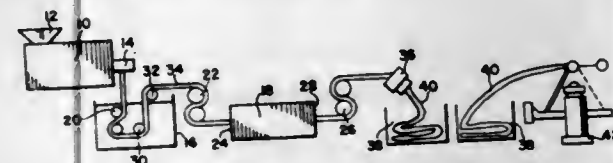
### 3,461,662 FIBROUS PRODUCT AND METHOD OF MANUFACTURING SAME

August K. Meyer and Robert B. McFall, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Filed Oct. 2, 1967, Ser. No. 672,193  
Int. Cl. D02g 3/06, 3/08, 3/36

U.S. Cl. 57-154

8 Claims

An improved fibrous product comprising, for example, a polyolefin sheet having talc dispersed therein in an amount between about 4% to about 15% by weight and fractured into substantially interconnected strands, twisted into a twine, cordage, or yarn-like form.



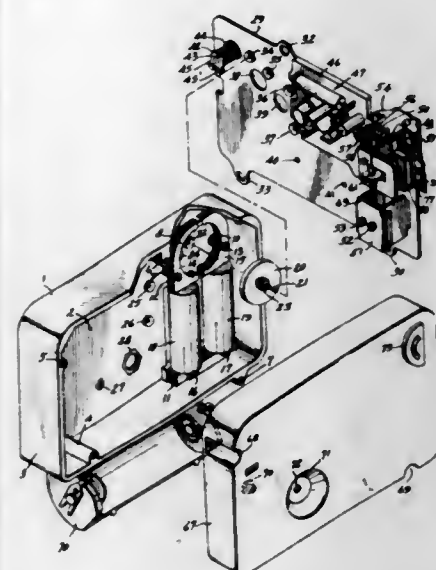
amount between about 4% and about 15% by weight, (b) fracturing the sheet into a web of substantially interconnected strands, and (c) twisting the fractured sheet into fibrous product form.

### 3,461,663 BATTERY OPERATED CLOCK

Harry Albinger, Jr., Ashland, and Christie Petrides, Medway, Mass., assignors to General Electric Company, a corporation of New York  
Filed Jan. 21, 1966, Ser. No. 522,199  
Int. Cl. G04c 3/00

U.S. Cl. 58-23

3 Claims



A battery operated clock which includes a permanent magnet synchronous motor driven by timing pulses supplied by an electro-mechanical oscillator. The electro-mechanical oscillator is comprised of an electronic transistor oscillator portion and a mechanical oscillator portion to which the electronic portion is inductively coupled. The synchronous motor is attached to the interior, front face of a clock housing; while the electronic and mechanical portions of the oscillator are attached to a back plate which connects to the housing in opposed, parallel relation to the front face of the housing. In order to promote assembly, bearings for rotatably supporting the internal mechanism of the clock are molded directly to the front face of the clock housing and to the back plate which attaches to the housing.

### 3,461,664 REGULATING AND DRIVING DEVICE FOR CLOCKWORK OF THE ELECTROMAGNETIC TYPE

Emilio Negri, Via Vanvitelli 41, and Giorgio Cassera, Via Plinio 12, both of Milan, Italy  
Filed Feb. 27, 1967, Ser. No. 618,933  
Claims priority, application Italy, Dec. 5, 1966, 30,770/66

Int. Cl. G04c 3/04

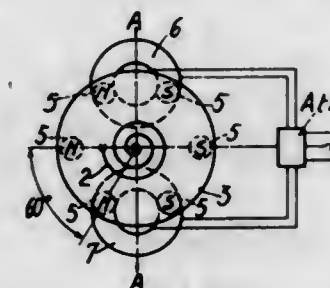
U.S. Cl. 58-28

3 Claims

A regulating and driving device for clockwork of the electromagnetic type, comprising at least four magnetic poles, at least two coils diametrically opposed and equally

spaced from the axis of the balance wheel, each of which has the working sides approximately perpendicular to the direction of motion of the balance wheel, the two coils

tween the openings being parallel and adjacent to form an elongated shank, which may include a welded joint or joints, the legs of the shank portion having a fillet-type weld extending continuously between the openings. Also



belonging one to the input circuit and the other to the output circuit of a suitable electronic power amplifier, the assembly forming an electromagnetic system.

### 3,461,665

### ANIMATED NOVELTY CLOCK

Edward F. Cleaszyk, Oglesby, Ill., assignor to General Time Corporation, New York, N.Y., a corporation of Delaware  
Filed Mar. 15, 1966, Ser. No. 534,388  
Int. Cl. G04b 3/02

U.S. Cl. 58-29

5 Claims



A spring wound novelty clock having a decorative design and being equipped with a characterized object which is animated for a predetermined period immediately following each time the clock is wound. The clock mechanism is adapted to automatically terminate the animated movement of the object at the end of the predetermined period while permitting clock to continue to keep accurate time for more than a full day.

### 3,461,666 ELEVATOR LINK AND PROCESS OF MAKING THE SAME

William M. Burstall, Huffman, Tex., assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware  
Continuation-in-part of application Ser. No. 461,831, June 7, 1965. This application Oct. 17, 1967, Ser. No. 676,679

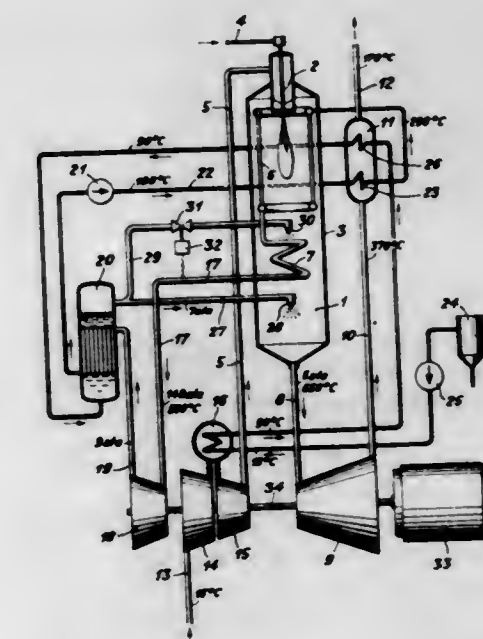
Int. Cl. B21l 13/00

U.S. Cl. 59-35

20 Claims

An elevator link formed by bending metal bar stock having a grain structure oriented parallel to its axis into the form of an elongated ring with openings or eye portions at its opposite ends, the elongated side sections be-

The water for the heater elements of the combustion chamber is cycled in a closed circuit while an auxiliary flow of water is heated to steam by a heat exchange with the expanded steam of the closed circuit. The generated steam is then mixed with the combustion gases in the combustion chamber and fed to the gas turbine.

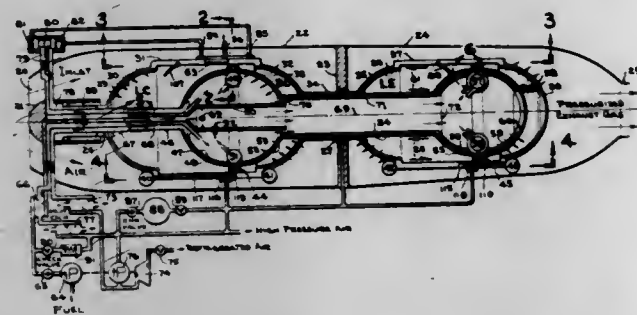




# **3,461,668** **FREE PISTON HEAT ENGINE CONSTRUCTION FOR HEATING THE WORKING FLUID INSIDE THE PISTON**

John Kuhn, 645 Las Lomas Ave., Pacific Palisades, Calif. 90272  
 Filed July 17, 1957, Ser. No. 672,452  
 Int. Cl. F02g 3/02; F02k 5/02  
 U.S. Cl. 60—39.6

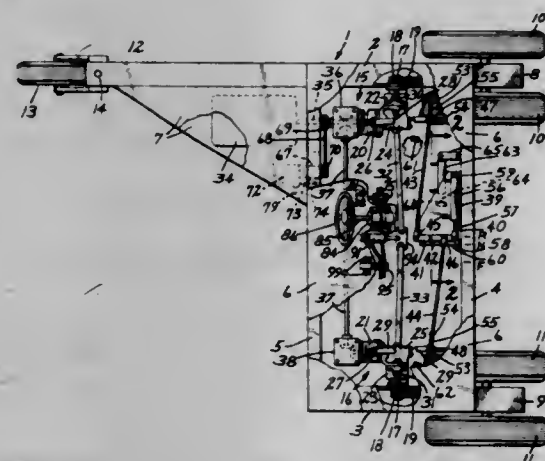
8 Claims



8. A free-piston hot-gas-generator engine comprising a casing having an inlet portion communicating with a supply of air and having an exhaust portion, a cylinder assembly mounted for reciprocation on the casing and having a compressor cylinder in valved communication with the inlet portion and having a motor cylinder in valved communication with the exhaust portion, a piston assembly mounted for reciprocation on the cylinder assembly and having a compressor piston cooperating with the compressor cylinder to enclose a compressor chamber in which the air can be compressed and having a motor piston cooperating with the motor cylinder to enclose an expandable motor cylinder in which combustion products can expand to do work and having a wall enclosing a combustion chamber and having a valved passageway through which compressed air can flow intermittently from the compressor chamber into the combustion chamber and having a valved passageway through which combustion products can flow intermittently from the combustion chamber into the motor chamber, an injecting means connected to a supply of fuel for injecting the fuel into the combustion chamber, and an igniting means for igniting the fuel for combustion in the compressed air in the combustion chamber.

**3,461,669**  
**CONTROL FOR HYDRAULIC DRIVE MECHANISM**  
 Glenn G. Kanengieter, Owatonna, Minn., assignor to Owatonna Manufacturing Company, Inc., Owatonna, Minn., a corporation of Minnesota  
 Filed Dec. 28, 1967, Ser. No. 694,347  
 Int. Cl. F16h 39/06, 39/48; B60k 21/12  
 U.S. Cl. 60—53

12 Claims

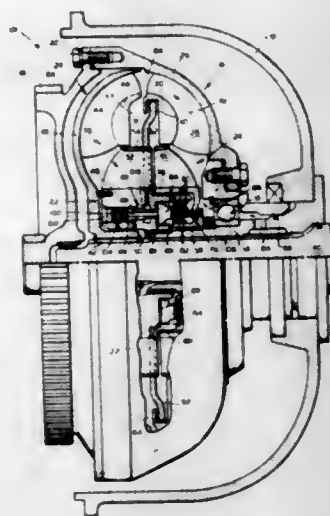


Apparatus for controlling operation of a pair of independent hydraulic drive motors for a vehicle, each motor being supplied with fluid under pressure from an individual variable displacement pump, each pump hav-

ing a control arm for varying the pump displacement. A movable base member carries a lever operatively connected to the control arms. Controlled power-operated means moves the base member to shift the control arms simultaneously, and other controlled power operated means moves the lever relative to the base member to shift the control arms in directions to effect steering of the vehicle by a differential in displacement between the pumps. Speed range determining means is operative to vary hydraulic motor displacement to obtain relatively high and low ranges of travel speed of the vehicle.

**3,461,670**  
**HYDRODYNAMIC TORQUE CONVERTER**  
 Mieczyslaw J. Wacławek, Burlington, Iowa, assignor to Clark Equipment Company, a corporation of Michigan  
 Filed Dec. 27, 1967, Ser. No. 693,974  
 Int. Cl. F16h 41/14  
 U.S. Cl. 60—54

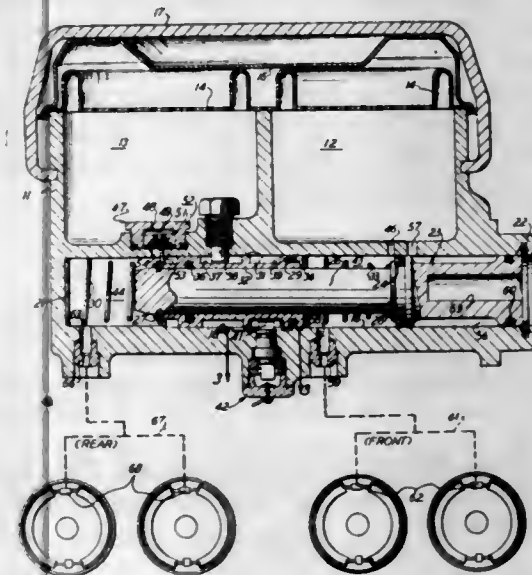
6 Claims



A hydrodynamic torque converter having an impeller, a turbine, a fixed reactor, a rotatable reactor and a brake actuable in response to fluid pressure in a portion of the torque converter to retard rotation of the rotatable reactor.

**3,461,671**  
**DUAL MASTER CYLINDER**  
 Jack H. Venema, Newport, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware  
 Filed Oct. 17, 1967, Ser. No. 675,938  
 Int. Cl. F15b 7/08; F16d 65/32  
 U.S. Cl. 60—54.6

9 Claims

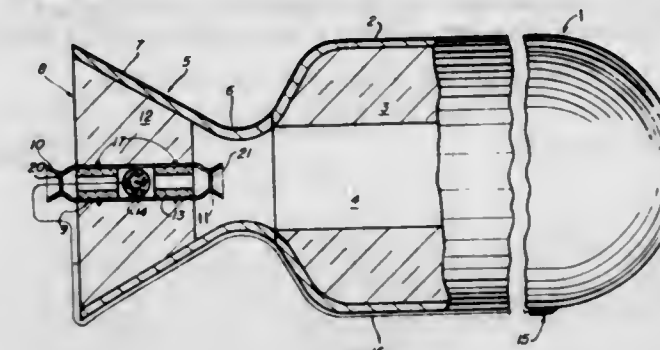


A dual master cylinder for a split hydraulic brake system having primary and secondary chambers separated by a movable shuttle-partition. The master cylinder pro-

vides balanced pressures between the two portions of the split system during normal brake operation and restricts the loss in hydraulic displacement in the event of a failure of one portion of the system.

**3,461,672**  
**AFT END IGNITER**  
 Charles P. Harris, Huntsville, Ala., and Sheldon G. Ellis, Santa Clara, Calif., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware  
 Filed Nov. 18, 1966, Ser. No. 595,438  
 Int. Cl. F2k 9/04  
 U.S. Cl. 60—256

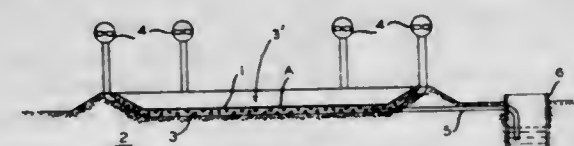
3 Claims



An aft end igniter for a rocket motor comprising an igniter motor having oppositely directed nozzles mounted in the exit cone of a rocket motor with one of the nozzles directed to cause hot gases issuing therefrom to be directed through the throat of the nozzle into the combustion chamber. The relative sizes of the opposed nozzles can be adjusted to compensate for loads experienced by the igniter motor to maintain the igniter motor in position during ignition.

**3,461,673**  
**LINED PIT HAVING WIND RESISTANT LINER THEREIN AND METHOD**  
 James W. Slover, Martinez, Calif., assignor to Phillips Petroleum Company, a corporation of Delaware  
 Filed Oct. 23, 1967, Ser. No. 677,235  
 Int. Cl. E02b 3/16, 5/02  
 U.S. Cl. 61—1

10 Claims

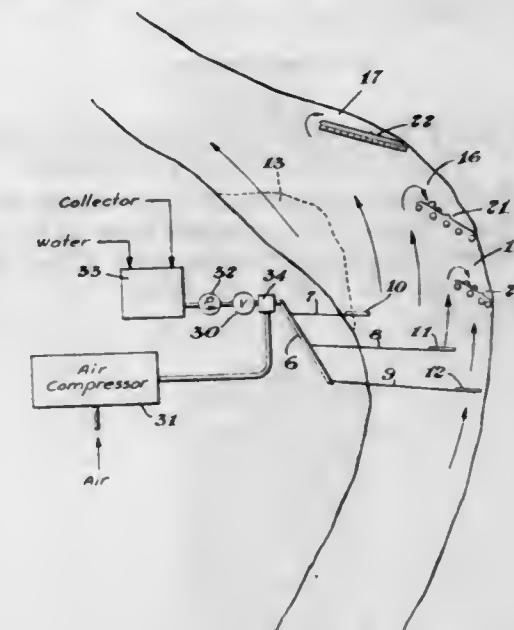


A pit lined with a flexible liner, for example, rubber sheeting, is provided with means to produce suction beneath liner whenever wind is blowing tending to disarrange liner from its position in pit. In one embodiment the pit is trenched beneath the liner and the suction producing means is a chimney or vent equipped with a wind actuated suction generator. A drain to a sump is provided to test for leakage from above the liner into the trenching.

**3,461,674**  
**RIVER MANAGEMENT**  
 Melvin F. Katzer, Danville, and David J. Pye, Alamo, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
 Filed Jan. 20, 1967, Ser. No. 610,586  
 Int. Cl. E02b 3/02  
 U.S. Cl. 61—2

10 Claims

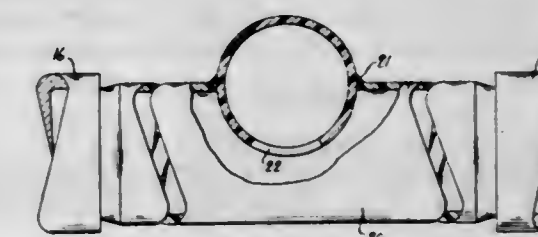
The present invention involves contacting bed-load solids, which normally saltate along river bottoms, with



earth fills designed for river diversion or simply as settling reservoirs for flocculated solids. The process also may be used for deepening rivers.

**3,461,675**  
**WATERING AND DRAINAGE SYSTEM**  
 James Paterson Izatt, Cobham, England (986 Baycrest Drive, North Vancouver, British Columbia, Canada)  
 Filed Aug. 18, 1967, Ser. No. 661,663  
 Claims priority, application Great Britain, Aug. 19, 1966, 37,358/66  
 Int. Cl. E02b 11/00, 13/00  
 U.S. Cl. 61—11

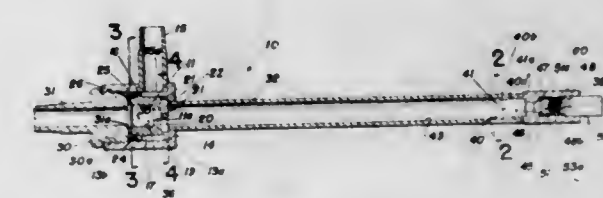
3 Claims



A system for controlling the moisture content of a planted area by the provision of a subterranean water-impervious zone superposed by a reservoir zone including a water distribution system.

**3,461,676**  
**VORTEX TUBE ARRANGEMENT**  
 Lester W. Toelke and Irven E. Hanson, Houston, Tex., assignors to Encon Manufacturing Company, a corporation of Texas  
 Filed Oct. 30, 1967, Ser. No. 678,786  
 Int. Cl. F25b 9/02  
 U.S. Cl. 62—5

9 Claims



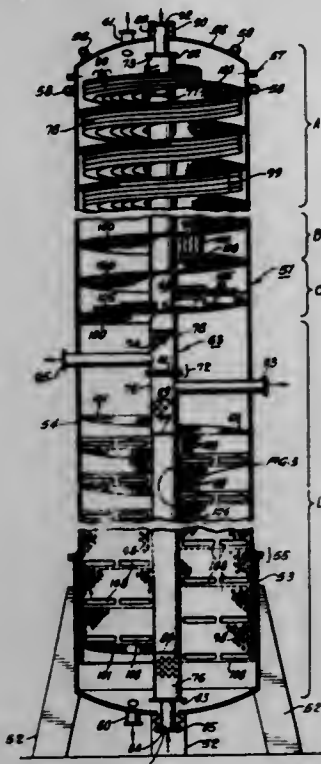
A vortex tube apparatus incorporating means for reducing the noise level of the air discharged through the



cold tube and a reduced bore arrangement in the tube which conveys the hot air from the vortex tube converter apparatus with means in at least one of the reduced bores to aid in straightening the hot air before discharge through a control valve.

### 3,461,677 HELICALLY DISTRIBUTED HEAT EXCHANGE FRACTIONATING COLUMN

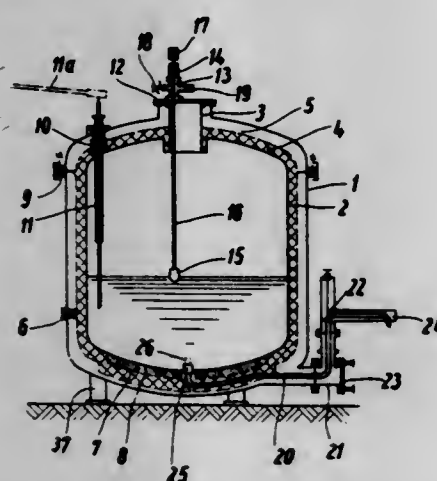
James R. Muenger, Beacon, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware  
Filed Sept. 28, 1967, Ser. No. 671,378  
Int. Cl. F25j 3/02; B01d 3/24  
U.S. Cl. 62-42 12 Claims



A plate type fractionating column for cryogenic service having a helical tube bundle and a helical arrangement of plates interwound therewith to provide distributed heat exchange throughout a substantial portion of the column.

### 3,461,678 STATIONARY, LARGE-CAPACITY STORAGE CONTAINER FOR THE STORAGE OF LIQUEFIED GASES

Gustav Klipping, Berlin, Justus Moll, Rodenkirchen, and Werner Wiedemann, Garching, near Munich, Germany, assignors to Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V., Göttingen, Germany  
Filed Sept. 22, 1967, Ser. No. 669,793  
Claims priority, application Germany, Sept. 24, 1966, M 71,051  
Int. Cl. F17c 1/00  
U.S. Cl. 62-45 15 Claims

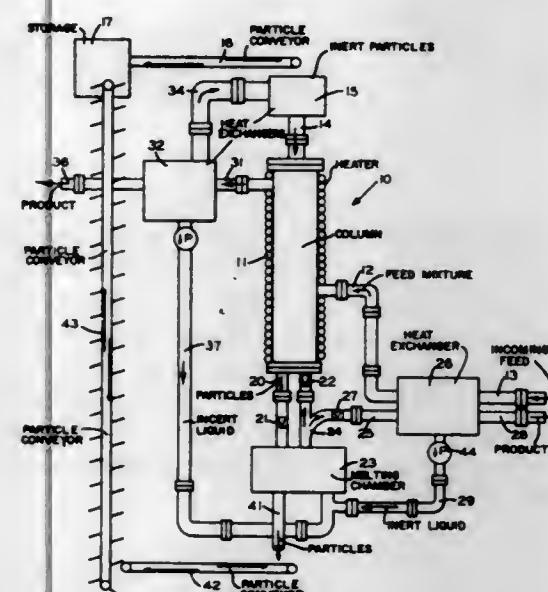


A large-capacity storage tank for low-temperature liquids including a jacket container, an inner container

for containing the liquid and disposed in the jacket to define a vacuum space therewith, a large diameter collar member connected between the two containers for firmly suspending the inner container in the outer container, the collar member representing the only support for the inner container when it is in its cold state, and spacer bolts mounted in the jacket container and positioned to contact the inner container only when it has expanded due to the absence of low temperature liquid therein.

### 3,461,679 SEPARATING LIQUEFIABLE MATERIALS FORMING SOLID SOLUTIONS

William M. Goldberger, Columbus, Ohio, assignor, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware  
Filed Apr. 20, 1965, Ser. No. 449,469  
Int. Cl. B01d 9/04  
U.S. Cl. 62-58 7 Claims



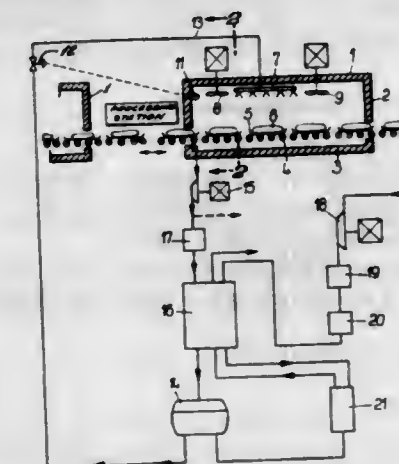
Materials forming solid solutions are separated by introducing them into a bed of inert particles that form a moving column, causing liquids within the bed to flow countercurrently to the flow of said particulate material and providing temperatures and liquid-solid fugacities within the column disposed to effect solidification of at least a portion of the substance on the inert particulate material as a solid phase leaving a remainder liquid phase so that solid and liquid phases of the material exist throughout the column of particles in direct contact with one another and said solid and liquid phases are enriched in one component upstream from the point of introduction of said material into said bed of particles and in another component downstream from the point of introduction of said material into said bed of particles.

### 3,461,680 METHOD AND APPARATUS FOR REFRIGERATING FOODSTUFFS

Ernst A. Rische, Duisburg-Rahm, Germany, assignor to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany  
Filed May 5, 1967, Ser. No. 636,375  
Claims priority, application Germany, May 4, 1966, M 69,384  
Int. Cl. F25d 13/06  
U.S. Cl. 62-63 5 Claims

Refrigerating foodstuffs as they travel between adjacent

food processing stations upon a conveyor. The conveyor is surrounded by an enclosure and liquid cooling agent is introduced into the enclosure by nozzle spraying to refrigerate the foodstuffs therein.



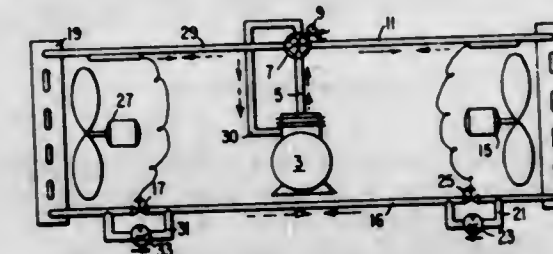
### 3,461,683 PRESSURE PIPE FOR ENCAPSULATED REFRIGERATING MACHINE

Knud V. Valbjorn and Kjeld Kjeldsen, Nordborg, and Steinar Skog, Sonderborg, Denmark, assignors to Danfoss A/S, Nordborg, Denmark, a company of Denmark  
Filed Jan. 30, 1968, Ser. No. 701,640  
Int. Cl. F25d 19/00  
U.S. Cl. 62-295 9 Claims

introduced into the enclosure by nozzle spraying to refrigerate the foodstuffs therein.

### 3,461,681 REFRIGERATION SYSTEM DEFROST CONTROL

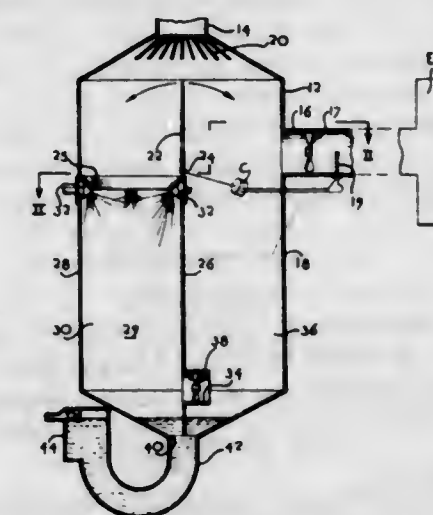
Roy F. Smith, Syracuse, and Richard D. Kovar, Auburn, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware  
Filed Mar. 11, 1968, Ser. No. 711,938  
Int. Cl. F25b 13/00; F25d 21/02  
U.S. Cl. 62-81 4 Claims



A control circuit for a heat pump to prevent excessive frost formation on the outside coil by initiating a defrost cycle after a timed interval in response to signals indicative of a high pressure differential of air across the outside coil and of the temperature of refrigerant in the outside coil.

### 3,461,682 GAS COOLING

Kenneth Darby, Warley, Oldbury, near Birmingham, England, assignor to Lodge-Cottrell Limited, Birmingham, England, a British company  
Filed Sept. 27, 1967, Ser. No. 670,855  
Claims priority, application Great Britain, Oct. 22, 1966, 47,461/66  
Int. Cl. F25b 37/00; F25d 17/06  
U.S. Cl. 62-85 6 Claims

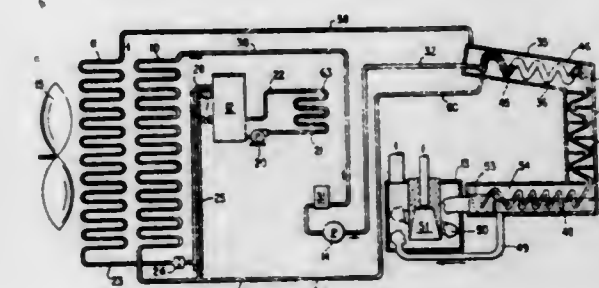


A method of cooling gas comprising the steps of dividing hot gas into a plurality of streams, contacting at least

The invention relates to motor-compressor refrigerating units of the type which a motor and compressor are contained in a sealed housing. These units have refrigerant pipes which extend from the compressor to the exterior of the housing and these refrigerant pipes are subjected to vibrational forces which cause the pipes to vibrate and create undesirable noises.

### 3,461,684 ABSORPTION REFRIGERATION MACHINE

Walter M. Simpson, Indianapolis, Ind., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware  
Filed Dec. 4, 1967, Ser. No. 687,838  
Int. Cl. F25b 15/00; B67d 5/62  
U.S. Cl. 62-476 3 Claims



An absorption refrigeration system employing an improved chiller to cool a liquid heat exchange medium which is passed to a remote location to provide cooling.

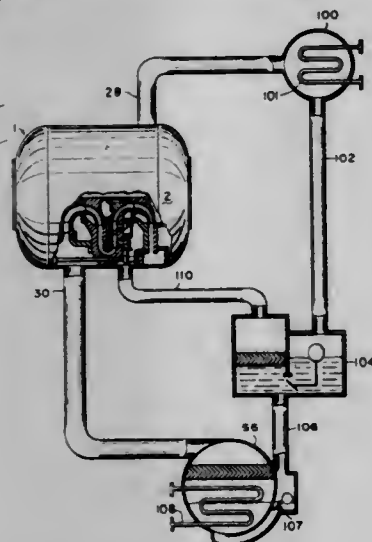


### 3,461,685 INLET GUIDE VANE ACTUATING ARRANGEMENT FOR MULTISTAGE CENTRIFUGAL COMPRESSOR

David C. Hoffman, Stoddard, Wyman K. Ender, Onalaska, and Allan I. Wold, La Crosse, Wis., assignors to The Trane Company, La Crosse, Wis., a corporation of Wisconsin

Filed Aug. 2, 1967, Ser. No. 657,914  
Int. Cl. F25b 1/10; F04d 27/00  
U.S. Cl. 62—510

10 Claims



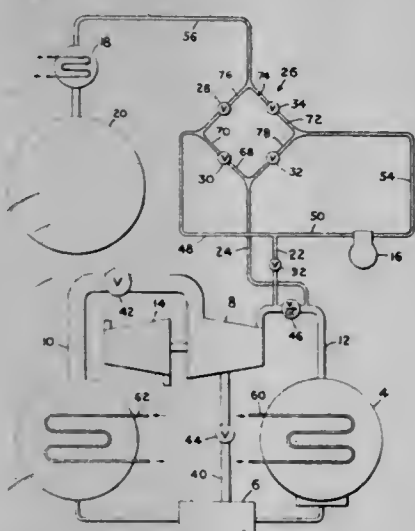
A multiple stage refrigerant compressor is provided with adjustable guide vanes at the inlet to each stage of compression, with the linkage mechanism for each set of guide vanes being actuated by a common operating shaft which extends through the compressor casing at only one point. The guide vane operating shaft section for an advanced stage of compression extends axially of the compressor casing outside of the interstage crossover passage, thereby minimizing the number of seals required along the operating shaft. The linkage mechanism for the advanced stage adjustable guide vanes is located in a chamber which also serves as a plenum space from which economizer gas is injected into the return passage leading to the advanced stage impeller.

### 3,461,686 MEANS TO REDUCE STARTING TORQUE REQUIREMENTS FOR LARGE CENTRIFUGAL COMPRESSORS

Erik B. Andersen, Maplewood, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware

Filed Jan. 4, 1968, Ser. No. 695,714  
Int. Cl. F25b 1/10, 41/00, 45/00  
U.S. Cl. 62—510

7 Claims



A centrifugal compressor refrigeration system having a small auxiliary reciprocating compressor which is con-

nected to transfer refrigerant between the refrigeration system and a refrigerant storage container and also connected to evacuate the main centrifugal compressor prior to start-up of the system so as to reduce the torque necessary to bring the centrifugal compressor up to operating speed.

### 3,461,687 QUICK CONNECT FLEXIBLE DRIVE

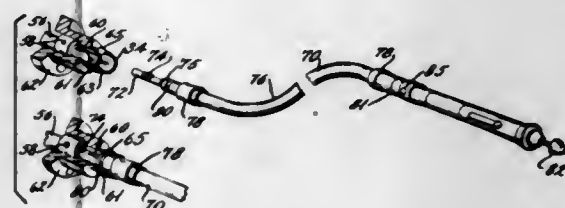
William Jordan Siegal, 9337 Fraser St., Silver Spring, Md. 20910

Continuation-in-part of application Ser. No. 539,168, Mar. 31, 1966. This application May 28, 1968, Ser. No. 732,665

Int. Cl. F16c 1/08, 1/06

U.S. Cl. 64—2

1 Claim



The invention relates to a double male ended quick convert flexible drive shaft structure particularly adapted for use with an electronic equipment repair and maintenance unit. The female connection member is of special construction which permits the flexible drive to be connected and disconnected while the driving motor is in operation.

### 3,461,688 CONSTANT VELOCITY UNIVERSAL JOINT

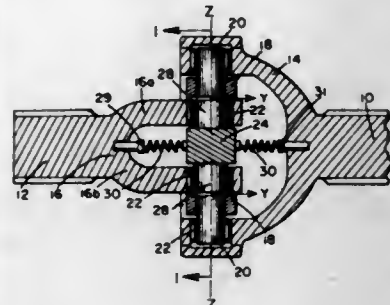
Marvin Garfinkle, P.O. Box 4704, Fairview Park, Cleveland, Ohio 44126

Filed Nov. 9, 1967, Ser. No. 681,793

Int. Cl. F16d 3/33, 3/16

U.S. Cl. 64—21

9 Claims



A constant velocity universal joint having a driving shaft and a driven shaft each forming a yoke at their adjacent ends. An annular coupler is trunnioned to one yoke and encircles the other yoke. A second coupler is trunnioned to the second yoke and arranged within and trunnioned to the annular coupler. Relative rotation between the parts is facilitated by pins, which are preferably roller bearing mounted. An elastic restraining element confines the shafts within the proper working relationship.

### 3,461,689 PILE TREATING ATTACHMENT FOR PILE FABRICATING MACHINES

Wolfgang Herkenberg, R.R. 6, Galt, Ontario, Canada

Filed June 19, 1967, Ser. No. 646,909

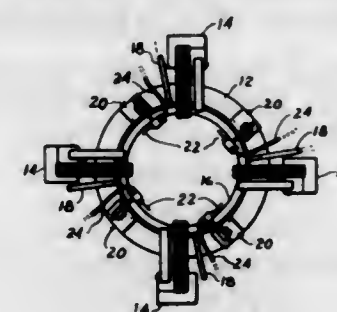
Int. Cl. D04b 9/12

U.S. Cl. 66—9

6 Claims

In a machine which produces a pile fabric, typically a pile circular knitting machine, the pile filaments are treated with a fluid directed transversely of the filaments

while they are in exposed condition transversely of the ground fabric, and before they have been covered by a succeeding layer of pile held by the next course of knitting.



Usually each carding head has an air nozzle to blow the pile inward, and this is followed by a needle-like nozzle to deliver the fluid transversely of the pile, and to a desired part only of the length of the pile.

### 3,461,690 PATTERN DEVICE FOR CIRCULAR KNITTING MACHINES

Johann Martinetz, Hechingen, and Horst Paepke, Rottenburg, Germany, assignors to Mayer & Cie, Taillfingen, Wurttemberg, Germany, a firm

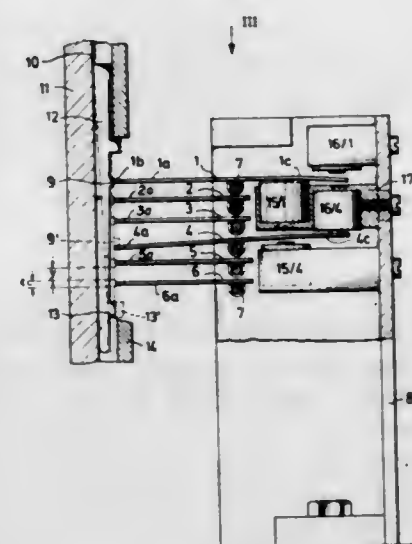
Filed Feb. 21, 1967, Ser. No. 617,577

Claims priority, application Germany, Feb. 28, 1966, M 68,552

Int. Cl. D04b 9/26, 15/78

U.S. Cl. 66—50

7 Claims



A pattern device for a circular knitting machine wherein needle-controlling plates, which have pattern feet, are directly controlled, in order to make a predetermined pattern selection, by armatures of electromagnets. The needle-controlling plates are supported for longitudinal shifting movement by a rotary needle-carrier means which is formed with longitudinal grooves in which the controlling plates are situated, and the pattern feet of the plates are respectively moved by the rotary needle bed along predetermined paths. The armatures of the several electromagnets terminate in free ends which are inclined and situated in the paths of movement of the pattern feet to engage the latter for shifting the control plates with respect to the bed to locations where these pattern plates will not participate in the knitting operations.

With this arrangement, while the pattern feet engaging arms of the armatures are arranged substantially along a straight line which is parallel to the axis of the rotary needle bed, the other arms of the armatures, which are acted upon by the electromagnets, are offset with respect to each other perpendicularly with respect to the axis of the needle bed so that a compact arrangement of the electromagnets can be achieved.

### 3,461,691 MULTIFEED CIRCULAR KNITTING MACHINES

Cyril G. Ballard, Oadby, England, assignor to G. Stibbe & Company Limited, Leicester, England, a British company

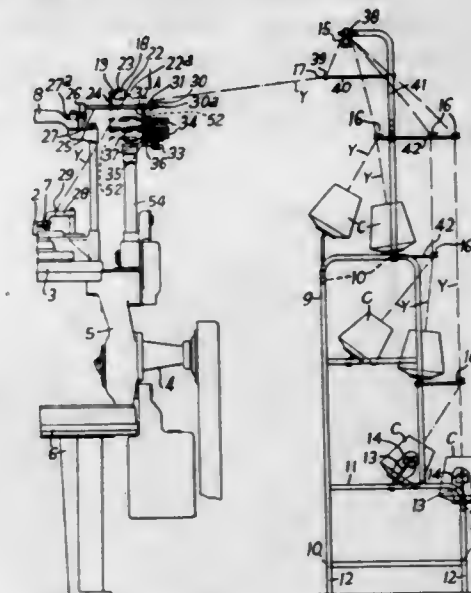
Filed May 26, 1966, Ser. No. 553,135

Claims priority, application Great Britain, June 4, 1965, 23,862/65

Int. Cl. D04b 35/16, 15/48

U.S. Cl. 66—125

4 Claims



The combination of a circular multifeed knitting machine having no superstructure and at least one portable bobbin stand set up next to the machine. A first series of yarn failure and abnormality detector devices and associated yarn guides is mounted on the stand and a second such series is mounted on the machine. Yarns extend from bobbins on the stand, through the yarn guides thereon, to the detector devices of the first series, across from the stand to the machine and through the yarn guides on the latter to the detector devices of the second series and to the needles.

### 3,461,692 YARN FEED DEVICE FOR A KNITTING MACHINE

Jean-Pierre Raisin, Troyes, France, assignor to Institut Textile de France, Boulogne-sur-Seine, France

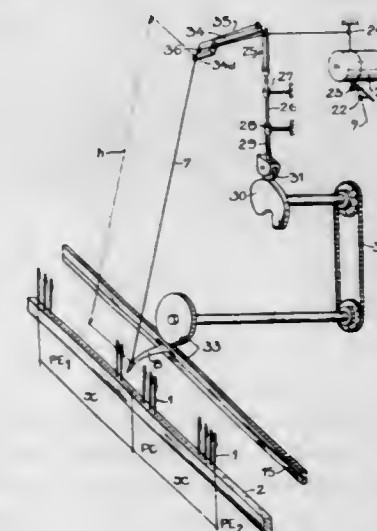
Filed Feb. 26, 1968, Ser. No. 708,027

Claims priority, application France, Feb. 27, 1967, 96,585

Int. Cl. D04b 15/48

U.S. Cl. 66—132

2 Claims



A yarn feed device for a knitting machine including a yarn guide operatively associated with the yarn carrier bar, means being provided to control the position of the yarn guide in dependence upon the position of the



yarn carrier bar so that the length of yarn between the yarn guide and yarn carrier is always constant. Means are also provided to control the starting and stopping of the yarn feeder in dependence upon the position of the yarn carrier bar.

3,461,693

**PNEUMATIC CLEANING SYSTEM**

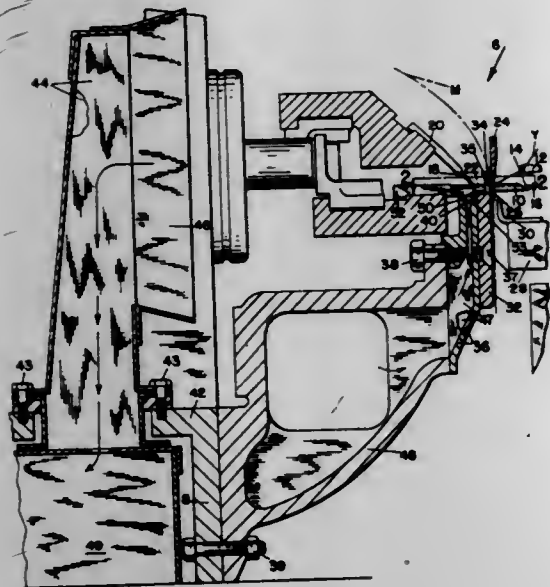
Hans J. Klaui, Shrewsbury, Mass., assignor to Crompton & Knowles-Mallmo, Inc., Worcester, Mass., a corporation of Massachusetts

Filed Sept. 7, 1967, Ser. No. 666,209

Int. Cl. D04b 35/32

U.S. Cl. 66—168

7 Claims



A pneumatic cleaning system for warp knitting machines in which blower ducts are made part of the sinker construction with openings in close proximity to the knitting needles and sinkers, and suction ducts are placed so as to draw lint laden air from the needle and sinker area.

3,461,694

**HOSIERY WELT AND METHOD OF MAKING THE SAME**

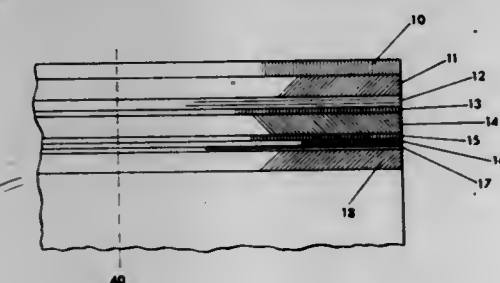
Abrasha Wilcher, Manchester, N.H., assignor to Manchester Hosiery Mills, Manchester, N.H., a partnership of New Hampshire

Filed Apr. 21, 1967, Ser. No. 632,700

Int. Cl. D04b 9/46, 11/00; A41b

U.S. Cl. 66—172

3 Claims



A welt construction for ladies' hosiery and a method of making the same comprising feeding four yarn ends into a four feed circular knitting machine as it is knitting a stocking welt. The yarn ends each comprise a torque yarn having alternate Z and S twist segments with the lengths of each segment extending about the welt. The successive segments engage the needles in a nonsynchronized and indiscriminate relation with respect to engagement of the yarn ends with the needles to form a combination of all defined bands of stretch fabric in the welt with the bands of different widths.

3,461,695  
**TWO-WAY STRETCH GARMENT INCORPORATING INLAID ELASTOMERIC YARN**

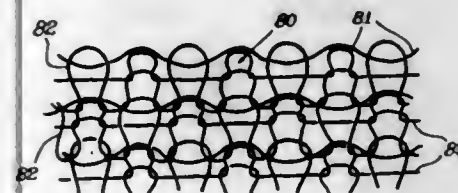
Herbert Knöhl, Seneca, S.C., assignor to The Kendall Company, Walpole, Mass., a corporation of Massachusetts

Filed Sept. 19, 1967, Ser. No. 668,756

Int. Cl. D04b 11/28, 7/12, 21/14

U.S. Cl. 66—178

7 Claims



The invention is particularly concerned with tubular knitted two-way stretch girdles, stockings, panty hose, stretch slacks, knee and elbow guards, stretch shorts, and other tubular knitted garments incorporating an inlaid elastic yarn.

3,461,696

**APPARATUS FOR LOCKING SKIS**

Johann Georg Seka, Altadena, Calif.

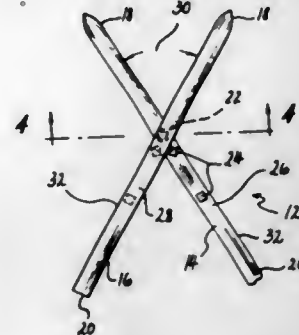
(280 Park View Terrace, Oakland, Calif. 94610)

Filed June 12, 1967, Ser. No. 645,451

Int. Cl. E05b 73/00, 67/38; A63c 11/02

U.S. Cl. 70—58

18 Claims



A ski-locking apparatus for locking pairs of skis and having first and second members adapted to be secured to the skis and a lock affixed to one of the members. When installed on a pair of skis the members are engaged by moving the skis perpendicularly to their mounting surfaces for the members. Actuation of the lock immovably secures the members to each other and thereby positions the skis in their crossed position.

3,461,697

**LATCHING AND LOCKING MEANS FOR LUGGAGE CASES OR THE LIKE**

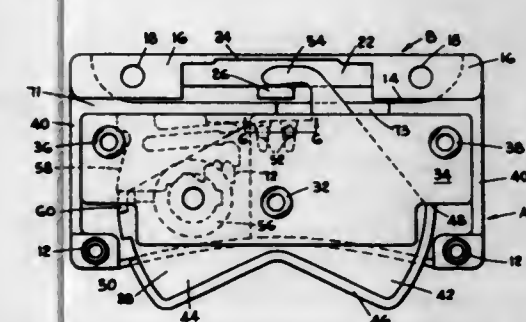
Charles S. Gehrie, Montclair, N.J., assignor to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York

Filed Sept. 13, 1967, Ser. No. 667,599

Int. Cl. E05b 65/52; A45c 13/10

U.S. Cl. 70—71

10 Claims



Latching and locking devices are disclosed in which a cantilever cover plate supports and houses the other parts of the device, including a pivoting latching member,

bottom plate, key barrel, and locking bolt. A cooperating hasp is received within a hasp-aligning recess of the cover plate and concealed by the cover plate. The hasp is engaged by a hook portion of the latching member which draws the latching device and the hasp together. The latching member is actuated by wing portions which project from beneath the cover plate and is maintained in latched and unlatched positions by a detent.

3,461,698

**APPARATUS FOR METAL WORKING WITH EXPLOSIVES**

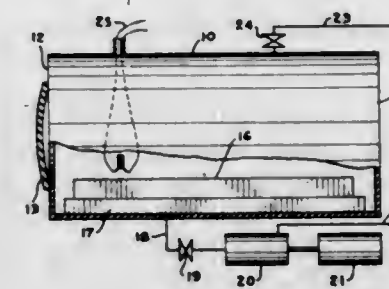
Charles P. Bennett, Box 401, St. Norbert, Manitoba, Canada

Filed Dec. 19, 1966, Ser. No. 602,681

Int. Cl. B21d 26/08

U.S. Cl. 72—56

1 Claim



Apparatus for metal working with explosives in a chamber and under conditions of vacuum or partial vacuum thus attenuating the shock wave and enabling the apparatus to be used indoors.

3,461,699

**METHOD AND APPARATUS FOR REFORMING CONTAINERS**

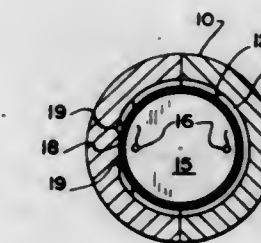
Donald J. Roth, Chicago Heights, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed May 23, 1967, Ser. No. 640,690

Int. Cl. B21d 25/02, 22/10; B21j 5/04

U.S. Cl. 72—56

8 Claims



A container, having a side seam, is reformed in a die whereby a body wall of the container is embossed or stylized in conformity with the configuration of the die cavity. The stresses which are exerted on the body wall of the container during reforming and which tend to produce rupture at the side seam, are minimized by providing an element having gripping means for engaging an area of the body wall immediately adjacent the side seam. When the container is reformed, the area engaged by the gripping means takes up the stresses to prevent rupture at the side seam.

3,461,700

**HYDROFORMING TECHNIQUES USING EPOXY MOLDS**

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Robert N. Hanson, Covina, Calif.

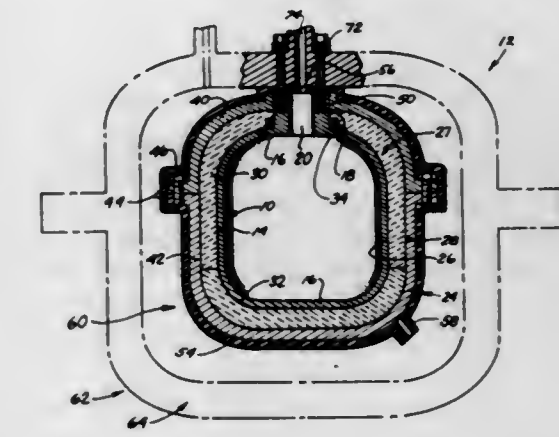
Filed Dec. 27, 1966, Ser. No. 605,091

Int. Cl. B21d 28/18, 22/10

U.S. Cl. 72—61

2 Claims

A hollow workpiece is disposed inside a thin-walled die. The die is inside a pressure vessel. Fluid pressure is applied to the inside of the workpiece and to the outside of the die so that pressure forces across the die are balanced. The interior of the workpiece is sealed from the interior of the pressure vessel. Additionally, the whole die is sealed in a



hermetic pliable bag to prevent leakage of fluid from the pressure vessel through the die into the space between the workpiece and the die. A one way valve is provided in the bag for attachment to a vacuum pump.

3,461,701

**ROLLING OF CYLINDRICAL COMPONENTS HAVING NON-PLANAR ENDS**

Jacob Marcovitch, Johannesburg, Transvaal, Republic of South Africa, assignor to Rotary Profile Anstalt, Vaduz, Liechtenstein

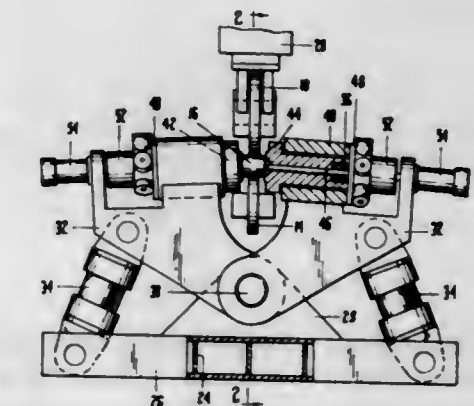
Filed May 1, 1967, Ser. No. 634,945

Claims priority, application Republic of South Africa, May 5, 1966, 66/2,613

Int. Cl. B21h 1/02; B21b 15/00; B21k 1/32

U.S. Cl. 72—84

7 Claims



A cylindrical article is made by a profiling operation consisting in gripping a blank between side cheeks which bear on its end and rollers which bear on its circumference, rotating the side cheeks and rollers, and forcing the cheeks towards each other to thin it and profile its ends. The cheeks are initially inclined to each other and are progressively tilted into parallelism. The rollers are moved



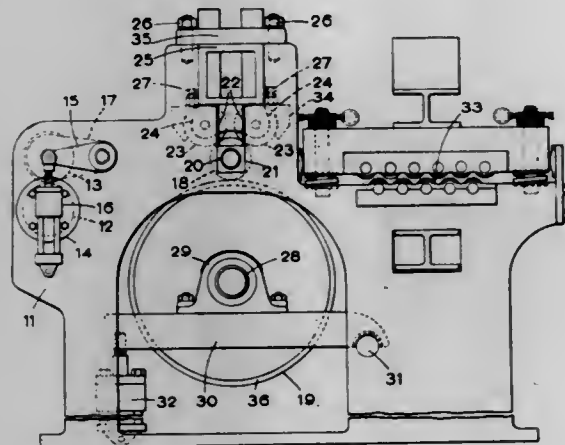
outwards to make way for the diametral spread, and are finally forced inwardly to compact the blank and profile its circumference.

### 3,461,702 MACHINE FOR PROCESSING METALLIC SHEET AND STRIP MATERIAL

John Frederick Wallace, Didcot, Roger David Butler, Kidlington, and Lancelot Alan Adkin, Didcot, England, assignors to Pressed Steel Fisher Limited, Cowley, England, a British company  
Filed Sept 26, 1966, Ser. No. 582,031  
Int. Cl. B21b 15/00

U.S. Cl. 72—161

1 Claim



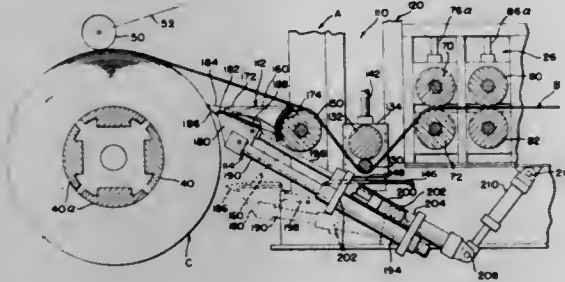
A machine for suppressing the discontinuous yield point of sheet/strip metal. The metal is passed between work rolls, one covered with nylon, and plastic strain is induced.

### 3,461,703 APPARATUS FOR UNCOILING AND PROCESSING METAL STRIP

Neil J. Ranney, Mentor, Ohio, assignor to Production Machinery Corporation, Mentor, Ohio, a corporation of Ohio  
Continuation-in-part of application Ser. No. 269,347, Apr. 1, 1963. This application Oct. 30, 1964, Ser. No. 407,673  
Int. Cl. B21d 3/12; B21c 47/16

U.S. Cl. 72—183

28 Claims



1. An apparatus for uncoiling and processing a metal strip comprising, in combination, a mandrel mounted to rotate about an axis and adapted to support a coil of said strip, a set of pinch rolls for processing said strip and spaced from said mandrel, a first working roll between said pinch rolls and said mandrel and defining a horizontal pass for said strip, and a second working roll between said first working roll and said pinch rolls, said second working roll being positioned substantially below said horizontal pass to define a sinuous path for said strip coming from said coil, a threading apron pivotally mounted coaxially with respect to said first working roll

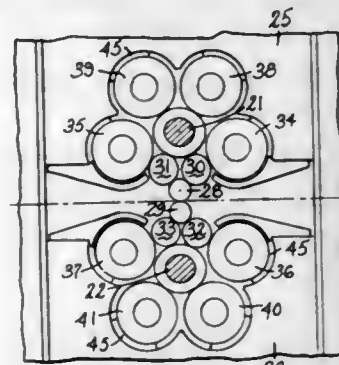
and means for rotating said apron from an inactive position below said first working roll to a threading position generally aligned with said horizontal pass.

### 3,461,704 CLUSTER ARRANGEMENT

Telesfore Rastelli, Cheshire, Conn., assignor to Textron, Inc., Providence, R.I., a corporation of Rhode Island  
Filed Dec. 29, 1966, Ser. No. 605,910  
Int. Cl. B21b 13/14, 29/00

U.S. Cl. 72—242

10 Claims



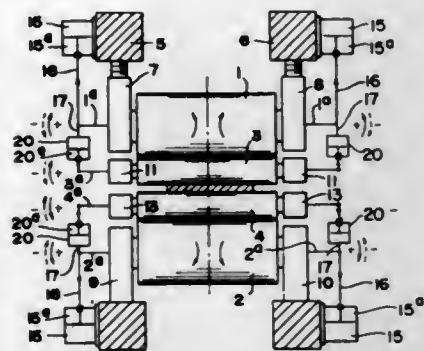
A cluster mill arrangement useful in the rolling of sheet or strip from stock, wherein the work roll sizes may be interchanged without the necessity for changing the mill housing or drive stand and without necessitating the change of a large number of rolls in the arrangement, consisting of a pair of work rolls; two pairs of intermediate rolls in contact with said work rolls; two pairs of back-up rolls wherein each back-up roll is in contact with the corresponding intermediate roll; a pair of center rolls which are in contact with each pair of intermediate rolls and directly above and below the work rolls; and a pair of auxiliary back-up rolls in contact with the corresponding center roll. Either the work rolls or the center rolls may be driven.

### 3,461,705 APPARATUS FOR CONTROLLING THE DEFLECTION OF THE ROLLS OF A ROLLING MILL

Karl Josef Neumann, St. Ingbert-Saar, Germany, assignor to Verwaltungsgesellschaft Moeller und Neumann Offene Handelsgesellschaft  
Filed Nov. 14, 1966, Ser. No. 593,955  
Claims priority, application Germany, Nov. 17, 1965, V 29,750

U.S. Cl. 72—243

10 Claims



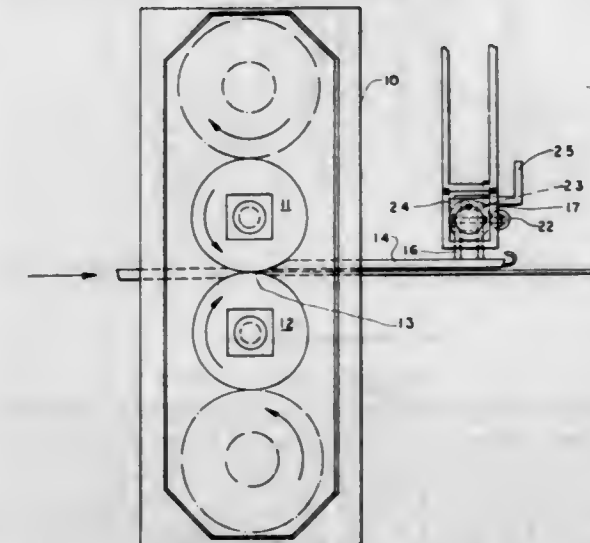
A method and apparatus for correcting the deflection of the rolls of a rolling mill of the type including opposed work contacting rolls and one or more back-up rolls engaging the work contacting rolls. The method includes applying separate crown controlling bending moments to at least one of the work contacting rolls and its associated back-up rolls so that substantially uniform pressure contact results between the rolls. The apparatus disclosed includes a variety of different means for carrying out the noted method.

### 3,461,706 TOP STRIPPER GUIDES

Roy R. Sloan, Blasdell, N.Y., assignor to Fox Industries, Inc., a corporation of Ohio  
Filed Aug. 9, 1966, Ser. No. 571,337  
Int. Cl. B21b 39/16

U.S. Cl. 72—250

4 Claims



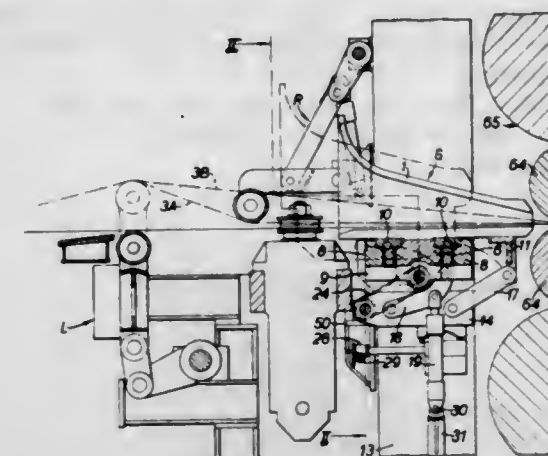
A top stripper guide is provided for rolling mills having a housing and an upper and lower work roll defining between them a pass line, said guide comprising a guide plate lying above the pass line adjacent the upper work roll, a contour edge on said plate adjacent the work roll, a guide shaft vertically adjustably mounted on said guide plate, hanger means on the housing supporting the ends of the guide shaft and locking adjusting means between the shaft and hanger means for adjusting the angle of said guide plate with respect to the pass line.

### 3,461,707 MILL GUIDES

Jack Maltby, Todwick, Sheffield, Yorkshire, England, assignor to Davy and United Engineering Company, Limited, Sheffield, England  
Filed Jan. 3, 1967, Ser. No. 606,957  
Claims priority, application Great Britain, Jan. 3, 1966, 121/66

U.S. Cl. 72—250

7 Claims



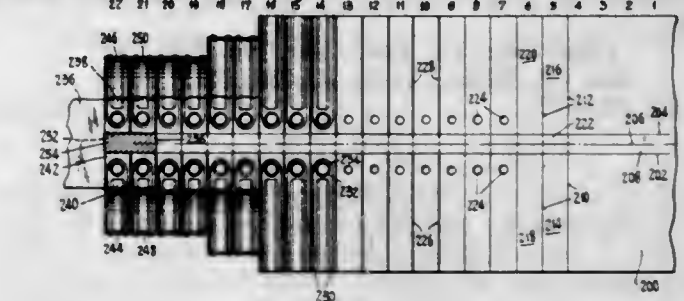
An entry guide for directing strip into a rolling mill capable of being raised and lowered vertically, and a pair of edge guides forming part of the entry guide displaceable towards and away from each other to vary the separation thereof and also movable upwards and sideways to a position in which the entry guide is out of the way during roll changing.

### 3,461,708 METHOD OF FORMING CONDUIT CLAMPS

Frank W. Pepe, Lordship, Conn., assignor to Arc-Co Incorporated, Bridgeport, Conn., a corporation of Connecticut  
Filed Nov. 2, 1967, Ser. No. 680,252  
Int. Cl. B21d 21/00, 28/06, 53/36

U.S. Cl. 72—332

15 Claims



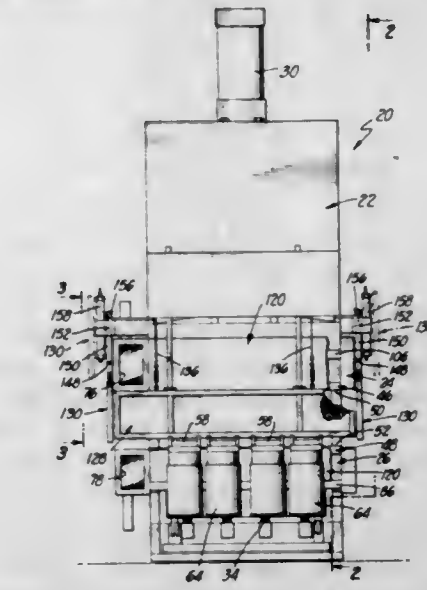
A method of continuously forming single hole conduit clamps from flat strip stock wherein pairs of elongate clamps are blanked in end to end adjacent relationship either completely or only partially across the width of the strip stock and sequentially formed in even numbered multiples by intermittent feeding of the stock through a progressive die punch press. Individual clamp blanks are partially severed from each other leaving a central carry through portion of the strip, either within or beyond the clamp blank length, then progressively die formed by deformation from the free end of each clamp blank toward the center of the strip, and finally severed from the strip in multiples of diagonally or end to end adjacent pairs of finished clamps by punching alternate diagonally adjacent pairs of clamps in opposite directions, or by punching out a central carry through portion between end to end adjacent clamps.

### 3,461,709 HOT PRESS INSULATING SYSTEM

Harry E. McMillen, Rolling Hills, Calif., assignor to Murdock, Inc., Compton, Calif., a corporation of California  
Filed June 2, 1967, Ser. No. 643,100  
Int. Cl. B21d 37/16

U.S. Cl. 72—342

13 Claims



An insulating system for the heated interplaten working zone of a hot press comprising: heat shields respectively extending along the open sides of the working zone; refractory layers engaging the surfaces of the platens opposite the working surfaces thereof; and insulating members respectively extending along the edges of the platens. Some of the heat shields are movable to inoperative positions to permit access to the working zone. Each refractory layer comprises a plurality of separate refractory blocks bolted to the corresponding platen in such a way

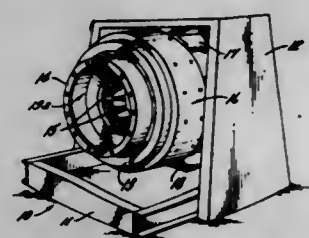


as to permit relative expansion and contraction of the as metal, to definite shape and size by camming swaging platen and the refractory blocks.

### 3,461,710 METHODS AND APPARATUS FOR SHRINK FORMING METAL ARTICLES

Hans R. Luedi, Highland Park, and Christian H. Stettler, Northbrook, Ill., assignors to Grotnes Machine Works, Inc.

Filed Dec. 28, 1967, Ser. No. 694,237  
Int. Cl. B21d 31/00, 41/00; B21j 7/16  
U.S. Cl. 72—372 8 Claims

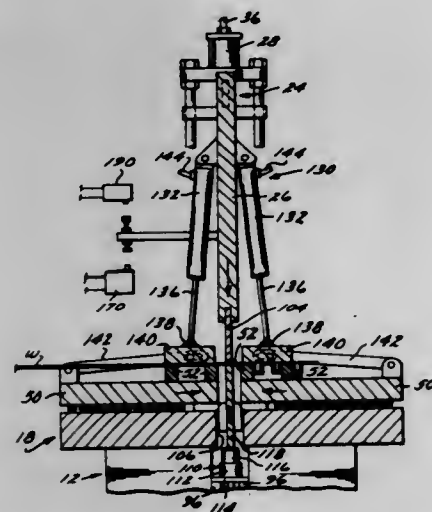


The disclosure relates to method and apparatus for radially shrinking annular workpieces wherein provision is made for insertion of the annular workpiece into the apparatus at one end and at the other end of the apparatus workpiece forming tools may be inserted so as to perform work after the workpiece has been shrunk.

### 3,461,711 CORRUGATING METHOD AND APPARATUS

Frank R. Ogilvie, 203 S. Elwood, Glendora, Calif. 91740  
Filed Sept. 8, 1964, Ser. No. 394,923  
Int. Cl. B21d 13/02, 5/01

U.S. Cl. 72—383 8 Claims

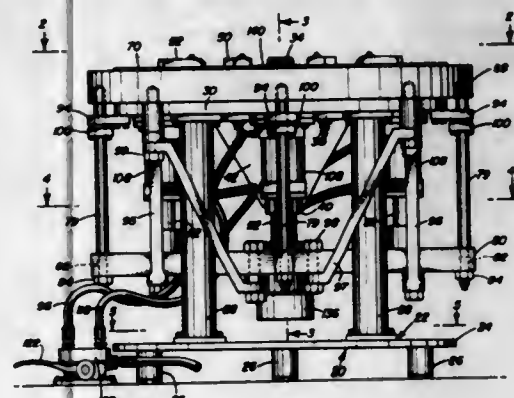


A sheet corrugating machine having a pair of spaced parallel forming members to which the work sheet is clamped and a forming bar which deforms the work sheet between the forming members to form a corrugation in the sheet. During the formation of each corrugation, the forming members move, inwardly toward the forming bar as the latter enters between the members and at a rate controlled by coacting means on the forming bar and forming members to avoid stretching of the work sheet.

### 3,461,712 SWAGER FOR METALLIC RINGS

Neville T. Henkel, 9582 Labradore Lane, El Cajon, Calif. 92021, and Herman W. Scharer, Spring Valley, Calif.; said Scharer assignor to said Henkel

Filed Apr. 25, 1967, Ser. No. 633,622  
Int. Cl. B21d 41/00; B21j 7/16  
U.S. Cl. 72—402 9 Claims  
A machine for cold working a circular member, such

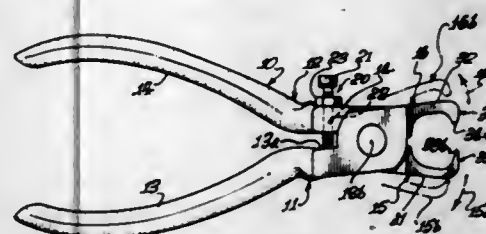


sectors radially inwardly against the periphery of the member.

### 3,461,713 PLIERS WITH ZIPPER-REFORMING JAWS

Henry Donath, 4342 Laurel Grove Ave., North Hollywood, Calif. 91604  
Filed Oct. 13, 1967, Ser. No. 675,128  
Int. Cl. B21d 9/08, 37/12; B25b 7/00

U.S. Cl. 72—409 3 Claims

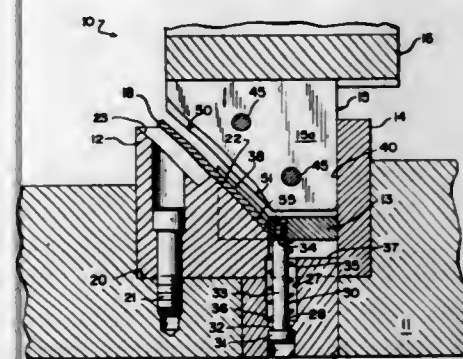


A pliers for restoring or freeing a deformed or jammed slide in a slide fastener of the zipper-type, in which the two jaws curve inwardly toward each other, each jaw being of a forked design different from the other and shaped respectively to fit precisely into the double entrance passages and the single exit passage of a zipper slide which is partly filled with a pair of tooth-bearing zipper tapes, said pliers being provided an adjustable gap stop for precisely matching the jaw gap to the length of the slide being repaired.

### 3,461,714 DIE FORMING SWAGE

Moses Hegyl, Orland Park, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware

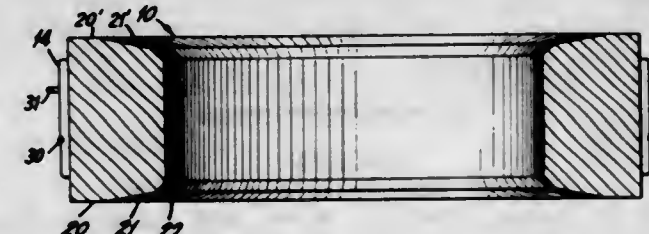
Filed Nov. 24, 1967, Ser. No. 685,614  
Int. Cl. B21d 37/10; B21c 3/02  
U.S. Cl. 72—416 6 Claims



A swage is disclosed herein that provides a structure whereby a piece part is supported on a die block in a die base and a punch is urged against the part to swage a tapered edge thereon.

3,461,715  
**COMPRESSIVE FORCE MEASURING DEVICE**  
Jordan H. Stover III, Bloomfield Hills, Mich., assignor to Lebow Associates, Inc., Oak Park, Mich., a corporation of Michigan  
Continuation-in-part of application Ser. No. 505,912, Nov. 1, 1965. This application Aug. 1, 1968, Ser. No. 769,768

Int. Cl. G01l 5/12  
U.S. Cl. 73—141 9 Claims



A device for measuring compressive force includes a thin force washer having a peripheral edge on which at least one strain gage is mounted, the washer also having top and bottom faces each provided with a flat outer annular portion and a countersunk or otherwise depressed inner annular portion. The washer has a thickness not less than about 0.15 inch but no greater than about 0.4D, its outer diameter being about 1.5D; and the inner diameter of each flat outer annular portion is from  $D + 0.025$  to  $1.32D$  plus or minus 5%, where D is the washer's inner diameter in inches and corresponds closely to the nominal diameter of the bolt with which the washer may be used. Two additional washers may be located above the top face and below the bottom face, respectively, of the force washer, the upper washer being of larger outer diameter than the force washer, and both additional washers being of at least substantially the same hardness as the force washer.

### ERRATA

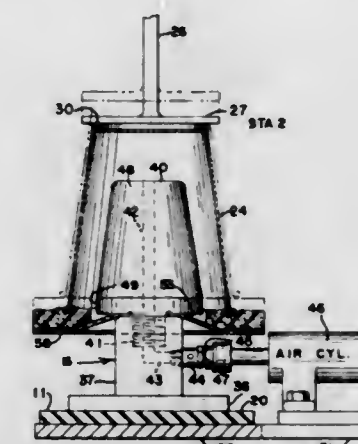
For Class 27—23.1 see:  
Patent No. 3,462,261

For Class 73—40.5 see:  
Patent No. 3,462,240

### 3,461,716 LEAK DETECTOR FOR PAPER CUPS

William W. Thomson, Portage, Mich., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Aug. 28, 1967, Ser. No. 663,591  
Int. Cl. G01m 3/04  
U.S. Cl. 73—45.1 3 Claims

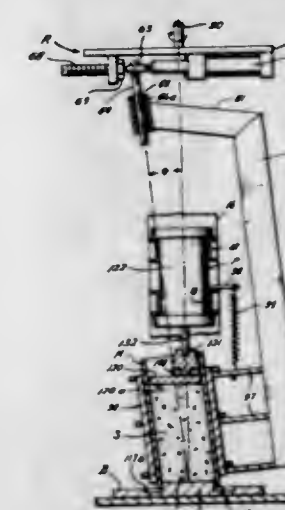


An apparatus for testing paper cups for leaks having test stands on which cups are placed mouth down in air tight relationship. Some air is forced out of the cups creat-

ing a partial vacuum in the cups. A pneumatically operated leaky cup reject tube is provided for removing detected leaky cups from the test stands. The test stands are moved one at a time under the reject tube. If a cup leaks, the partial vacuum therein will disappear; the cup will consequently rest freely on the test stand and will be sucked up into the pneumatic reject tube. If a cup is satisfactory, the suction created by the partial vacuum in the cup will hold it on the test stand sufficiently tight to prevent it from being sucked up into the pneumatic reject tube.

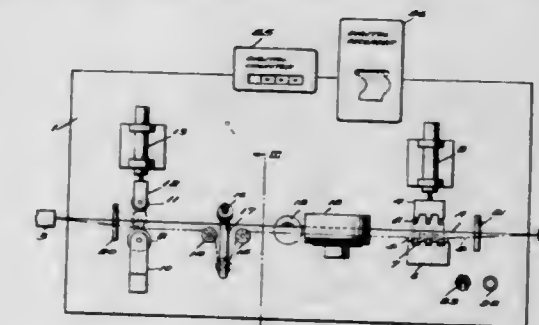
3,461,717  
**GYRATORY COMPACTOR**  
Wayne A. Dunlap and Lionel J. Milberger, both % Texas A. & M. University, Department of Civil Engineering, College Station, Tex. 77843; and Tommy L. Snow, Houston, Tex.; said Snow assignor to said Dunlap and said Milberger

Filed Mar. 29, 1968, Ser. No. 717,139  
Int. Cl. G01n 3/00  
U.S. Cl. 73—84 12 Claims



A gyratory compactor for molding compactible material comprising a mold adapted to be gyrated about a fixed point near one end of the mold so that the longitudinal axis of the mold circumscribes a cone whose vertex coincides with the fixed point with means operably connected to the other end of the mold for tilting the mold to a desired gyratory angle while the mold is being gyrated and means for applying a desired amount of pressure longitudinally of the mold during gyration thereof.

3,461,718  
**THREAD TENSIONING APPARATUS**  
John Vipond Harvey and John Rowson Thompson, Kingston, Ontario, Canada, assignors, by mesne assignments, to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
Filed Jan. 5, 1967, Ser. No. 607,419  
Int. Cl. G01n 3/28; G01l 5/04  
U.S. Cl. 73—95.5 6 Claims



The yarn-handling apparatus has clamps and a tensioning device which are activated in sequence to stop, clamp and tension a length of thread advancing to an aspirator.



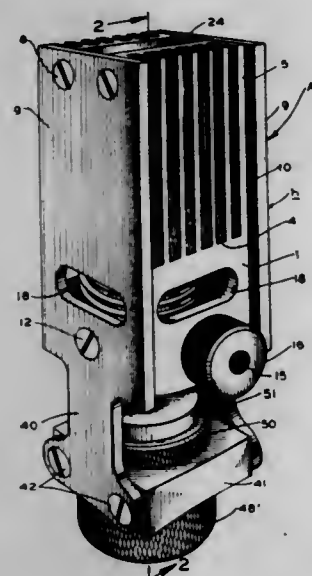
At the conclusion of a timed period for physical testing, the various elements are deactivated in reverse sequence. After another timed period, there is an automatic repetition of the same sequences.

### 3,461,719 CLAMPING SYSTEM

Milton Welhoelter, Rock Hill, and Merrill Jenkins, Spanish Lake, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
Filed July 1, 1966, Ser. No. 562,311  
Int. Cl. G01n 3/02

U.S. Cl. 73-103

17 Claims

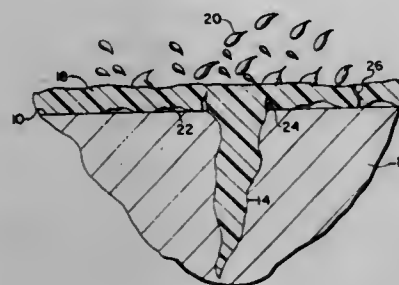


A clamping device for use with dynamic viscoelastometers and the like where the device includes an outer housing and a pair of jaws which are movable along wedge-shaped walls within the housing. When the jaws are projected towards each other, they will removably engage a plastic test sample. The jaws are urged towards each other by means of a spring action biasing a shaft which is in turn connected to the jaws. The jaws are removable from the housing by means of a knurled nut which is threaded about the shaft and bears against the housing for urging the shaft outwardly of the housing. A unique coupling device is mounted on the lower end of the housing for securing the clamping device to a stationary device.

3,461,720  
**WATER WASHABLE PENETRANT**  
Orlando G. Molina, Westminster, Calif., assignor to North American Rockwell Corporation  
Filed Feb. 6, 1967, Ser. No. 614,079  
Int. Cl. G01n 19/02

U.S. Cl. 73-104

12 Claims



The disclosure is of a dye penetrant composition in liquid form adapted to enter minute surface defects when coated uniformly over a workpiece surface and to dry

rapidly thereafter. The composition includes a wetting agent whereby the coated surface may be washed clean by application of water to remove excess penetrant, leaving only residual dye in the minute defects. Where the composition contains fluorescent dye, inspection is accomplished by viewing the workpiece under black light to detect residual traces of dye on the bare surface. Where daylight visible dye is used in the penetrant composition, a developer including a wetting agent similar to that in the penetrant may be applied after the mentioned washing step to render the dye visible in the developer coating, which is thereafter removed by water washing when the inspection is completed.

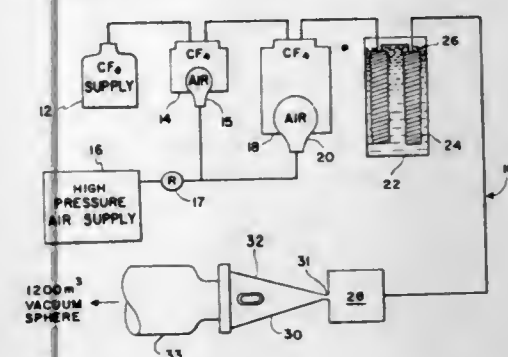
### 3,461,721

#### FLOW FIELD SIMULATION

Robert A. Jones, Newport News, and James L. Hunt, Hampton, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration  
Filed Dec. 28, 1967, Ser. No. 694,317  
Int. Cl. G01m 9/00

U.S. Cl. 73-147

8 Claims



The flow fields that would be encountered by a blunt vehicle upon entry into a planetary atmosphere are simulated without involving the high temperatures that would occur in actual flight. The test gas used is a heavy gas having a small specific heat ratio, such as CF<sub>4</sub>.

### 3,461,722

#### ELECTRODE ASSEMBLY FOR LIQUID LEVEL CONTROLLERS

David Martens, Winnipeg, Manitoba, Canada, assignor to EPM Manufacturing Co., Ltd., Winnipeg, Manitoba, Canada

Filed June 29, 1967, Ser. No. 650,005  
Int. Cl. G01f 23/00

U.S. Cl. 73-304

6 Claims



This is a floatless liquid level control consisting of an elongated non-conductive tube with electrodes situated

along the length thereof and having electric conduits extending through the tube and being connected to the electrodes. The tube is then filled with a sealing material such as liquid plastic which, when set, seals the interior against the ingress of moisture.

### 3,461,723

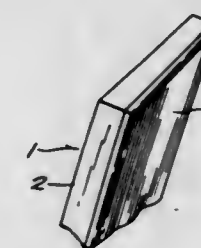
#### SYNTHETIC HUMIDITY SENSING ELEMENT AND METHOD OF PREPARING THE SAME

Paul E. Thoma, Milwaukee, Wis., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin

Filed July 10, 1967, Ser. No. 652,287  
Int. Cl. G01n 25/56

U.S. Cl. 73-335

17 Claims



This invention relates to a varying dimension humidity sensing element having improved chemical resistance and creep resistance. The element includes a strip of a relatively hard, flexible, moisture resistant material, and a layer of moisture sensitive material is bonded to one surface of the strip. The moisture sensitive layer is an organic crosslinked material produced by the reaction of a substance containing glucoside chains with a stabilizing monomer capable of reacting with the hydroxyl groups of the glucoside.

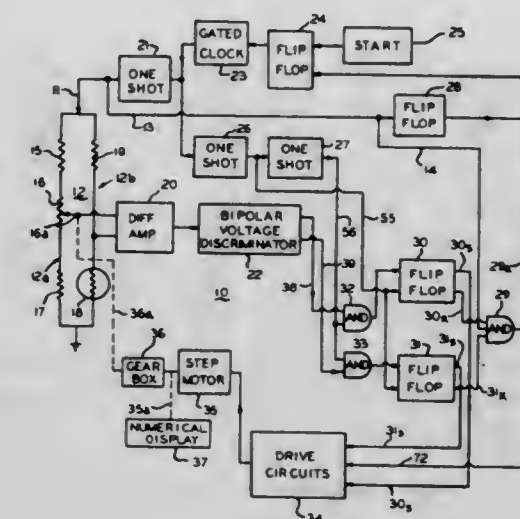
### 3,461,724

#### TEMPERATURE MEASURING SYSTEM

Peter P. Tong and Richard H. Thomas, Madison, Wis., assignors to T & T Technology, Inc., Madison, Wis.  
Filed Jan. 16, 1967, Ser. No. 609,483  
Int. Cl. G01k 5/18, 5/52

U.S. Cl. 73-362

13 Claims



A temperature measuring system of a hybrid discrete state servo type which includes a rebalancing bridge containing a thermistor in one arm. The bridge is energized by a pulse generator. A stepping motor is activated by the output pulses from the bridge which form an error signal. The stepping motor drives a rebalancing potentiometer and activates a digital indicator.

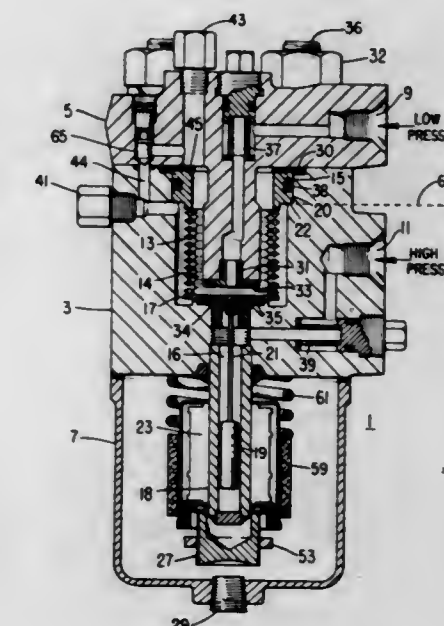
865 O.G.-29

### 3,461,725 ELECTRIC DIFFERENTIAL PRESSURE TRANSMITTER

Roy W. Gardiner, Richmond Heights, and Victor J. Melville and Norman J. Yager, Euclid, Ohio, assignors to Bailey Meter Company, a corporation of Delaware  
Filed Aug. 18, 1967, Ser. No. 661,609  
Int. Cl. G01l 9/00

U.S. Cl. 73-393

12 Claims



An apparatus for measuring pressure differential has a welded metal bellows sensor responding to pressure differential and a movable core transformer producing a proportional electrical signal. The bellows sensor has a collar on the open end thereof which is affixed within the housing of the apparatus by means of a spring in the form of a wavy washer to compensate for changes in static pressure and ambient temperature.

### 3,461,726

#### APPARATUS FOR MEASURING A DIFFERENCE IN PRESSURE

Horst Ziegler, Berlin, Germany, assignor to Continental Elektroindustrie AG Askania-Werke, Berlin-Mariendorf, Germany, a corporation of Germany

Filed Nov. 6, 1967, Ser. No. 680,723  
Claims priority, application Germany, Nov. 8, 1966, C 40,615

Int. Cl. G01l 9/00

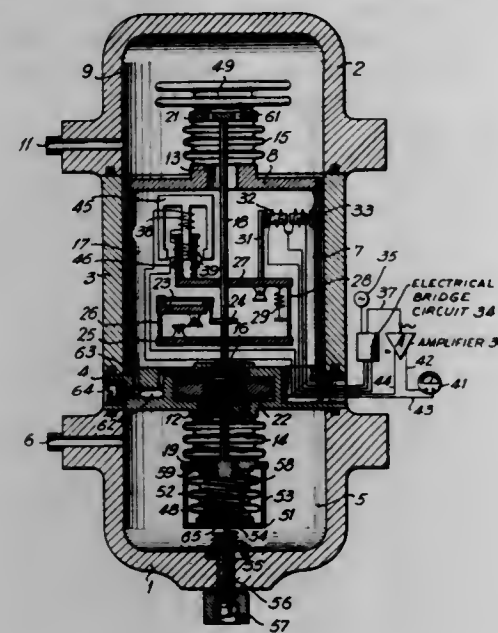
U.S. Cl. 73-398

10 Claims

First and second pressure chambers are coupled to a pipe conducting a medium whose difference in pressure is to be measured. A partition is interposed between the first and second pressure chambers and has an aperture formed therethrough. A first expandable elastic container in the first pressure chamber seals said pressure chamber at the aperture and a second expandable elastic container in the second pressure chamber seals said chamber at the aperture. A linking rod is affixed to each of, and rigidly couples, the first and second elastic containers and extends therebetween through the aperture. The linking rod is mechanically coupled to an electromechanical compensating system for providing an electrical signal corresponding to a difference in pressure between the first and second pressure chambers. A first expandable elastic expansion container is affixed to and opens into the first elastic container. A second expandable elastic expansion container is affixed to and opens into the second elastic container. Each of the first and second expansion containers and elastic containers is filled with liquid, the volume of liquid



in the first expansion container being variable under variation in pressure in the first pressure chamber. A liquid



passage is formed through the partition and extends from and opens into each of the first and second elastic containers and throttles the flow of liquid therebetween.

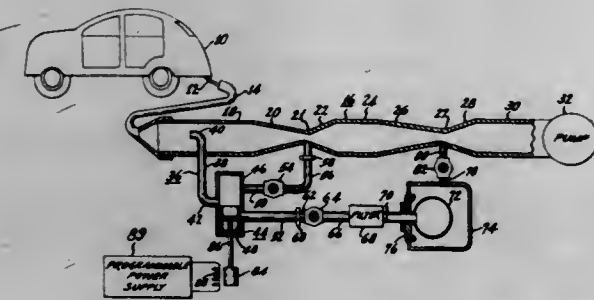
### 3,461,727 GAS SAMPLER

Frederic U. Everhard, Pelham, N.H., and Robert E. Hartwell, Chelmsford, Mass., assignors to RCA Corporation, a corporation of Delaware

Filed May 29, 1967, Ser. No. 642,108  
Int. Cl. G01n 1/22

U.S. Cl. 73-421.5

4 Claims



A source of fluid which is to be collected for analysis is connected to a tube. The fluid is shunted from the tube into one or the other of two paths and back to the tube. A fluid collector is arranged in one path. Pump means are provided to prevent the described apparatus from applying back pressure to the source of fluid. The shunting of the fluid between the two paths is programmed to provide a sample in the fluid collector that is an average of the fluid produced by the fluid source over a period of time.

### 3,461,728 STAND FOR BASELESS CYLINDERS

August J. Paoli, 950 Logan Ave., Salt Lake City, Utah 84105

Filed Oct. 1, 1965, Ser. No. 492,128

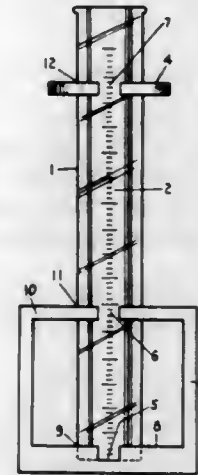
Int. Cl. G01f 19/00

U.S. Cl. 73-426

3 Claims

A combined means for supporting tubular glass cylinders

including a base stand member and a separate slidable ring which is snugly fitted around the top of the glass



### 3,461,729

#### WHEEL BALANCER PROBE ASSEMBLY

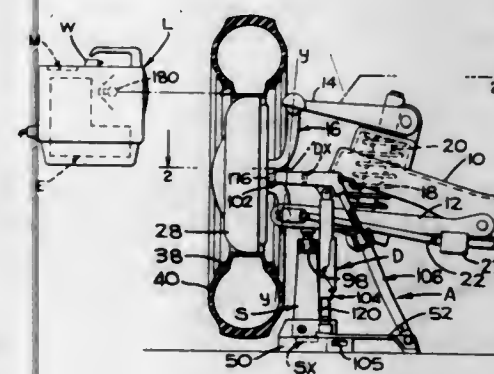
Don A. Haynes, Okemos, Mich., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed May 2, 1966, Ser. No. 546,704

Int. Cl. G01m 1/14

U.S. Cl. 73-457

13 Claims



A dual probe assembly having separate transducers for each probe measures both static and dynamic unbalance of a wheel as it is rotated on the vehicle. The probe for measuring the static unbalance is mounted on an adjustable screw jack which supports the axle, or one of the control arms of an "A-frame," or independent suspension linkage. The probe for measuring the dynamic unbalance is mounted on the same base as the jack which supports the dynamic probe. The dynamic probe engages a non-rotating part of the wheel, and is mounted for height and orientation adjustability for accommodation to different vehicles.

### 3,461,730 ACCELEROMETER

Rex B. Peters, Pasadena, Calif., assignor to Endevco Corporation, Pasadena, Calif., a corporation of California

Filed Apr. 2, 1965, Ser. No. 444,985

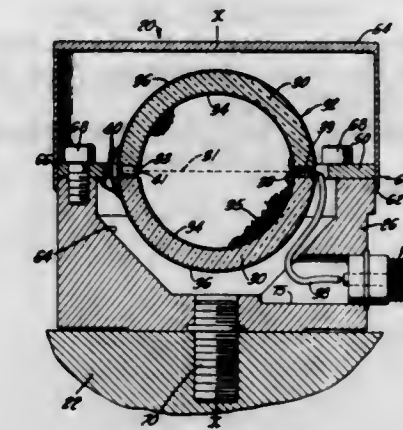
Int. Cl. G01p 15/08

U.S. Cl. 73-517

16 Claims

This omnidirectional accelerometer employs a container composed of a piezosensitive (e.g. piezoelectric or

piezoresistive) material, which is substantially filled with an inertial material, such as liquid or powder having liquid-like properties. The container may be spherical or cylindrical or the like. It is supported at a number of



points in its equatorial zone by means of a cantilever-type support structure which is attached to the object being tested. Case effects are substantially eliminated and the output signal is independent of the direction of acceleration so long as the acceleration is large compared with gravity.

### 3,461,731

#### MECHANISM FOR CONVERTING ROTARY MOTION TO RECIPROCATING AND ROTARY MOTION

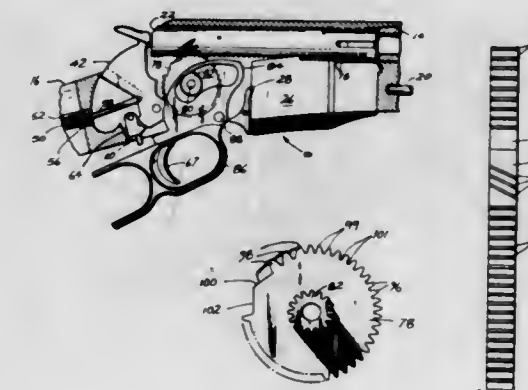
Karl R. Lewis, 77 Olney Road, Wethersfield, Conn. 06109

Original application Dec. 16, 1966, Ser. No. 609,979, now Patent No. 3,377,730, which is a continuation-in-part of application Ser. No. 524,763, Feb. 3, 1966. Divided and this application Apr. 5, 1968, Ser. No. 719,080

Int. Cl. F16h 25/12, 37/16

U.S. Cl. 74-22

10 Claims



This application discloses a mechanism wherein the rotary motion of one driving member is converted into reciprocating and rotary motion of another driven member. The motion conversion is accomplished by coengaging teeth on the two members constructed and arranged to apply both axial and rotational forces to the driven member, and guide means for restraining the driven member to a desired path of movement including both axially and angularly extending components. The mechanism is specifically disclosed as used in a firearm, the motion converting mechanism being used to convert the rotation of a driving member into reciprocating and rotational movement of the firearm bolt.

### 3,461,732 PORTABLE POWER DRIVEN RECIPROCATING SAW

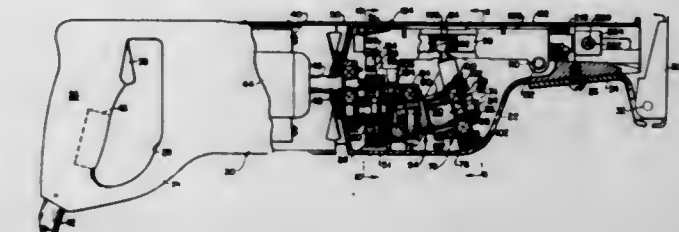
Edward G. Gregory, North Syracuse, N.Y., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 19, 1966, Ser. No. 602,696

Int. Cl. F16h 33/20; B27b 11/00

U.S. Cl. 74-60

10 Claims



A reciprocating hand held saw having a motor and drive mechanism for selectively imparting straight axial reciprocation to the saw blade or aggressive orbital reciprocation to the saw blade.

### 3,461,733 ENDLESS BELT ASSEMBLY WITH INSERT COUPLING

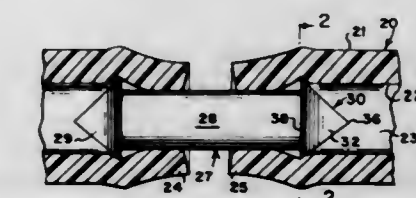
Arnold G. Peterson, Sunapee, N.H., assignor to L. M. & L. Corporation, Claremont, N.H., a corporation of New Hampshire

Filed July 6, 1967, Ser. No. 651,527

Int. Cl. F16h 9/00

U.S. Cl. 74-238

6 Claims



A continuous belt assembly suitable for use in high-velocity, moderate-load power transmission applications comprising, in combination, a novel internal coupling means and a tough extensible, flexible and tear resistant polymeric belting. The fastening means comprises sharp holding edges at either end thereof, such edges being adapted to indent, deform, cut and grip the walls of the belting when said fastening device is inserted into hollow sections of the belting and the belting is subsequently mounted on machinery. The sharp edged insert is free of sharp prongs and undercut barbs, but includes sharp spade-like edges defining a figure of greater periphery than the inside diameter of the hollow tubular belting, the corner edges having obtuse angles on the periphery to limit fracture while deforming the tube into a tight stretch around the periphery.

### 3,461,734 DEVICES FOR DRIVING AN INTERNAL GEAR

Francois Durand, 108 Blvd. Carnot, 78 Le Vesinet, France

Filed Jan. 18, 1968, Ser. No. 698,757

Claims priority, application France, Jan. 30, 1967, 93,023

Int. Cl. F16h 57/00, 1/06

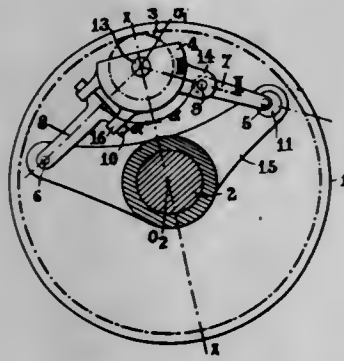
U.S. Cl. 74-410

4 Claims

An internal gear driven by a pinion supported on means



independent from those of the internal gear. The pinion mounting means has freedom of movement in all direc-

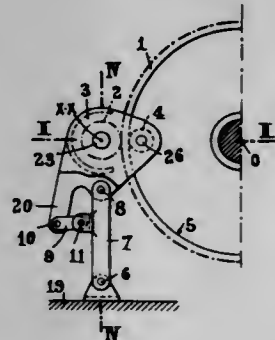


tions so that the pinion may assume automatically proper meshing engagement with the internal gear.

**3,461,735**  
**DEVICES FOR DRIVING TOOTHED WHEELS**  
Francois Durand, 108 Blvd. Carnot,  
Le Vesinet, France  
Filed Jan. 19, 1968, Ser. No. 699,182  
Int. Cl. F16h 57/00

U.S. Cl. 74-410

3 Claims

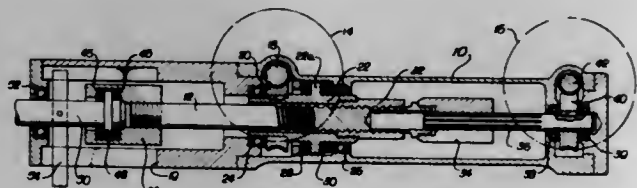


An external gear and pinion drive has separate pinion support means retained in the tangential direction by a pivotal anchor rod. A roller mounted on the pinion support engages an internal surface of the gear for maintaining meshing engagement between the gear and the pinion.

**3,461,736**  
**ELECTROMECHANICAL ACTUATOR**  
John R. Curran, Foxboro, Mass., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland  
Filed Feb. 10, 1967, Ser. No. 615,169  
Int. Cl. F16h 1/20

U.S. Cl. 74-424.8

2 Claims



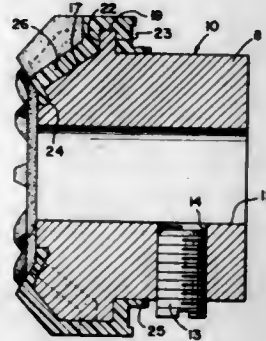
A shaft to be controllably positioned in a direction along its long dimension is threaded for being received within a similarly threaded nut driven at a constant rotative speed. A selectively variable speed drive is also connected to the shaft. When the variable speed drive is at the same speed as the constant speed of the nut, the shaft is maintained at a fixed longitudinal orientation, whereas change

of the variable speed drive effects shaft displacement. Photoconductive elements are incorporated in the variable speed drive circuitry for providing automatic control.

**3,461,737**  
**COMPOSITE GEARS**  
Joseph J. Lukawich and Robert W. Graft, Somerville, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey  
Filed Oct. 6, 1967, Ser. No. 673,428  
Int. Cl. F16h 55/16

U.S. Cl. 74-443

6 Claims

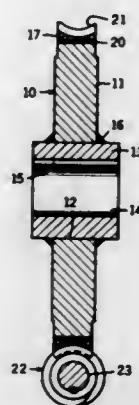


A gear comprising a cast metallic core having a hub portion and a toothed portion integrally formed therewith, wherein the teeth formed on the latter portion are undersized. The toothed portion of the core is provided with an overlay of polyurethane, which is molded into the correct tooth form and is secured on the core at one end by overlying an annular flange formed on the core and at the other end by causing the polyurethane to enter into an undercut area provided on the body of the core.

**3,461,738**  
**GEAR AND METHOD OF MANUFACTURE**  
Anthony K. Pandjiris, St. Louis, and Cleveland N. Cooper, Kirkwood, Mo., assignors to The Pandjiris Weldment Co., St. Louis, Mo., a corporation of Missouri  
Filed Feb. 7, 1968, Ser. No. 703,644  
Int. Cl. F16h 55/12

U.S. Cl. 74-446

15 Claims



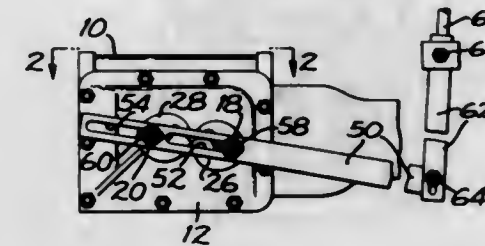
A gear having a steel hub plate with a bronze layer applied by welding deposit on the periphery of the hub plate, the interface between the steel hub plate and bronze peripheral layer being provided by a radially thin dilution zone. The gear teeth are cut in the bronze peripheral layer. The bronze peripheral layer has a radial thickness determined by the location of the outside diameter of the dilution zone in a range between a minimal distance inwardly of the root diameter of the gear teeth and substantially the working depth of the gear teeth.

The method of manufacturing the gear includes the steps of depositing a bronze layer by welding on the periphery of a steel hub plate, while the hub plate and a welding tool are relatively rotating, and then cutting the gear teeth in the bronze peripheral layer within the limits mentioned previously.

**3,461,739**  
**GEAR SHIFT MECHANISM**  
George J. Viegas, 14336 New Jersey Ave.,  
San Jose, Calif. 95124  
Filed Apr. 25, 1967, Ser. No. 633,599  
Int. Cl. G05g 9/06, 9/18

U.S. Cl. 74-473

4 Claims

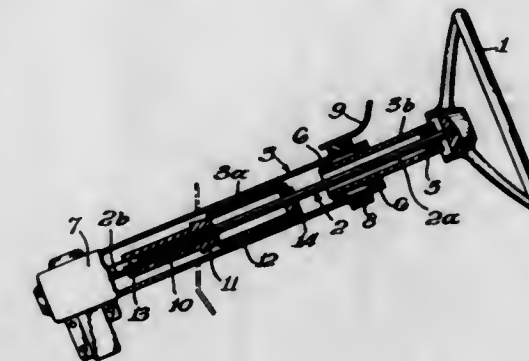


A mechanism for shifting gears in a standard automotive transmission with a pair of control shafts extending therefrom, including a pair of actuating members fixed to the shafts, each actuating member having a slot for receiving a pin, the pin being adapted to travel in a linear path to pivot the actuating members and shafts enabling a shift pattern in the form of a uniform line.

**3,461,740**  
**COLLAPSIBLE STEERING COLUMN ASSEMBLY**  
Atsushi Tajima and Shigeru Moriya, Toyota, Japan, assignors to Toyota Jidosha Kabushiki Kaisha, Toyota, Japan, a corporation of Japan  
Filed Oct. 4, 1967, Ser. No. 672,866  
Claims priority, application Japan, Oct. 5, 1966, 41/65,511; Oct. 8, 1966, 41/66,201  
Int. Cl. B62d 1/18; B60k 27/00

U.S. Cl. 74-492

4 Claims

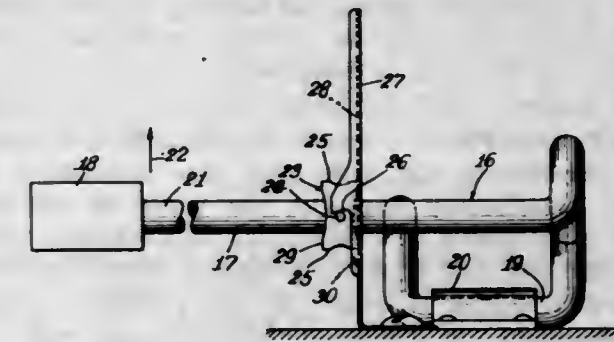


A collapsible column of the type used on motor vehicles is arranged to telescope upon impact thereby eliminating chest injuries to a driver involved in an accident. The steering shaft within the column has upper and lower sections connected by a coupling. In normal operation the sections are adapted to rotate together, but upon the application of an axial force load, such as encountered in a collision, these sections will telescope one within the other. Means for absorbing the energy of such a collision are arranged about the shaft sections and comprise a cylindrical element and an opposite element. The opposite element when thrust into the cylindrical element by the force of impact deforms the latter thereby absorbing the energy generated upon collision.

**3,461,741**  
**LATCH**  
David G. Koland, St. Paul, Minn., assignor to Whirlpool Corporation, a corporation of Delaware  
Filed July 21, 1967, Ser. No. 655,176  
Int. Cl. G05g 5/06

U.S. Cl. 74-532

4 Claims

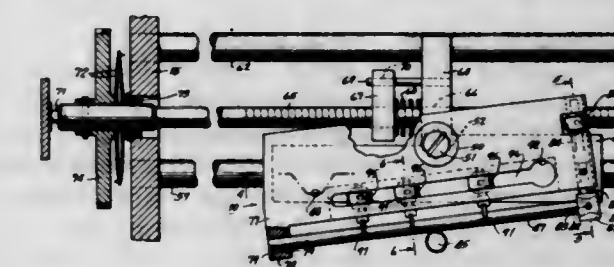


A releasable latch having a pair of latch members one of which is carried by a movable lever normally urged in one direction and with the other urged toward engagement with the first member in which the first member is movable relative to the lever between positions where the first latch is in position to engage the second latch and a position where a cam forming a part of the first member holds the two latch members out of position for this engagement together with a catch that engages the combined first latch and cam member for successively moving the first member on successive movements of the lever, the successive movements of the first member being from one position where the catch members are positioned for engagement and another position where the cam member holds them out of engagement and then back to the first position.

**3,461,742**  
**ADJUSTABLE TRANSLATING CAM STRUCTURE**  
William M. De Mair, Rutherford, and Theodore R. Strauss, Wayne, N.J., assignors to Wallace & Tiernan Inc., East Orange, N.J., a corporation of Delaware  
Filed Oct. 2, 1967, Ser. No. 672,043  
Int. Cl. F16h 53/00

U.S. Cl. 74-568

9 Claims



An adjustable translating cam structure is fabricated of a rigid rectangular plate having an edge projection conically apertured to receive and support, in spaced relation to the edge of the plate, one end of an essentially linear and elongated hardened-steel cam rod. The plate has a transverse edge bore spaced from the edge projection and has an end slot normal to the bore and extending therethrough. An elongated support member has one end portion conically apertured to receive and support the other end of the cam rod and is slidably received in the plate bore. The other end of the support member is screw-threaded and an adjusting nut, positionally received in the plate end slot, is threaded onto the support member axially to adjust the position of the latter in the plate bore and thus adjust the spacing of this end of the cam rod from the edge of the plate. For linear movement of the cam structure as oriented with the cam rod form-



ing an angle to the direction of the movement, this adjustable structure provides adjustment of the effective longitudinal rise, dwell and fall of the cam surface profile for a given contour of the cam rod. The cam rod may be adjustably bent, in either of two directions, from longitudinal linearity at one or more points along its length to provide arcuate cam surface contours at the region of each such point. This is accomplished at each point by an elongated adjustable bending member having one end portion gripping the rod and having its opposite end extending through a longitudinal edge slot of the plate to receive a knurled adjustment nut. The latter is positionally received in a second longitudinal slot normal to and intersecting the edge slot, has concentric end shoulders rotationally engaging the walls of the edge slot, and is rotatable to effect axial displacement of the bending member and thus bend the rod toward or away from the edge of the plate and provide a concave or convex arcuate cam rod profile at the region of bend.

3,461,743

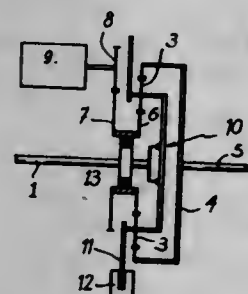
# **METHODS AND APPARATUS FOR REVERSING THE DIRECTION OF ROTATION OF ENGINE OUTPUT SHAFTS**

Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French society  
Filed July 14, 1967, Ser. No. 653,464  
Claims priority, application France, July 21, 1966, 70,358

Int. Cl. F16h 37/14

U.S. Cl. 74—674

6 Claims



This invention relates to a method and means for reversing the direction of rotation of the output shaft of an engine that has no gear box that incorporates reverse drive, the engine being provided with a super-charger compressor driven from a differential that includes a satellite-holder and planet wheels. The method of the invention consists in uncoupling the output shaft from the satellite-holder braking the rotary movement of the satellite-holder and coupling the planet wheel to the engine shaft. In carrying the invention into effect first and second coupling/uncoupling means are provided respectively between the engine shaft and the satellite-holder and between the engine shaft and the planet wheels; the second means being operative in at least one direction of rotation: a brake member is also provided for braking the satellite-holder.

3,461,744

# **STEERING OF TRACKED VEHICLES**

Stanley Henshaw Booth, Wokingham, England, assignor to The Secretary of State for Defence in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England  
Filed Oct. 31, 1966, Ser. No. 590,651  
Claims priority, application Great Britain, Nov. 4, 1965, 46,751/65

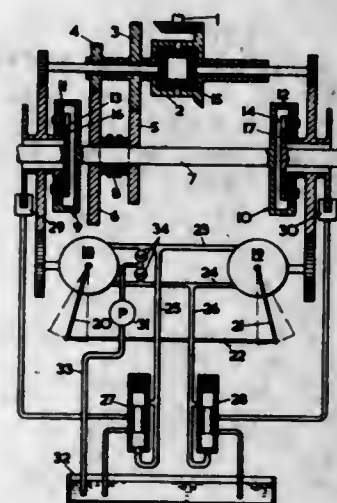
Int. Cl. F16h 47/04; B62d 5/10, 11/00

U.S. Cl. 74—720.5

6 Claims

A steering system for a track laying vehicle comprises differential gearing for driving the tracks. A closed hy-

draulic system includes two motor/pumps connected to gearing from the differential to opposite tracks and means interconnecting the motor/pumps whereby the output of one motor/pump may be selectively increased as that of



the other is decreased. Braking means for each track include spring loaded valves hydraulically connected to the outlets of the motor/pumps and to brakes for selective braking of the tracks to steer the vehicles.

3,461,745

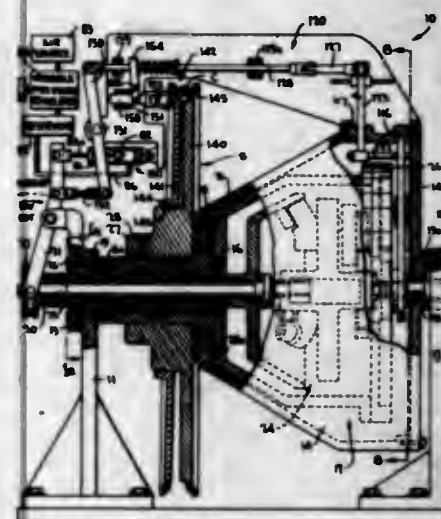
# **CONTROL LINE TENSION REGULATOR**

Wescomb O. Temple, Carroll, N.H.  
(R.F.D. 1, Whitefield, N.H. 03598)  
Filed Jan. 24, 1967, Ser. No. 611,309

Int. Cl. F16h 3/74, 15/24

U.S. Cl. 74—751

13 Claims



An apparatus for maintaining constant tension in a line having a power transmission utilizing a planetary gearing unit that carries dual torque control units in an orbital path; said units having friction wheels which are reversibly and continuously variably driven by an axially shiftable drive cone in response to the output torque sensed in said units. The drive wheels are tapered to match the center path of the drive cone to minimize slippage and the torque control units are pressed toward the cone by torque effect as well as being radially shiftable to maintain constant angle of attack for the same purpose. Additional torque sensor at the output is provided to improve responsiveness of the apparatus for establishing torque equilibrium.

3,461,746

# **CENTRIFUGAL COUPLING ARRANGEMENT**

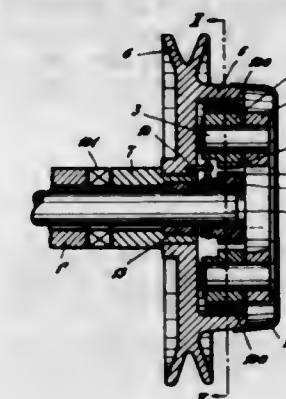
Hans Joachim Schwerdtböfer, Schweinfurt, Germany, assignor to Fichtel & Sachs A.G., Schweinfurt, Germany  
Filed Sept. 25, 1967, Ser. No. 670,305

Claims priority, application Germany, Oct. 7, 1966, F 50,381

Int. Cl. F16h 3/74; F16d 23/10, 43/06

U.S. Cl. 74—752

10 Claims



A coupling arrangement having two coaxial input shafts driven at different speeds, an output pulley permanently connected to the slower shaft by an overriding clutch, and centrifugal weights on the faster shaft which drivingly engage a coupling face on the pulley when centrifugally shifted radially outward against biasing springs. A rotatable control ring frictionally coupled to the slower shaft has teeth engageable by matching teeth on the weights to lock the latter in the inoperative position during incipient movement of the shafts, and for release at full speed when the drive is briefly deenergized.

3,461,747

# **REVERSIBLE VARIABLE STROKE POWER ACTUATOR**

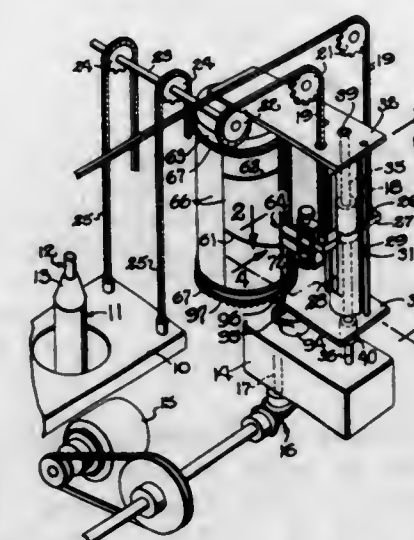
Leroy W. Simonson, Beloit, Wis., and Barry A. Dahlberg, Rockton, Ill., assignors to Warner Electric Brake & Clutch Company, South Beloit, Ill., a corporation of Delaware

Filed Nov. 22, 1967, Ser. No. 685,162

Int. Cl. F16h 25/08

U.S. Cl. 74—828

6 Claims



A reversible variable stroke power transmission drives the ring rail of a textile machine up and down to build yarn masses of contours determined by the lateral spacing of lines extending along a flexible pattern wrapped around the cylindrical surface of a rotary and indexable drum. The pattern is scanned by a photoelectric or mag-

netically sensitive feeler which controls the selective energization of two magnetic friction clutches for reversely rotating a screw shaft paralleling the drum axis and mating with a nut carrying the feeler. The nut is linked to the ring rail whose motion is reversed each time the feeler reaches one of the pattern lines, the length of each stroke of the nut also being determined by the angular position of the drum which is indexed to present different portions of the lines to the feeler. The indexing is effected in unison with reversals of the screw shaft rotation and the feeler includes two photocells individually adjustable along the nut to scan different areas of the pattern and individually controlling the activation of the respective clutches.

3,461,748

# **METHOD OF MAKING A BROACHING TOOL**

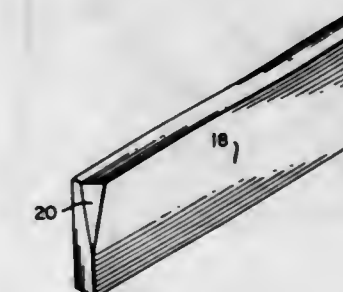
Edwin L. Meyer, 376 Cleveland Ave.,  
Bridgeport, Conn. 06604

Filed May 10, 1966, Ser. No. 549,055

Int. Cl. B23k 21/00

U.S. Cl. 76—101

3 Claims



A multiple rotary broaching tool and method of making wherein thin flat blades are assembled in a machining block at one angle and placed in a working block with separators therebetween, the blades being at a different angle to provide a "backoff" angle. In one form, there is a skiving blade at the forward end substantially at right angles to the path of travel of the assembly of the other blades which are angularly displaced relative thereto.

3,461,749

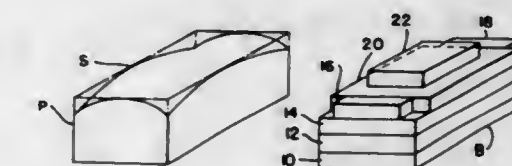
# **SYSTEM FOR DUPLICATING A MODEL TO PRODUCE A FOAM PLASTIC PATTERN**

Oscar J. Gagne, Grosse Pointe, Mich., assignor to Precise Service, Inc., Detroit, Mich., a corporation of Michigan  
Filed June 5, 1967, Ser. No. 643,614

Int. Cl. B21k 5/20; B27c 5/00; B23p 17/00

U.S. Cl. 76—107

9 Claims



Method and apparatus for producing a Styrofoam pattern which comprises assembling and adhering together rectangular strips of Styrofoam so as to produce over a surface area to be reproduced, an irregular excess of Styrofoam, thereafter employing a model guided router producing in the Styrofoam a surface substantially similar to the required surface but providing a substantially uniform excess of stock in a casting, embedding the Styrofoam pattern in a sand mold, pouring the molten die metal into the mold to consume and replace the Styrofoam, and finally machining the cast die part to exact required shape



by a Kellering operation characterized in substantially uniform stock removal permitting simple automatic control of the Kellering machine.

3,461,750

## DRILLING APPARATUS

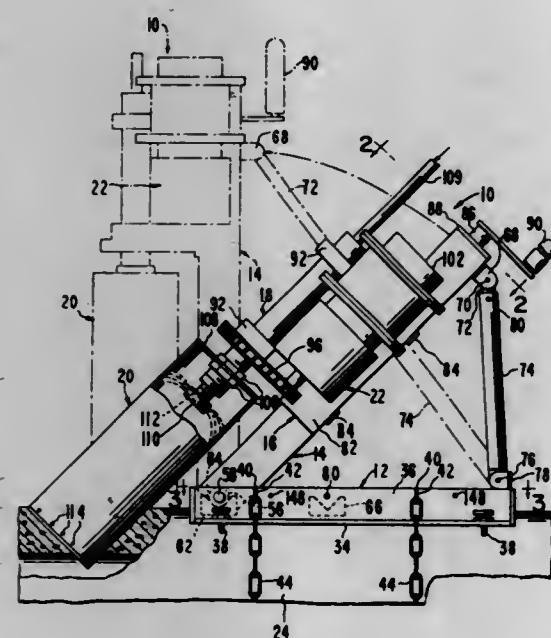
Frederic Achels, Palo Alto, Roy J. Brown, Los Gatos, and Roger M. Sherman and William M. Bibb, Palo Alto, Calif., assignors to The Kor-it Company, Inc., Santa Clara, Calif.

Filed Feb. 10, 1967, Ser. No. 615,127

Int. Cl. B23b 41/08, 45/14

U.S. Cl. 77-14

10 Claims



Drilling apparatus suitable for drilling holes in tile, concrete or metallic structures, such as sewer pipe. The drill bit support can be held either by flexible connecting members or by a vacuum device to the workpiece to be drilled and the drill bit can be disposed at a right angle to the workpiece or inclined relative thereto. Pipe of substantially any diameter and flat surfaces can be drilled with the apparatus.

3,461,751  
BORING BAR

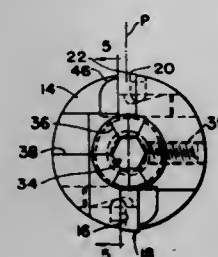
Hubert Dupuis, Warren, Mich., assignor, by mesne assignments, to Allegheny Ludlum Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 620,815, Mar. 6, 1967. This application June 5, 1967, Ser. No. 643,620

Int. Cl. B23b 29/02, 47/00

U.S. Cl. 77-58

9 Claims



A boring bar having a head provided with a plurality of recesses opening at the end and side thereof, a side determining abutment member positioned coaxially to said boring bar and having a piloted conical head extending

into all of said recesses for engagement with the radially inner edges of indexable inserts received therein, said member in one embodiment of the invention being axially adjustable for hole size adjustment.

3,461,752

## PRECISION BORING GROOVING AND RECESSING HEAD

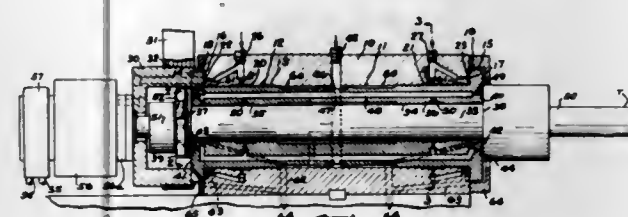
Robert J. Kielas, Livonia, and Gordon H. Porath, Detroit, Mich., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Filed Apr. 14, 1967, Ser. No. 631,004

Int. Cl. B23b 29/02; F16c 7/04

U.S. Cl. 77-58

13 Claims



This application describes a machine tool comprising a base, a first member rotatably mounted with respect to the base and a second member mounted in the first member in eccentric relation thereto and supporting a tool or other work engaging member. Each of the base, first member and second member have complementary surfaces and are rotatably mounted relative to one another by hydrostatic bearings. The second member is angularly adjustable to vary the position of the tool or work engaging member radially with respect to the first-mentioned member. Either the base or the first member can be mounted for sliding movement axially.

3,461,753

## HYDRAULIC COPYING ATTACHMENT FOR A LATHE

Werner Meier, Winterthur, Switzerland, assignor to Oerlikon-Bührle Holding Ltd., Zurich, Switzerland

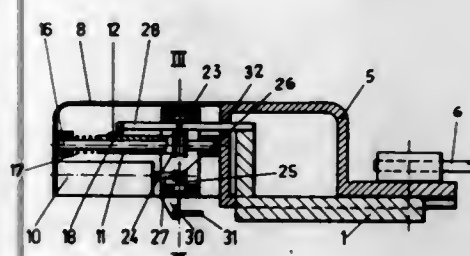
Filed Apr. 6, 1967, Ser. No. 628,939

Claims priority, application Switzerland, Apr. 15, 1966, 5,505/66

Int. Cl. B23b 3/28

U.S. Cl. 82-14

3 Claims



A hydraulic copying attachment for a lathe wherein the copying cylinder, in order to avoid any jamming, is mounted entirely at one side of the copying-cylinder housing above the center of frictional forces, that is to say above the point at which the frictional forces on the two gibs mounted between copying slide and saddle are in equilibrium, so that there is room for the stop drum, together with the distributing slide valve, at the other side of the housing, with their axes parallel to the cylinder, in order to be protected from dust. The counter stop is mounted on an arm, which is secured to the saddle and which extends through an aperture in the housing from

the saddle to within range of the stop drum in the interior of the housing. which opens into the wheel slot and in which a flowable lubricant is placed.

3,461,754

## ROTARY DRUM FOR FISSURING ACOUSTICAL MATERIAL

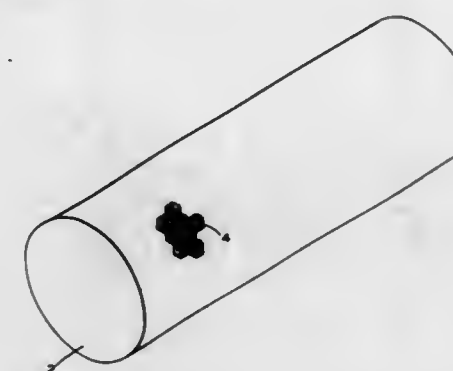
Charles W. Griffen, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

Filed Dec. 7, 1966, Ser. No. 599,763

Int. Cl. B26f 1/24; B26d 1/56

U.S. Cl. 83-2

6 Claims



A rotary drum for fissuring acoustical material having the drum surface composed of a plurality of polygonal shaped blocks. The blocks are individually formed with the projections for fissuring the acoustical material and the blocks are fastened in a removable manner to the drum surface.

3,461,755

## GLASSCUTTER

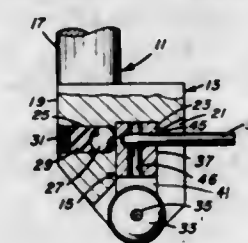
Joseph T. Gerew, Gates, and Rudolf Hoeft, Irondequoit, N.Y., assignors to Paul A. MacInnes Tool Corp., Rochester, N.Y., a corporation of New York

Filed Feb. 6, 1967, Ser. No. 614,317

Int. Cl. B26d 3/08

U.S. Cl. 83-12

22 Claims



There is disclosed a glasscutter comprising a holder member and a separable tool member. The holder member comprises a body having a socket preferably intersected by a linear guide slot with the center line of the socket preferably being in the center plane of the tool. The tool member comprises a carrier conforming in cross section to the socket and insertable in sliding fit into said socket. Extending inwardly from one end of the carrier is a linear wheel slot with part of a glasscutting wheel rotatably disposed in said slot on an axle carried by the carrier. In a preferred embodiment there is in the region of the opposite end of the carrier an outwardly projecting guide pin substantially wider than the cutting wheel, but substantially the same width as the guide slot in the holder member body. The center line of the guide pin is preferably substantially in the center plane of the cutting wheel. The carrier is held in position in the holder member body slot by an inwardly biased ball bearing movably mounted in a transverse bore opening into the socket. Preferably, when lubrication of the cutting wheel and/or axle is desired, the carrier has a lubricant reservoir-passageway

3,461,756

METHOD FOR TRIMMING PLASTIC PREFORMS  
Albert B. Mojonner, Chicago, Ill., assignor to Albert Mojonner, Inc., Franklin Park, Ill., a corporation of Illinois

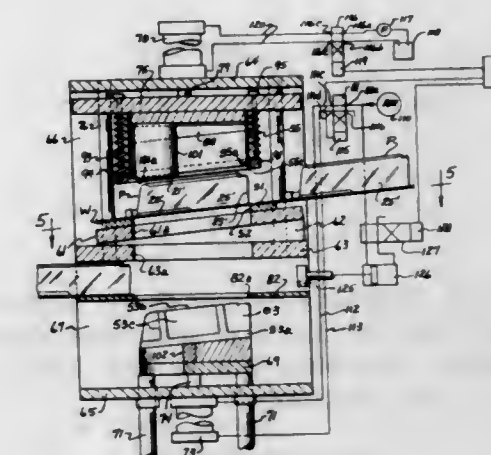
Original application Apr. 20, 1967, Ser. No. 632,268.

Divided and this application Dec. 4, 1968, Ser. No. 781,194

Int. Cl. B29c 17/08; B29h 3/06

U.S. Cl. 83-17

6 Claims



A method and apparatus for trimming cup-shaped preforms with a marginal flange from a web of plastic material where the preform is first clamped between an outer punch member that engages the outer side of the preform and an inner shaping member that engages the inner side of the preform, and the punch and shaping members are then moved in unison with the preform clamped therebetween through a trimming die to punch the preform from the web.

3,461,757

SHEET HANDLING APPARATUS AND METHOD  
James W. Healy, Waltham, and William P. Hidden, Cambridge, Mass., and Donald C. Anderson, Lafayette, Calif., assignors, by direct and mesne assignments, to Hexcel Corporation, Berkeley, Calif., a corporation of California

Filed July 25, 1966, Ser. No. 567,452

Int. Cl. B26d 7/00, 7/06, 5/20

U.S. Cl. 83-23

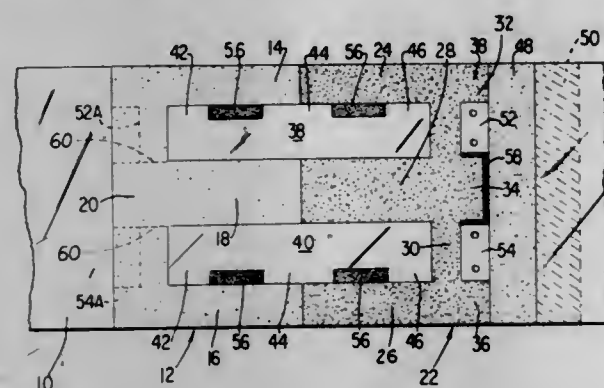
14 Claims



Sheet handling apparatus and method suitable for use in making honeycomb structures wherein a sheet is moved along a predetermined path, cut into predetermined lengths, and stacked below the cutting zone. The sheet is held as it is being cut and adjustments in the position of the sheet relative to the stack can be made by sensing the leading edge of the sheet. The stack is movable upwardly to receive the cut sheet and the movement is responsive to the height of the stack.

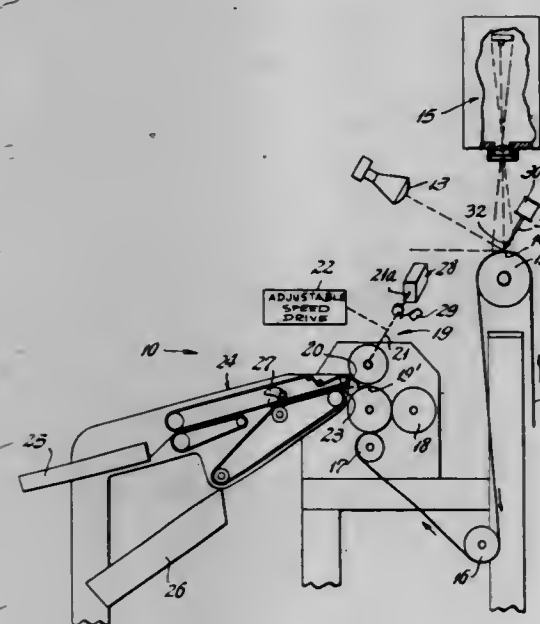


**3,461,758**  
**METHOD OF MAKING SCRAPLESS LAMINATIONS FOR PRODUCING A PLURALITY OF UNITS**  
 Bruno B. Michiulis, Wood Dale, Ill., assignor to Sola Basic Industries, Inc., Milwaukee, Wis.  
 Filed Jan. 16, 1967, Ser. No. 609,656  
 Int. Cl. B26f 1/02; H01f 7/06  
 U.S. Cl. 83—32



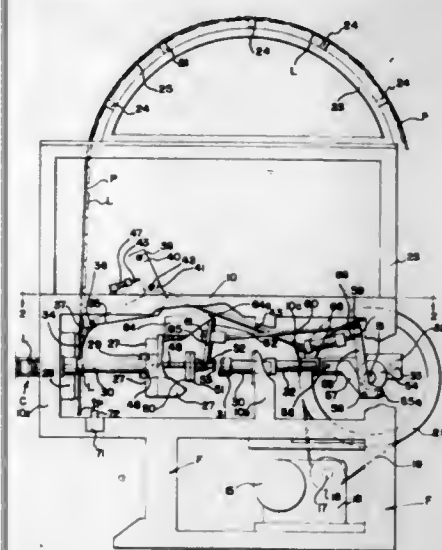
A method of producing various shape portions of core laminations with a minimum of scrap and which can be interchangeably assembled into various types and configurations of core structures.

**3,461,759**  
**SHEET INSPECTING AND SEGREGATING APPARATUS**  
 Harold F. E. Dixon, Douglaston, and Angelo Vaccaro, Port Washington, N.Y., assignors to Columbia Controls Research Corporation, Glen Cove, N.Y., a corporation of New York  
 Filed June 20, 1967, Ser. No. 647,403  
 Int. Cl. B26d 5/34, 7/18  
 U.S. Cl. 83—80



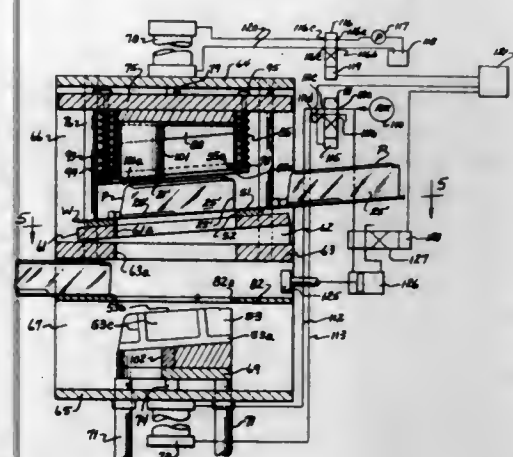
An apparatus, that inspects a continuously moving web for defects, cuts the web into sheets and then segregates the sheets having defects from the defect-free sheets in which the length of the sheets may be adjusted without changing the position of the inspection station or the cutting station while still maintaining correspondence between a defect sensed in the web and the sheet in which it finally appears.

**3,461,760**  
**TRIMMING APPARATUS**  
 James C. White, Gladwin, Mich., assignor to Brown Machine Company of Michigan, Inc., Beaverton, Mich., a corporation of Michigan  
 Filed Feb. 1, 1967, Ser. No. 613,261  
 Int. Cl. B65h 35/00  
 U.S. Cl. 83—81



The invention is concerned with generally horizontally traveling pusher mechanism for stacks of nested plastic container parts which normally advances the parts through female severing dies and adds them to the rear end of each stack after they have been punched out of a vertically disposed plastic web by horizontally reciprocating male die members and is embodied in mechanism which at intervals moves the pusher mechanism ahead an increased distance to separate the stacks formed from those which will subsequently be formed.

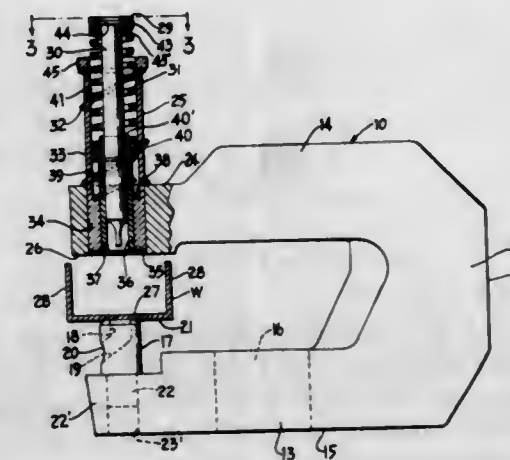
**3,461,761**  
**APPARATUS FOR TRIMMING PLASTIC PREFORMS**  
 Albert B. Mojonner, Chicago, Ill., assignor to Albert Mojonner, Inc., Franklin Park, Ill., a corporation of Illinois  
 Filed Apr. 20, 1967, Ser. No. 632,268  
 Int. Cl. B26d 7/06, 7/14  
 U.S. Cl. 83—140



A method and apparatus for trimming cup-shaped preforms with a marginal flange from a web of plastic material where the preform is first clamped between an outer punch member that engages the outer side of the preform and an inner shaping member that engages

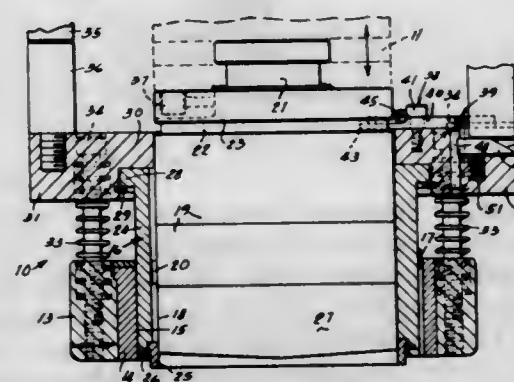
the inner side of the preform, and the punch and shaping member are then moved in unison with the preform clamped therebetween through a trimming die to punch the preform from the web.

**3,461,762**  
**PUNCH AND DIE UNIT**  
 Frank Deni, Eric F. Putnam, and Lynn G. White, Tomawanda, N.Y., assignors to Unittool Punch & Die Co., Inc., Buffalo, N.Y., a corporation of New York  
 Filed Mar. 6, 1967, Ser. No. 621,054  
 Int. Cl. B26d 7/06, 5/08  
 U.S. Cl. 83—143



A punch and die unit including a holder having a central body portion and spaced arms with a die mounted on one of the arms and a punch unit mounted in opposition thereto on the other of the arms with the punch unit including an outer punch guide encircling an inner punch guide encircling a punch, with a first lifter spring interposed between the arm and the outer punch guide and a second lifter spring interposed between the inner and outer punch guides and a stripper spring interposed between the inner punch guide and the punch to provide a high feed clearance in a low open height press.

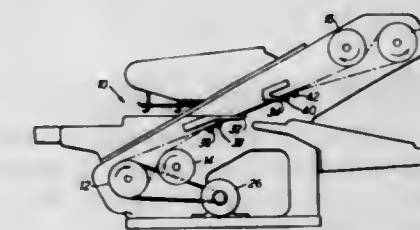
**3,461,763**  
**TOOL SUPPORT STRUCTURE**  
 John H. Herzog, Clarence, and Ronald C. Hill, Corfu, N.Y., assignors to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan  
 Filed Feb. 20, 1967, Ser. No. 617,104  
 Int. Cl. B26d 7/06  
 U.S. Cl. 83—136



A punch press is provided with a releasable guide assembly in the form of a yoke adjacent to its ram, within which there are reciprocable stripping means that slidably guide a toolholder normally supported by the ram.

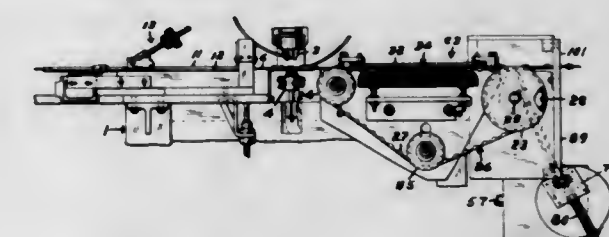
On detachment of the guide assembly from the press which releases the toolholder from the ram, a pair of pivotable levers automatically move into a position where they jointly temporarily support the toolholder while a punch tip portion is replaced. Release of the levers is automatic in response to resecuring the guide assembly.

**3,461,764**  
**BLADE GUIDES FOR BAND SLICER**  
 Benedict R. Benith, Richmond, Va., assignor to American Machine & Foundry Company, a corporation of New Jersey  
 Filed Nov. 7, 1966, Ser. No. 592,464  
 Int. Cl. B26d 1/46, 1/48, 1/54  
 U.S. Cl. 83—201.1



In a slicing machine having a plurality of band saws mounted around a set of drive rollers and a stationary blade guide assembly for each pass of the plurality of band saw blade passes, means for translating the attitude of the band saw blades comprising at least one shaft mounted on each side of the slicing work area, and a plurality of interconnected rotatable blade guides, one for each band saw blade pass.

**3,461,765**  
**AUTOMATIC CUTTING MECHANISM**  
 Walter S. Bachman, Jr., South Acton, William A. Erhardt, Jr., Cambridge, and Edward V. Surprenant, North Tewksbury, Mass., assignors, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware  
 Original application Jan. 25, 1965, Ser. No. 427,882, now Patent No. 3,331,544, dated July 18, 1967. Divided and this application May 24, 1967, Ser. No. 640,902  
 Int. Cl. B26d 5/20  
 U.S. Cl. 83—234



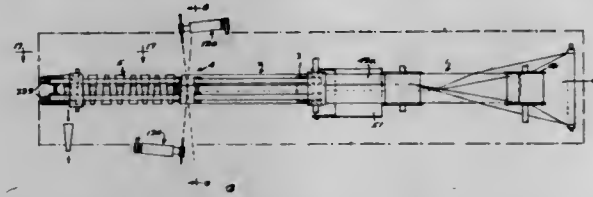
An electrically actuated and controlled work cutting device for use in connection with an automatic attaching machine for applying fastener components to the work at spaced intervals and a work moving mechanism which automatically advances the work a predetermined distance after each fastener attachment. The actuation of the cutting device is synchronized with the means that drive the work moving mechanism and the controlling circuitry includes variable set switch means through which the device is programmed to cut the work at intervals determined by the number of fastener components desired on a given length thereof.



3,461,766

**SLITTING APPARATUS FOR CUTTING CELLULOSIC PADS FROM WADDING WEB**  
Richard D. Anderson, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Original application Apr. 27, 1964, Ser. No. 362,893, now Patent No. 3,344,483, dated Oct. 3, 1967. Divided and this application Dec. 9, 1966, Ser. No. 619,093  
Int. Cl. B26d 5/20, 7/06  
U.S. Cl. 83—255 7 Claims



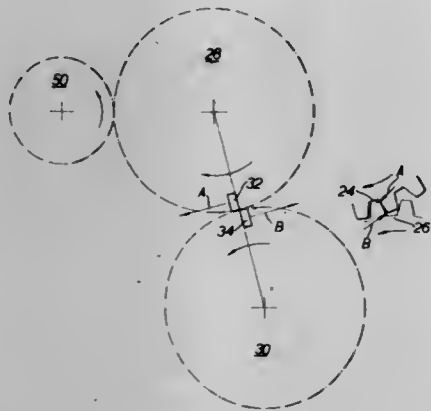
This apparatus is directed to feeding on a bed path having a slot therein wrapped wadding intermittently to a clamping mechanism, a mechanism adjacent the clamping mechanism for successively cutting the wadding web at equal arcuate but oppositely disposed angles to the line of feed whereby there is cut isosceles trapezohedron pads having a wide and opposite narrow end and non-parallel sides. The cutting mechanism includes two rotating arms each at an angle to the line of feed of the web. Each of the cutting mechanisms has a rotating arm that mounts an arm system carrying a pivotally mounted rotating cutting disc. A motor means carried by the counter-balanced arm system for each rotary disc drives each cutting disc through drive means. The arm system is under the control of a cam so that the rotating cutting disc makes a cut through the web while traveling generally parallel to the bed and through the transverse slot in the bed. There is also notching mechanism to round off the corners of the pads.

3,461,767

**ROTARY SHEAR**

Derek Stubbins, Crosspool, Sheffield, England, assignor to Davy and United Engineering Company Limited, Sheffield, England

Filed Feb. 16, 1966, Ser. No. 527,953  
Claims priority, application Great Britain, Feb. 18, 1965, 7,032/65  
Int. Cl. B26d 1/24  
U.S. Cl. 83—344 5 Claims



The disclosure of this invention relates to a rotary flying shear having two drums in which a leading knife is carried by one of the drums and is driven by a motor. The other drum carries a trailing knife and is driven through gearing associated with the first drum. The drums are supported by separate shafts and eccentrics

are associated with one of the shafts for moving that shaft relative to the other shaft in order to vary the separation between the drums.

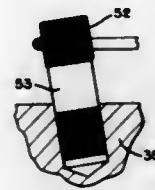
3,461,768

**PIANO PLATES**

Carl Ultes, Jr., Springfield, Ohio, assignor to The O. S. Kelly Company, Springfield, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 531,512, Mar. 3, 1966. This application June 10, 1968, Ser. No. 735,813

U.S. Cl. 84—188 Int. Cl. G10c 3/08 3 Claims



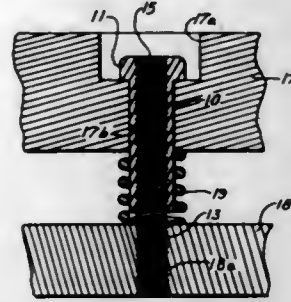
A cast iron piano plate incorporates hitch pins or agraffes which can locate the string precisely with respect to the surface of the plate and surrounding parts. The pins or agraffes are formed from a material substantially more ductile than the cast iron and are driven into formed holes in the plate, the root section of the pin is knurled or serrated and is deformed as the pin is driven, thereby obtaining a tight fit, regardless of differences in hole diameters or out of round conditions of the hole, with risk of cracking the plate. The section of the pin protruding from the plate may also be serrated or knurled, and can deform under pressure from the strings, thereby serving to locate the string on the pin and at any desired elevation with respect to the plate.

3,461,769

**ADJUSTABLE LENGTH SHOULDER SCREW**

Fritz V. Brosselt, S. 71 Bypass, R.R. 2, Box 286, Lee's Summit, Mo. 64063

Filed Mar. 6, 1968, Ser. No. 710,807  
Int. Cl. F16b 35/00, 35/04, 19/00  
U.S. Cl. 85—1 6 Claims



An internally threaded sleeve-like body open at both ends and a headless screw are interconnected by screwing the screw into the sleeve with one end of the screw projecting from an end of and forming an extension from the sleeve. The sleeve body can be one-piece or two-piece construction and the screw is adjustable lengthwise within the pieces by twisting the components relative to one another to effect change in the length relationship. The selected relationship, and thus the overall length of the screw, can be releasably fixed by a releasable locking means which is readily accessible from one end of the assembly.

3,461,770

**SCREW OR LAG BOLT OF THE WOOD-SCREW TYPE**

Robert Lestrade Carlier de Kyvon, Paris, France, assignor to Expandet S.A., Paris, France

Filed June 21, 1968, Ser. No. 738,893  
Claims priority, application France, June 21, 1967, 111,351  
Int. Cl. F16b 33/06

U.S. Cl. 85—46

1 Claim



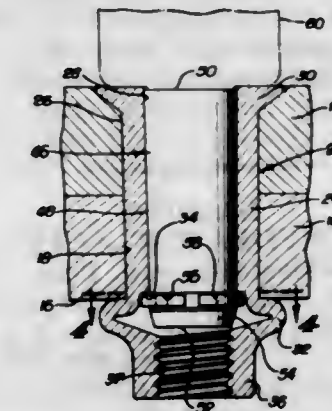
A wood screw or lag bolt for an expansion shield or anchor in which the crest of the thread thereof is substantially flat and the root diameter is substantially greater than the root diameter of a wood screw or lag bolt of the same nominal size.

3,461,771

**BLIND FASTENER**

Franklin S. Briles, 6 Middleridge Lane, Rolling Hills, Calif. 90274

Filed Aug. 7, 1967, Ser. No. 658,711  
Int. Cl. F16b 13/10 21 Claims



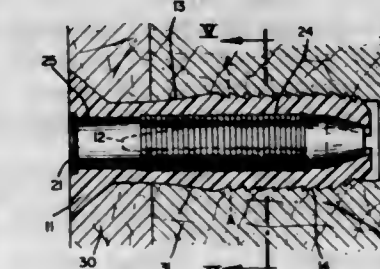
A blind fastener providing controlled interference preload in the structure immediately surrounding the fastener. The fastener has two primary parts: a sleeve having a tapered inner surface insertable in a mating bore in the structure providing axial clamp-up by means of a head on its outer end and a nut section formed on its inner end by a preentry pull-up tool insertable through the sleeve, and a tapered, oversize pin telescopically drivable into interlocked engagement within the sleeve to preload the sleeve against the surrounding structure and solidly fill the bore for high shear strength.

3,461,772

**BARBED PLASTIC RIVET**

John K. Barry, Springfield, Pa., assignor to Southco, Inc., Lester, Pa., a corporation of Delaware

Filed May 2, 1967, Ser. No. 635,603  
Int. Cl. F16b 13/10, 15/06 1 Claim



A blind-drive plastic rivet has a head and a slotted shank. The lower portion of the rivet shank is externally

barbed. An axial hole extends through the head and through or at least partially into the rivet shank for receiving a metal spreader pin having a head and shank. The shank of the expander pin has annular external barbs for an extended portion of its length so that when the pin is driven fully into the plastic rivet the barbs of the pin are on both sides of the dividing line between the lower barbed portion of the rivet shank and its upper unbarbed portion. The barbs on the expander pin have gently sloping lead-in angles with sharp crests and an abrupt back angle.

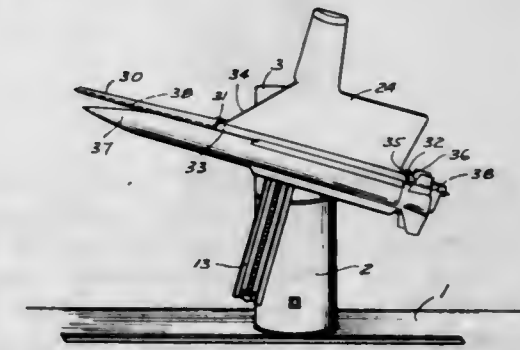
3,461,773

**LAUNCHING DEVICE FOR ROCKETS**

Henry Wilhelm Aldrin, Bofors, and Erik Birger Kindrot Karistoga, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden

Continuation-in-part of application Ser. No. 452,630, May 3, 1965. This application June 1, 1967, Ser. No. 642,773  
Claims priority, application Sweden, May 6, 1964, 5,618/64

Int. Cl. F41f 3/04  
U.S. Cl. 89—1.805 10 Claims



A launching device for a rocket missile in which a pre-assembled rail-and-rocket unit is attached to the carrier head of the launching device in a position transverse of the general plane of the carrier head rather than lengthwise of the unit so that the space required for mounting the unit does not substantially exceed the over-all length of the unit. The device also comprises means for securing the unit in a predetermined transverse position in reference to the carrier head.

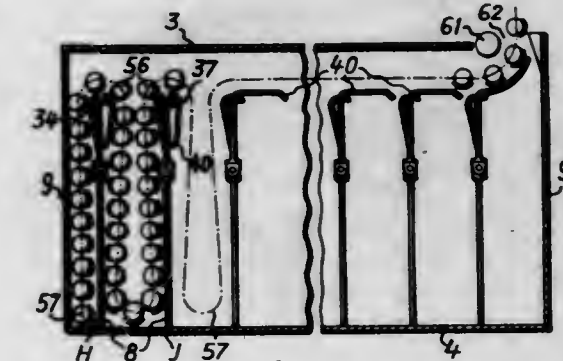
3,461,774

**AMMUNITION HOLDER HAVING COMPARTMENTS TO RECEIVE A CARTRIDGE BELT**

Fritz Maurer, Gontenschwil, and Hanspeter Novet, Uster, Switzerland, assignors to Werkzeugmaschinenfabrik Oerlikon Buhrle & Co., Zurich, Switzerland

Filed June 13, 1968, Ser. No. 737,788  
Claims priority, application Switzerland, June 16, 1967, 8,603/67

Int. Cl. F41c 25/02  
U.S. Cl. 89—34 8 Claims

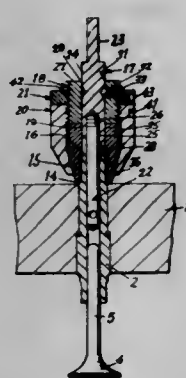


An ammunition container having compartments which are emptied in succession on withdrawal of the ammunition contained in a carriage belt, the latter being guided over the previously emptied compartments. For this guiding a flap is provided which in turn is articulated on



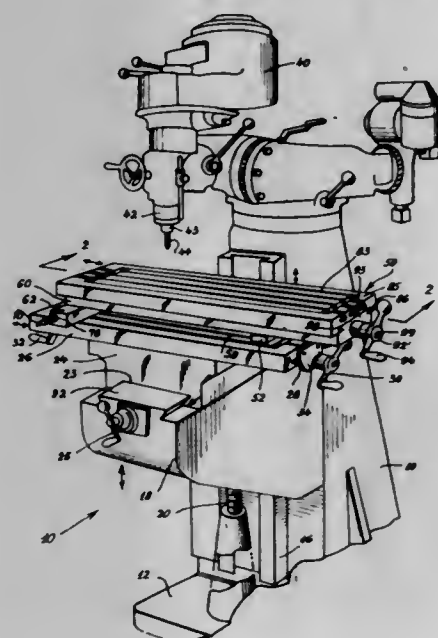
a swivellable part of the wall disposed between two compartments. This flap covers the previously emptied compartment and prevents the cartridge belt from passing into said previously emptied compartment as it is withdrawn.

**3,461,775**  
**VALVE GUIDE BUSHING MACHINING TOOL**  
Paul H. Devanney, 3986 Ballard Ave., Cincinnati, Ohio, 45209, and Bernard D. Jackson, Cincinnati, Ohio; said Jackson assignor to said Devanney  
Filed May 9, 1966, Ser. No. 548,733  
Int. Cl. B23c 1/20  
U.S. Cl. 90—12.5 8 Claims



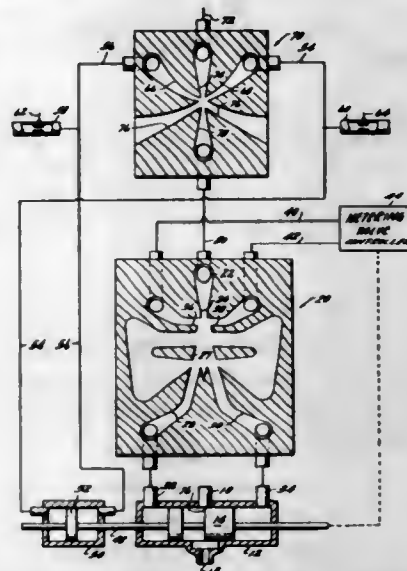
A valve guide bushing machining tool for machining valve guide bushings in engine cylinders so that seals may properly seat thereon and preclude seepage of oil between valve stems and valve guide bushings comprising a cylindrical body, a valve stem pilot and driver secured to said cylindrical body, a cutter which is received by said valve stem pilot and driver, and a cutter locating collar.

**3,461,776**  
**TABLE EXTENSION FOR MACHINE TOOL**  
Julius Arpad Hamori, Yonkers, and Frank Denes, Bronx, N.Y. (both of 278 Woodworth Ave., Yonkers, N.Y. 10701)  
Filed June 9, 1967, Ser. No. 644,839  
Int. Cl. B23d 7/08  
U.S. Cl. 90—58 3 Claims



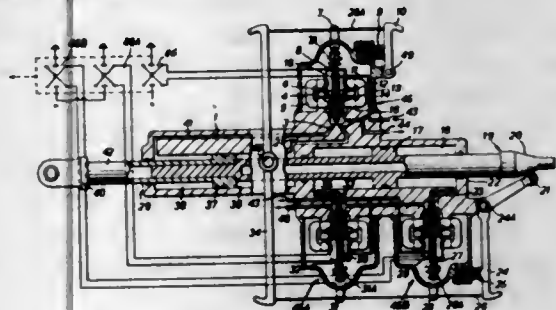
A longitudinally movable table for a machine tool such as a milling machine provided with a longitudinally movable extension for the table to extend the range of longitudinal movement of the table.

**3,461,777**  
**FLUID AMPLIFIER CONTROL**  
William R. Spencer, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York  
Filed Nov. 18, 1966, Ser. No. 595,378  
Int. Cl. F15b 13/02  
U.S. Cl. 91—3 6 Claims



A fluid amplifier control is disclosed wherein a signal whose level is related to that of the amplifier receiver pressure is fed back to vary, through suitable means, the inlet pressure to the amplifier power nozzle, thereby providing a means for limiting the amplifier recovered pressure at maximum deflection of the power stream without limiting the recovered pressure for small deflections of the power stream.

**3,461,778**  
**ELECTRO-HYDRAULIC ACTUATORS**  
Roy Westbury, Bridgnorth, and Peter John Maltby, Codsall, England, assignors to H. M. Hobson Limited, London, England, a company of Great Britain  
Filed Sept. 22, 1967, Ser. No. 669,807  
Claims priority, application Great Britain, Sept. 23, 1966, 42,673/66  
Int. Cl. F15c 3/12; F15b 9/07  
U.S. Cl. 91—3 7 Claims

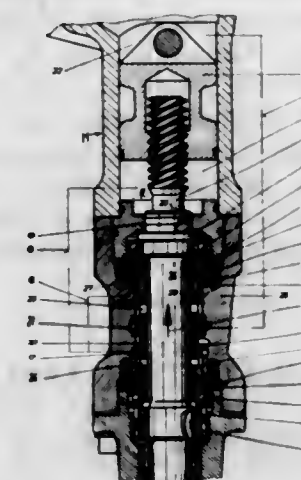


An electro-hydraulic actuator having a hydraulically actuated output member movable to alternative positions under the control of electrical signals and provided with mechanical feedback for moving it to another position in the absence of electrical signals.

**3,461,779**  
**BALANCING OF STEERING SPINDLES IN POWER STEERING SYSTEMS**  
Erich Jablonsky, Friedrichshafen, Germany, assignor to Zahradfabrik Friedrichshafen Aktiengesellschaft, a corporation of Germany  
Filed Mar. 2, 1967, Ser. No. 619,996  
Claims priority, application Germany, Mar. 4, 1966, Z 12,070  
Int. Cl. F15b 9/10, 11/08, 13/04  
U.S. Cl. 91—372 10 Claims

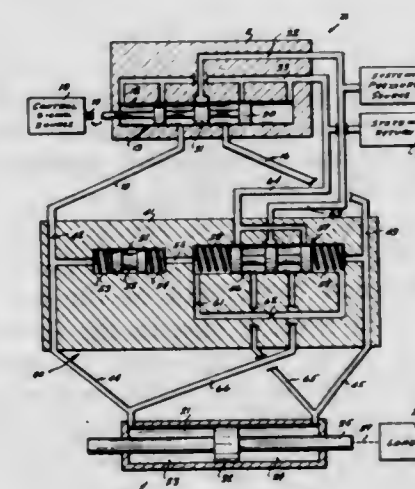
This invention pertains to booster steering systems and more particularly to a hydraulic pressure system using a

double-ended cylinder with a slideable piston therein having the steering spindle threaded thereto in the usual manner but wherein a balancing pressure chamber is



associated with the spindle in such a manner as to balance the pressure force acting on the spindle due to pressure in the cylinder chamber through which the spindle extends.

**3,461,780**  
**DYNAMIC LOAD DAMPING VALVE FOR CONNECTING SYSTEM PRESSURE FLUID AND RETURN TO ACTUATOR**  
Franz Schmon, Granada Hills, Calif., assignor to Bell Aerospace Corporation, a corporation of Delaware  
Filed Sept. 7, 1967, Ser. No. 666,086  
Int. Cl. F15b 11/10, 13/042; F16d 57/00  
U.S. Cl. 91—433 2 Claims



Disclosed is apparatus for controlling the application of fluid under pressure to an actuator which comprises a cylinder having a movable piston therein thus separating the cylinder into a pair of chambers. The fluid pressure is applied in response to a control signal which positions a control valve to one or the other of the chambers thereby positioning the actuator, and responsive thereto a load, in accordance with the information provided by a control signal. Connected across the piston and thereby the two chambers of the actuator, is a dynamic load damping apparatus in accordance with the present invention. Such apparatus includes first and second spring centered spool valves one of which is connected to one of the chambers and the other to the other of the chambers. A restriction orifice is connected across the second of the spool valves and in such a manner as to communicate with the opposite end of the first spool valve. Thus, as a pressure difference exists across the two chambers of the actuator, a pressure differential signal is generated across the second of the spool valves,

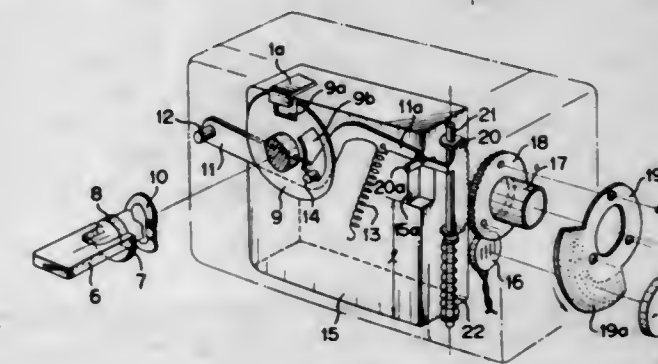
the first of the spool valves operating as an isolation valve, thus, causing the second of the spool valves to move in response to the differential pressure signal. If the signal is a steady state signal then the pressure difference across the second of the spool valves is bled off or equalized through the restriction orifice. As the second spool valve moves in response to the pressure differential signal thereacross, fluid under pressure is applied to the chamber of the actuator which has the lower pressure therein while the higher pressure chamber of the actuator is connected to system return.

**3,461,781**  
**EXPANSION JOINTS AND WATERSTOPS**  
Albert Weiner, 12-21 Bellair Ave., Fair Lawn, N.J. 07410, and Anthony A. Styner, 405 W. 57th St., New York, N.Y. 10019  
Filed Dec. 15, 1966, Ser. No. 602,459  
Int. Cl. E01c 11/10  
U.S. Cl. 94—18 11 Claims



This invention relates to expansion and contraction joints or gaskets, in concrete or other structural materials, and more particularly to waterstops capable of conforming to their surroundings under all possible conditions without an unreasonable amount of fatigue or degradation with the passage of time or variation of temperature, or gaskets to join tightly abutting structural units. The joint or gasket contemplated in this invention incorporates a pre-compressed core surrounded by a destructible or disintegrating material. Upon placement of the joint, gasket, waterstop, or insert in a suitable environment and in the desired position the destructible material decomposes leaving the pre-compressed core free to expand against the surrounding environment, filling possible contours and voids therein to seal the joint in its surroundings.

**3,461,782**  
**MECHANISM FOR AUTOMATICALLY ADJUSTING THE FILM SENSITIVITY SETTING FOR AN EXPOSURE METER BUILT INTO A CAMERA**  
Yoshihisa Katsuyama, Yokohama-shi, Japan, assignor to Nippon Kogaku, K.K., Tokyo, Japan, a corporation of Japan  
Filed Mar. 23, 1966, Ser. No. 536,801  
Int. Cl. G01j 1/00; G03b 23/02  
U.S. Cl. 95—10 5 Claims



A mechanism to automatically adjust the film sensitivity setting for an exposure meter built into a motion picture camera, the adjustment being by a one-step motion at a time when a film cartridge is loaded into the camera. The adjustment of the film sensitivity set-



ting is performed by a spring loaded rack member which is released only after the camera cover has been locked by rotation of a locking member by the operator of the camera.

**3,461,783**  
**EXPOSURE MEASURING MECHANISM FOR A SINGLE LENS REFLEX CAMERA HAVING INTERCHANGEABLE LENSES**

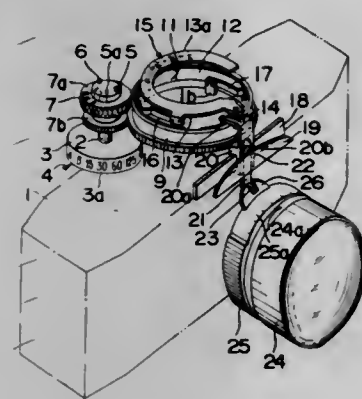
Tatsuo Fujii, Minato-ku, Tokyo, Japan, assignor to Nippon Kogaku K.K., Tokyo, Japan, a corporation of Japan

Filed Feb. 10, 1966, Ser. No. 541,867

Int. Cl. G01j 1/10; G03b 19/12

U.S. Cl. 95—10

7 Claims



An exposure measuring mechanism for a single lens reflex camera having interchangeable objective lenses of different aperture ratios with the exposure measuring and calculating mechanism built into the camera body. A variable resistor which forms a part of the exposure meter circuit is movable relative to a relatively movable electrical contact. The circuit elements are relatively movable by the shutter setting mechanism of the camera and an aperture ratio link interlocked with the stop signal member on the interchangeable objective lens mounted on the camera body.

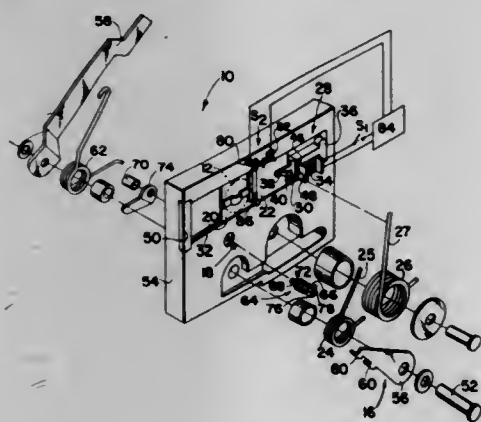
**3,461,784**  
**EXPOSURE CONTROL APPARATUS**  
John Paul Burgarella, Sudbury, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Mar. 13, 1967, Ser. No. 622,491

Int. Cl. G03b 9/64

U.S. Cl. 95—53.3

4 Claims



A photographic shutter control apparatus includes separate leading and trailing blades. Elongated springs bias the leading and trailing shutter blades for movement from their reset positions to their rundown positions for producing a photographic exposure. Subsequent to each exposure the blades are returned to their reset positions. A keeper is flexibly attached to the trailing shutter blade. The biasing spring for moving the trailing blade bears directly against the keeper. During return of the shutter

blades to their reset positions, the flexibly attached keeper is brought into contact with an electromagnet and mechanically retained in contact therewith. During exposure producing operation, the trailing blade is electromagnetically engaged to be held in its reset position after release of the leading blade for exposure initiating movement to its rundown position. Simultaneously the mechanical force for holding the trailing blade at its reset position is released. The flexibly mounted keeper and the biasing spring for the trailing blade cooperate to avoid shock which tends to occur when the mechanical holding force is released. Subsequently, the electromagnet is deenergized to release the trailing blade for exposure terminating movement.

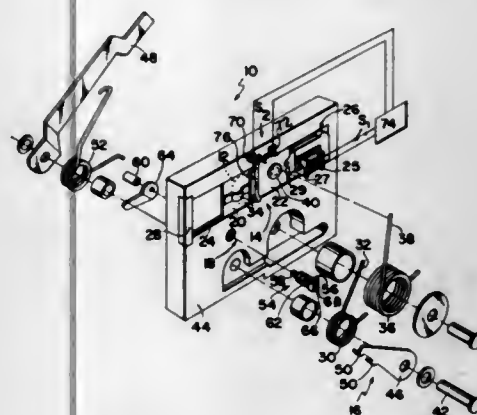
**3,461,785**  
**EXPOSURE CONTROL APPARATUS**  
Andrew S. Ivester, Morganton, N.C., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Mar. 13, 1967, Ser. No. 622,597

Int. Cl. G03b 9/64

U.S. Cl. 95—53.3

7 Claims



Photographic exposure control apparatus includes a shutter blade driven by an elongated spring from its reset to its rundown position for producing a photographic exposure. A reset lever is engageable with the drive spring for returning the shutter blade to its reset position abutting an electromagnet, subsequent to each exposure. Continued movement of the reset lever after abutment causes a reverse bias in the drive spring. The resulting flexure in the spring causes the shutter blade to be pressed firmly against the electromagnet. The shutter blade is retained against the electromagnet so that it may be magnetically engaged and retained thereby during an exposure interval. Thereafter it is released for movement to its rundown position.

**3,461,786**  
**EXPOSURE CONTROL SYSTEM FOR PHOTOGRAPHIC CAMERAS**  
Takayoshi Sato, Hiroshi Ueda, Atsutada Nakatani, and Minoru Otake, Tokyo-to, Japan, assignors to Kabushiki Kaisha Kōpaku, Itabashi-ku, Tokyo-to, Japan

Filed Oct. 25, 1966, Ser. No. 589,297

Claims priority, application Japan, Nov. 6, 1965, 40/68,172; May 27, 1966, 41/34,128; July 12, 1966, 41/45,540; July 13, 1966, 41/66,340; July 14, 1966, 41/66,671; July 19, 1966, 41/68,372

Int. Cl. G03b 7/08, 9/02

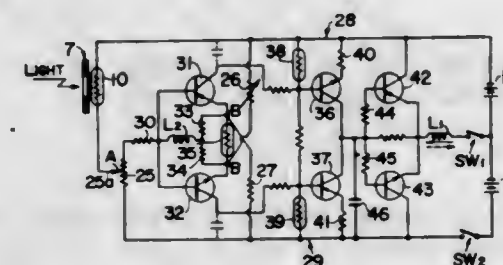
U.S. Cl. 95—64

9 Claims

An exposure control system for use in photographic cameras wherein the diaphragm is operated by an electromagnetic device including a permanent magnet and a movable element wound with an energizing coil and a damping coil. The electromagnetic device is controlled by a Wheatstone type electric bridge having a photoresistor in one of the branches. Switching transistors of

the p-n-p and n-p-n type are connected between the output terminals of the bridge, and a transistor amplifier is connected to the switching transistors. The diaphragm is controlled in quick and accurate response to changes

shoulder a base structure of a developer tray is mounted and has an outwardly extending flange with an edge snapped into a groove in the curb flange. Downwardly extending pins on the base flange fit into sockets in the shoulder. The tank has an alcove at one side over which



in brightness of the object to be photographed by connecting the energizing coil between the output terminals of the transistor amplifier and by connecting the damping coil between the output points of the bridge.

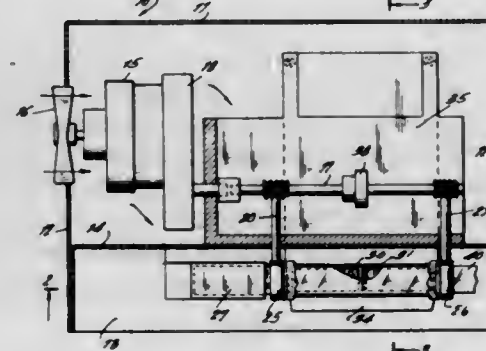
**3,461,787**  
**MACHINE FOR DEVELOPING STRIP PHOTOGRAPHIC FILM**  
William A. Pfaff, 12 Mary's Lane, Centerport, N.Y. 11721

Filed July 8, 1966, Ser. No. 563,771

Int. Cl. G03d 3/12

U.S. Cl. 95—94

4 Claims



A machine for developing strip photographic film in which the film is led, emulsion side down, over a series of small trays, developing solutions and a sponge are carried in each tray. The sponge in each tray absorbs a quantity of the solution therein. As the film is advanced through the machine the sponges are alternately lifted into contact with the emulsion and removed therefrom to first apply developing solution to the emulsion and thereafter remove excess solution from the film. A constant fresh supply of solution is thus applied at each cycle.

**3,461,788**  
**DEVELOPER TRAY AND SUPPLY TANK ASSEMBLY**  
Emil Tiger, Highland Park, Erskine G. Corman, Forest Park, and Kenneth R. Reick, Downers Grove, Ill., assignors to Formfoto Manufacturing Company, Villa Park, Ill., a corporation of Illinois

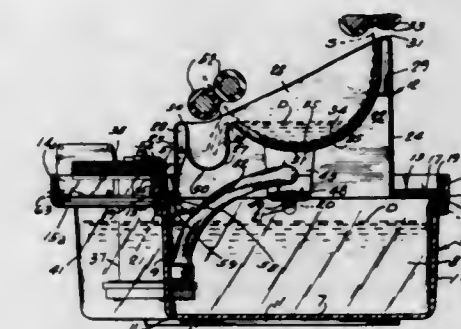
Filed Oct. 23, 1965, Ser. No. 503,064

Int. Cl. G03d 13/04

U.S. Cl. 95—95

22 Claims

A photodeveloping apparatus developer tray and tank assembly comprises a mold plastic tank having a bottom wall and upstanding side and front and rear walls integral therewith, and an upstanding curb flange integral with and joined to the upstanding walls in outwardly off-set relation by a rim providing an upwardly facing shoulder. On this



is mounted a motor driving a pump connected by tube to a depending well from which developer solution is delivered to the tray. Small openings drain the tray bottom and larger openings drain a spillover gutter along one edge of the tray.

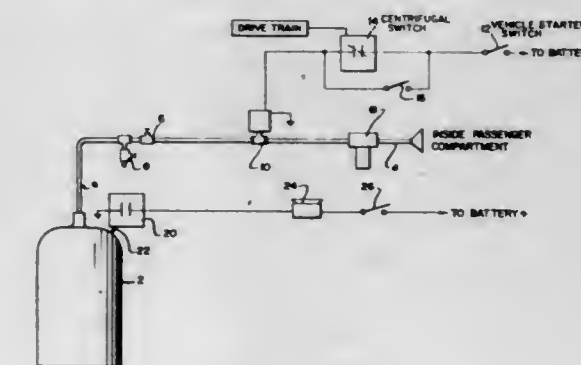
**3,461,789**  
**AIR SUPPLY SYSTEM FOR AUTOMOTIVE VEHICLE**  
Teodoro A. Texidor, 6720 Navajo, Lincolnwood, Ill. 60645

Filed Oct. 25, 1967, Ser. No. 678,092

Int. Cl. B60h 1/24

U.S. Cl. 98—1.5

6 Claims



A system for substantially eliminating the toxic effects of air pollutants upon operators and passengers of automotive vehicles, such as automobiles, trucks, buses, trains, etc. The system involves the introduction of a gas, preferably pure air, into the occupied portions of an automotive vehicle, which portions are sealed to prevent appreciable quantities of air on the exterior of the vehicle from entering therein. This prevents the highly contaminated and often toxic air frequently encountered while operating an automotive vehicle in heavy urban traffic from entering the vehicle while simultaneously supplying the occupants with essentially pure, uncontaminated air.

**3,461,790**  
**AUTOMATIC AIRCRAFT CABIN PRESSURE CONTROL SYSTEM**  
Robert C. Kinsell, Los Angeles, and Dan S. Matulich, Rolling Hills Estates, Calif., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California

Filed Apr. 28, 1967, Ser. No. 634,708

Int. Cl. B64d 13/04

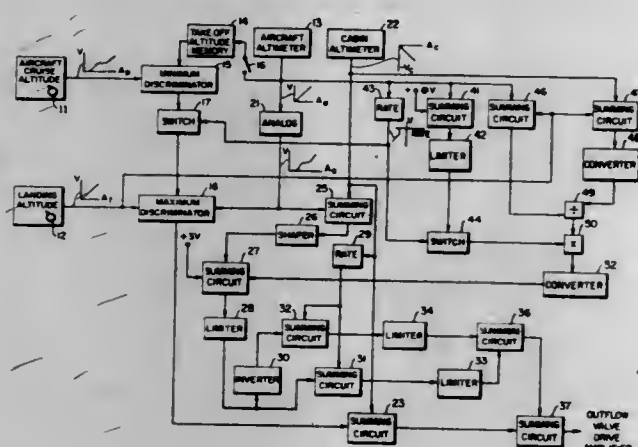
U.S. Cl. 98—1.5

21 Claims

An automatic aircraft cabin pressure system wherein the altitude as measured is converted to the required

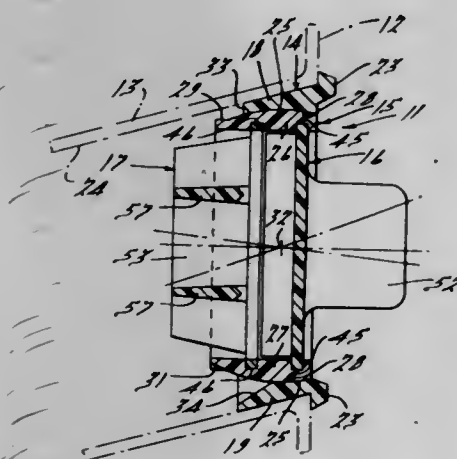


cabin altitude, and this altitude is continuously compared to the actual cabin altitude to produce an error signal which is used to drive the outflow valve in the direction to reduce the error signal.



signal which is used to drive the outflow valve in the direction to reduce the error signal.

**3,461,791**  
**AIR DISTRIBUTION GRILL**  
Gerald E. Beyer, Lathrup Village, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware  
Filed June 19, 1968, Ser. No. 738,316  
Int. Cl. F24f 13/12  
U.S. Cl. 98—40 5 Claims

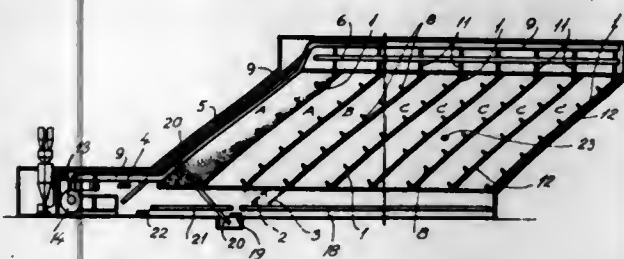


An air distribution grill, particularly adapted to be mounted on an interior panel of the vehicle body such as the instrument panel, comprising a frame member, a body member fitted in the frame member for pivotal movement about a longitudinal axis, and shutter members slidably supported in the body member. The body member and shutter members each have a plurality of spaced ribs with the spaces therebetween providing air flow apertures. Through selective positioning of the shutter members on the body members, the spaced ribs are utilized to control the quantity and direction of air flow.

**3,461,792**  
**APPARATUS FOR STORING AND SEASONING OF RAW ROOT VEGETABLES, SPECIALLY POTATOES**  
Sven Anders Torbjörn Tjaderklou, Solna, Sweden, assignor to Solanum Aktiebolag, Solna, Sweden  
Filed Oct. 7, 1966, Ser. No. 591,363  
Int. Cl. A47j 47/02; A23i 1/12; A23b 7/00  
U.S. Cl. 99—271 14 Claims

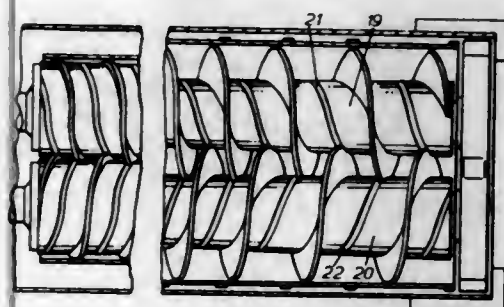
Device for storing and seasoning raw vegetable products comprising a plurality of adjacent inclined storing bins

having doors at the bottom thereof and being provided with means for controlling the humidity and temperature



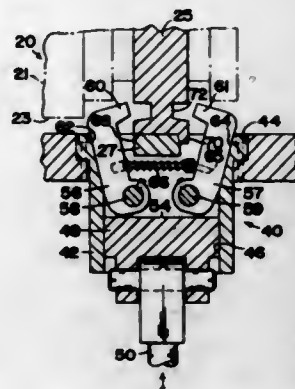
in the bins and being further provided with means for conveying the product to other places of treatment.

**3,461,793**  
**SCREW PRESSES**  
Per Solberg, Bergen, Norway, assignor to Stord Bartz Industri A/S, Bergen, Norway  
Filed June 26, 1967, Ser. No. 648,705  
Int. Cl. B30b 9/12, 9/16, 9/18  
U.S. Cl. 100—117 10 Claims



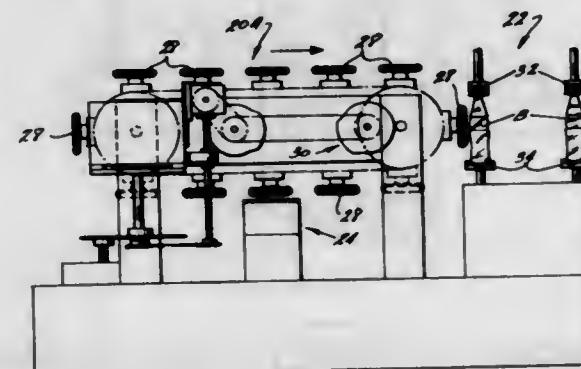
A screw press having two helical screw elements accommodated side-by-side in a housing adapted for fluid drainage. The screw elements have threads with pitches which are substantially greater than their thickness in axial direction preferably at least three times greater than their thickness in axial direction and are arranged so that the threads of each element engage a helical groove formed in the spindle of the other adjacent element between the threads thereof.

**3,461,794**  
**BOLSTER LIFT CLAMP**  
Robert Dale Schaeffer, Canal Fulton, Ohio, assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware  
Filed Oct. 13, 1967, Ser. No. 675,194  
Int. Cl. B30b 15/06; B21j 13/00  
U.S. Cl. 100—229 10 Claims



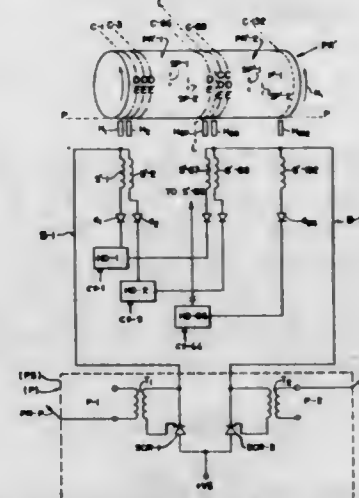
A mechanism for simultaneously centering, lowering and clamping a movable bolster in position in the press bed. The mechanism comprises vertically reciprocable piston means in the press bed adapted to engage the wheels on the bolster when the bolster is in position and adapted to raise and lower the bolster into and out of

**3,461,795**  
**ELECTRICAL PRINTING USING PLURAL ELECTRICAL FIELDS WITH SINGLE POWDER BED**  
Alfred S. Decker and Luther H. Wideman, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio  
Filed May 4, 1967, Ser. No. 636,047  
Int. Cl. B41f 17/08, 15/00; B41j 31/00  
U.S. Cl. 101—40 9 Claims



Methods and apparatus for simultaneously electrostatically printing two or more powder images from a common printing powder supply source which may be periodically replenished to permit continuous image reproduction at high output rates. The powder bed supply source is arranged so that independent electric fields can be established between the supply and each of a plurality of stencil screens so that the electric fields can be controlled independently of each other.

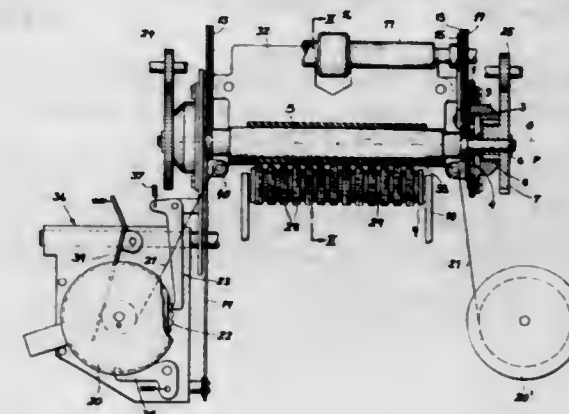
**3,461,796**  
**HIGH-SPEED PRINTER WITH SHARED CONTROL CIRCUIT**  
Ross A. Belson and John F. Zettler, Natick, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware  
Filed Nov. 20, 1967, Ser. No. 684,571  
Int. Cl. B41j 1/28  
U.S. Cl. 101—93 11 Claims



A high-speed printer control system for a continuously-rotating type-roll and an associated array of aligned print hammers adapted to be driven to selectively impact intermediate media against the roll, the driver electronics characterized as being "shared" in the sense of each electronic driver control unit being coupled in common to drive a set of hammer solenoids associated with a set of print-columns, each driver being associated with a respective

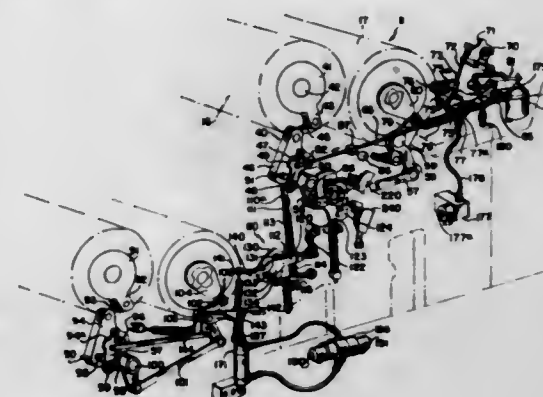
set of columns; and the font arrangement or the type-roll being characterized in being "offset-in-groups," or "shared," across each character-row so as to present font at each column in a given set at prescribed staggered (character-scan) times to accommodate this driver sharing.

**3,461,797**  
**ECCENTRICALLY MOUNTED PLATEN STRUCTURE IN SELECTIVE PRINTING MACHINES**  
Abdulrahim Cheikh Trab, Timmerlah, and Heinz Ricke Braunschweig, Germany, assignors to Firma Olympia Werke AG, Wilhelmshaven, Germany, a corporation of Germany  
Filed Oct. 30, 1967, Ser. No. 679,037  
Claims priority, application Germany, Nov. 5, 1966, O 12,062  
Int. Cl. B41j 25/22; B41j 47/46  
U.S. Cl. 101—96 10 Claims



A cylindrical platen, cooperating with a printing roller, is eccentrically journaled in a pair of continuously rotating end disks so as to perform a cycloidal (or, in an extreme case, rectilinear) motion parallel to itself, under the control of a planetary-gear system of the same eccentricity, whereby the platen is periodically moved toward the yieldably supported printing roller; on its swing away from the printing roller, the platen actuates a ribbon transport and a paper feed while drawing both the paper and the ribbon clear of the roller to permit resetting of its type faces.

**3,461,798**  
**SELECTIVE AND SEQUENTIAL INTERRUPTER FOR A MULTIPLE COUPLE PRINTING PRESS**  
Robert A. Bulk, Seven Hills, and Louis P. Toth, Broadview Heights, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware  
Continuation of application Ser. No. 461,795, June 7, 1965. This application June 7, 1968, Ser. No. 739,892  
Int. Cl. B41f 5/14, 13/24  
U.S. Cl. 101—184 4 Claims



A multi-unit printing press includes a plurality of spaced printing units through which sheets travel in se-



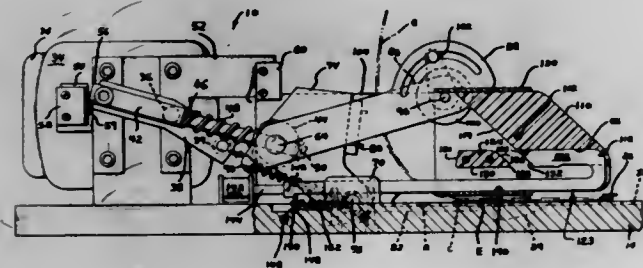
quence. The cylinder members of consecutive units may be moved in sequence between their printing and non-printing positions. Moreover, the cylinders of any one or any combination of printing units may be moved from their printing position to their nonprinting position by the actuation of solenoid valves which control air motors which effect the movement of the cylinders. The solenoid valves are controlled by control switches located at an operator's station and which are in circuit with relays which are energized, when the control switches are closed, in response to a timing signal. The relays in turn effect energization of the solenoid valves.

### 3,461,799 GATE CONTROL MEANS FOR TRAVELING PLATEN ROLLER

Bryce Wilson Blair, Hershey, Pa., assignor to AMP Incorporated, Harrisburg, Pa.  
Filed Mar. 22, 1967, Ser. No. 625,135  
Int. Cl. B41f 3/20, 3/04

U.S. Cl. 101-269

9 Claims

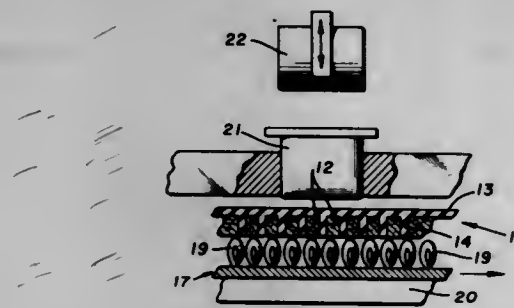


A device is disclosed for reading and/or imprinting records with a plurality of modes of operation effected by an electro-mechanical control mechanism which displaces a crook shaped gate to block or pass a motor driven roller. The roller is confined within the gate at all times in that portion of the stroke which is critical to proper operation.

3,461,800  
SCREEN FOR PENETRATION PRINTING  
James G. T. Paterson, Ashley P. Smith, and James K. Sams, Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
Filed Oct. 22, 1965, Ser. No. 502,007  
Int. Cl. B41l 47/04; B41n 9/02

U.S. Cl. 101-368

3 Claims

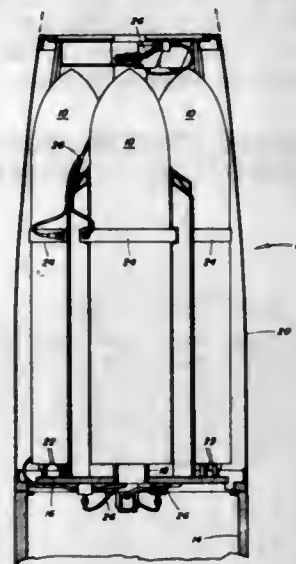


A screen for penetration printing of fabrics comprising a porous material for holding a coloring agent, the porous material being broken up into small isolated cells which are separated by impervious partitions for preventing lateral flow of the coloring agent from one area of the material to another when an impact force is applied to the back of the material.

3,461,801  
MULTI-CANISTER EJECTING DEVICE  
Donald J. Vitale and Edwin W. Eagleson, Silver Spring, Thomas B. Harris, Rockville, and Vincent J. Menichelli, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy  
Filed Jan. 25, 1968, Ser. No. 700,556  
Int. Cl. C06d 1/04; F42b 15/08, 13/50

U.S. Cl. 102-37.6

9 Claims

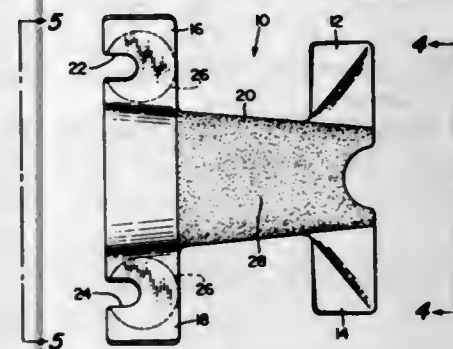


An apparatus for jettisoning a cluster of instrument canisters into the upper atmosphere having abutting, propellant filled hollow pistons simultaneously ignited by a centrally located detonator. Two pair of pistons, located at right angles to each other, are ignited by the same detonator to effect jettison of the canisters.

3,461,802  
HEAT SHIELD FOR MISSILE FLARE  
Raymond L. Ayers, Camarillo, Calif., assignor to the United States of America as represented by the Secretary of the Navy  
Filed Feb. 12, 1968, Ser. No. 704,746  
Int. Cl. F42b 15/00, 13/40; E04c 2/02

U.S. Cl. 102-87

5 Claims



A heat shield having fastening means for mounting the shield adjacent the discharge nozzle of an airborne missile, said shield having a portion thereof coated with a heat resistant material. The shield protects a tracking flare located adjacent the missile nozzle from the hot gases of the missile motor blast emitting from the nozzle and prevents premature consumption and failure of the flare.

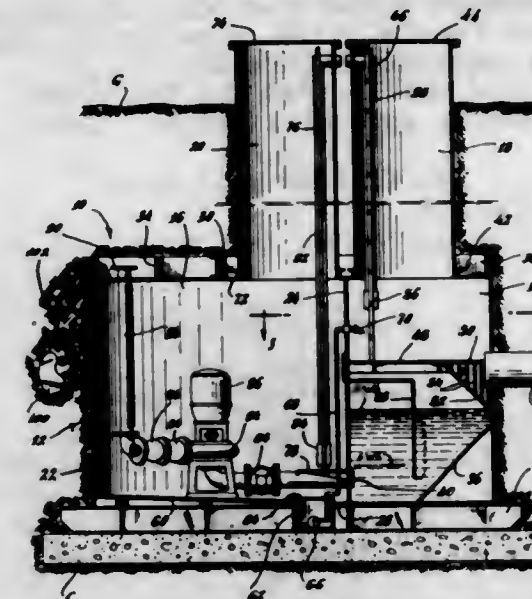
3,461,803  
UNDERGROUND PUMPING STATION  
William L. Stothoff III and Herbert G. Johnson, Flemington, N.J., assignors to Wilco Sales and Engineering Company, Inc., Flemington Junction, N.J., a corporation of New Jersey  
Filed Oct. 27, 1967, Ser. No. 678,698  
Int. Cl. F04b 49/02; E03b 3/18, 7/07

U.S. Cl. 103-25

9 Claims

A prefabricated underground pumping station formed in two sections including a lower section defining a pump

chamber and a wet well and an upper section defining into the cavity of the piston and refills the central cavity an access chamber of smaller cross sectional area than through a second check valve during the withdrawal of

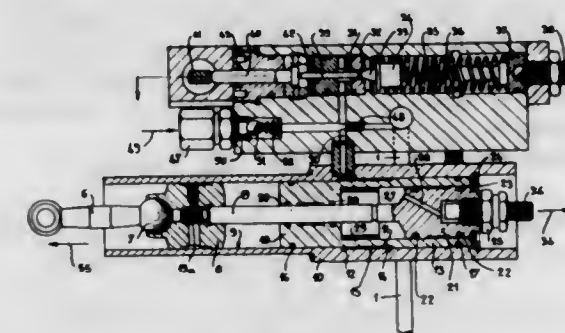


the first section. The pump chamber houses mechanical suction pumps and other equipment.

3,461,804  
REGULATOR FOR A VARIABLE DELIVERY  
HYDRAULIC PUMP  
Roger Chanal, Saint-Etienne, France, assignor to Bennes Marrell, Saint-Etienne (Loire), France, a French joint-stock company  
Filed Nov. 13, 1967, Ser. No. 681,966  
Claims priority, application France, Nov. 21, 1966, 47,972  
Int. Cl. F04b 49/08, 1/02; F04d 15/00

U.S. Cl. 103-38

5 Claims



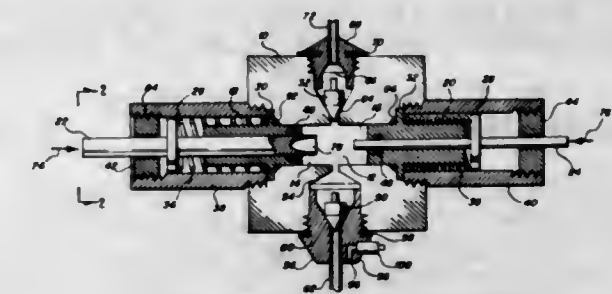
A combination pressure relief valve and load regulator for a hydraulic pump driven by an internal combustion engine and devised to reduce the load on the engine starter motor when starting from cold, comprising a pressure relief valve, manual operating means therefor, a tilting swashplate variable output pump connected directly to the engine, and means consisting of a piston sliding within a sliding sleeve and interconnected thereto by a compressed gas cushion, the piston being so interconnected with the swashplate and acted upon by the pump oil pressure as to gradually increase the pump load on the motor as the circulating oil heats up.

3,461,805  
RECIPROCATING PISTON METERING PUMP  
Waldemar B. Karkow, Yorkville, Ill., assignor to Photo Instrument Tooling Company, Yorkville, Ill., a corporation of Illinois  
Filed Feb. 26, 1968, Ser. No. 708,112  
Int. Cl. F04b 49/00, 3/00; B67d 5/46

U.S. Cl. 103-38

6 Claims

A piston type pump which expels fluid from a central cavity through a first check valve during the movement

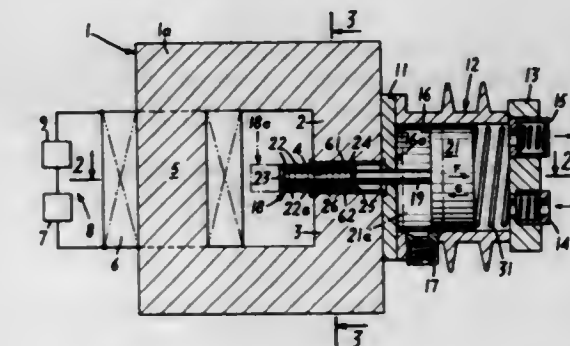


the piston from the cavity, piston stroke length being used to control the volume of fluid displaced.

3,461,806  
RECIPROCATING ELECTRIC MOTOR  
Maurice Barthalon, 78 Avenue Henri Martin, Paris XVI, France  
Continuation-in-part of applications Ser. No. 537,604, Feb. 28, 1966, and Ser. No. 581,060, Sept. 21, 1966. This application Aug. 30, 1968, Ser. No. 767,888  
Claims priority, application France, Mar. 12, 1965, 8,974  
Int. Cl. F04b 17/04; H02k 7/14, 33/02

U.S. Cl. 103-53

73 Claims



A reciprocating machine having an electric motor and a device such as a pump, compressor or various vibratory devices, driven by the motor. The motor has at least one electromagnetic circuit having a pair of spaced-apart poles defining an air gap and at least one field coil adapted to generate a magnetic field across the air gap, and a magnetic armature mounted for reciprocating movement along an axis disposed transversely to the magnetic field and coupled to the driven device. The motor field coil is supplied with a succession of unidirectional electric current pulses, the power supply including current control elements that prevent the current from reversing direction in the field generating coil at the end of each current pulse and for initiating each pulse only when the supply voltage is of proper polarity. Upon each current pulse, the armature is pulled into the air gap by the forces exerted on it, by the electromagnetic field. The armature is driven in a direction to move the major portion of it out of the air gap after each current pulse by mechanical or pneumatic or electromagnetic forces created by a return means distinct from the motor. The machine may have two circuits, each supplied alternatively with unidirectional electric current pulses so as to impose an electromagnetic force on an armature reciprocating back and forth between them (or an armature associated with each of them), and two driven devices, one being powered on each power pulse while the other acts to return the armature.

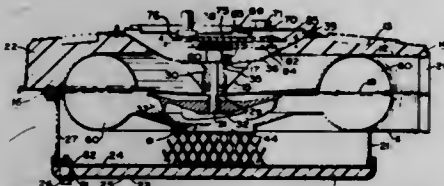


### 3,461,807 PUMP

Erwin M. Morrison, Calgary, Alberta, Canada, assignor to Northwest Industries Limited, Edmonton, Alberta, Canada

Filed May 17, 1967, Ser. No. 639,214  
Claims priority, application Canada, Oct. 28, 1966, 974,304

Int. Cl. F04d 1/00, 13/02, 29/28  
U.S. Cl. 103—103 7 Claims

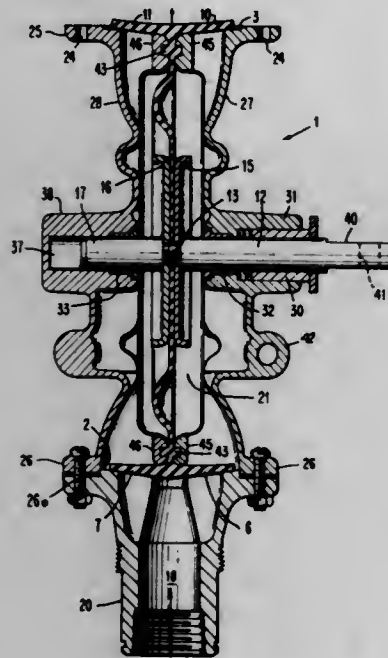


A portable, floating pump which includes a housing having an inlet means, an outlet means and an impeller chamber. An impeller is mounted in the chamber on a fixed rotatable shaft. The impeller is formed of molded, structurally rigid, light weight synthetic plastic material. Primary and secondary chain-driven sprockets connect a motor to drive the impeller. A volute chamber, arranged around the periphery of the impeller chamber, provides maximum efficiency promoting a high flow rate of the liquid. Float means are secured to the housing near the upper portion of the pump and preferably also at the base of the pump.

### 3,461,808 DIAPHRAGM HAND PUMPS

Lowell F. Nelson and Louis G. Hanson, Muskegon, Mich., assignors to John Wood Company, East Orange, N.J., a corporation of Delaware

Filed July 3, 1967, Ser. No. 650,719  
Int. Cl. F04b 43/02; F01b 19/02  
U.S. Cl. 103—150 4 Claims



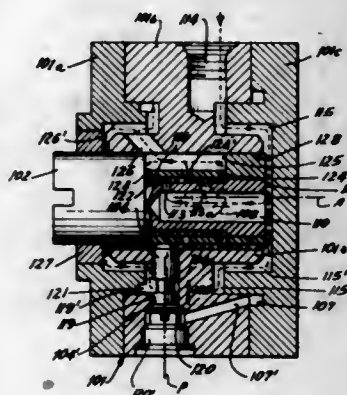
A double-action diaphragm-type hand pump for fluids such as gasoline, kerosene, oil, alcohol, etc., which pump includes within an outer housing a flexible rubber, or the like, diaphragm having inlet and outlet flapper valves molded integrally therewith at the opposite ends for the pump inlet and outlet. The diaphragm is reciprocated manually by push and pull strokes on handle means connected with a plunger operatively connected to the diaphragm.

### 3,461,809 RADIAL-PISTON PUMP WITH IMPROVED COOLING AND LUBRICATION

Ludwig Bodecker, Frankfurt am Main, Germany, assignor to Alfred Teves, G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed Mar. 13, 1968, Ser. No. 712,817  
Claims priority, application Germany, June 22, 1967, T 34,154

Int. Cl. F04b 1/04, 39/02  
U.S. Cl. 103—174 7 Claims

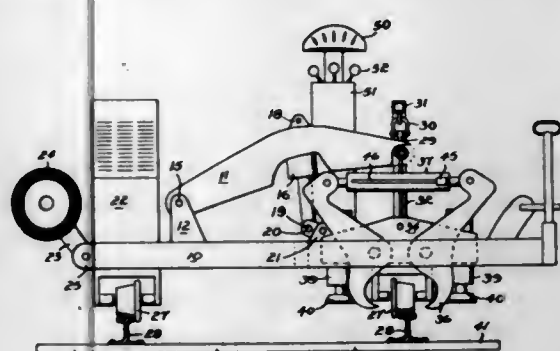


In a radial piston pump the hydraulic fluid is shunted on its path between the reservoir and the piston cylinders so as to cool and lubricate the latter, the shunt path including an axial bore formed in the eccentric shaft and opening beneath the bearing ring surrounding the eccentric; a constriction in this path or another fluid path between intake port and suction chamber.

### 3,461,810 RAIL LIFTER

William J. Yard, Cavan, South Australia, Australia, assignor to Australian Railway Equipment Supply Company Proprietary Limited, Adelaide, South Australia, and Trak Chief Manufacturing Proprietary Ltd., Cavan, South Australia, Australia

Filed Nov. 21, 1967, Ser. No. 684,702  
Int. Cl. E01b 29/22  
U.S. Cl. 104—7 5 Claims



A rail lifter for the lifting of a rail from a tie to thereby "break" the grip of a spike in the tie, the rail lifter having a clamp to engage the rail beneath its head and hydraulic rams to urge downwardly on the tie thereby lifting the rail from the tie.

### 3,461,811 MONORAIL SYSTEM

Louis E. Swinney, Roeland Park, Kans., assignor, by mesne assignments, to Swinney-Ferreira, Gyrodynamics, Inc., Mission, Kans., a corporation of Missouri

Filed Feb. 24, 1966, Ser. No. 529,868  
Int. Cl. G61b 13/06; E01b 25/08  
U.S. Cl. 104—118 10 Claims

A monorail vehicle is provided with a normally re-

tracted safety support gear which, in response to certain failures in the vehicle stabilization means, is extended to

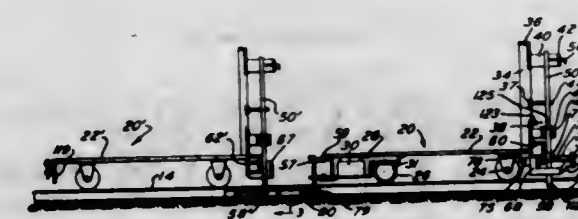


engage the rail support and thereby prevent undesired tipping of the vehicle.

### 3,461,812 TOW TRUCK SYSTEM

James A. Roland, Elmwood Park, Ill., assignor to SI Handling Systems, Inc., Easton, Pa., a corporation of Pennsylvania

Filed June 1, 1966, Ser. No. 554,385  
Int. Cl. B61b 13/00; B61c 11/02  
U.S. Cl. 104—172 12 Claims

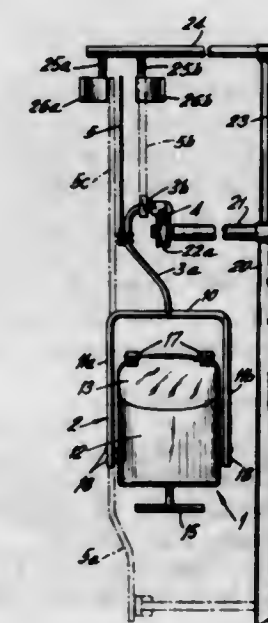


A tow truck system is disclosed wherein a train of tow trucks is pulled by a driverless self-propelled tractor. The tractor and trucks are guided along a path defined by a slot and means on the tractor and truck which extends into the slot. The tractor pulls a chain disposed entirely within the slot. Each truck is capable of being removably coupled to the chain while the chain is stationary or moving. The train may be caused to transfer to a shunt slot by a preselection of a mechanism on the tractor. The tractor may be provided with an obstruction sensing means which interrupts the drive on the tractor.

### 3,461,813 SKI LIFT CHAIR STABILIZER

Alexander McIlvaine, 131 E. 36th St., New York, N.Y. 10016

Filed Apr. 5, 1967, Ser. No. 632,139  
Int. Cl. B61c 11/02  
U.S. Cl. 104—173 14 Claims



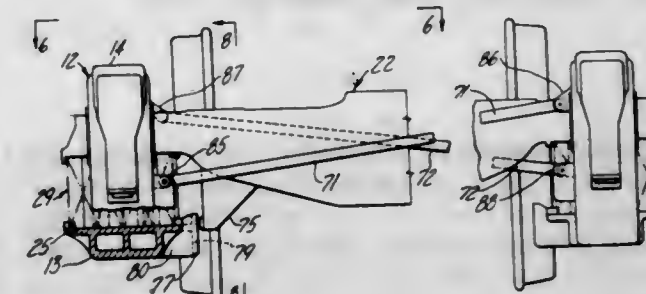
One type of lift for raising skiers and others up mountains consists of a series of chairs suspended from a con-

tinuous elongated loop of cable. The cable passes over sheaves (rollers) mounted on towers. The chairs of the present invention are equipped with elongated members, preferably flexible rods. The rods pass between, or on the side of, guide rails affixed to the towers. The guides dampens the widwise swinging motion imparted to the chairs by cross-winds.

### 3,461,814 DAMPENED RAILWAY CAR TRUCK BOLSTER

Hans B. Weber, Bedford, and Joseph Brown, Warrensville Heights, Ohio, assignors to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Mar. 7, 1967, Ser. No. 621,225  
Int. Cl. B61f 3/00, 5/00  
U.S. Cl. 105—193 6 Claims

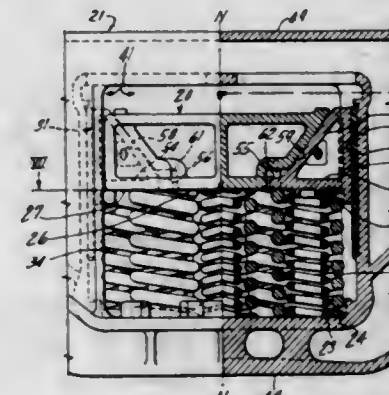


A four-wheel, two-axle railway car truck of the non-integral side frame and bolster type having means interconnecting the side frames to prohibit swinging motion of the side frames transversely of the truck and stop means on the bolster for restricting the lateral movement of the bolster at a level below the plane containing the longitudinal axes of the axles.

### 3,461,815 SNUBBED RAILWAY TRUCK BOLSTER

Algis E. Gedris, Richmond Heights, Hans B. Weber, Bedford, and Joseph Brown, Warrensville Heights, Ohio, assignors to Midland Ross Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Aug. 1, 1966, Ser. No. 569,271  
Int. Cl. B61f 5/06; F16f 1/06  
U.S. Cl. 105—197 9 Claims

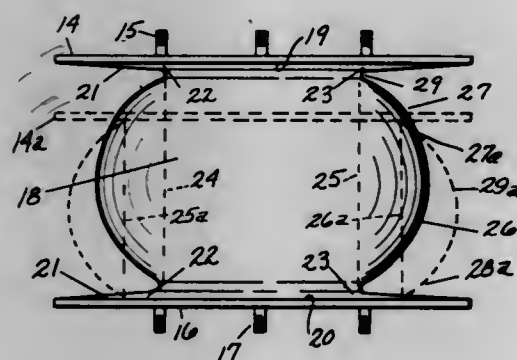


A snubbed railway car truck of the type wherein pockets for friction wedges are formed primarily by downward-opening recesses in the sides of the end portions of the bolster received in the side frames but having an improved construction enabling full-size load springs standing on the spring seats of the side frames to engage the friction wedges of the truck-snubbing system.



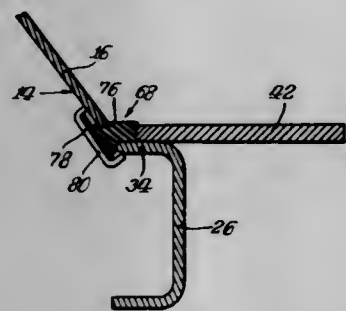
### 3,461,816 ELASTOMERIC RAILWAY FREIGHT CAR TRUCK BOLSTER SPRING

Merrill G. Beck, Erie, Pa., assignor to Lord Corporation, Erie, Pa., a corporation of Pennsylvania  
Filed Feb. 28, 1967, Ser. No. 619,462  
Int. Cl. B61f 5/08, 5/04; F16f 1/36  
U.S. Cl. 105—197 8 Claims



Each spring group of coil springs in a railway truck is replaced by a single body of elastomer with upper and lower ends respectively in load transmitting relation between the bolster and the side frame. Under load, the elastomer at the ends bulges outwardly to increase the load transmitting area and to prevent stress concentration in the elastomer. One advantage is a substantially constant ride from light to full load.

**3,461,817  
PLUG SEAL FOR HOPPER OUTLET ASSEMBLY**  
William Kendrick Farmer, Chicago, Ill., assignor, by mesne assignments, to W. H. Miner Inc., Chicago, Ill., a corporation of Delaware  
Filed May 19, 1967, Ser. No. 639,791  
Int. Cl. B61d 3/00, 7/00, 9/00  
U.S. Cl. 105—282 4 Claims

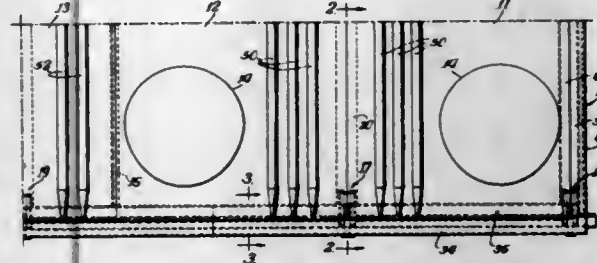


A plug member for sealing residual gaps in a hopper outlet assembly at the trailing edges of a closing gate slidable across the discharge opening defined by the main frame of the assembly.

**3,461,818  
HINGED HOPPER AND GONDOLA CAR ROOF**  
Wes E. Sanders, Chicago, and John W. Allen, Flossmoor, Ill., assignors to Stauray Corporation, Chicago, Ill., a corporation of Delaware  
Filed Dec. 21, 1967, Ser. No. 692,375  
Int. Cl. B61d 39/00, 3/00, 7/00  
U.S. Cl. 105—377 9 Claims

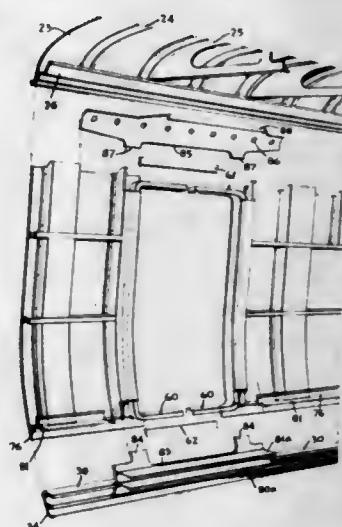
A roof for an open top railroad freight car, which roof is movably and hinged along the longitudinal side edges thereof to the tops of side walls of the car. The hinge arrangements are such that the roof is carried in a normal position to completely cover the interior of the car when the car is in an upright position. However, when the car is rotated about its longitudinal

axis in a rotating car dumper, the roof is pivoted about the upper side edge of the car and swings away from the lower side edge thereof so that the car contents can be dumped through the top of the car. The roof can be pivoted about either side edge of the car so that the car



can be run through a dumper in either direction and dumped to either side. After the dumping operation, the car is rotated in a reverse direction and the roof swings back to engagement with the hinge at the lower side edge of the car.

**3,461,819  
VEHICLE BODY CONSTRUCTION AND  
METHOD OF MAKING IT**  
Walter S. Eggert, Jr., Huntingdon Valley, Philadelphia, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania  
Filed Aug. 22, 1967, Ser. No. 662,525  
Int. Cl. B61d 17/00, 25/00; B23p 21/00  
U.S. Cl. 105—401 2 Claims

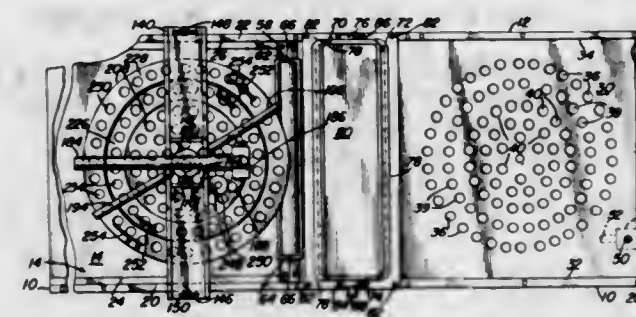


A railway vehicle sidewall construction including upper and lower web sheets having a plurality of strut members and at least one full length longitudinal beam and a plurality of full length strut members secured thereto to form a panel unit. The method of construction includes forming doorway splicer units with interiorly offset horizontal flanges which connect lower through-running beam members of adjacent panels and embracing therewith the ends of short transverse floor beams in the doorway.

**3,461,820  
FOOD PROCESSING MACHINE**  
Vito A. Falco, 2643 W. 87th St., Chicago, Ill. 60642  
Filed Mar. 21, 1966, Ser. No. 536,052  
Int. Cl. A21c 9/04; B29f 3/04  
U.S. Cl. 107—15 8 Claims

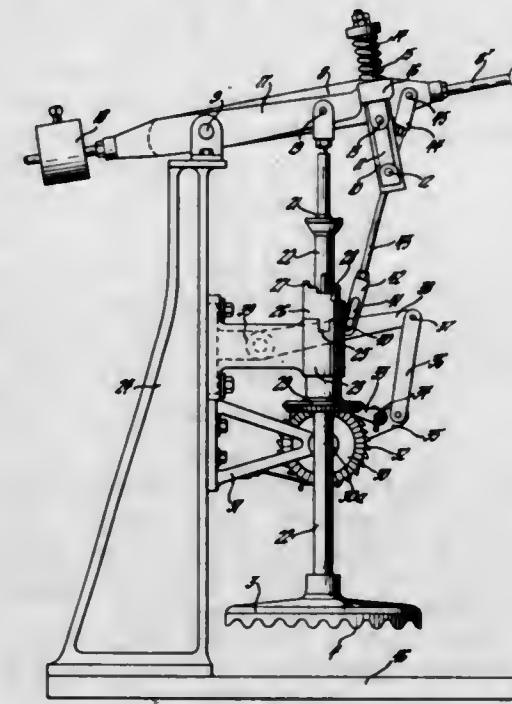
A device for forming and depositing a pattern of discrete portions of a food composition onto a prepared surface characterized by including a die plate movable

between loading and depositing positions and having a pattern of openings therethrough for receiving the food composition, a food composition supply hopper having force means operable to force fill the die plate openings



during movement of the die plate between set positions, and selectively operable plunger means for ejecting food composition from pre-determined ones of the die plate openings.

**3,461,821  
APPARATUS FOR KNEADING AND  
SHAPING LUMPS OF DOUGH**  
Geza Gallus, Cuba 3488, Buenos Aires, Argentina  
Filed Dec. 15, 1967, Ser. No. 690,723  
Int. Cl. A21c 3/00, B30b 5/00  
U.S. Cl. 107—15 5 Claims

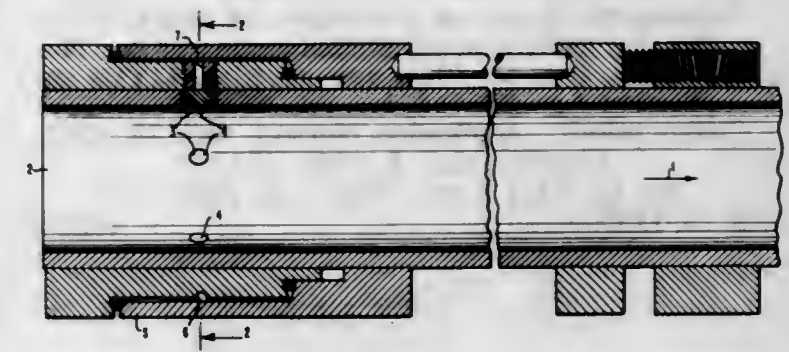


A device for shaping lumps of dough which includes a vertically mounted plunger with a dough engaging plate at its lower end and means for reciprocating the plunger in progressive steps. The lower surface of the plate has a plurality of grooves and means is provided for rotating the plunger so that each time the grooved lower surface of the plate engages the dough, it provides a kneading action while working the dough into final product shape prior to baking.

**3,461,822  
MANUFACTURE OF NOVELTY CONFECTIONS**  
John A. Rikert, Ridgefield, Conn., Owen B. Carlin, Rutherford, N.J., and Michael J. Lucas, Chicago, Ill., assignors to Standard Brands Incorporated, New York, N.Y., a corporation of Delaware  
Filed June 29, 1966, Ser. No. 561,382  
Int. Cl. A23i 1/27; A23g 3/28  
U.S. Cl. 107—54 8 Claims

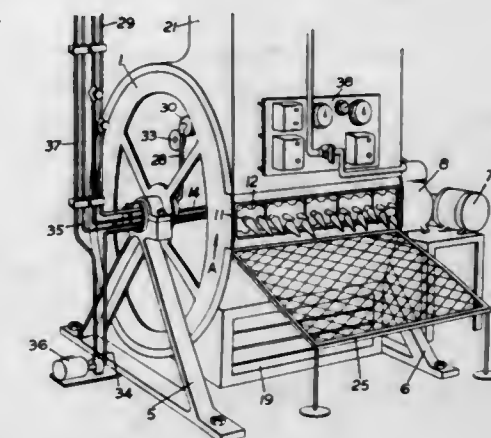
The disclosure relates to a method of coloring marshmallow. A pressurized stream of an aerated marshmallow

mass is colored by transferring through a wick an edible coloring agent to a point on the surface of the marshmallow.



low mass. After the marshmallow stream passes the wick, it is dusted with a powdered edible material and cut into predetermined sizes.

**3,461,823  
MACHINE FOR PRODUCING ICE CREAM  
CONES, BAKERS' CUPS OR LIKE EDIBLE  
CONTAINERS**  
Joseph Greco, 17 Thorne Lane, Leeds 8, England  
Filed Feb. 27, 1967, Ser. No. 618,920  
Int. Cl. A21b 5/00  
U.S. Cl. 107—58 17 Claims



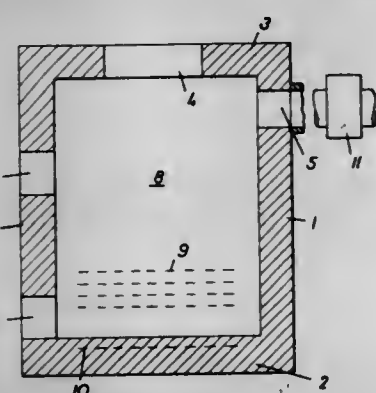
A machine for continuously moulding and cooking a batter or mix to produce ice-cream cones, cups, or like edible containers, wherein a series of mold sets comprising inner moulds and split outer moulds are mounted in pairs of opposed mould carriers around the circumference of a drum which is rotated continuously around a horizontal axis while the mould sets are successively filled with mix, heated internally of the drum to cook the mix, opened to eject the cones and closed ready to receive a further charge of mix, all in timed relation to the rotation of the drum. The opening and closing of the mould carriers are effected by sets of ram and cylinder assemblies mounted between them, the inner moulds being axially movable against spring pressure relative to the outer moulds to act as a valve through which the mix is injected under pressure. The ejection of the cooked cones is effected by actuation through ram and cylinder units of ejector members surrounding the inner moulds, the injection of mix being effected by a pump mechanism located within the drum and whose discharge nozzle is held in engagement with each circumferentially succeeding mould inlet in turn during a small portion of the revolution of the drum, the pump itself being bodily and continuously rotated and having a plunger for injecting a measured quantity of mix from a supply thereof at each injection.



3,461,824

## INCINERATION METHOD

Fredrik Pedersen, Even Lorens vei 6, 7000 Trondheim, Norway, and Ellif Indbryn, Namsos, Norway; said Indbryn, assignor to said Pedersen  
Continuation-in-part of application Ser. No. 675,716, Oct. 16, 1967, which is a continuation of Ser. No. 404,069, Oct. 15, 1964, now abandoned. This application Apr. 8, 1968, Ser. No. 727,123  
Claims priority, application Norway, Oct. 16, 1963, 150,470; Mar. 5, 1964, 152,292  
Int. Cl. F23g 5/00; F23b 1/38; F23i 7/00  
U.S. Cl. 110—7 4 Claims

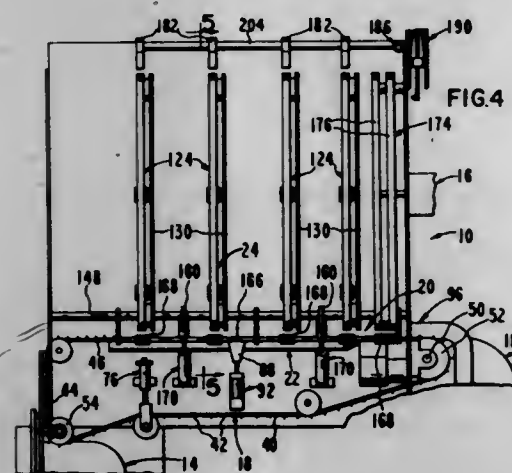


A method is disclosed for the combustion of refuse without pollution of the atmosphere. The cold refuse is placed in a grateless incinerator and then gradually heated without admitting air until the refuse is in a completely dry state and the self-ignition temperature of the refuse has been reached. A slight amount of air is then admitted to maintain combustion.

3,461,825

## SHEET-HANDLING APPARATUS

Roy J. Brown, Los Gatos, Calif., assignor to The Kor-It Company, Inc., Santa Clara, Calif.  
Filed Oct. 11, 1967, Ser. No. 674,398  
Int. Cl. D05b 23/00, 13/00  
U.S. Cl. 112—10 20 Claims

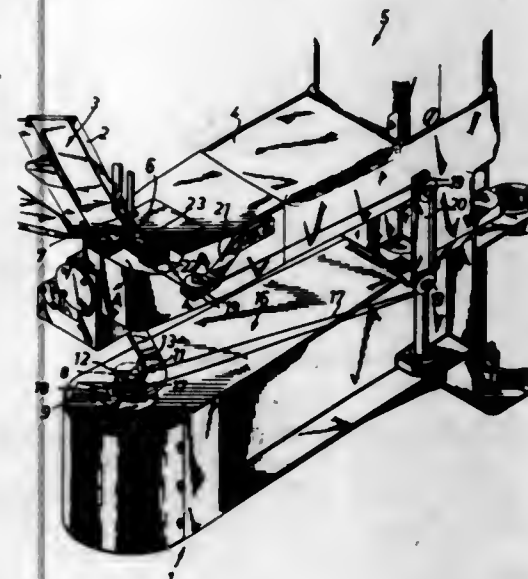


Sheet-handling apparatus capable of moving a flexible sheet from a first location to a second location while the sheet is vertically disposed and freely hangs from a first conveyor. Means is provided to move the sheet off and away from the first conveyor and onto a second conveyor which moves the sheet in a generally horizontal plane. The apparatus is especially adapted for making bags wherein a first sewing machine positioned at the first location stitches opposed side margins of the sheet after the latter has been folded upon itself and as the sheet is manually fed into the first sewing machine. A second sewing machine adjacent to the second conveyor stitches opposed end margins of the sheet as the sheet moves in the horizontal plane. Means is provided to align the end margins of the sheet when the latter is vertically disposed.

3,461,826

## SEWING DEVICE WITH A DOUBLE CHAIN STITCH SEWING MACHINE

Hans Scholl, Bielefeld, and Alfred Helmann, Senne, Germany, assignors to Kochs Adlernahmaschinen Werke AG, Bielefeld, Germany  
Filed Feb. 20, 1968, Ser. No. 706,960  
Int. Cl. D05b 1/10  
U.S. Cl. 112—121.11 5 Claims

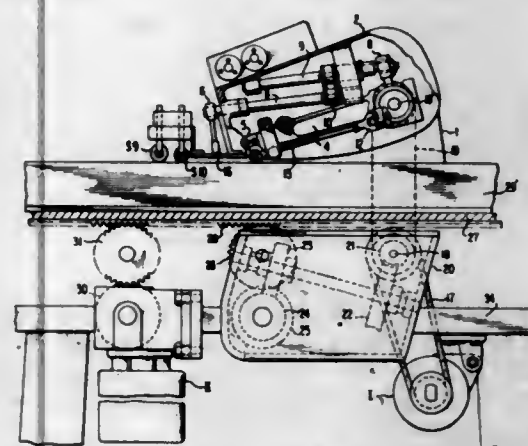


A pattern controlled sewing device having workpiece clamping holders and guide patterns arranged beneath the clamping holders. A double chain stitch sewing machine is provided with a thread carrying needle, a thread carrying looper, a throat plate with an inset pivoted in it and having an oblong stitch hole, and a thread spreader to allow the forming of seams in every feed direction. The inset is controlled by a pattern follower device co-operating with the patterns and in driving connection with the inset through transmitting means in the form of an endless ball string, for rotating the oblong stitch hole in a direction corresponding to the shape of the patterns.

3,461,827

## AUTOMATIC BLIND STITCH SEWING MACHINE

Alfons Strobel, Grunwald, near Munich, and Lothar Sommerschuh, Oberschleissheim, near Munich, Germany, assignors to J. Strobel & Soehne, Spezial-Naechmaschinen-Fabrik, Munich, Germany  
Filed Sept. 2, 1966, Ser. No. 577,029  
Claims priority, application Germany, Sept. 4, 1965, St 24,355  
Int. Cl. D05b 1/24, 19/00, 11/00  
U.S. Cl. 112—178 30 Claims



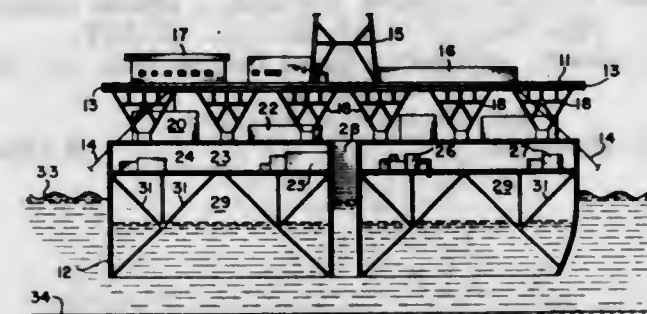
A blind stitch sewing machine, specifically a padding machine for the automatic padding of layers of material placed one above another, but more specifically for the

automatic roll padding of lapels of coats, jackets, overcoats and similar pieces of garments, wherein material contact switches control the sequence of operations and a magnetic thread breakage detector is provided.

3,461,828

## FLOATING DRILLING PLATFORM

Walter J. Bielstein, Houston, Tex., assignor to Easo Production Research Company  
Filed Apr. 15, 1968, Ser. No. 721,510  
Int. Cl. B63b 35/44, 35/00  
U.S. Cl. 114—5 15 Claims

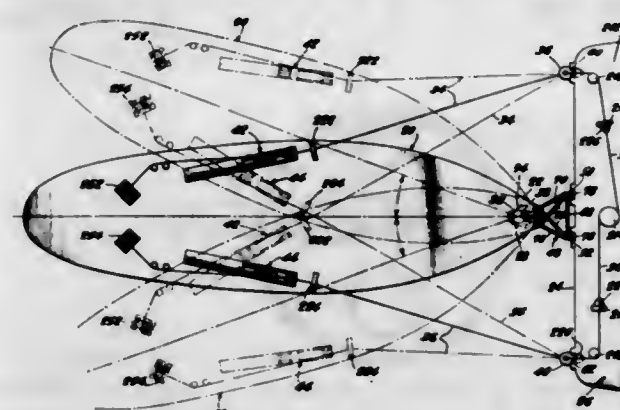


A floating drilling platform is provided by a vessel which is moored for 360° rotation about its axis by rotatably and peripherally anchoring the vessel by a plurality of at least two anchors flexibly, rotatably and peripherally attached to the vessel, the vessel being adapted to be supported above wave action on an air cushion and maintained in a selected location with respect to water bottom during drilling operations.

3,461,829

## SYSTEM AND APPARATUS FOR CONNECTING AND STEERING PUSHED VESSELS

Gordon Mosvold, Freeport, Bahamas, assignor, by means assignments, to Ocean Research and Manufacturing Company, Inc., a corporation of Florida  
Filed June 9, 1967, Ser. No. 644,984  
Int. Cl. B63b 21/04, 21/16, 21/56  
U.S. Cl. 114—235 20 Claims

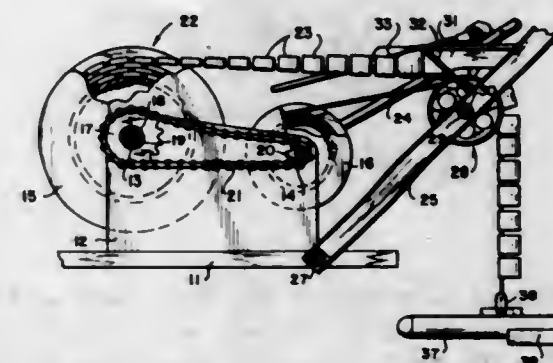


A system and apparatus for connecting and steering pushed vessels, particularly in rough seas, by attachment to the stern of the pushed vessel the bow of a pushing vessel, the attachment being a universal coupling means providing for three degrees of motion between the vessels, namely pitch, roll and yaw, and securing cables from the pushed vessel outboard of the coupling operatively connected to the pushing vessel in a manner so as to reduce cable stress and so they can be payed in or out to control positively the steering of the pushed vessel under all sea conditions while under way.

3,461,830

## FAIRINGS FOR A MARINE TOWLINE

Harry H. Pearce, James B. Turner, and Harold L. Wise, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Filed Feb. 20, 1968, Ser. No. 706,929  
Int. Cl. B63b 21/56  
U.S. Cl. 114—235 9 Claims

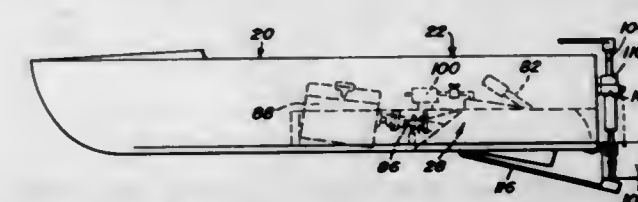


A towline and a plurality of fairings are guided through a sheave arrangement into a converging, engaging relationship to automatically clip the fairings to the towline as it is being strung out below a towing vessel. The towline and fairings are automatically separated for winding on separate drums as the towline is pulled in.

3,461,831

## BOAT DRIVE

Guy C. Lewis, Jefferson, La.  
(306 Newman Ave., New Orleans, La. 70121)  
Filed Apr. 24, 1968, Ser. No. 723,665  
Int. Cl. B63h 11/02, 5/12, 25/08  
U.S. Cl. 115—12 13 Claims



A boat drive comprising an elongated drive tube for receiving and directing a propeller impelled stream of water. The drive tube is adjustable, in conjunction with an adjustable panel, between a forward position, a reverse position and a neutral position through a simultaneous manipulation of the tube and panel and without either stopping or reversing the propeller. A protective ski is provided for automatically retracting the tube, panel and steering rudder upon the encountering of obstacles. The tube and panel are retractable within an internal tunnel in the boat hull which cooperates with the tube in recirculating the stream of water so as to achieve the neutral position.

3,461,832

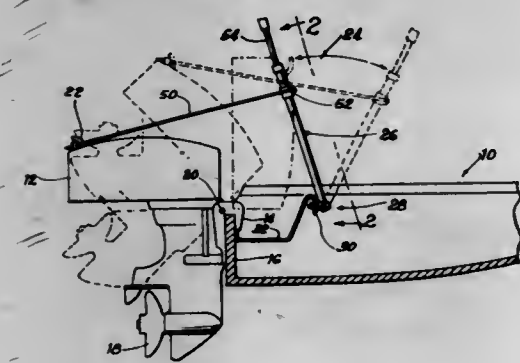
## OUTBOARD MOTOR LIFTING DEVICE

Robert L. Vierling, Chicago, Ill., assignor to Floyd C. Vierling, Chicago, Ill.  
Filed July 11, 1967, Ser. No. 652,439  
Int. Cl. B63h 21/26 8 Claims

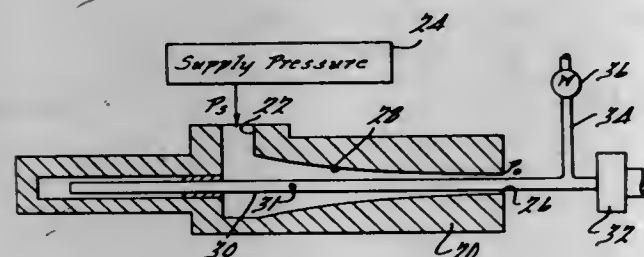
An outboard motor lifting device for a motor boat, comprising a lever arm, hinge means having a first swivel supporting the arm for fore and aft movement, and second swivel supporting the arm for lateral swinging movement on the boat to a storage position, a cable or



other tension element connected to the arm and adapted to be removably connected to the outboard motor, the arm preferably having an extensible portion for increasing the effective leverage of the arm, and a bracket adapted to be mounted on the boat at a position spaced laterally from the hinge means for supporting the arm in its storage position.

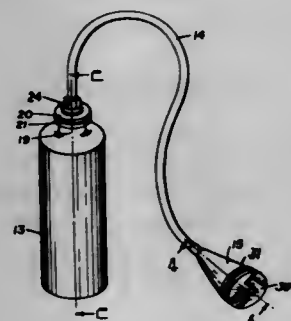


**3,461,833**  
**FLUID VARIABLE PRESSURE DEVICE**  
George I. Boyadjiev, Pontiac, Mich., assignor to The Bendix Corporation, a corporation of Delaware  
Filed Dec. 27, 1966, Ser. No. 605,041  
Int. Cl. G08b 1/06  
U.S. Cl. 116—65 7 Claims



An apparatus for providing a variable output pressure having a convergent duct for flow of a fluid therethrough in combination with an orifice being movable along the duct.

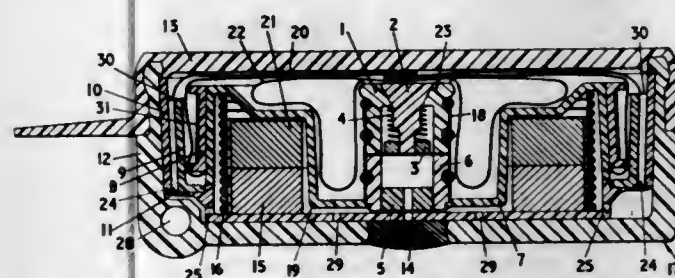
**3,461,834**  
**FREEZER THAW ALARMS**  
Howard P. Linder, P.O. Box 777, R.R. 5, Golden, Colo. 80401  
Filed Sept. 18, 1968, Ser. No. 760,504  
Int. Cl. G08b 17/00, 17/04, 21/00  
U.S. Cl. 116—106 8 Claims



A sealed metallic bottle partially filled with a liquid having a freezing point below that of water—the remain-

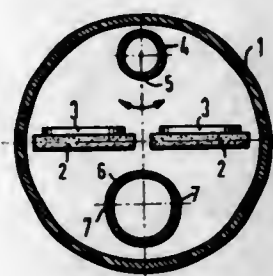
der of said bottle containing a gas under pressure. A discharge tube extends from adjacent the bottom of said bottle to a pressure actuated alarm device. Before use, bottle is chilled to freeze the liquid to form an ice seal which closes the discharge tube. Bottle is then placed in a food freezer. Should refrigeration failure occur, temperature of freezer will rise to melt ice seal and allow gas to escape through discharge tube to actuate the alarm device.

**3,461,835**  
**WATER-ACTIVATED BALLOON INFLATING DEVICE**  
Michael Henry Cockbill, Rickmansworth, and James Thomas Main, London, England, assignors to Lionel Heller Limited, London, England, a British company  
Filed Nov. 17, 1967, Ser. No. 683,893  
Claims priority, application Great Britain, Nov. 22, 1966, 52,189/66  
Int. Cl. G09f 9/00, 21/12  
U.S. Cl. 116—124 9 Claims



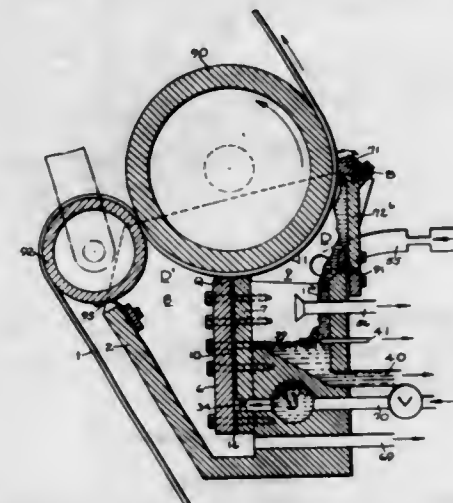
A device for inflating a balloon having a receptacle containing a chemical which reacts with water to release hydrogen into a balloon so that the balloon can ascend and mark the position of the operator for use in rescue work at sea.

**3,461,836**  
**EPITACTIC VAPOR COATING APPARATUS**  
Heinz Henker, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany  
Filed Dec. 28, 1965, Ser. No. 516,913  
Claims priority, application Germany, Dec. 29, 1964, S 94,856  
Int. Cl. C23c 11/00  
U.S. Cl. 118—48 4 Claims



Described is apparatus for the simultaneous precipitation of crystalline semiconductor layers upon a plurality of disc-like crystalline substrates which are arranged in a reaction vessel on the surface of an elongated and heatable carrier which extends in a horizontal direction. A gas inlet tube with a row of openings at its lower side and rotatable about its horizontal axis is provided above the carrier and parallel to it. A gas outlet tube similar to the gas inlet tube and also provided with a row of openings, is situated below the carrier and also extends parallel to the carrier. Also described is the method of using the above apparatus.

**3,461,837**  
**COATING APPARATUS**  
Donald F. Dreher, P.O. Box 56, East Brookfield, Mass. 01515  
Filed Oct. 24, 1965, Ser. No. 504,445  
Int. Cl. B05c 1/12, 11/02  
U.S. Cl. 118—50 9 Claims



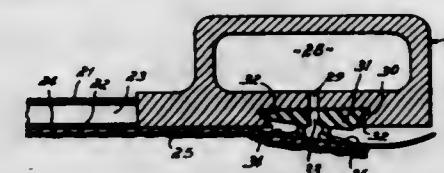
This application relates to web coating apparatus for paper and the like, and in particular describes:

(a) A reverse roll coater (FIGURE 1) having one roll instead of the customary three or four. Bearing support throughout its operative length permits relatively small diameter, and the support housing incorporates means for lateral distribution of coating composition and its final and precise metering.

(b) A trailing blade type of coater (FIGURE 3), fully enclosed, utilizing partial vacuum to eliminate air entrainment and to control coating thickness.

(c) Doctoring elements responsive to subatmospheric pressure differential, adaptable to a range of apparatus and utilized in the coaters above described.

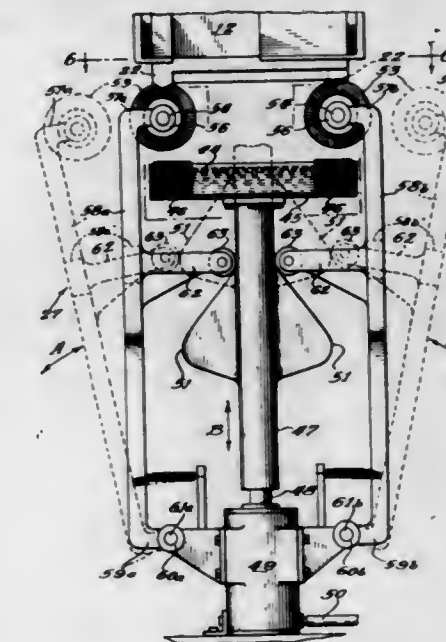
**3,461,838**  
**VACUUM WORK SUPPORT**  
John R. Nelson, Jr., and Tyler K. Hayes, Mentor, Ohio, assignors to Eagle-Picher Industries, Inc., a corporation of Ohio  
Original application May 7, 1965, Ser. No. 453,937, now Patent No. 3,337,908, dated Aug. 29, 1967. Divided and this application July 17, 1967, Ser. No. 671,511  
Int. Cl. C23c 13/08; B25b 11/00  
U.S. Cl. 118—50 2 Claims



A holder for a sheet to be flocked wherein a sheet retaining vacuum is exerted through a centrally located foraminous plate of a first chamber and through the apertures of a resilient, sealing ring which is peripherally located and operatively associated with a second chamber.

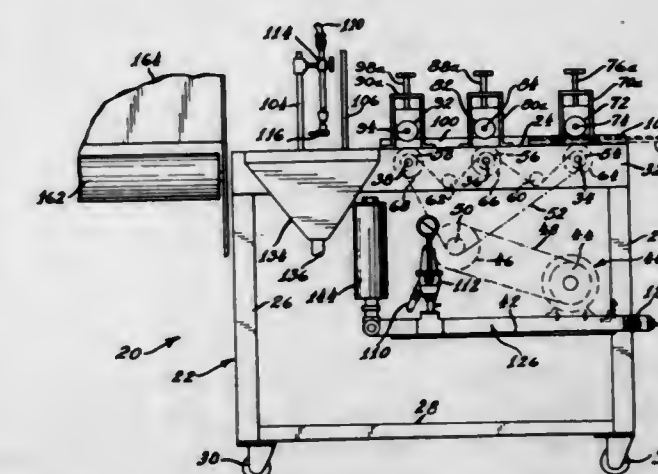
**3,461,839**  
**APPARATUS FOR CLEANING AND FLUXING BATTERY PLATE LUGS**  
John E. Farmer, Chicago, Ill., assignor to Farmer Mold and Machine Works, Inc., a corporation of Illinois  
Filed Oct. 30, 1967, Ser. No. 679,093  
Int. Cl. B05c 3/02; A46b 13/02  
U.S. Cl. 118—74 11 Claims  
A fluxing station for a battery fabricating machine wherein driven brushes are provided for cleaning battery

plate lugs to be fluxed, the brushes being mounted for movement to and from the plate lugs and means to effect



movement of a flux holding tray for application of the flux simultaneously effecting said movement of the brushes.

**3,461,840**  
**CURTAIN COATING APPARATUS FOR APPLYING COATING MATERIALS**  
Jonathan B. Turner, Chicago, Ill., assignor to Turner Manufacturing Co., Chicago, Ill., a corporation of Illinois  
Filed Apr. 4, 1966, Ser. No. 539,784  
Int. Cl. B05b 7/06; B05c 5/00  
U.S. Cl. 118—314 3 Claims

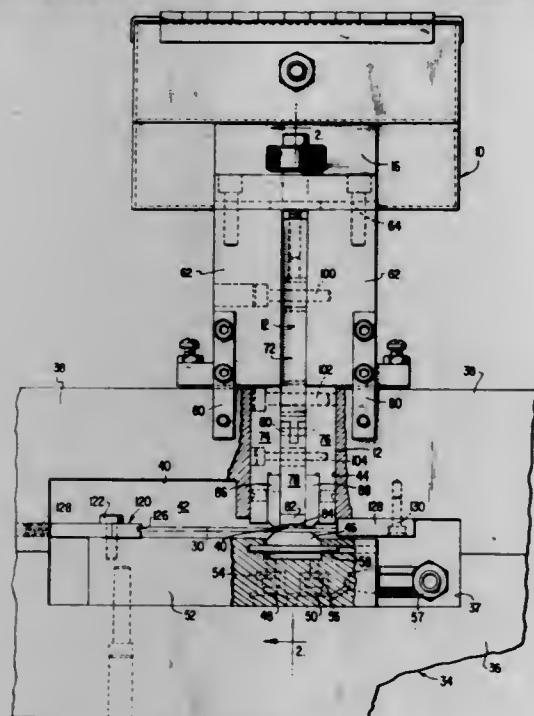


An apparatus for coating articles which comprises a plurality of nozzles for forming one or more unbroken curtains of coating material and means for grasping an article and projecting it through the curtain or curtains onto a receiving means.

**3,461,841**  
**APPARATUS FOR COATING A THIN, UNIFORM THICKNESS STRIPE ON A SUBSTRATE**  
Michael A. Marchese, Boulder, Colo., and Lewis G. Taft, Tokyo, Japan, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Jan. 13, 1967, Ser. No. 609,171  
Int. Cl. B05c 3/12  
U.S. Cl. 118—413 2 Claims  
A flat stripe coating apparatus including a stripe mate-



rial reservoir communicating with a die with an adjustable slot. The apparatus also includes a flat air bearing on size, a substantially rectilinear die opening, the die having the side of the paper opposite the chamber slot to push



ing an upper crowned portion, the curvature of which is the arc of a circle of given radius.

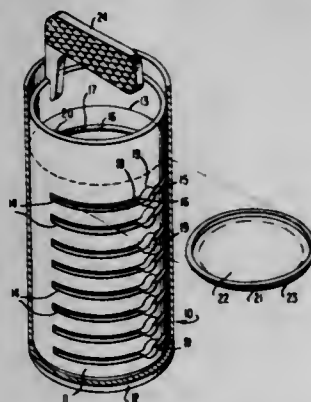
### 3,461,842 WORK HOLDER RACK

Ernest E. Conrad, Clinton Corners, and Armin A. Flager, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Nov. 19, 1965, Ser. No. 508,669  
Int. Cl. B05c 11/14

U.S. Cl. 118—500

2 Claims



A tubular stacking device for use in a container of a centrifuge containing a coating liquid and wherein the objects to be coated are placed on circular pans which are inserted and held in a plurality of transverse slots, and wall portions of the device opposite such slots, in the stacking device and which slots contain passageways to permit the escape of gas trapped between the objects when the stacking device is loaded and placed in the container.

### 3,461,843 TONER APPLICATION APPARATUS

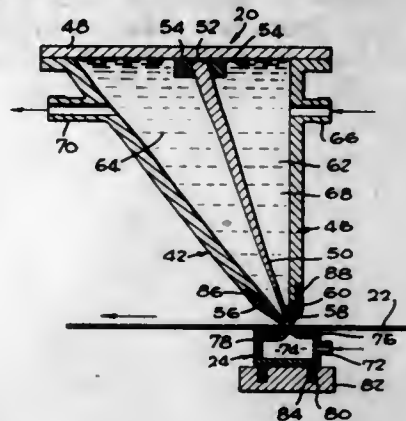
Alonzo W. Noon, Los Altos, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California

Filed Nov. 21, 1967, Ser. No. 684,704  
Int. Cl. B05c 5/02; G03g 13/10

U.S. Cl. 118—637

13 Claims

Apparatus useful in electrostatic printing systems to apply liquid toner to a paper for developing an image, comprising an applicator chamber having a slot extending across the width of the paper and a divider plate within the chamber directing the flow of liquid toner past the



the paper against the slot, and a vacuum cleaning system for removing excess toner positioned near the point of contact of a capstan.

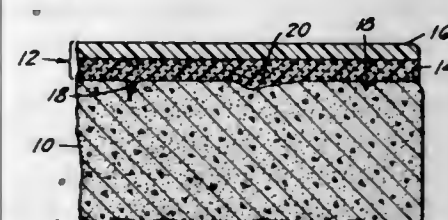
### 3,461,844 LAMINATE ANIMAL STALL FLOORING

George C. Harrison, Roseville, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed July 20, 1967, Ser. No. 654,926  
Int. Cl. A01k 1/00; E04f 15/10; B32b 5/20

U.S. Cl. 119—28

8 Claims



Polymeric laminates consisting of a hard polymer layer preferably a polyurethane containing a lightweight filler such as glass microbubbles and a rubbery polyurethane layer, the layers being self-adhered to each other by polymerization in situ of the rubbery layer in contact with the hard layer, and more particularly improved mats for animal stalls formed by curing the hard layer in situ on the flooring substrate, and subsequently applying and curing in situ the rubbery layer, thus forming a surfacing under which unsanitary materials cannot accumulate.

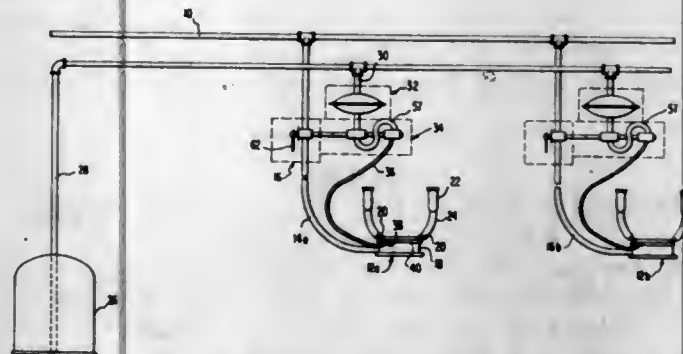
### 3,461,845 SANITIZING APPARATUS FOR MILKING MACHINES

Howard P. Peterson, Fayetteville, Ark., assignor to Research Corporation, New York, N.Y., a nonprofit corporation of New York

Filed Jan. 23, 1967, Ser. No. 611,092  
Int. Cl. A01j 7/00; B08b 9/06, 3/00

U.S. Cl. 119—14.18

9 claims



An apparatus for sanitizing teat cups and milk tubes in a milking machine. Valve controlled sanitizing lines to supply sanitizing fluid to each milk tube and teat cup. A

dosage device communicating with the sanitizing lines to deliver a fixed volume of sanitizing fluid to the milk tubes and teat cups for sanitization thereof.

### 3,461,846 STEAM GENERATORS

Arthur John South, Littleover, Derby, England, assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

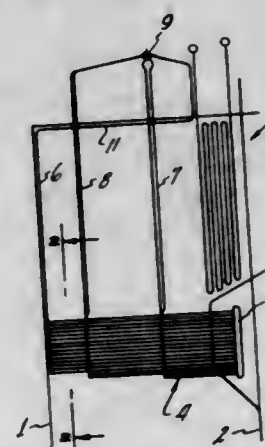
Filed June 29, 1967, Ser. No. 650,099

Claims priority, application Great Britain, July 11, 1966, 30,971/66

Int. Cl. F22b 37/10; F22g 7/14

U.S. Cl. 122—235

10 Claims



A radiant heat exchanger positioned in the upper region of the furnace of a steam generator and comprised of a curtain or panel of vertically aligned tubes extending horizontally across the furnace toward the front wall of the furnace. At a location adjacent this front wall these tubes are bent to form a panel extending parallel with this wall and upwardly of the wall with the tubes projecting through the roof of the furnace where they are connected with an outlet header. The other ends of the tubes are connected with a vertical header adjacent the rear wall of the furnace.

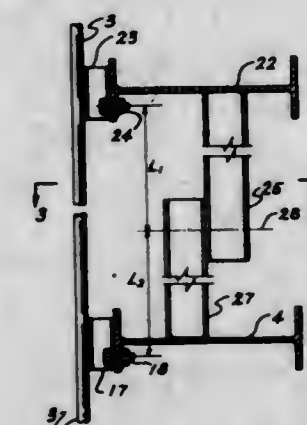
### 3,461,847 AUTOMATIC FURNACE TEMPERATURE CONTROL

Martin Jacobs, Hartford, and Raul J. Roccatagliata, Wethersfield, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Dec. 22, 1967, Ser. No. 692,758  
Int. Cl. F22b 37/24

U.S. Cl. 122—510

6 Claims



An apparatus for maintaining the buckstays of a steam generator level. Upper and lower buckstays are eccentrically supported from vertically expanding steam generator furnace walls. A first rigid member extends vertically downward from the upper buckstay and a second rigid member extends vertically upward from the lower buck-

stay. The bending moment of each buckstay around its support is resisted by the horizontal force acting between the two vertical members. This force may be transmitted by having the members in sliding contact or by the use of a sliding, bending or preferably rotating bolt.

### 3,461,848 PISTON FOR A ROTARY PISTON INTERNAL COMBUSTION ENGINE

Wolf-Dieter Bensinger, Stuttgart-Riedenberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

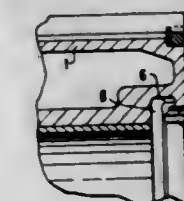
Filed Sept. 5, 1967, Ser. No. 665,567

Claims priority, application Germany, Sept. 8, 1966, D 51,052

Int. Cl. F02b 53/00, 55/00

U.S. Cl. 123—8

8 Claims



A piston for a rotary piston internal combustion engine especially of trochoidal construction, which is provided at one end wall with a gear serving to control the rotary movement of the piston by its engagement with a fixed pinion, whereby the gear is arranged at a flange of the piston equalizing the thermal expansions in the piston.

### 3,461,849 RADIAL/ROTARY—DUAL MODE—INTERNAL COMBUSTION ENGINE

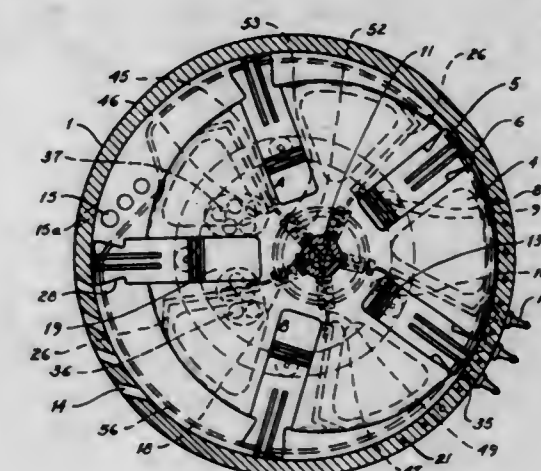
Donald A. Kelly, 58—06 69th Place, Maspeth, N.Y. 11378

Filed Jan. 9, 1968, Ser. No. 696,575

Int. Cl. F02b 57/04, 53/00

U.S. Cl. 123—16

6 Claims



A radial/rotary I.C. engine comprising multiple piston/vanes which are fitted with longitudinal through holes and centrifugal check valves. The object of the centrifugal check valves is to allow radial piston operation at low speed, high torque conditions, and rotary vane operation at high speeds.

A variation of the engine design would provide external control of a gate valve located at the base of each radial transfer bore which transfers air pressure to the rotor periphery to provide a thrust vector.

Dual mode operation for a radial/rotary I.C. engine is projected as a means of providing maximum speed and torque range versatility with optimum economy of operation.



### 3,461,850 INSTALLATION FOR REDUCING THE NOXIOUS EXHAUST GAS EMISSION OF INTERNAL COMBUSTION ENGINES

Kurt Oblander, Rommelshausen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart, Unterturkheim, Germany

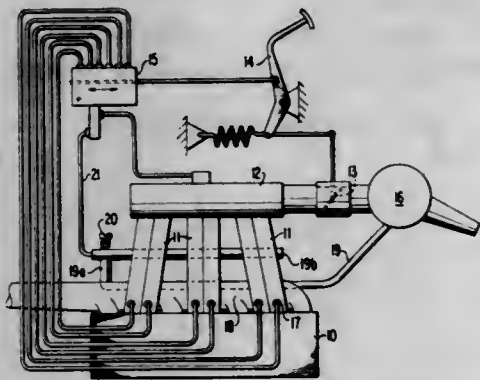
Filed Aug. 29, 1967, Ser. No. 664,011

Claims priority, application Germany, Sept. 2, 1966, D 51,002

Int. Cl. F02m 31/00, 39/00

U.S. Cl. 123—122

15 Claims

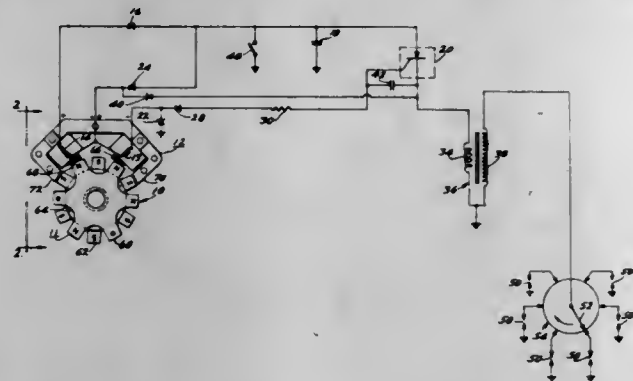


An installation for reducing the emission of harmful exhaust gases in internal combustion engines in which the idling air line which supplies combustion air to the cylinders in the idling speed range, by-passing the throttle valve controlled by the gas pedal, extends in direct proximity to the exhaust gas line so as to provide a pre-heating of the idling air by the exhaust gases. The exhaust gas line and the idling air line may be advantageously combined into a unitary structure in such a manner that additionally a zone is formed opposite the injection nozzles within each individual suction pipe connection which is heated by the exhaust gas line for improving the fuel preparation.

**3,461,851  
IGNITION SYSTEM AND MAGNETO THEREFOR**  
Joe Baron Stephens, Columbus, Miss., assignor to AMBAC Industries, Incorporated, Columbus, Miss., a corporation of New York  
Continuation of application Ser. No. 520,380, Jan. 13, 1966. This application Oct. 7, 1968, Ser. No. 781,664  
Int. Cl. F02p 1/08; H02k 11/00

U.S. Cl. 123—149

12 Claims



An ignition system for an engine provides an inductive means for generating sufficient potential to produce a spark at at least one spark gap ignition device. The ignition system includes a magneto having at least one winding, a charge storage means (e.g., capacitor) to which the output of the at least one winding is connected and a switch means for selectively connecting the charge storage means to the inductive means. The switch means has a control terminal which is responsive to a suitable signal to connect the charge storage means to the inductive means. The at least one winding of the magneto is connected to the charge storage means by unidirectional current flow means, which assures charging by current of one polarity. The control terminal of the switch means

is connected to the at least one magneto winding so that current of the same polarity flowing in the opposite direction from that reaching the charge storage means will reach the control terminal and cause the switch means to connect the charge storage means to the inductive means. Preferably two windings are provided on the magneto, one winding being of low impedance and the other of high impedance, connected to impart their cumulative effect to the storage means. The magneto includes a stator having at least a magnetic core with the at least one winding thereon and a rotor mounted for rotation relative to the stator. The rotor has permanently magnetized teeth alternating north and south poles around the circumference of the rotor, which teeth pass successively in close proximity to the magnetic core of the stator.

### 3,461,852 TRIGGER AND RELEASE MEANS FOR BOWS

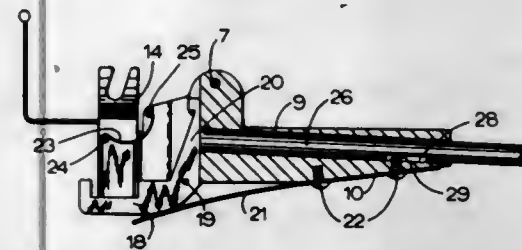
Lewis F. Brothers, 302 S. Centerville Road, Sturgis, Mich. 49091

Filed July 13, 1966, Ser. No. 564,939

Int. Cl. F41b 5/00, 5/02

U.S. Cl. 124—35

10 Claims



An archery device in which the bowstring and the arrow are releasably held by a support member so that the bowstring can be manually pulled in order to tension same. A latch is provided to releasably retain the support member in the holding position and the latch can be actuated by contraction of the user's hand in order to release the support member and free the arrow and the bowstring.

### 3,461,853 IGNITION MEANS FOR A COOKING APPARATUS OR THE LIKE

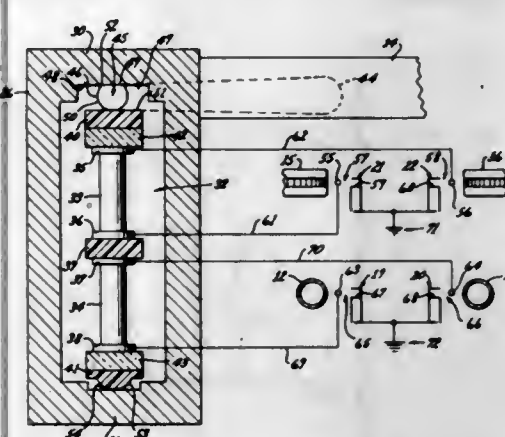
Fred Riehl, Greensburg, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Sept. 25, 1967, Ser. No. 670,310

Int. Cl. F24c 3/10; F23g 9/00, 3/00

U.S. Cl. 126—39

16 Claims



This disclosure relates to a method and apparatus for effecting automatic igniting of pilot burner means of a cooking apparatus or the like each time the oven door thereof is opened and closed to insure that not only will the pilot burner means be lit, but also to provide a selective actuation of the ignition means when unlit pilot burner means are found, the movement of the oven door

altering the stresses in piezoelectric crystal means that will cause ignition sparking at the pilot burner means.

### 3,461,854 WATER HEATING SYSTEM

Henry Tomi, Burlington, and Count Lee Zoeckler, Stratford, Ontario, Canada, assignors to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Filed Jan. 8, 1968, Ser. No. 696,412

Int. Cl. F24h 1/10

U.S. Cl. 126—351

6 Claims



The invention relates to a water heating system for commercial or industrial establishments. A hot water storage tank and a water heater are connected by piping in a first closed flow system, while the water storage tank and a second water heater are connected by piping in a second closed flow system and a pump is located within each closed system. Two thermostats are located within the hot water storage tank at different levels and each thermostat is operably connected to the heater and pump of one of the closed systems. During off-peak periods when small volumes of water are drawn from the tank, the lower thermostat operates the water heater and pump of the corresponding closed system to supply heated water to the storage tank. During peak periods when larger volumes of water are being drawn from the tank both thermostats operate to actuate the water heaters and pumps of both closed systems so that both systems act to supply heated water to the storage tank.

### 3,461,855 "G" CONDITIONING SUIT

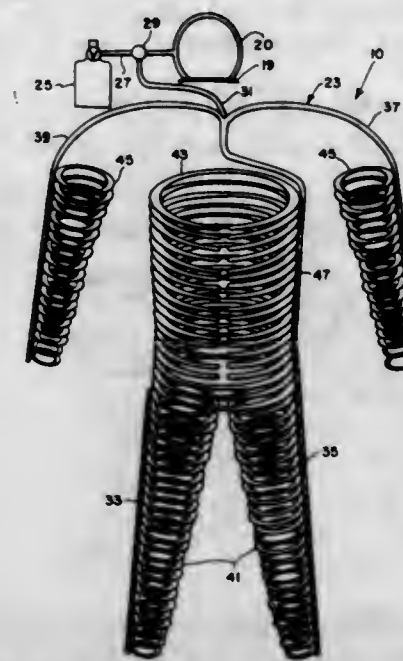
Clinton Eugene Brown, Silver Spring, Md., and Ralph W. Stone, Jr., Newport News, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Feb. 2, 1965, Ser. No. 429,932

Int. Cl. A61b 19/00

U.S. Cl. 128—1

15 Claims



The "G" conditioning suit is a device operative on the cardiovascular system of a body to make it function as a plate.

865 O.G.—30

it normally does in a gravity environment. The suit structure and associated apparatus is designed such that a decreasing pressure is applied from the area of the head to the feet thus controlling the flow of blood in a body to accomplish the result gravity has on the cardiovascular system.

### 3,461,856 OXIMETERS

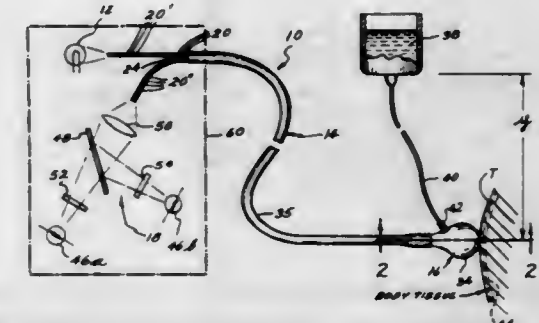
Michael L. Polanyi, Webster, Mass., assignor, by mesne assignments, to American Optical Corporation, Southbridge, Mass., a corporation of Delaware

Filed Oct. 23, 1965, Ser. No. 503,484

Int. Cl. A61b 5/10

U.S. Cl. 128—2

15 Claims



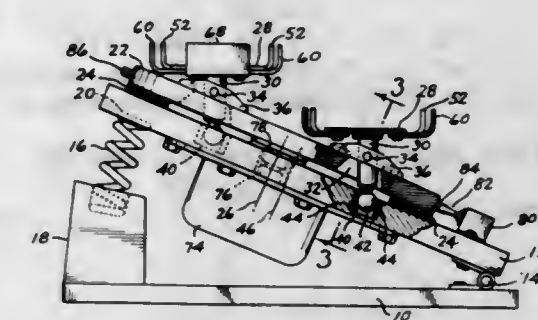
A tissue oximeter probe comprising a long and slender fiber optical light conductor having a bulbous membrane of pliable transparent material at one end. The membrane is filled with a transparent fluid and placed against body tissue to be examined. Light directed by afferent fibers of the light conductor passes through the fluid and membrane into the tissue wherein portions thereof are diffusely reflected back through the membrane and fluid into efferent fibers of the light conductor to instrumentation for determining therefrom the oxygen saturation of blood in the tissue.

### 3,461,857 SKI TRAINING AND EXERCISING DEVICE

Robert A. Poulin, 195 SW. 88th Ave., Portland, Ore. 97225  
Filed July 11, 1967, Ser. No. 652,585  
Int. Cl. A61b 1/02

U.S. Cl. 128—25

9 Claims



A turntable is mounted for rotation on an inclined support plate hinged at its lower end to a base plate and supported at its upper end by coil springs interposed between the base and support plates. The turntable may be rotated by an electric motor. A pair of foot supports are supported above the turntable by rods secured pivotally to the turntable, and the lower ends of the rods extend through the turntable and engage a circular guide track on the support plate. The center of the track is offset from the center of the turntable in the downward direction of the inclined support plate such that the foot supports are horizontal when the rod pivots extend transversely of the support plate.



### 3,461,858 CARDIOPULMONARY RESUSCITATION APPARATUS

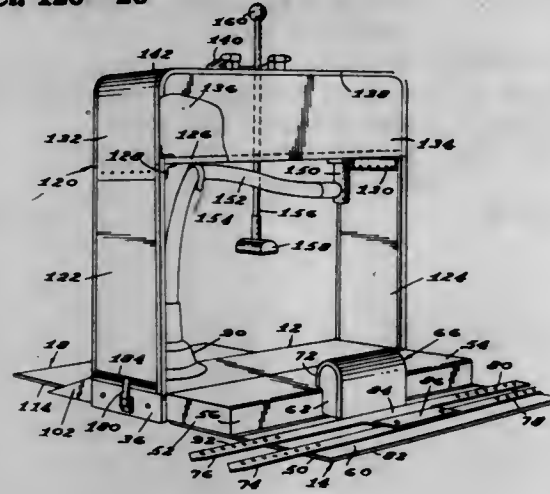
Irving Michelson, New Rochelle, N.Y., assignor to American Safety Equipment Corporation, New York, N.Y., a corporation of New York

Filed May 13, 1966, Ser. No. 549,847

Int. Cl. A61h 31/00

U.S. Cl. 128—28

9 Claims



A three-section base for supporting a patient in a supine position for application of cardiopulmonary resuscitation emergency procedures. A U-shaped stand mounts detachably on the center section of the base and the sections of the base are hinged together so that they may be folded up to form with the stand a suitcase-like carrying case. The base has a rigid headrest disposed at a lower elevation than the main platform of the base, and a rigid neck rest is located between the headrest and platform and at a higher elevation than the platform. Head straps are secured to the headrest to pull down and hold the head of the patient securely against the headrest, thereby supporting the neck of the patient in an upwardly arched position and thus moving the tongue and mandible of the patient upwardly and opening the air passage in the back of the throat of the patient. Cardiopulmonary resuscitation equipment including a chest compressing plunger is carried in a compartment provided at the upper end of the stand so that heart and lung resuscitation procedures may be applied simultaneously, the base and stand maintaining the equipment and patient in proper position for both procedures.

### 3,461,859 HAND OPERATED VIBRATOR

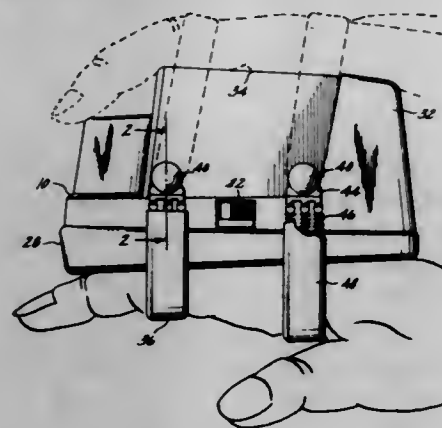
George A. Fortnam, Newington, Conn., assignor to General Electric Company, a corporation of New York

Filed May 8, 1967, Ser. No. 636,789

Int. Cl. A61h 1/00

U.S. Cl. 128—36

7 Claims



A hand operated vibrator with an improved strap attachment for dual use of the vibrator. A pair of straps

are pivotally attached to the vibrator housing so that they may hold the operator's hand to either the top or bottom of the vibrator housing.

### 3,461,860 PULMONARY VENTILATION SYSTEM AND COMBINATION CARDIAC COMPRESSOR AND VENTILATION SYSTEM

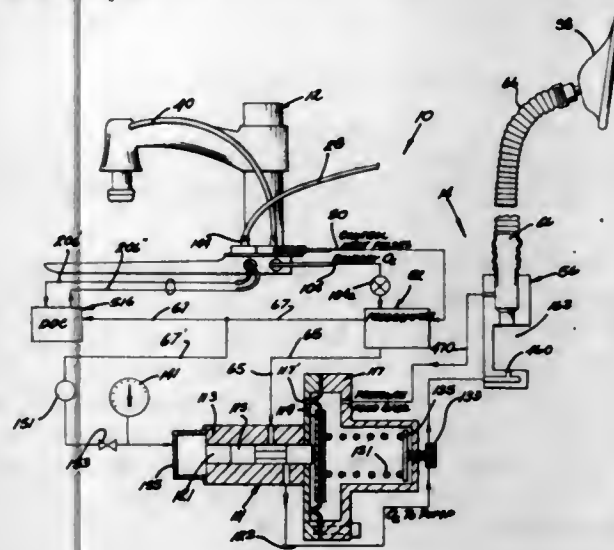
Clare E. Barkalow, Comstock Park, Mich., assignor to Michigan Instruments, Inc., Grand Rapids, Mich., a corporation of Michigan

Filed Apr. 17, 1967, Ser. No. 631,317

Int. Cl. A61h 31/00, 31/02; A62b 7/00; A61m 16/00

U.S. Cl. 128—53

14 Claims



A unique pulmonary ventilation system, preferably in combination with a cardiac compressor, having an automatically regulated, variable ventilation gas flow rate, regulated in response to feedback pressure from the patient's pulmonary system. The oxygen enriched air output flow rate to the patient from a high volume, low pressure venturi pump is automatically regulated over a predetermined time period by a variable rate, flow control valve that regulates flow of oxygen to the venturi pump, in response to varying feedback pressure from the patient's pulmonary system to the flow control valve.

### 3,461,861 CARDIAC COMPRESSOR AND VENTILATION MEANS

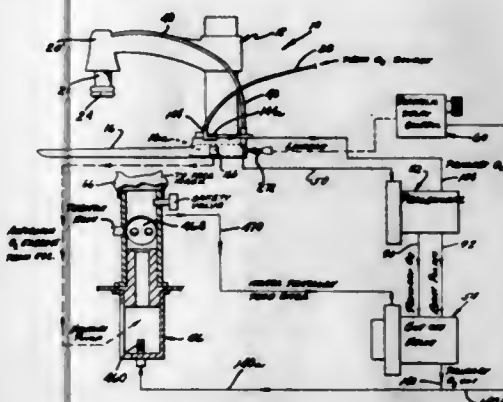
Clare E. Barkalow, Comstock Park, and Elden R. Folkerth, Sparta, Mich., assignors to Michigan Instruments, Inc., Grand Rapids, Mich., a corporation of Michigan

Continuation-in-part of application Ser. No. 409,634, Nov. 9, 1964. This application Oct. 5, 1966, Ser. No. 584,402

Int. Cl. A61h 7/00

U.S. Cl. 128—53

17 Claims



A combined cardiopulmonary apparatus having a pneumatically operable, reciprocable, cardiac compressor and a lung ventilation means. A pneumatically operated control system operates the cardiac compressor and the venti-

lation system such that the ventilation cycle is synchronized with the cardiac compression cycle, although the ventilation cycle is slower than the cardiac compression cycle. Means are provided to operate the cardiac compressor or the ventilation system in the absence of the other. These means are so constructed so as to permit the discontinuance of one of the cardiac compressor or the ventilation system for a short period of time, and commencing the stopped unit automatically in the same synchronized relationship. Means are further provided to delay the cardiac compression cycle in the event of a restricted passage in the patient's ventilation system. Means are also provided to control the gaseous flow rate and gaseous pressure to the patient's lungs.

ing through such offset apertures and the intervening tube section a rigid tube having an internal cross section greater than the external cross section of the unstressed tube and having an end beveled to facilitate threading of such tube through the rubber tube apertures, and threading a flexible tube stretch through the rigid tube.

### 3,461,864 TRACTION DEVICE

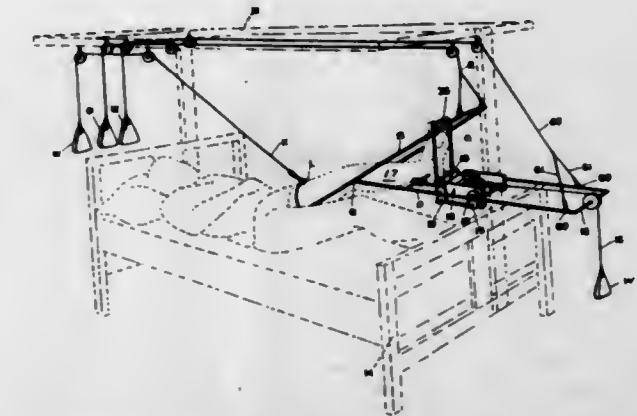
Raymond L. Coss, 3503 Stoughton Road, Erie, Pa. 16506

Filed Aug. 1, 1966, Ser. No. 569,130

Int. Cl. A61f 5/04

U.S. Cl. 128—85

17 Claims



A traction device made up of two spaced track members that are adapted to be supported in a generally horizontal member, a Thomas splint adapted to receive a thigh of a person between its spaced legs, the one end of the tracks being attached to an intermediate part of the Thomas splint, a car-like member supported on the tracks and a Steinmann pin attached to the car, a tension member supporting the distal ends of the tracks and supporting the distal ends of the Thomas splint and a tension member connected to the car and to the distal end of the tracks.

### 3,461,865 LOW COST RESUSCITATOR

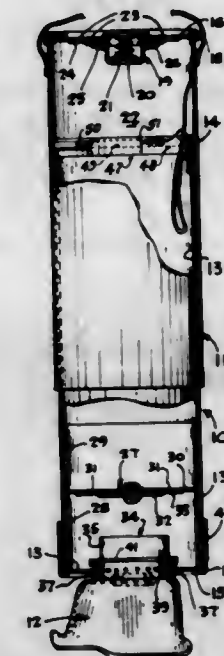
Alfred F. Chouinard, Chicago, and Allan E. Beeler, Bensenville, Ill., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware

Filed July 28, 1966, Ser. No. 568,446

Int. Cl. A62b 7/00

U.S. Cl. 128—145.7

7 Claims



Apparatus having a face piece connected to telescoping tubular sections which force air under pressure into the

### 3,461,862 HYDRO-MASSAGE UNIT

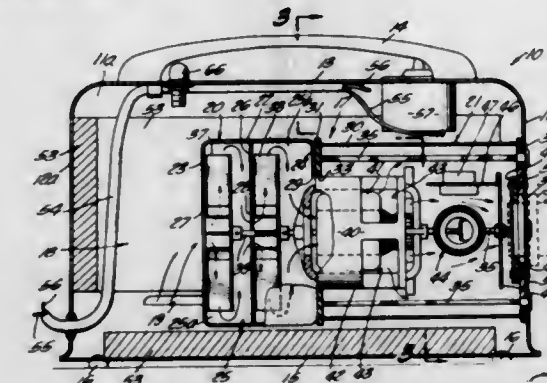
James M. Kemper, Hollywood, Calif., assignor to Lyn-Bar Enterprises, Sherman Oaks, Calif., a corporation of California

Filed Sept. 26, 1966, Ser. No. 582,102

Int. Cl. A61h 9/00

U.S. Cl. 128—66

4 Claims



A hydro-massage unit having a housing with an ambient air inlet and an air outlet hose connection, the interior of the housing being separated into an air compressing compartment, a motor compartment, and an air heating compartment which are connected for sequential air flow from the housing inlet to the outlet hose connection, said compartments respectively containing air moving elements, a motor having a driving connection with the air moving elements and a spiraled heating element extending transversely across the air flow stream in the air heating compartment, and including a control switching circuit for selectively connecting the heating element in series with the motor for one operating speed thereof, and in parallel with the motor for a different operating speed.

### 3,461,863 TURGIDITY-MAINTAINING TOURNIQUET

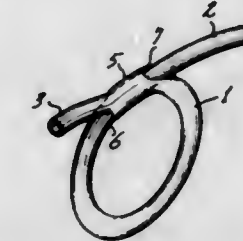
Glen R. Sullinger, Rte. 3, Box 286, Arlington, Wash. 98223

Filed Feb. 23, 1967, Ser. No. 618,148

Int. Cl. A61f 5/00, 15/00; A61b 17/12

U.S. Cl. 128—79

5 Claims



A tourniquet in which a bight is maintained in a tough and highly stretchable rubber tube by passing a stretch of such tube through apertures in a connected tube stretch located in opposite sides of the tube and spaced lengthwise of the tube. The bight can be constructed by insert-



face piece when the tubular sections are telescoped to a lesser extent. Valve means between the face piece and the telescoping sections expose exhaust ports to the atmosphere when the tubular sections are telescoped to a greater extent.

### 3,461,866 MANUALLY OPERATED ARTIFICIAL RESPIRATOR

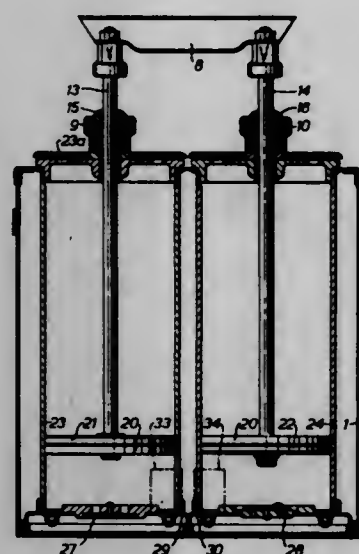
David Ritchie, Northampton, England, assignor to Alan Westley and Beatrice Rose Westley, both of Northampton, England

Filed Feb. 1, 1966, Ser. No. 524,006

Int. Cl. A62b 7/00

U.S. Cl. 128—145.7

5 Claims



Artificial respiration apparatus comprising a pair of pumping elements each of which comprises a cylinder containing a piston connected by a piston rod to a common handle for simultaneous reciprocal operation, each cylinder having a pipe connection leading to a common facepiece, one pumping element being operable on one stroke of said handle to induce inhalation in a person to whom the facepiece is applied and the other pumping element being operable on the other stroke of said handle to induce exhalation, valves being provided to prevent excess positive and/or negative pressures in the apparatus.

### 3,461,867 NEEDLELESS INJECTOR

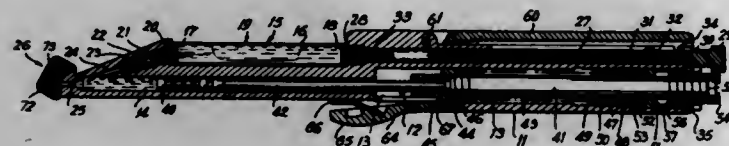
Arthur L. Zimmet, New York, N.Y., and Richard H. Hubbard, Clifton Forge, Va., assignors to Mizzy, Inc., Clifton Forge, Va., a corporation of New York

Filed Mar. 14, 1966, Ser. No. 534,187

Int. Cl. A61m 31/00

U.S. Cl. 128—173

3 Claims



A needleless injector, and more particularly an improved device of the type described, which includes an elongated body having a front and rear portion with the front portion having an elongated recess within the confines thereof to receive an ampule that defines a liquid reservoir. The reservoir is in communication with a pres-

sure chamber which is charged by the retraction of a piston associated therewith and which is discharged upon rapid advance of such piston, through a discharge passage-way at the end of the front portion which forms an obtuse angle with respect to said body.

### 3,461,868 MEDICAMENT INJECTION DEVICE

William E. Palich, 12321 Collier Court, NE., Albuquerque, N. Mex. 87112

Filed Apr. 1, 1966, Ser. No. 539,382

Int. Cl. A61m 5/00

U.S. Cl. 128—214

1 Claim



A medicament injection device comprising an elastic translucent receptacle having a check valve controlled delivery means at one end and a check valve controlled vent means at the other end. The check valve means and the receptacle are formed as a one-piece construction. A flexible and collapsible delivery tube, which functions as a pump when collapsed, is attached at one of its ends to the check valve controlled delivery means and has a tapered tip member at its other end for receiving a correspondingly tapered hypodermic needle or cap. The vent means valve body is also externally tapered and provided with a cooperating tapered cap.

### 3,461,869 PERMANENT SKIN EXIT DEVICE

Thomas Sewell Hargest, Charleston, S.C., assignor to Bio-Medical Systems, Inc., Danbury, Conn.

Filed Apr. 5, 1966, Ser. No. 540,398

Int. Cl. A61m 5/00

U.S. Cl. 128—214

6 Claims



A body with fluid passage means has a fabric-like coat to stimulate tissue growth for anchoring the lower body portion in the tissue with its entrance and exit ports disposed for fluid transfer with cannulae outside and within the tissue. A removable shunt can be telescopically re-

ceived in the fluid passage means when the body is not connected for fluid transfer.

3,461,870

### DOUCHE ATTACHMENT FOR CONNECTION WITH A SHOWER HAVING ANTISIPHON AND PRES- SURE CONTROL MEANS

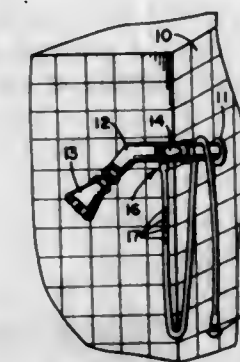
Cornelius Van Linge, 4165 Marascal Ave., Los Angeles, Calif. 90066

Continuation-in-part of application Ser. No. 448,360, Apr. 15, 1965, which is a continuation-in-part of application Ser. No. 430,101, Feb. 3, 1965. This application Mar. 6, 1967, Ser. No. 620,933

Int. Cl. A61m 7/02

U.S. Cl. 128—229

11 Claims



A tube with a douching instrument or nozzle and associated branch valve for connection to a shower head outlet to enable douching operations to be carried out in the shower. The tube itself includes side openings to provide an antisiphon, reduce pressure at the nozzle, and enable monitoring of water temperature by testing water passing from the openings. The branch valve is insertable between the shower head outlet and shower head itself so that it can be removed if desired without requiring pipe modifications.

3,461,871

### DISPOSABLE DIAPER

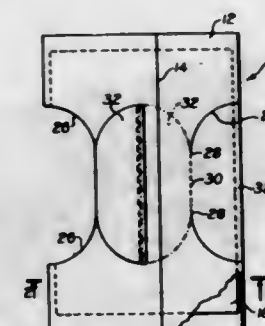
Philip H. Foote, Brielle, N.J., assignor to Blessings, Inc., Bound Brook, N.J., a corporation of Delaware

Filed July 25, 1966, Ser. No. 567,711

Int. Cl. A61f 5/44, 5/48

U.S. Cl. 128—284

8 Claims



A disposable diaper having a flattened tube as an outer cover and an absorbent pad originally extending across most of the width of the diaper. Cuts extending inward from both sides through the cover and the pad form panels which are folded over to make the absorbent filler of double thickness at the mid-section of the diaper.

### 3,461,872 DIAPER RETAINING GARMENT

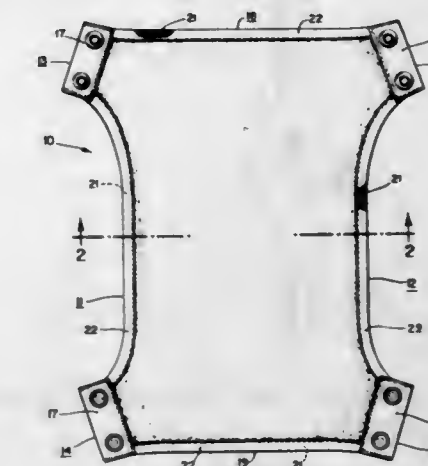
Albert L. McConnell, Chester, Alexander Pochuyko, Glen Mills, and Whitney R. Adams, Wilmington, Del., assignors to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed May 17, 1966, Ser. No. 550,764

Int. Cl. A61f 5/48

U.S. Cl. 128—287

4 Claims



A diaper supporting and retaining garment of polymeric cellular material such as open-celled or reticulated polyurethane foam, and laminates of such material with other sheet materials.

### 3,461,873 CATAMENIAL APPLIANCE WITH DISPOSABLE SUPPORTS

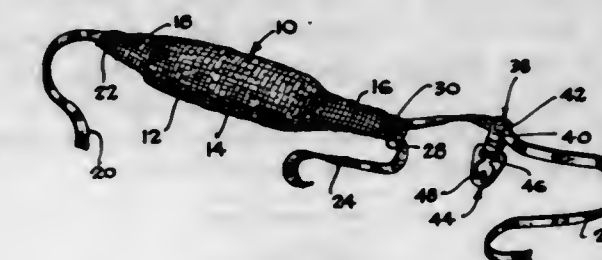
Guillermo Torres, 5423 S. Hamlin Ave., Chicago, Ill. 60632

Filed Sept. 2, 1966, Ser. No. 577,006

Int. Cl. A61f 13/16

U.S. Cl. 128—289

4 Claims



A catamenial appliance of the pad type with attached strap supports at the opposite ends of the pad for securing the appliance to the body of the user, said straps being disposable with the pad.

### 3,461,874 ELECTRIC CAUTERY

Miguel Martinez, 6006 Hunt Ridge Road, Baltimore, Md. 21210

Filed Aug. 10, 1966, Ser. No. 571,606

Int. Cl. A61b 17/36

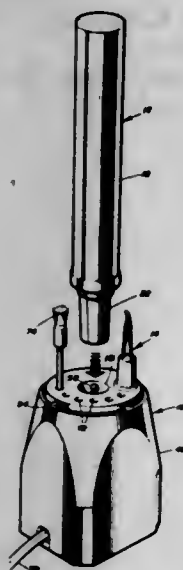
U.S. Cl. 128—303.17

2 Claims

A hot wire cautery which is cordless having a tip separable from the handle which contains a storage battery. The jack arrangement used for this is also employed as a holder mount and a battery recharging connection for the handle when the latter is inserted into a charger stand. A light accessory comprising a sub-miniature incandescent lamp on a lead can be plugged into the handle for diagnostic use. A mercury switch in the handle



permits control of the current merely by changing the attitude of the instrument. Where this form of control is



by the integral hinge forming inside legs of the member. The free ends of the outside legs carry means for locking the ends together in a clamping position. Each outside leg is of substantially T-shape in cross section and has an integral flange portion extending inwardly of the W towards the flange portion of the other outside leg.

### 3,461,877 TRACHEOSTOMY TUBE CONSTRUCTION

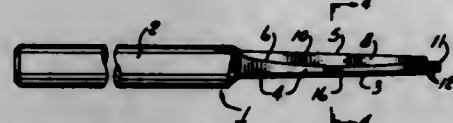
Ernst Trier Morch, 300 N. State St.,  
Chicago, Ill. 60610  
Filed Mar. 2, 1966, Ser. No. 531,149  
Int. Cl. A61m 16/00; A62b 9/04; F16l 37/00  
U.S. Cl. 128—351 4 Claims

A tracheostomy tube assembly including a T-shaped swivel fitting between a tracheostomy tube insertable in the trachea of a patient and an air tube leading to a respirator. The respective tubes are threaded at their ends and receive, or are received by, openings in the fitting. Axial engagement between the protruding threads of each tube and complementary threads at the openings of the

not desired, a concealed reed switch and external magnetic actuator is provided.

### 3,461,875 ROTARY LATERAL OSTIAL CUTTING BIT

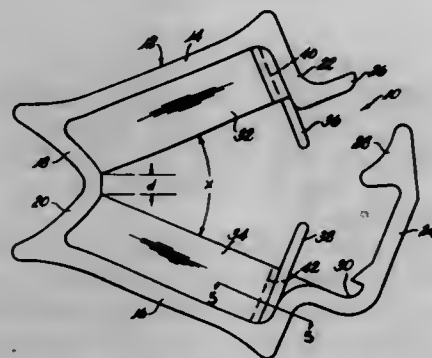
Robert M. Hall, 103 Hillcrest Road, Fox Chapel,  
Pittsburgh, Pa. 15238  
Filed Apr. 27, 1966, Ser. No. 545,634  
Int. Cl. A61b 17/16 9 Claims



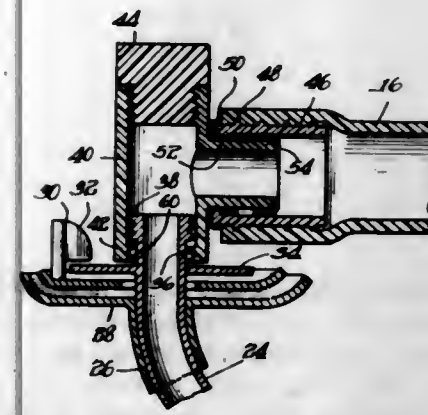
A rotary ostial saw cutting bit having a shank and a body provided with a straight longitudinally tapered flute having an axially radial flat face and a tapered flat face both of which are intersected by a coextensive curved face normal to each of said flat faces, a second tapered flat face intersecting longitudinally said axially radial flat face to form a straight tapered cutting blade, the other of said edges of said first and second tapered flat faces joined by a tapered arcuate surface, and a bearing surface beyond the tip of said cutting blade.

### 3,461,876 TUBING CLAMP

Theodore A. Miller, Jr., Ashland, Ohio, assignor to  
Abbott Laboratories, North Chicago, Ill., a corporation  
of Illinois  
Filed Sept. 26, 1966, Ser. No. 581,930  
Int. Cl. A61b 17/02, 17/06, 17/08 6 Claims



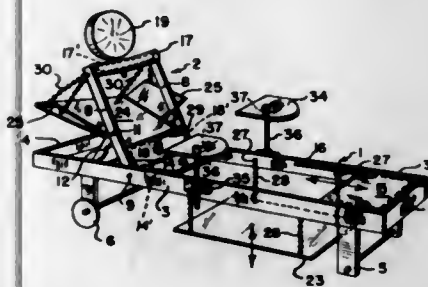
A clamp comprising a generally W-shaped member is provided and is formed from resilient plastic material. One end of each of the outside legs of the W is connected



fitting prevents axial separation of the parts in the absence of simultaneous relative rotation thereof. Conversely, the parts are freely rotatable without becoming separated unless such rotation is accompanied by the application of axially-directed forces.

### 3,461,878 SUN CHAIR

Nancy L. Southard, 40 E. Brookside Drive,  
Larchmont, N.Y. 10538  
Filed Nov. 18, 1965, Ser. No. 508,480  
Int. Cl. A61h 33/06; A47c 1/035 12 Claims



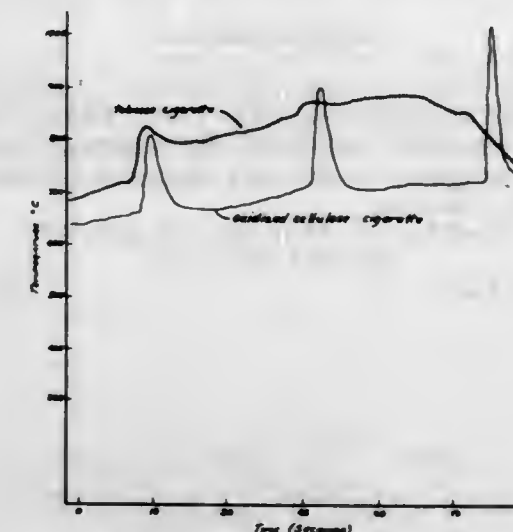
A sun chair comprising a framework having means for supporting an individual thereon, open spaces within the framework aligned with certain portions of a person's body, and reflector means connected to the framework and movable between a first position disposed within the openings of the framework and a second position in alignment with the openings but spaced therefrom for

reflecting the sun's rays against the exposed portions of the person on the chair.

### 3,461,879 OXIDIZED CELLULOSE TOBACCO SUBSTITUTE COMPOSITION

Earl Vance Kirkland, Wappingers Falls, N.Y., assignor  
to Celanese Corporation, New York, N.Y., a corporation  
of Delaware  
Continuation of application Ser. No. 550,059, May 13,  
1966, which is a continuation of application Ser. No.  
462,319, June 8, 1965, which in turn is a continuation-  
in-part of application Ser. No. 9,761, Feb. 19, 1960.  
This application June 30, 1967, Ser. No. 650,258  
Int. Cl. A24b 3/14 3 Claims

U.S. Cl. 131—2

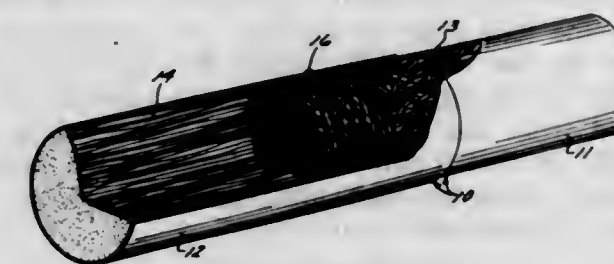


A tobacco substitute material made principally from oxidized cellulose gauze or pulp which may, if desired, be blended with other form of cellulose, polymers or tobacco. The oxidized cellulose is combined with minor amounts of a hydrated metal compound and manifests reduced smoke condensate phenols, as well as some of the major molecular components reported as harmful in conventional tobacco smoke.

### 3,461,880 FILTER CIGARETTE

Thomas A. Stubblefield, P.O. Box 748,  
Kings Beach, Calif. 95719  
Filed Aug. 2, 1967, Ser. No. 657,842  
Int. Cl. A24d 1/04; A24c 5/50, 5/52 17 Claims

U.S. Cl. 131—9



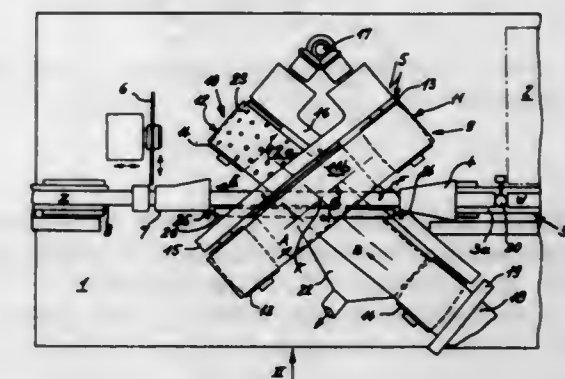
A filter cigarette wherein the filter element comprises a very densely compacted mass of metal fibers, such as steel fibers. The compacted fibers are of small diameters, and are arranged in mutually crossing relationships, to thus provide great numbers of openings for the smoke. In accordance with one embodiment, air-inlet holes are provided through the wrapper of the cigarette in order to aid in cooling the filter and thus enhance the smoke-condensing operation thereof.

### 3,461,881 MACHINE FOR WRAPPING CIGAR FILLERS OR THE LIKE

Johannes Mielke and Rudolf George, Hamburg, Germany,  
assignors to Hauni-Werke Koerke Koerber & Co. KG.,  
Hamburg-Bergedorf, Germany  
Filed Nov. 23, 1966, Ser. No. 596,497  
Claims priority, application Germany, Dec. 6, 1965,  
H 57,876  
Int. Cl. A24c 1/26 10 Claims

U.S. Cl. 131—59

10 Claims



A cigar wrapping machine wherein successive cigar fillers are fed lengthwise and are simultaneously rotated about their axes. The wrapper is fed obliquely from one side of the path for the fillers and is convoluted in a spiral around successive fillers to thereby exert upon the fillers a pull which tends to displace the fillers to the one side of the path. A roller-shaped barrier is provided to hold the fillers against such sidewise displacement.

### 3,461,882 METHOD OF FILTERING TOBACCO SMOKE

Martin E. Epstein, Charlotte, N.C., and Saunders E. Jamison, Summit, N.J., assignors to Celanese Corporation,  
New York, N.Y., a corporation of Delaware  
No Drawing. Filed May 8, 1967, Ser. No. 636,632  
Int. Cl. B01d 35/06; A24f 7/04, 25/00 1 Claim

U.S. Cl. 131—262

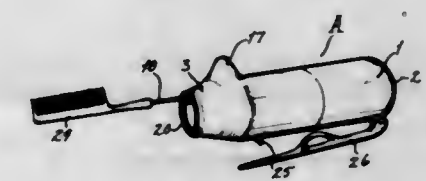
A method of filtering tobacco smoke is described in which a filter is interposed in the smoke stream which comprises two fibers.

### 3,461,883 POWER COMB

Peter Maris, St. Louis County, Mo.  
(750 Harvard Ave., St. Louis, Mo. 63130)  
Filed Aug. 4, 1966, Ser. No. 570,308  
Int. Cl. A45d 24/14 8 Claims

U.S. Cl. 132—11

8 Claims



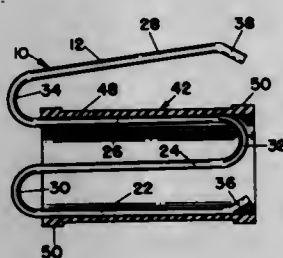
A power hair comb apparatus, having a casing, a prime mover having a drive shaft contained therein; the casing has an annular opening through which the shaft projects in close proximity to the periphery of the annular opening, being supported there by a ring-like member. In another embodiment, the comb and shaft project through a lower front end wall for motion in a vertical plane.



**3,461,884**  
**HAIR ROLLER BRAKE**  
 Joseph Augusta, 22 Elizabeth St.,  
 River Edge, N.J. 07661  
 Filed Sept. 20, 1967, Ser. No. 669,017  
 Int. Cl. A45d 2/14, 2/28

U.S. Cl. 132—40

7 Claims

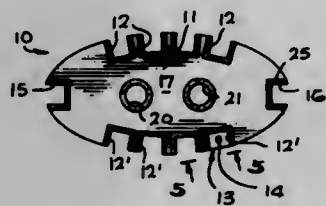


A device in the form of a unitary W-shaped body of resilient material in which at least two of the legs of the W-shape are laterally spaced to fit within a hollow hair roller with resilient displacement toward one another so that the two legs will contact the inside of the roller and a resilient biasing force will secure the device within the roller while a further leg will be spaced from the outside of the roller to engage nearby hair or another roller to preclude rolling of the roller within which the device is placed.

**3,461,885**  
**COSMETIC FINGERNAIL MASK ASSEMBLY**  
 Howard W. Coveney, Los Angeles, Calif.  
 (19336 Santa Rita, Tarzana, Calif. 91356)  
 Filed May 9, 1967, Ser. No. 637,267  
 Int. Cl. A45d 29/11, 29/18

U.S. Cl. 132—88.5

10 Claims



The cosmetic fingernail mask assembly disclosed herein provides a base member having a plurality of receptacles disposed about the perimeter thereof for insertably receiving individual masks or templates. Each mask is formed with a preformed aperture shaped to correspond to the user's particular fingernail contour or shape so that only the nail portion of the finger is exposed from one side of the mask towards which a relatively narrow spray of a cosmetic preparation is directed. A central portion of the base member is formed with a pair of openings adapted to receive the thumbs of the user's hand so that the entire assembly can be hand-held. The central openings may include receptacles for insertably receiving selected masks therein.

**3,461,886**  
**TOOL FOR HANDLING FALSE EYELASHES AND THE LIKE**  
 Robert Gordon Bau, North Hollywood, Calif., assignor to Warner Bros. Cosmetics, Inc., a corporation of Delaware  
 Filed Mar. 24, 1967, Ser. No. 625,691  
 Int. Cl. A45d 8/30

U.S. Cl. 132—88.7

7 Claims

A tool formed of a rod-like handle which at one end carries a plurality of parallel, elongated blades mounted

on one surface. The blades are of such thinness and spacing that on pressing the tool against a false eyelash, the blades enter between the strands and frictionally hold

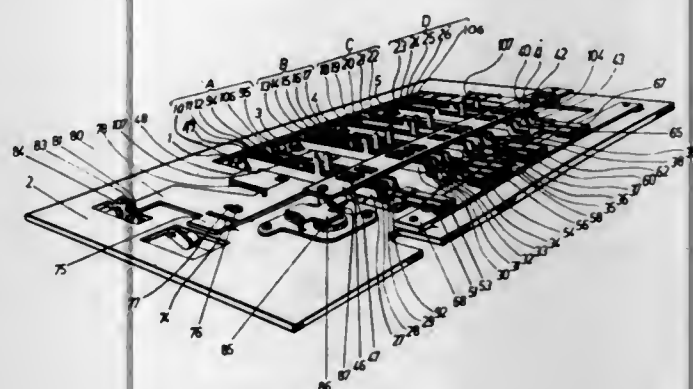


them, thereby to permit the lash to be lifted and carried to a position and held while it is being attached to the eyelid.

**3,461,887**  
**REGISTER CONTROLLED COIN DISPENSER**  
 Gosta R. Englund and Rolf B. Andren, Stockholm, Sweden, assignors to Svenska Dataregister AB, a corporation of Sweden  
 Filed Nov. 9, 1967, Ser. No. 681,789  
 Int. Cl. G07d 1/02

U.S. Cl. 133—2

20 Claims



A coin dispensing mechanism for use with a cash register or similar machine for dispensing the least amount of coins required for any given sum. The units, tens and hundreds orders of the register actuate respective switch mechanisms which are connected to coin dispensers. The units and hundreds orders each actuate one set of switches whereas the tens order actuates either one or two sets of switches depending on whether the amount in the units order is greater or less than a predesignated amount. When the amount in the units order is greater than the predesignated amount and the appropriate switch mechanism in the tens order is actuated, an amount will be dispensed by the tens order which is a preset amount above that in the units order. This extra amount will be subtracted from the number of units dispensed by the units order so that a coin can be dispensed by the tens order which includes both units and tens orders, for example, a 25 unit coin.

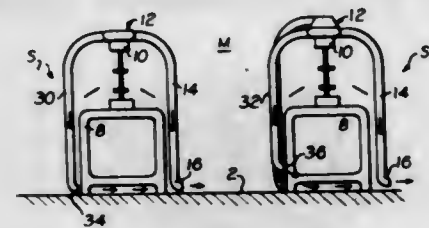
**3,461,888**  
**FLOOR CLEANING OF TEXTILE MILLS**  
 Hans W. Ferri, Uster, Switzerland, assignor to Luwa Ltd., Zurich, Switzerland, a corporation of Switzerland  
 Filed June 2, 1966, Ser. No. 555,650  
 Int. Cl. B08b 5/04; A47I 5/38, 11/00

U.S. Cl. 134—21

8 Claims

Method and means for cleaning the floors of textile mills or the like, having traveling overhead blowers with ducts extending from the blower to the mill floor to direct

an airstream over the floor with a blocking barrier other outdoor areas, consisting of flexible expansive supported in the airstream path, and a suction duct mov-

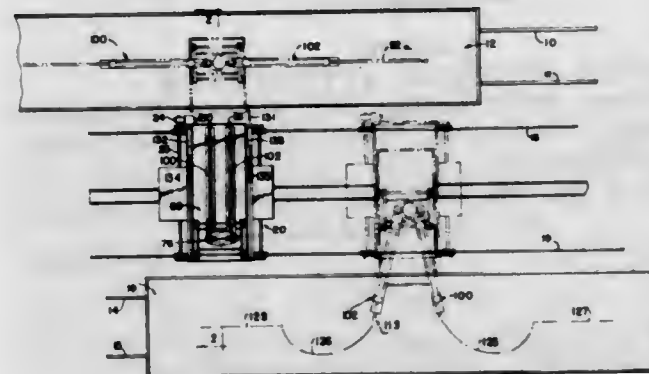


able over the barrier to remove foreign matter therefrom.

**3,461,889**  
**APPARATUS FOR WASHING RAILWAY BOXCAR INTERIORS**  
 Wallace J. Saxonmeyer, Park Forest, Ill., assignor to Whiting Corporation, a corporation of Illinois  
 Filed May 23, 1967, Ser. No. 640,625  
 Int. Cl. B60s 3/00; B08b 3/00, 9/00

U.S. Cl. 134—43

11 Claims



The apparatus includes a trolley mounted for movement between two track sections. The trolley supports a base for rotation about a vertical axis. This base mounts a platform for reciprocal movement relative thereto. The trolley and base are positioned such that one end of the platform is extended into the boxcar through the open side door thereof. A carriage is mounted on the platform for reciprocal movement relative thereto along a path parallel with the direction of movement of the platform relative to the base. The carriage mounts a pair of booms for endwise movement into the boxcar through the open side door thereof along with movement of the carriage. Cam means causes spreading of the booms during movement of the carriage into the boxcar such that when the carriage is fully inserted the booms are extended oppositely of each other in general alignment with the longitudinal centerline of the car. Each boom carries an extension mounting a nozzle on the end thereof.

## ERRATA

For Class 134—155 see:  
 Patent No. 3,462,301

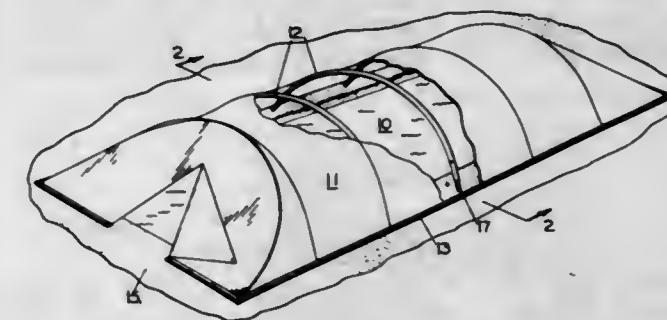
For Class 134—169 see:  
 Patent No. 3,462,302

**3,461,890**  
**FLEXIBLY SUPPORTED ENCLOSURE FOR OUTDOOR AREA**  
 Burton J. Goodrich, 9535 SW Lancaster Road, Portland, Oreg. 97219  
 Filed Nov. 24, 1967, Ser. No. 685,507  
 Int. Cl. E04b 1/347; A45f 1/16; E04h 3/16

U.S. Cl. 135—1

2 Claims

A tent-like structure for enclosing swimming pools and

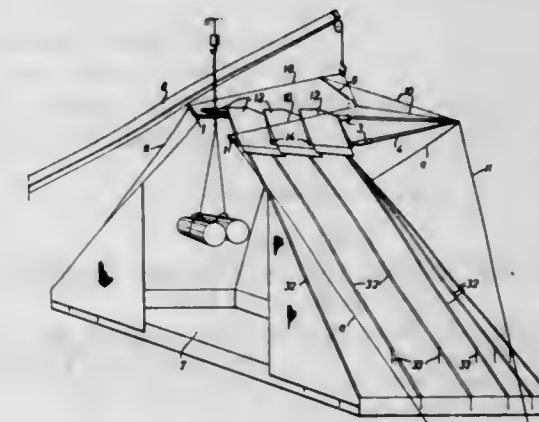


ports, restrained and contained by a pliant sheet covering material, especially constructed and arranged.

**3,461,891**  
**RAIN COVER FOR HATCHWAYS AND THE LIKE**  
 Gote Einar Erling Blomberg, Vastergatan 3A, Goteborg C, Sweden  
 Filed Apr. 10, 1967, Ser. No. 629,523  
 Claims priority, application Sweden, Apr. 13, 1966, 5,001/66  
 Int. Cl. B63b 27/00, 19/00

U.S. Cl. 135—6

5 Claims



The present rain covers are for protecting a loading area such as a ship's hatchway, railroad cars, or the like. The rain cover has a frame with an elongated yoke which is positioned substantially horizontal during the use of the rain cover and an awning supported by said frame provided at its upper side with an elongated opening which is open at one end for the insertion therein of a load line, said yoke has legs defining said opening, rods yieldably connected to said yoke legs, a plurality of flaps distributed along said elongated opening, carried by said rods and displaceable under the influence of the load line by the yielding of said rods for permitting the load line to pass and as soon as the load line has passed a flap, said flap is returned to its initial position.

**3,461,892**  
**FLUID CONTROLS PARTICULARLY FOR TURBINE ENGINES**

Willis A. Boothe and Carl G. Ringwall, Scotia, and Lonny R. Kelley, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York  
 Continuation of application Ser. No. 457,099, May 19, 1965. This application July 25, 1968, Ser. No. 751,005  
 Int. Cl. F02c 9/08; F15c 1/08

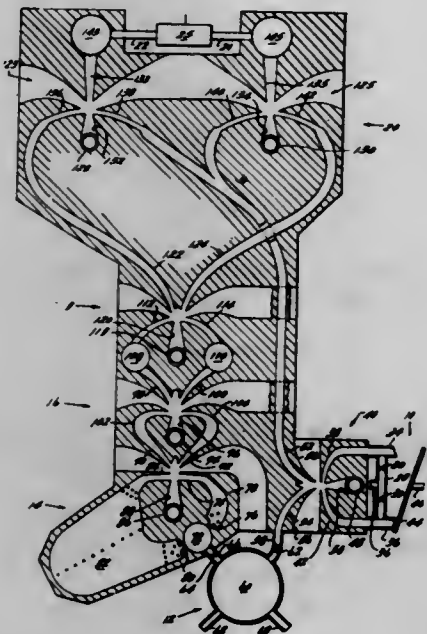
U.S. Cl. 137—18

6 Claims

The disclosure shows a speed control for a gas turbine engine wherein a fluidic speed signal is generated proportionate to engine rotor speed. This speed signal is employed in combination with a resonator to generate a reference signal. The phase relationships of the speed signal and the reference signal are compared to generate

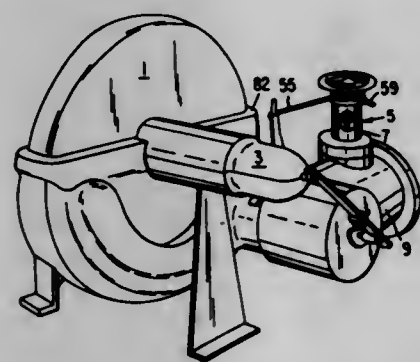


an output control signal which is employed to regulate fuel supply to bring the rotor speed to a given value, dependent upon the frequency of the resonator. The frequency of the resonator is controlled by a throttle to obtain a desired speed. The speed of the rotor may be auto-



matically compensated by flushing compressor inlet air through the resonator. The phase relationship comparison is attained through the use of fluidic elements having a pair of control ports on opposite sides of a power stream and a single receiver aligned with the normal axis of the power stream.

**3,461,893**  
**OVERSPEED RESPONSIVE STEAM TURBINE CONTROL VALVE**  
Charles C. Czusak, Greensburg, Pa., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware  
Filed Mar. 27, 1967, Ser. No. 626,180  
Int. Cl. F01d 21/02, 21/16  
U.S. Cl. 137—31 2 Claims

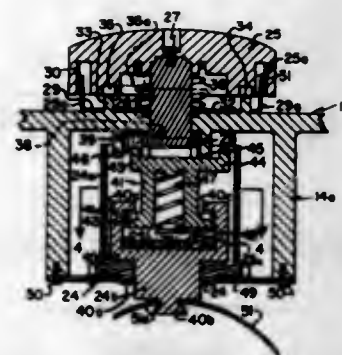


A steam turbine and an overspeed control therefor including a combination throttle and trip valve. The valve has a threaded stem rotatable in a split nut to adjust the valve opening. The valve can be closed rapidly by spreading the halves of the split nut, thereby allowing the valve stem to drop to closed position.

**3,461,894**  
**MANUALLY RESETTABLE SAFETY VALVE**  
John R. MacLennan, Miraleste, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware  
Filed Oct. 18, 1965, Ser. No. 497,247  
Int. Cl. F23d 13/46; F23h 5/10  
U.S. Cl. 137—46 9 Claims

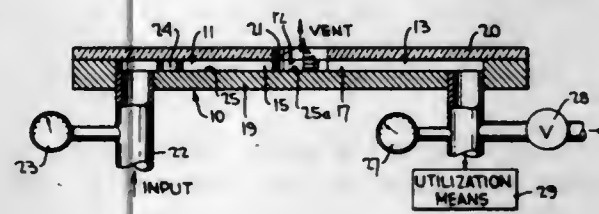
A manually rotatable valve movable between "off", "pilot" and "on" positions in a manner to provide safe lighting of a gas burner. An actuating knob detachably

latches the valve in its "on" position against the bias of a return spring. Coupling means is provided between the knob and the valve which cooperates with a flame sensor to hold the knob and valve engaged, but disengages the



valve from the knob and prevents reengagement thereof in the event the valve is manually rotated to its "off" position and an attempt is made to turn the valve to its "on" position before the flame sensor has had a chance to assume a "no flame" condition.

**3,461,895**  
**FLUID PRESSURE ATTENUATOR**  
John R. Colston, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland  
Filed May 20, 1966, Ser. No. 551,782  
Int. Cl. F15c 1/14  
U.S. Cl. 137—81.5 18 Claims

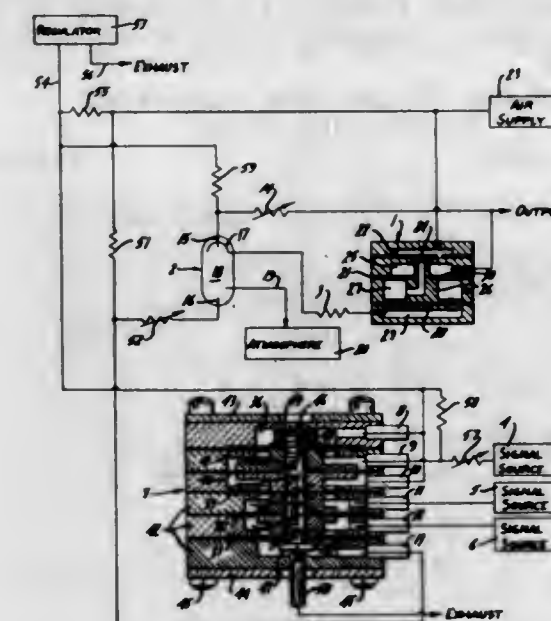


A fluid pressure attenuator of the jet recovery type comprises a flat cylindrical chamber having one vented open end and one closed end, an input port and an output port disposed in diametric alignment across the chamber and arranged adjacent the closed end of the chamber so that a fluid stream flowing between said ports flows along the wall defining the closed chamber end. A restricted channel connected to the input port is responsive to an input pressure signal to issue a stream into said chamber, the stream spreading within said chamber in all directions parallel to and away from the closed endwall. The output port is sufficiently small to receive only a portion of the spread stream, the fluid not received being vented through the open chamber end.

**3,461,896**  
**FLUID PROPORTIONAL CONTROLLER**  
Thomas M. Holloway, Waukesha, Wis., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin  
Filed July 1, 1966, Ser. No. 562,252  
Int. Cl. F15c 1/20  
U.S. Cl. 137—81.5 5 Claims

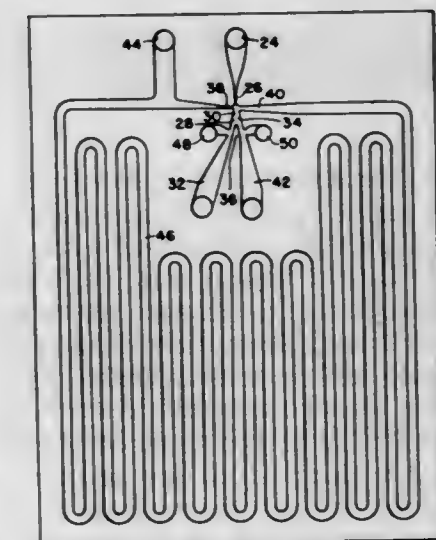
The present disclosure relates to a proportional controller having a summing impact modulator connected to sum the signal from an input comparator and a feedback signal path with the output signal applied to a fluidic amplifier. The output of the summing impact modulator is applied to a fluidic amplifier. The input comparator is by a multiple diaphragm comparator having dead-ended sig-

lator is connected to a dead-ended chamber of a leak-port relay which is connected to an external power supply and provides the controller output. The output is fed back through a needle valve to the nozzle of the



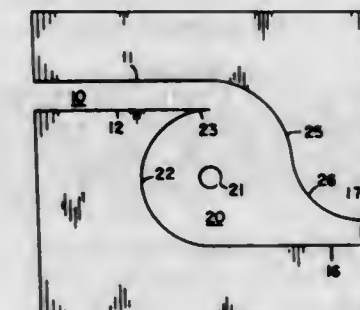
is in such a direction that substantially no flow into the first conduit can take place. Since there is a continuous discharge of fluid through the central vent, even with very large attenuation of the fluid flow from the second conduit to the first conduit, the vortex flow in the chamber is continued by the vortex flow of fluid from the second conduit to the central vent.

**3,461,898**  
**FLUID PULSE DEVICE**  
Robert H. Bellman and Thomas W. Bernel, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York  
Filed May 16, 1966, Ser. No. 550,284  
Int. Cl. F15c 1/08  
U.S. Cl. 137—81.5 6 Claims



impact modulator which is opposite that to which the comparator output is connected. Adjustment of the needle valve provides for the overall controller gain adjustment.

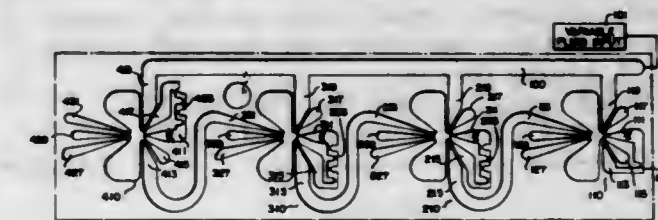
**3,461,897**  
**VORTEX VENT FLUID DIODE**  
Clyde Chi Kai Kwok, Montreal, Quebec, Canada, assignor to Aviation Electric Limited, Montreal, Quebec, Canada  
Filed Dec. 17, 1965, Ser. No. 514,543  
Int. Cl. F15c 1/16  
U.S. Cl. 137—81.5 2 Claims



A fluid diode device having a vortex chamber provided with central vent which in use discharges continuously, a first inlet conduit opening into the vortex chamber tangentially with respect to the outer wall of the chamber with its inner wall terminating at an acute angle to the outer wall of the chamber, and a second inlet/outlet conduit also opening into the vortex chamber tangentially with respect to the outer wall of the chamber but with its inner wall merging with the outer wall of the chamber in a smoothly rounded curve. When a fluid pressure is applied to the first conduit, fluid flows in vortex manner in the vortex chamber, some escaping through the central vent, but the fluid for the most part flowing with little hindrance round the smoothly rounded curve of the second conduit into the second conduit. Thus there is little attenuation of flow through the diode in this direction from the first conduit to the second conduit. On the other hand, when a fluid pressure is applied to the second conduit, fluid flows in vortex manner in the vortex chamber, some escaping through the central vent, but the fluid flow

A fluid pulse device to provide a single desired output pulse of predetermined duration for each input signal of a duration at least as long as that of said output pulse.

**3,461,899**  
**CURVE FITTING WITH PURE FLUID AMPLIFIERS**  
Carmine V. Di Camillo, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland  
Filed Oct. 6, 1966, Ser. No. 584,814  
Int. Cl. F15c 1/10  
U.S. Cl. 137—81.5 15 Claims

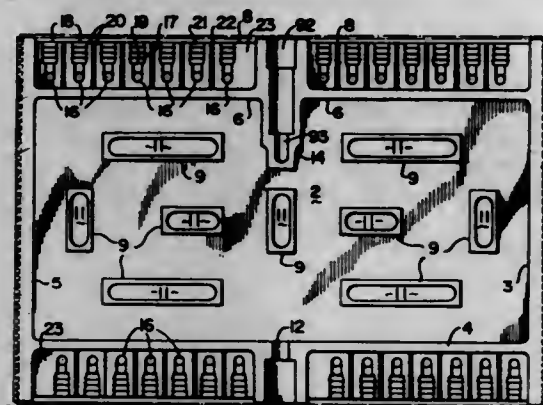


A fluid function generator is capable of approximating virtually any output signal versus input signal function by utilizing a first fluidic amplifier fed by the input signal and by an output signal from a second fluidic amplifier which is also fed by the input signal. The second amplifier thus provides a variable bias signal to the first, the bias changing in response to the input signal in accordance with the gain characteristic of the second amplifier. Tailoring the gain characteristic of the second amplifier, as by fixed bias signals, determines the effectiveness of the variable bias signal at the first amplifier over specified input signal ranges.



### 3,461,900 FLUIDIC CIRCUIT AND MANIFOLD CONSTRUCTION

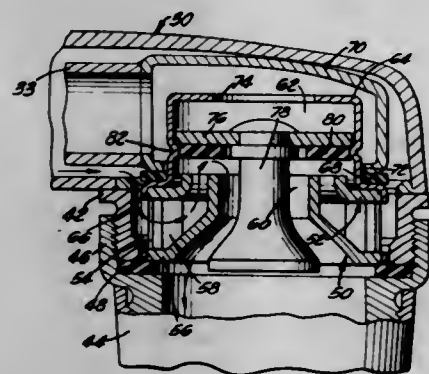
Edwin M. Dexter and Carmine V. Di Camillo, Silver Spring, Md., assignors to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland  
Filed Dec. 19, 1966, Ser. No. 602,889  
Int. Cl. F15c 1/08; F16k 11/00  
U.S. Cl. 137—81.5 15 Claims



A manifold for fluidic circuits comprises two members which, when sealed together in face-to-face relation, provide two large parallel surfaces and a flat cavity enclosed therebetween. Circuit boards may be bonded to one or both surfaces such that the surface serves as a cover plate for the circuit board. Pressurized fluid is supplied to the manifold cavity and is thus available to the circuit by merely drilling through a manifold surface. The surfaces extend beyond at least two ends of the cavity to form respective end regions which are pressure-isolated from the cavity. Holes through the surfaces at the end regions permit external connections to the circuit boards via the end regions. Hollow columns may be provided across the cavity, pressure isolated from the pressure supplied to the cavity, to permit crossover connections between various circuit boards.

### 3,461,901 DIVERTING SPOUT

Ernest H. Bucknell and Irving A. Ward, Los Angeles, Calif., assignors of 5 percent to the estate of Ralph E. Bletcher, deceased; three and one-third percent to James H. Bletcher, trustee; ten percent each to Pearl W. Bletcher and Hazel S. Brondum; eight percent to Charlotte Robertson; one percent to Kenneth Robertson, trustee; two and two-thirds percent to Gary B. Robertson; eight percent to James H. Bletcher; two percent to Richard J. Bletcher; eight percent to E. H. Bucknell; four and one-half percent to Myron Glauber, trustee; twelve and one-half percent to the estate of Mabel Bucknell, deceased; twenty and one-half percent to Marcia B. Liston; and four and one-half percent to Daniel B. Liston, trustee  
Filed Aug. 13, 1964, Ser. No. 389,317  
Int. Cl. E03c 1/04; F16k 31/143  
U.S. Cl. 137—119 2 Claims

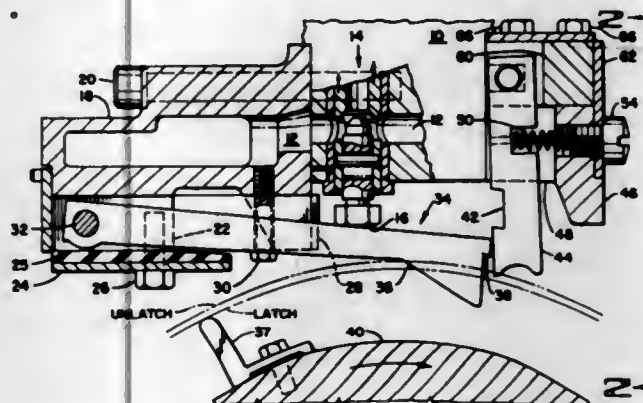


The disclosure relates to valves outletting through a single spout with a diverter construction therein for diver-

sion to a secondary line through a diverter tube in the spout.

### 3,461,902 VALVE LEVER AND LATCH MOUNTING MECHANISMS FOR GLASSWARE FORMING MACHINE

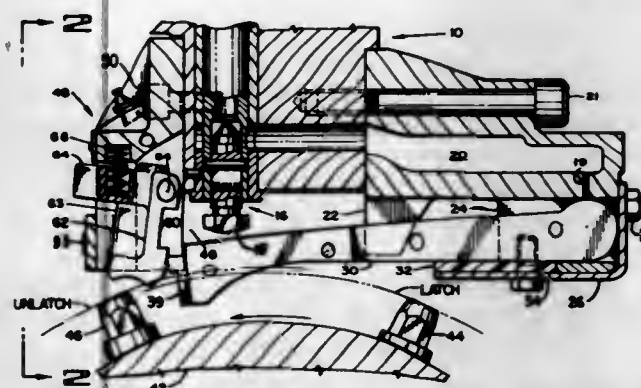
Robert A. Daly, West Hartford, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut  
Filed June 23, 1966, Ser. No. 559,947  
Int. Cl. F16k 31/48  
U.S. Cl. 137—315 10 Claims



1. In a glassware forming machine of the type having a main valve body in which a plurality of control valves are arranged for timed operation in response to rotation of an adjacent timing drum, the combination comprising a plurality of valve operating levers, each of said levers having a first portion which is engageable with a tappet face on one of said valves and a second portion which is engageable by a camming button on said drum, a plurality of lever holders, means for detachably securing each of said holders to said valve body in spaced relation so as to provide channels therebetween for receiving end portions of said levers, a plurality of pivot pins carried by said holders, each of said pivot pins extending across at least one adjacent channel so as to pivotally receive at least one lever whereby any one of said holders and its associated lever can be conveniently removed from said valve body.

### 3,461,903 VALVE LEVER AND LATCH CONSTRUCTION FOR GLASSWARE FORMING MACHINES

Francis A. Sarkozy, West Hartford, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut  
Filed July 8, 1966, Ser. No. 563,832  
Int. Cl. F16k 31/48  
U.S. Cl. 137—315 10 Claims



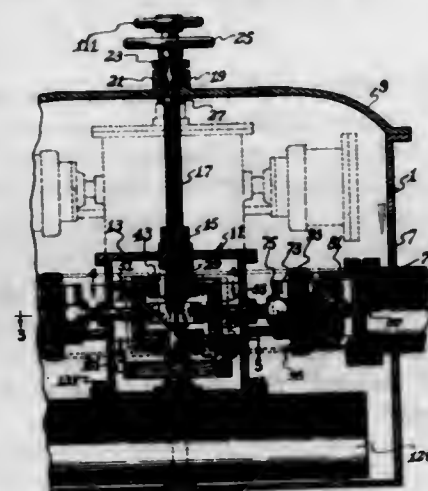
1. In a glassware forming machine of the type having a main valve body in which a plurality of pneumatic control valves are arranged for timed operation in response to rotation of an adjacent timing drum, the combination comprising a plurality of valve operating levers, each of said levers having a first portion which is engageable with a tappet face on one of said valves and a second portion which is engageable with a camming button on said timing drum, each of said levers having a

rear end portion which is slidably received in a forwardly open recess defined in said valve body, said lever rear end portions being so shaped as to permit limited pivotal movement of said levers as well as said forward sliding movement thereof, and guide means carried by said valve body for engaging the forward ends of said levers during said limited pivotal movement thereof so as to restrain said levers from moving forwardly out of said recess.

not operable by inspection so that one can readily determine what needs to be repaired. The case where a pump is losing its prime overnight is not provided by information available in valves of the present art, but by the device of the present invention, it is determined whether there is a hole in the line or the check valve is leaking without running a test which is true in the conventional valve.

### 3,461,904 GATE VALVE

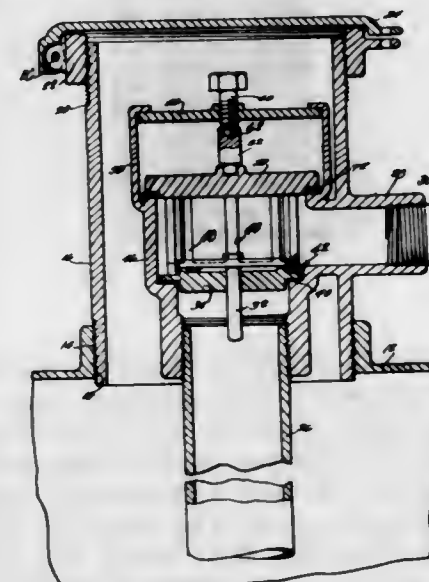
John Ray Polston, 3346 S. Wheeling Ave., Tulsa, Okla. 74105  
Filed Aug. 10, 1967, Ser. No. 659,755  
Int. Cl. F16k 51/00, 3/18  
U.S. Cl. 137—315 10 Claims



A bifaced gate valve is particularly suitable for use in pipelines and comprises a valve mechanism that slides vertically on and relative to a squared valve stem, between a closed position in line with the pipeline and an open position in which the mechanism is out of line with the pipeline but a through conduit is in line with the pipeline. Special cam assemblies ensure equal and opposite seating of the valve faces on the seats. Special structure makes the valve easy to disassemble.

### 3,461,905 LIFETIME CHECK VALVE FOR GASOLINE DISPENSING EQUIPMENT

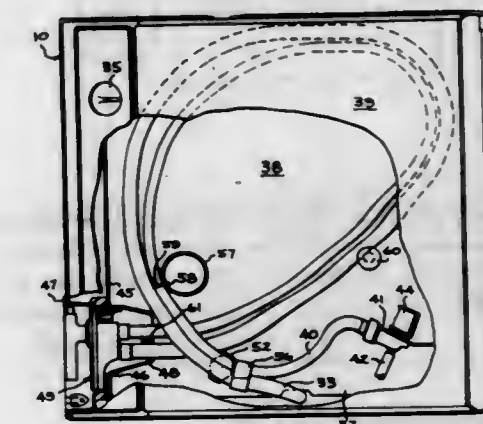
Daniel U. McCabe, 601 N. Pottenger St., Shawnee, Okla. 74801  
Filed July 3, 1968, Ser. No. 742,419  
Int. Cl. B67d 5/04, 5/34, 5/38  
U.S. Cl. 137—315 3 Claims



A valve installed in a gasoline dispensing equipment which provides information as to whether the valve is or is

### 3,461,906 HOSE STORAGE SYSTEM FOR WASHING APPLIANCE

William A. Eckerle, Louisville, Ky., assignor to General Electric Company, a corporation of New York  
Filed Aug. 18, 1966, Ser. No. 573,398  
Int. Cl. B65h 75/46, 75/48  
U.S. Cl. 137—355.17 14 Claims



An improved storage system for the water inlet hose and/or the effluent discharge hose of a washing appliance, such as a portable dishwasher. One aspect of the invention provides improved means for facilitating the retraction of the hose into its storage compartment. A portion of the hose is secured against movement relative to the compartment, and the hose also has a major portion extending from the securing means to a terminal end that is free to move relative to the compartment and through an opening provided in one wall of the compartment. The hose major portion forms a loop within the compartment that is substantially tangential to the one wall of the compartment and thus urges the hose to retract itself through the opening and into the compartment. Another aspect of the invention provides improved means to minimize kinking of the hose during its withdrawal from the storage compartment. The hose has a first portion secured against movement and a second portion in the form of a loop movable relative to the first portion, and a generally cylindrical element is secured to the hose second portion, positioned within the loop, for movement both with and relative to the hose second portion.

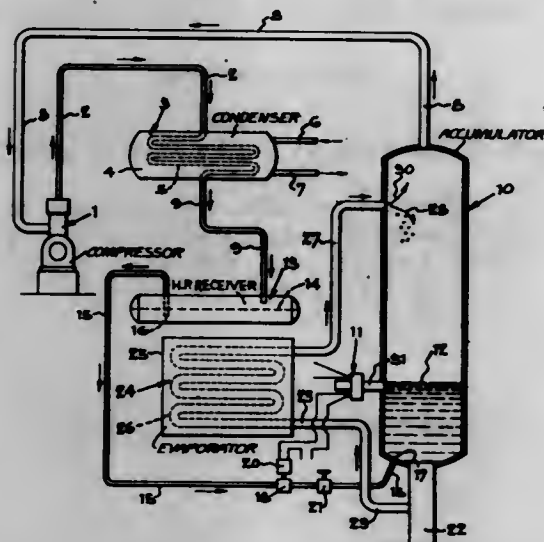
### 3,461,907 LIQUID LEVEL CONTROL DEVICE FOR REFRIGERATION SYSTEMS

Charles P. Wood, Jr., 1020 Richwood Ave., Cincinnati, Ohio 45226  
Filed Aug. 18, 1966, Ser. No. 573,327  
Int. Cl. F16k 21/18, 31/08  
U.S. Cl. 137—386 3 Claims

The disclosure relates to a liquid level control device for a refrigeration system having a vessel containing liquid refrigerant and having a telltale tube or liquid level gauge communicating with the vessel. The control device comprises a heat conduction element clamped in thermal contact about the telltale tube, with a thermostat element mounted within the conduction element and including electrical contacts. The electrical contacts are



interconnected in a circuit with an electrical control valve which regulates the supply of liquid refrigerant to the vessel. The arrangement is such that the temperature of the telltale tube, which corresponds with the liquid level



in the vessel, is sensed by the conduction element and transmitted to the thermostat element, which in turn operates the supply valve so as to maintain the liquid refrigerant within the vessel at a predetermined level.

3,461,908

**VACUUM RELIEF VALVE**

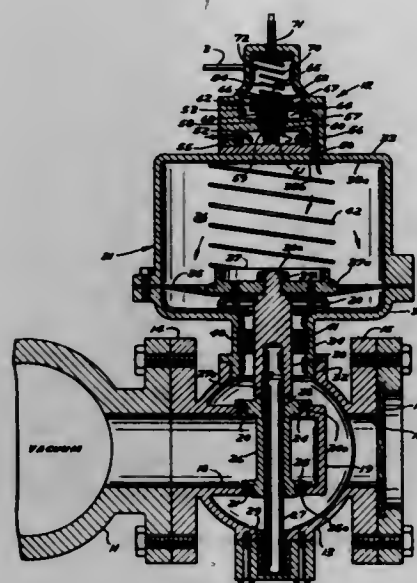
Douglas H. Newcomb, Hudson Falls, and Charles B. Nicholson, Glens Falls, N.Y., assignors to Broughton Corporation, Glens Falls, N.Y., a corporation of New York

Filed Apr. 6, 1967, Ser. No. 628,859

Int. Cl. F16k 17/06

U.S. Cl. 137-492.5

4 Claims

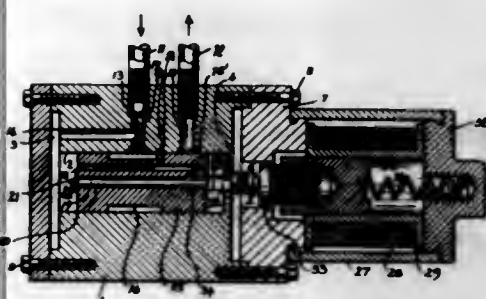


A valve controlling communication between a vacuum header and atmosphere to open the same to atmosphere when the vacuum in the header reaches a predetermined level with an actuating means controlling the communication means and a controller apparatus introducing vacuum pressure or atmospheric pressure to the actuator for actuation thereof. The controller receives its vacuum from the header and is preset by preloading the control portion to introduce either vacuum or atmospheric pressures of the actuator for actuation thereof. The communication means between the header and atmosphere is normally shifted into a closed position, the unit being designed to relieve excessive vacuums in the header.

3,461,909  
**VALVE ARRANGEMENT**  
Karl Vöhringer, Königsbergerstrasse 15,  
Malsch, near Mannheim, Germany  
Filed Sept. 21, 1967, Ser. No. 669,419  
Int. Cl. F16k 31/14

U.S. Cl. 137-495

6 Claims



A pressure control valve having a plunger. A recess thereof may connect orifices of a pressure conduit and a return conduit in the enclosing cylinder. One of two cylinder chambers separated by the plunger communicates with the pressure conduit near the orifice and downstream from a throttling nozzle. A cylinder rod passes through the other chamber and is urged inward of the cylinder by a control solenoid. A duct connects the chambers, and a passage extends from the duct to the portion of the recess nearest the return orifice in the valve-opening plunger position.

3,461,910

**HYDROACOUSTIC AMPLIFIER**

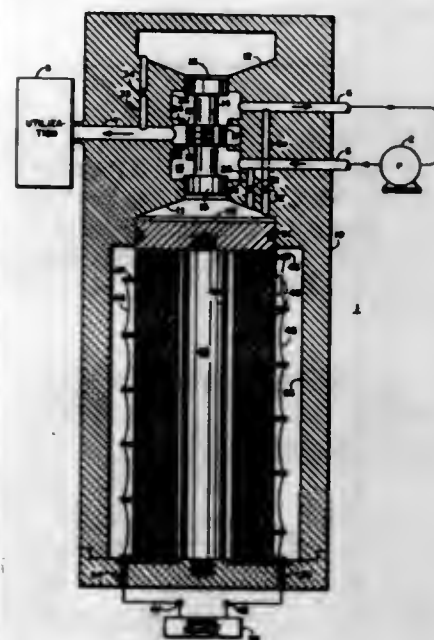
Roger L. Selsam and Max G. Utterback, Monroe, N.Y., assignors to General Dynamics Corporation, a corporation of Delaware

Filed June 2, 1966, Ser. No. 554,718

Int. Cl. E03b; E03c; F17d 3/00

U.S. Cl. 137-624.15

9 Claims



The hydroacoustic amplifier described herein includes a housing having a spool valve arranged in a stator port structure. The housing in which the valve is mounted defines four different cavities. Two of these cavities are at the opposite ends of the spool valve and are isolated from each other by the valve itself. The remaining two cavities are on opposite sides of a land which is located in the middle of the valve. Steady flow of pressurized fluid passes between the cavities on opposite sides of the land. An output cavity or line is connected between the cavities on opposite sides of the land. It is this cavity from which

the acoustic power is derived and applied to a utilization device. Pressure is varied in one of the two end cavities by means of a stack of piezoelectric transducers which are driven by an electrical signal source. The spool valve is centered in the stator port region by means of lines which provide paths for steady flow from the steady fluid pressure source to the end cavities, while isolating the end cavities and the supply lines from each other with respect to varying or AC fluid pressure.

3,461,911

**MAGNETIC LATCH FOR MAGNETICALLY OPERATED VALVE**

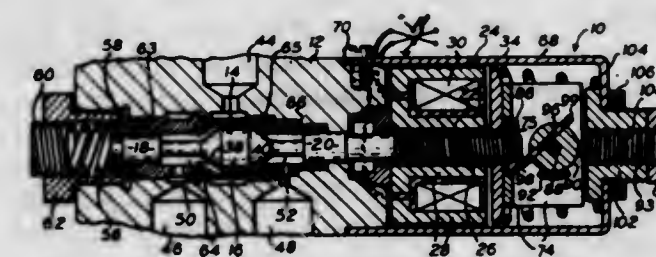
Zbigniew J. Janczur, Orange, Calif., assignor to Marotta Valve Company, Boonton, N.J., a corporation of New Jersey

Filed Feb. 15, 1966, Ser. No. 527,558

Int. Cl. F16k 31/06, 11/04

U.S. Cl. 137-625.5

13 Claims



This magnetically operated valve has a latch for holding it in position to which it is moved by a magnetic actuator. A subsequent actuation with polarity of the electromagnetic actuator reversed causes the latch to release so that the valve returns to its original position. If the valve is originally actuated by the reverse current flow, it operates without the latch becoming effective. The latch, which is preferably a cam, is movable between operative and inoperative positions independently of the movement of the valve, and no rotation of the valve or valve stem is necessary, as in the prior art.

3,461,912

**NON-DISPLACEABLE ROTARY VALVE**

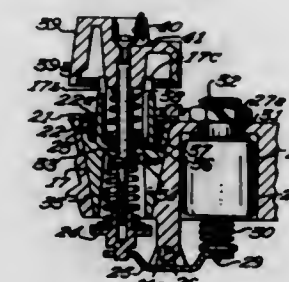
Walter F. Allingham, Torrance, and Hugh M. Morgan, Culver City, Calif., assignors to Honeywell Inc., a corporation of Delaware

Filed Feb. 24, 1964, Ser. No. 346,809

Int. Cl. F16k 5/02, 35/02, 31/44

U.S. Cl. 137-636.4

7 Claims



1. A control valve comprising a valve body having a main fluid flow passageway therethrough, a rotary valve in said passageway, a spring between said valve body and said rotary valve to hold it in sealing engagement in said passageway, a safety valve also in said passageway and adapted to arrest flow through same, an actuating means for rotating said rotary valve between "off," "pilot" and "on" positions and having abutment means thereon engaging the rotary valve to prevent outward movement thereof with respect to said rotary valve but axially slidable inwardly in said rotary valve for moving said safety

valve to its open position in the "pilot" position of the rotary valve, a first abutment means on said valve body adjacent said actuating means, second abutment means on said actuating means for cooperation with said first abutment means to prevent sufficient inward axial movement of said actuating means to open said safety valve when said rotary valve is in its "on" position, and third abutment on said actuating means cooperable with said first abutment means to provide position stops for the rotary valve and to prevent outward movement of said rotary valve with respect to said valve body by said actuating means in all of its adjustable rotary positions.

3,461,913

**CAR HEATER VALVE**

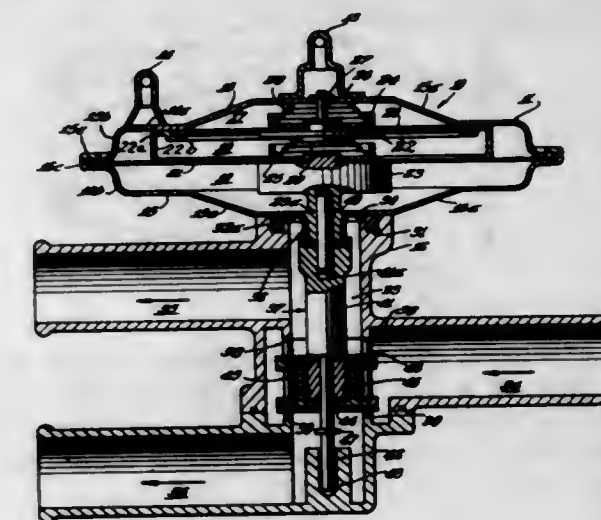
Arthur A. Scott, Chicago, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois

Filed Aug. 31, 1966, Ser. No. 576,448

Int. Cl. F16k 11/02, 31/12

U.S. Cl. 137-627.5

8 Claims



A multi-positioned unitary valve assembly controlling flow in a two-inlet device having a vacuum-mechanical actuator comprising two vacuum chambers each having a diaphragm and biased spring and an atmospheric chamber acting on one of the vacuum chambers. A valve assembly is interconnected with the actuator by a rod member that carries a two-faced valve means with a biased spring between the faces. The valve assembly is actuated by a balance of vacuum pressure and mechanical pressure.

3,461,914

**CONCENTRIC MULTI-TUBE ACCUMULATOR**

Kazuo Sugimura and Nobuyuki Sugimura, both of 1416 Sodeshi-cho, Shizuoka-ken, Shimizu-shi, Japan

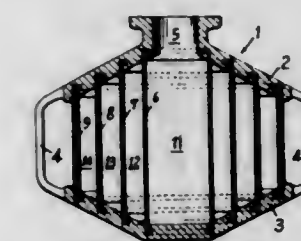
Filed Jan. 24, 1967, Ser. No. 611,410

Claims priority, application Japan, Feb. 3, 1966, 41/6,334

Int. Cl. F16l 55/04, 55/02

U.S. Cl. 138-30

2 Claims



A plurality of concentric elastic tubes of different diameters have rigid end members sealed to their opposite ends to define an inner liquid chamber surrounded by annular gas chambers. One end member has a concentric opening for liquid. The end members are connected by



rigid circumferentially spaced stays, spaced radially outwardly of the outermost tube, so that the latter has its outer surface exposed to atmosphere. Large changes in liquid volume are accommodated with small pressure changes.

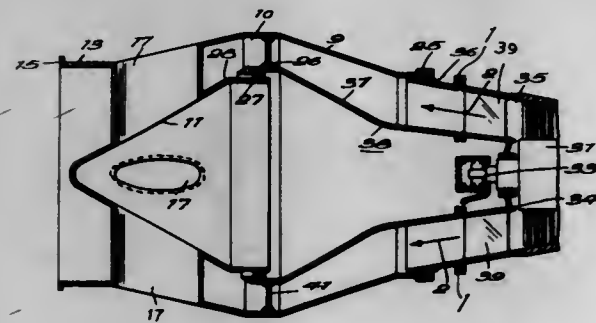
3,461,915

## EXPANSION-COMPENSATOR OF THE NON-LOADED TYPE

Max Hartmann, Baden, Switzerland, Willy Burger, deceased, late of Wettingen, Switzerland, by Jeanne Fanny Burger and Uli Raymond Burger-Straumann, sole heirs, Wettingen, Switzerland, assignors to Aktiengesellschaft, Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

Filed Oct. 7, 1966, Ser. No. 585,211  
Claims priority, application Switzerland, Nov. 29, 1965, 16,384/65

U.S. Cl. 138—31 Int. Cl. F16I 55/04 2 Claims



An expansion compensator designed for use in the exhaust pipe of a gas turbine which includes a two part hollow expandable structure within and spaced from a housing which is axially displaceably connected to the exhaust casing of a gas turbine. One part of the hollow structure is connected to the housing and the other part to a cowling surrounding the end bearing of the turbine. The interior of the hollow structure communicates with the atmosphere and thus provides access to the end bearing of the gas turbine contained therein.

3,461,916

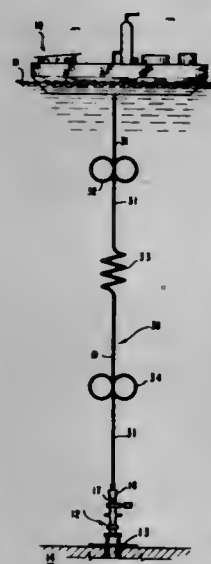
## FLEXIBLE FLOWLINE

Leroy W. Ledgerwood, Jr., Houston, Tex., assignor to Esso Production Research Company

Filed Dec. 13, 1966, Ser. No. 601,469

Int. Cl. F16I 11/14; B65b 3/00

U.S. Cl. 138—120 15 Claims



A flexible flowline connected between a floating vessel and a subsea well installation provided with means to permit lateral and vertical motion of the floating vessel.

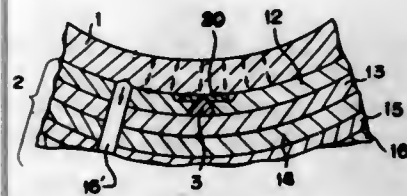
3,461,917  
PRESSURE VESSEL WITH LAMINATED PLATE WALL FOR USE WITH HYDROGEN

Yoshimitsu Uto, Taizo Yamazaki, and Toshikazu Shin-kawa, Hiroshima-ken, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan

Filed Feb. 28, 1967, Ser. No. 619,243

Int. Cl. F16I 9/02, 9/18, 9/22

U.S. Cl. 138—143 4 Claims



A pressure vessel for use in association with a hydrogen atmosphere comprises an inner shell and an outer shell of relatively great thickness and an intermediate laminate of a plurality of tubular elements or plates which are welded together along longitudinally extending welding seams. The tubular shell on the side of the vessel which is to be exposed to hydrogen is made of a hydrogen-resistant material. A vent hole is defined through the laminate of plates to provide for the pressure equalization. A backing plate is located between the laminate plates and the shell plate which is to be exposed to the hydrogen atmosphere and separates the weld material of the adjacent plate of the laminate from the shell plate and prevents the fusing of the weld material to the shell plate.

3,461,918

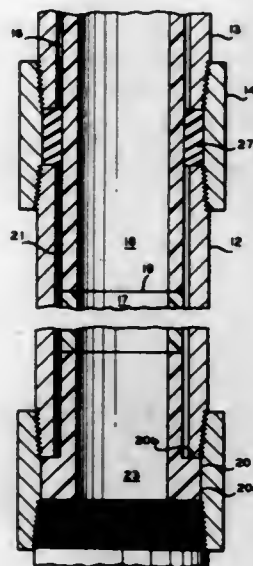
## CORROSION PROTECTION

Robert V. Gerner, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 29, 1966, Ser. No. 575,821

Int. Cl. F16I 9/02, 9/18, 9/20

U.S. Cl. 138—148 7 Claims



Corrosion is reduced in a corrodible structure, such as a pipe carrying corrosive fluids, by inserting liner sections of noncorrodible material, such as polyethylene, spacing the liner sections from the wall of the structure to leave an annulus, and leaving unsealed joints between the liner sections so fluid is allowed to seep through the joint and maintain a pressure equilibrium of the fluid between the inside and exterior of the liner. The passage of fluid in the annulus is not sufficient to produce a washing effect on the corrodible enveloping structure.

3,461,919

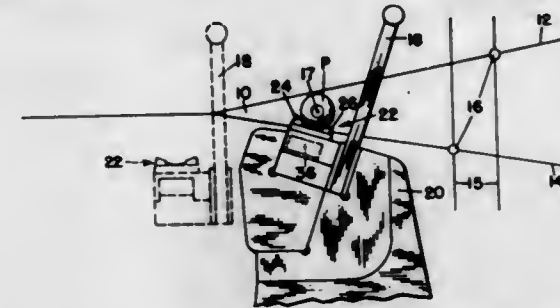
## STATIONARY FILLING SUPPLY LOOM

Karl Willi Wueger, Spencer, Mass., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts

Filed Sept. 13, 1967, Ser. No. 667,457

Int. Cl. D03d 49/32

U.S. Cl. 139—125 8 Claims



A loom wherein the filling yarn is drawn from a stationary package and guided through a warp shed by a projectile which is suspended during its passage through the shed in a fluid medium.

3,461,920

## APPARATUS FOR CUTTING WEFT YARN ENDS UNDER TENSION ON A SHUTTLELESS LOOM

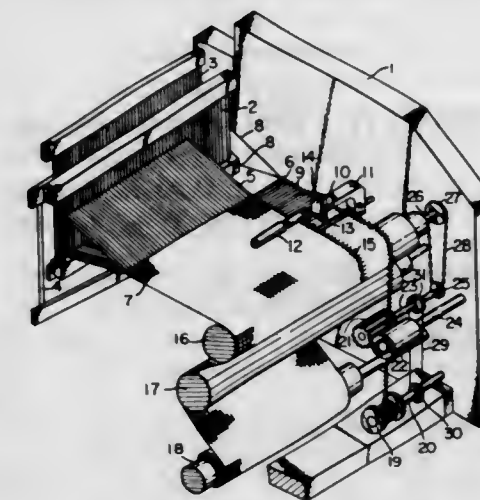
Toemon Sakamoto, 11-22 Hirosewa, 3-Chome, Hamamatsu-shi, Shizuoka-ken, Japan

Filed Aug. 23, 1967, Ser. No. 662,692

Claims priority, application Japan, Aug. 29, 1966, 41/57,199; Dec. 17, 1966, 41/115,217

Int. Cl. D03d 49/70

U.S. Cl. 139—302 5 Claims



An improved apparatus for cutting weft yarn ends under tension on a shuttleless loom while tensioning an additional selvage formed outside of an ordinary selvage of a woven cloth with a certain intervening space. Tensioning of the weft yarn ends is effected by taking up the additional selvage at a speed faster than that of the cloth or by advancing the additional selvage through means for deflecting a path thereof and located near the cutting position. Reduction in cloth defects in the selvage portion is assured.

3,461,921

## MANUFACTURE OF COILED LAMP FILAMENTS

Stanley C. Ackerman, 3979 Northampton, Cleveland Heights, Ohio 44121

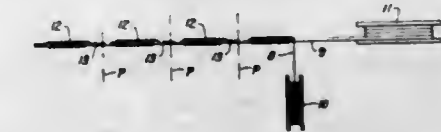
Original application July 2, 1965, Ser. No. 469,163, now Patent No. 3,346,761. Divided and this application Apr. 17, 1967, Ser. No. 631,414

Int. Cl. B21f 45/00

U.S. Cl. 140—71.5 5 Claims

Coiled filaments of a refractory metal wire are formed by coiling the wire on a tantalum wire mandrel, sintering

the wire coil on the mandrel in a vacuum and at an elevated temperature above 1500° C. to recrystallize the wire.



coil and relieve the strains therein, dissolving out the tantalum mandrel, and then cleansing the wire coil to remove the dissolving medium remaining thereon.

3,461,922

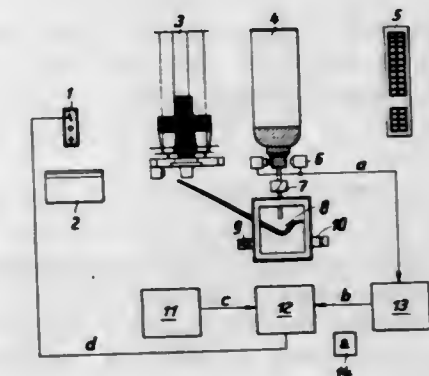
## METHOD OF CONTROLLING AN AUTOMATIC VENDING MACHINE

Wolfgang Niehaus, Hamburg-Neugraben, and Alexander Kückens, Hamburg, Germany, assignors to Dagma Deutsche Automaten und Getrankemaschinen G.m.b.H. & Co., Hamburg, Germany

Filed Dec. 13, 1966, Ser. No. 601,383

Int. Cl. B67d 5/14

U.S. Cl. 141—1 3 Claims



An automatic vending machine for flowable products, such as beverages and ice cream, utilizing computing, programming, controlling, logic and cup sensing elements to insure a proper sequence of operation when a cup is provided by the machine and filled with the beverage. Additionally, the apparatus permits use of cups other than those provided by the apparatus, and also dispenses cups, per se, without beverage. The interconnection of the components of the control prevent operation of the machine if a cup is not in position to receive the beverage, or if beverage is not available.

3,461,923

## SUBMERGIBLE FILLING HEAD

James H. Riesenber, Amherst, N.Y., assignor to Consolidated Packaging Machinery Corp., Buffalo, N.Y.

Filed Oct. 31, 1966, Ser. No. 590,609

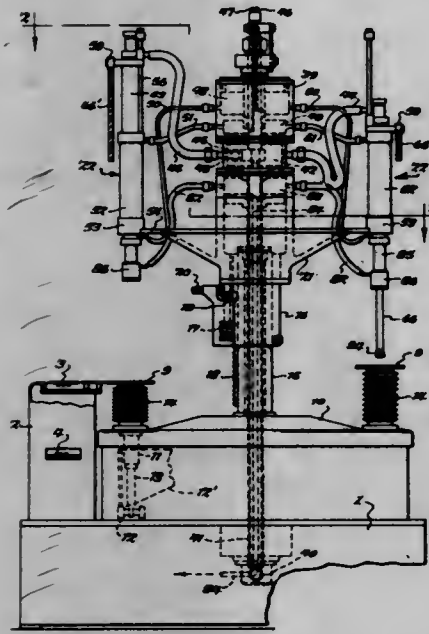
Int. Cl. B65b 57/02, 43/42

U.S. Cl. 141—140 12 Claims

A container filling machine has a product dispensing filling head including a first tubular member. A filling stem extends through the first member for telescoping movement therein, and product delivery means communicate with the filling stem. A second tubular member is movable with the filling stem within the first member and a first fluid chamber is provided between the first and second members. A piston is carried by the second member for movement therewith in the first chamber, and fluid under pressure is admitted to the first chamber on one side of the piston. A third tubular member telescopes within the second member and a sleeve encircles the filling stem,



a second fluid chamber being defined between the sleeve and the third member. A fourth tubular member encircling the sleeve and telescoping within the third member carries a container engaging centering bell. Fluid under



pressure is admitted to the second chamber, and the fourth member is movable into the second chamber against the fluid pressure therein, with stop means limiting outward movement of the fourth member relative to the third.

#### 3,461,924 METHOD AND APPARATUS FOR OFFSHORE TRANSFER OF FLUID

Peter J. Bily, Sunset Beach, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of California

Filed Nov. 12, 1963, Ser. No. 323,546  
Int. Cl. B63b 21/50; F16l 3/00  
U.S. Cl. 141—388 17 Claims

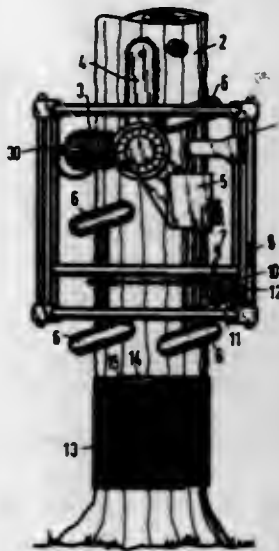


1. An apparatus for mooring a vessel in the water while transferring fluid to or from the vessel comprising anchor means submerged in the water, a support frame having opposite mounting and fendering end portions, means supporting the mounting end portion of the frame on said anchor means for pivotal movement about a substantially horizontal axis and for swinging movement of the frame lengthwise of the frame, a conduit borne by the frame for elevational movement therewith, supporting lines individually connected to said frame and projecting laterally thereof but longitudinally of said vessel, means for connecting said supporting lines fore and aft of said vessel for suspending said fendering end portion of the frame from and in abutment with the vessel, and a pair of mooring means individually connected adjacent said axis and adapted for connection fore and aft of said vessel for holding said fendering end portion against the vessel and for limiting movement of the vessel away from said anchoring means.

#### 3,461,925 CONTROL ARRANGEMENT FOR A BRANCH LOPPING APPARATUS

Fritz Fend, Regensburg, Germany, assignor to Fichtel & Sachs A.G., Schweinfurt, Germany  
Filed May 31, 1967, Ser. No. 642,466  
Claims priority, application Germany, June 11, 1966, F 49,464

Int. Cl. B27b 17/00, 29/00 9 Claims  
U.S. Cl. 144—2

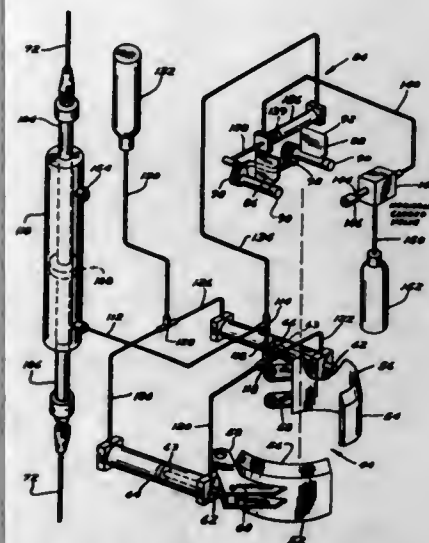


The descent of an automatic branch lopping apparatus from a tree trunk under the driving force of an internal combustion engine is stopped at a safe distance above the ground by shorting the ignition circuit when two spaced contacts on the apparatus simultaneously engage bare wire netting attached to the tree trunk at a suitable level.

#### 3,461,926 APPARATUS FOR TOPPING AND DELIMBING TREES

Robert W. Larson, Port Arthur, Ontario, Canada, assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Oct. 25, 1967, Ser. No. 678,037  
Int. Cl. B27b 1/00, 23/00 14 Claims  
U.S. Cl. 144—2

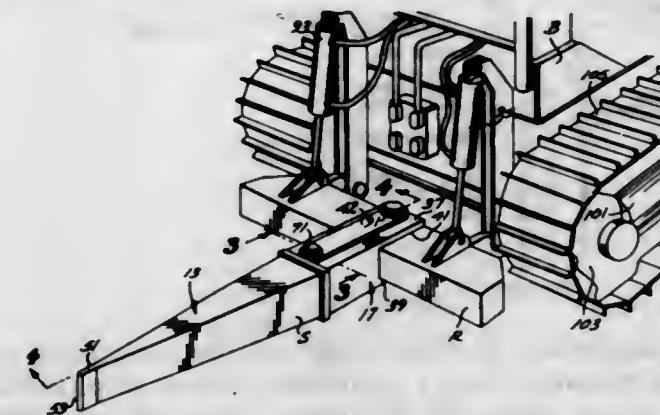


A cable raises and lowers a delimeter head along a vertical tree. Carried on the head is a first pair of blades for removing the branches and a second pair of blades for removing the top portion of the tree. Both sets of blades are operated through the agency of a self-contained hydraulic circuit. The topping blades, however, are not actually operated until the head has reached an ele-

vated portion of the tree having a predetermined diminished size, the contraction of the delimbing blade automatically triggering the operation of the topping blades.

3,461,927  
STUMP SPLITTER  
Thomas J. Funari, Box 597,  
Brookings, Oreg. 97415  
Filed Oct. 30, 1967, Ser. No. 679,131  
Int. Cl. B27c 9/00 6 Claims

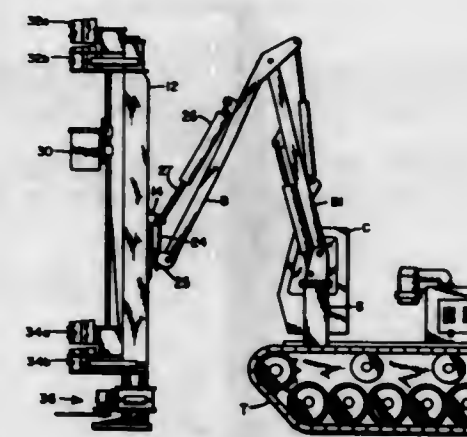
U.S. Cl. 144—2



A stump splitter including a frame having means for attaching it to the rear of a tractor. A housing depends from the frame and forms a rearwardly opening slide passage, the rearward extremity of the wall of such housing defining a rearwardly facing hammer surface. A slider projects into the slide passage and includes a forwardly facing hammer surface for being hammered by the rearwardly facing hammer surface. A rearwardly pointing wedge depends from the slider and terminates, at its rearwardly extremity, in a vertical cutting edge. The slider is coupled to the housing to limit forward movement of the housing relative to the slider and to enable the housing to reciprocate on such slider to hammer the rearwardly facing hammer surface against the forwardly facing hammer surface.

3,461,928  
TREE HARVESTER  
Nestor Pete Siro, Angora, Minn., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon

Filed Jan. 17, 1967, Ser. No. 609,857  
Int. Cl. B27b 1/00, 17/00 12 Claims  
U.S. Cl. 144—3

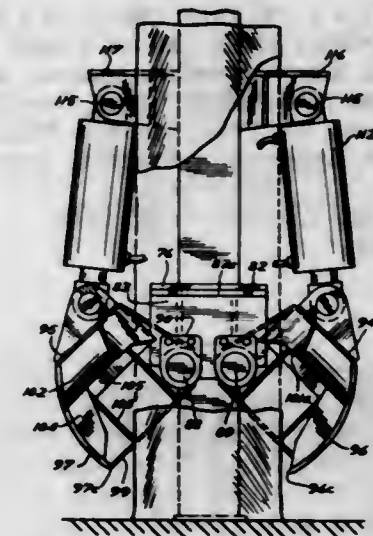


A mast, having grasping and delimbing grapples fixed at each end, a movable puller in between and a saw at one end outside the bottom grapple, is attached to an articulated boom so that it can be swung over a wide area. The mast can be tilted if required for harvesting bent trees. After a tree is felled and while it is held by the grapples, the tree puller moves between the grapples to

pull the tree trunk through the grapples for delimbing and for measuring off sections of tree trunk to be severed by the saw. The saw assembly is spring mounted to the mast to minimize damage to the saw.

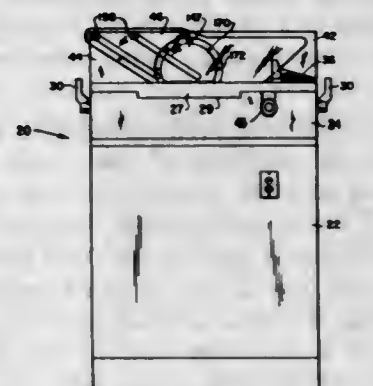
3,461,929  
DEEP SNOW BUTT SHEAR APPARATUS  
Richard H. Hunger, Dubuque, Iowa, and Charles L. Whiting and Reino Suojanen, Ashland, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed July 25, 1967, Ser. No. 655,812  
Int. Cl. B27b 23/00 14 Claims  
U.S. Cl. 144—34



Apparatus for delimbing and severing standing trees including a mobile vehicle having boom mechanism for positioning a standard and a mast movably relative thereto adjacent the tree. Delimbing and clamping mechanism is movably mounted on the mast while mechanism is mounted on the standard for severing a tree. The severing mechanism includes arcuate blades mounted for movement about horizontal axes to sever a tree, the severing mechanism including means which in conjunction with clamping mechanism retain the severed tree against any substantial movement relative the mast as the tree is swung to a piling position.

3,461,930  
PLANING AND JOINTING MACHINE  
Edward C. Warrick, Pittsburgh, and William S. McLay, Jr., Murrysville, Pa., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Sept. 13, 1967, Ser. No. 667,466  
Int. Cl. B27c 1/12; B27g 21/00 11 Claims  
U.S. Cl. 144—118



A machine for planing and jointing material in a single operation. A main bed plate supporting a cutting wheel, work guide fences, and work table accurately aligned by

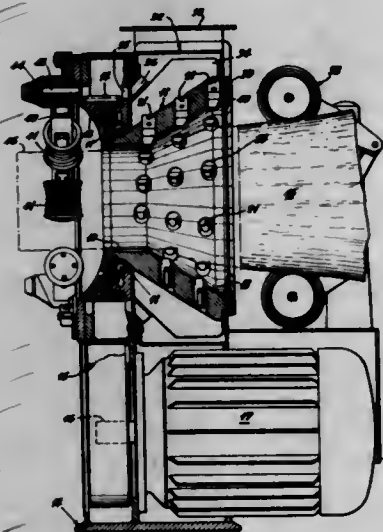


factory assemblage to produce a stable, accurate, and lasting machine. Roughing and finishing cutters are alternately arranged around the cutting wheel and a critical relationship is maintained between the setting of the cutters, and between the cutter setting and the plane of the outfeed fence. The axis of rotation of the wheel is perpendicular to and to one side of the direction of travel of the workpiece fed by hand along the table past the wheel and against the fence to permit the cutters to safely operate at one side of the operator's hands cutting when moving downwardly and upwardly. A stable adjustment device for the infeed fence permits accurate variance and maintenance of the depth of cut.

### 3,461,931 APPARATUS FOR THE PRODUCTION OF WOOD CHIPS FROM LOGS

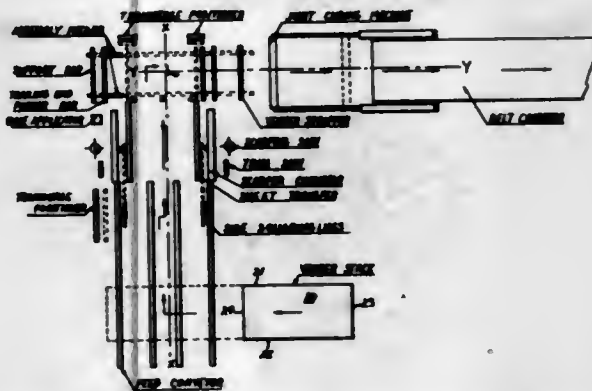
Harry W. Wexell, Gavle, Sweden, assignor to Brundell & Jonsson Aktiebolag, Gavle, Sweden  
Filed Aug. 14, 1964, Ser. No. 389,536  
Claims priority, application Sweden, Aug. 19, 1963,  
9,040/63

Int. Cl. B27c 1/00, 9/00  
U.S. Cl. 144—162



1. An apparatus for reducing a log to a cylindrical bolt and for producing usable chips of substantially uniform width and thickness, said apparatus comprising a frame, a hollow frusto-conical head open at both ends rotatably mounted in said frame, means to drive said head, said head having a conical inner surface merging into a cylindrical inner surface adjacent the end of smaller diameter, said head having a plurality of circumferentially elongated radial apertures extending therethrough, said apertures being disposed in a spiral helical path extending from said cylindrical surface to a point adjacent the large end of said head, an elongated cutter secured in each aperture, cutting edges on the inner end of each cutter, certain of said cutting edges being disposed inwardly of said cylindrical surface a predetermined distance and the remainder of said cutting edges being disposed the same distance inwardly of said conical surface, said cutting edges comprising a shaving edge disposed substantially parallel to the axis of rotation of said head and a parting edge disposed at an angle to said shaving edge, whereby upon feeding a log longitudinally through said head and rotation of said head, said cutter will operate to remove wood from said log in the form of helical chips of substantially uniform width and thickness and to provide a cylindrical bolt of a diameter determined by the location of the innermost shaving edge, said shaving edges cutting substantially parallel to the fibers in said log and said parting edges cutting across the fibers at an angle thereto, said chips being discharged radially outwardly through said apertures by centrifugal force.

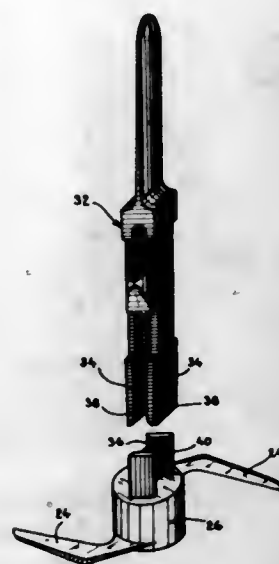
3,461,932  
PROCESS FOR MANUFACTURING A  
CONTINUOUS VENEER STRIP  
Norman Thomas Shelton, Lewiston, Idaho, and Harold  
A. Keller and Dwight G. Seay, Clarkston, Wash., as-  
signors to Potlatch Forests, Inc., Lewiston, Idaho, a  
corporation of Delaware  
Filed July 31, 1967, Ser. No. 657,185  
Int. Cl. B27d 1/04, 3/04  
U.S. Cl. 144—317



The disclosure describes apparatus for performing the steps in manufacturing a continuous veneer strip. Initially the veneer sheets are positioned crosswise on a feed conveyor 25. The sheets are successively conveyed to a trimming, scarfing and glue applying apparatus 95. The apparatus 95 trims the ends of the sheets to form uniform length sheets having parallel end edges. A glue applicator deposits a bead of glue on one of the scarfed surfaces. A sheet transfer device 210 transfers and indexes the sheets over a feed conveyor 211. The device 210 drops the sheets lengthwise onto the feed conveyor in a timed relationship with moving pusher members 244 so that the forward end of each sheet overlaps the trailing end of the preceding sheet. The sheets are pushed forward by the pusher bars 244 onto a joint curing apparatus 300. The joint curing apparatus includes a reciprocal carriage with pressure platens for engaging the overlapping ends and curing the glue therebetween as the sheets are moving.

3,461,933  
ROTARY BLADE DOMESTIC APPLIANCE  
Jean Mantelet, Paris, France, assignor to Moulinex,  
Societe Anonyme, Bagnolet, France  
Filed Feb. 6, 1967, Ser. No. 614,161  
Claims priority, application France, Feb. 15, 1966,  
49,676

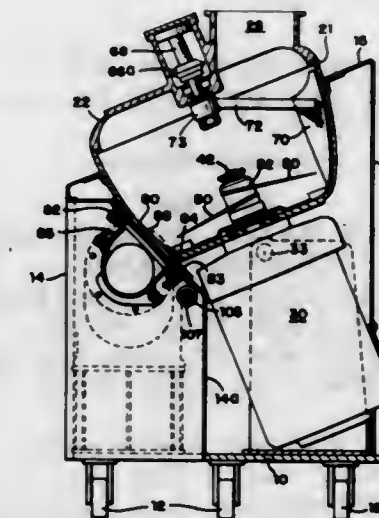
Int. Cl. B02c 2/04  
U.S. Cl. 146—68



An electric domestic appliance such as a mincer or shredder has a working bowl mounted above a motor assembly housing, a spindle driven by the motor extend-

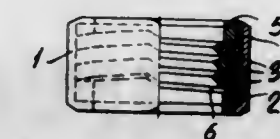
ing into the bowl and a rotary blade socket is demountably secured to the spindle, to rotate therewith, by a locking device resiliently urged into its locking position. locking elements each of which has a bent portion lying outside the plane of the main body portion of the locking elements and a cap member arranged to hold the juxtaposed elements in relatively fixed relation.

3,461,934  
APPARATUS FOR CUTTING, MIXING AND  
GRINDING MATERIALS  
Barrett Bradford Waters, Troy, Ohio, assignor to The  
Hobart Manufacturing Company, Troy, Ohio, a cor-  
poration of Ohio  
Filed June 2, 1967, Ser. No. 643,254  
Int. Cl. A47j 43/04, 44/00  
U.S. Cl. 146—79



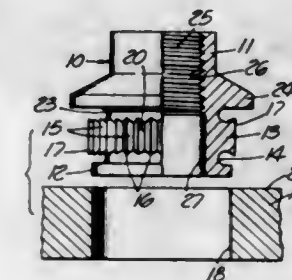
A high speed cutting and mixing device receives large pieces of food or other material to be processed, such as chunks of frozen meat to be made into ground meat. The cutting and mixing device reduces the chunks into small pieces of relatively uniform size and blends in other materials as desired. The bowl of the cutting device is generally circular in cross-section and mounted with its vertical axis inclined. A gate in the lowermost part of the bowl opens into the barrel of a worm type of food chopper through which the cut and blended product is fed and processed. Separate coordinated controls and drives are provided for the cutting-mixing device and for the chopper, and there is a drive for a gate controlling discharge from the cutting-mixing device into the chopper. Operation of these drives is controlled in timed sequence which may be varied according to the type of food input and the type of product desired.

3,461,935  
RESILIENT SELF-BLOCKING NUT  
Giulio Monticelli, Via Savona 134,  
Milan, Italy  
Filed Jan. 26, 1968, Ser. No. 700,869  
Claims priority, application Italy, Feb. 1, 1967,  
Patent 791,673  
Int. Cl. F16b 39/28  
U.S. Cl. 151—21



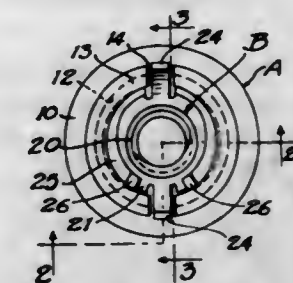
An improved lock nut comprising a housing within which is provided a base plate, a stack of resilient thread-

3,461,936  
SELF-RETAINED TENSION NUT  
José Rosán, Sr., Rancho San Juan, San Juan Capistrano,  
Calif. 92675, and Robert D. Weber, 1955 Irvine Ave.,  
Costa Mesa, Calif. 92627  
Filed Oct. 19, 1967, Ser. No. 676,570  
Int. Cl. F16b 39/282, 39/284  
U.S. Cl. 151—41.72



This invention relates to press nuts capable of withstanding high tensional loads and which are mechanically locked in a workpiece against subsequent axial and rotational displacement relative thereto. The press nut of this invention is provided with a pilot flange which is longitudinally spaced from a radial broaching flange by an annular groove. About the periphery of the broaching flange are a plurality of serrations which are formed into cutting teeth at the forward ends thereof. By axially displacing the fastener into a workpiece bore, the serration teeth cut portions of the workpiece material and compact the same into an annular groove, thereby prohibiting further axial displacement of the fastener. The workpiece material situated in the interstices between the serrations produces a mechanical lock prohibiting rotational movement of the fastener. The fastener is also provided with an annular bearing flange which overlies the workpiece bore. The bearing flange not only insures the installation of the insert to a uniform depth, but also provides the bearing load capabilities of the fastener.

3,461,937  
BASKET NUT ASSEMBLY WITH LATCHING  
RETENTION OF REMOVABLE NUT  
Frank E. Finney, Garden Grove, Calif., assignor to Shur-  
Lok Corporation, Santa Ana, Calif., a corporation of  
California  
Filed May 15, 1967, Ser. No. 638,390  
Int. Cl. F16b 39/10, 37/04, 29/00  
U.S. Cl. 151—41.75

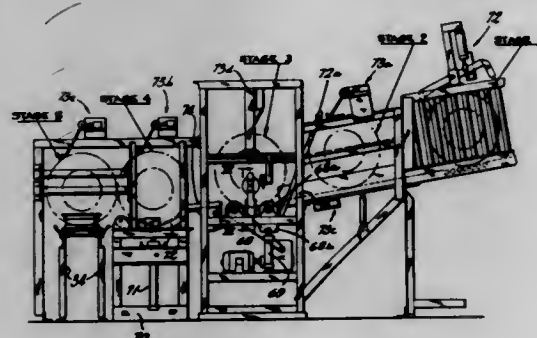


A combination of retainer basket with flanged retainer rim, with a nut having an annular base normally retained within a collar portion of the basket by a rim flange on



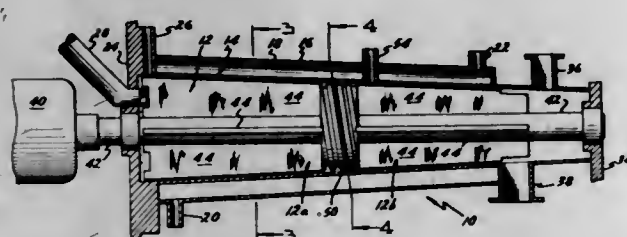
the collar, overhanging the base, the base being removable by releasing latch means which normally locks it in the basket.

**3,461,938**  
**TIRE MOUNTING AND INFLATING SYSTEM**  
John L. Mueller, Detroit, Mich., assignor to Spanton Corporation, Jackson, Mich., a corporation of Ohio  
Filed Mar. 9, 1967, Ser. No. 621,880  
Int. Cl. B66c 25/06  
U.S. Cl. 157—1.1 2 Claims



A reciprocating system for automatically mounting and inflating random, intermixed sizes of tubeless tires comprising, a wheel loader, bead lubricator, mounting head, inflator, and palletized conveyor interconnecting and transfer means.

**3,461,939**  
**FLUID MATERIALS PROCESSING**  
Arthur C. Florelli, South Amherst, and Leland P. Miner, Wilbraham, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
Filed June 10, 1966, Ser. No. 556,741  
Int. Cl. B01d 1/00  
U.S. Cl. 159—6 7 Claims

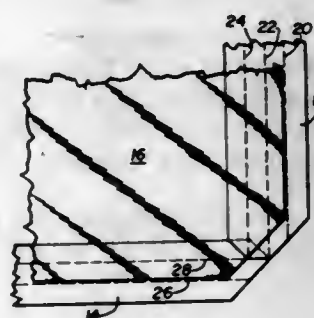


This application describes multizone, thin film type, fluid processing apparatus having unique transfer zones between adjacent processing zones which serve as vapor barriers. The apparatus is capable of handling fluid material whose viscosities exceed 100,000 centipoises at processing conditions.

**3,461,940**  
**WINDOW AND FRAME ASSEMBLY**  
Reidar Brynjelson, 3508 W. Palmer, Chicago, Ill. 60647  
Filed Oct. 3, 1967, Ser. No. 672,554  
Int. Cl. A47g 5/00  
U.S. Cl. 160—371 8 Claims

A window and frame assembly is formed from a pair of side frame members, a pair of end frame members, and a sheet of flexible, light-transmittant material. The frame members are folded along fold lines parallel to their length, interfolding the sheet material and the ends of the corresponding frame members at the corners. In the preferred embodiment, the end frame members are folded back upon themselves over the side frame

members. The sheet material contributes to the overall strength of the assembly, and the frame members are

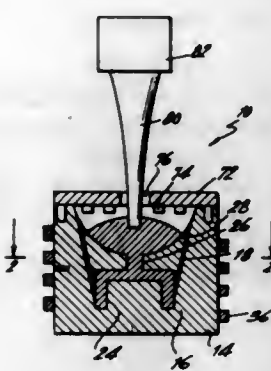


bias cut on the ends to reduce bulk at the corners. Fastening means may optionally be provided at the corners.

**3,461,941**  
**METHOD OF HANDLING AND COOLING FOUNDRY SAND**  
Joseph S. Schumacher, 7256 Concord Ridge Drive, Cincinnati, Ohio 45230  
No Drawing. Filed Mar. 19, 1968, Ser. No. 714,339  
Int. Cl. B22c 5/18, 25/00; B22d 47/02  
U.S. Cl. 164—5 8 Claims

The disclosure disclosed herein relates to a novel method of handling and cooling foundry sand. The method includes the steps of preparing a quantity of the foundry sand, conveying a portion of the sand to a molding machine and forming molds therefrom, casting a metal into the molds, breaking up the molds, and mixing the unused sand with the used sand. By using this method, the temperature of the foundry sand can be controlled and the use of costly cooling apparatus can be eliminated.

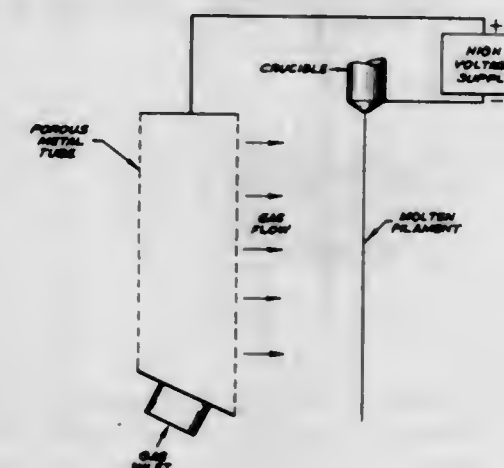
**3,461,942**  
**METHOD FOR PROMOTING THE FLOW OF MOLTEN MATERIALS INTO A MOLD USING ULTRASONIC ENERGY VIA PROBE MEANS**  
Robert Hoffman, 17 Copper Beech Place, Merrick, N.Y. 11566, and Leo Gross, 36—11 217th St., Bayside, N.Y. 11361  
Continuation-in-part of application Ser. No. 405,139, Oct. 20, 1964. This application Dec. 6, 1966, Ser. No. 599,567  
Int. Cl. B22d 27/04, 27/02; B06b 3/00  
U.S. Cl. 164—49 5 Claims



This invention relates to a method of casting metals comprising the steps of heating metallic material to a liquid state, promoting metallic flow of the molten metallic material into a mold with ultrasonic vibrations applied to sprue material by directly contacting an ultrasonic probe therewith, and simultaneously heating the mold and further heating the metallic material from an external

source while subjecting the metallic material to ultrasonic vibrations.

**3,461,943**  
**PROCESS FOR MAKING FILAMENTARY MATERIALS**  
Richard D. Schile, Wethersfield, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware  
Filed Oct. 17, 1966, Ser. No. 587,009  
Int. Cl. B22d 27/02, 25/00  
U.S. Cl. 164—89 13 Claims



This application relates to a method of manufacturing fibers and filaments directly from a molten starting material using rapid cooling techniques.

**3,461,944**  
**METHOD OF MANUFACTURING A LINED IRON-BASE ARTICLE**  
Herbert P. Kuebrich, Albany, Oreg., assignor, by mesne assignments, to TI Line Corporation, Richland, Wash., a corporation of Washington  
Filed Sept. 28, 1965, Ser. No. 490,872  
Int. Cl. B22d 19/08  
U.S. Cl. 164—100 5 Claims



A method of manufacturing comprising casting an iron-base metal about a refractory metal liner. A casting temperature is used which is below the melting point of the liner, so that the liner's integrity is maintained during casting. Prior to casting, an oxide is applied to the outer surface of the liner which inhibits chemical contamination of the liner during the casting.

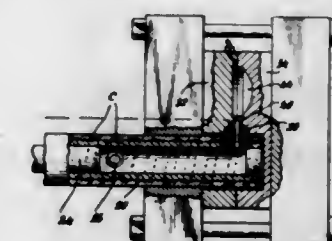
**3,461,945**  
**METHOD OF FORMING UNDERCUTS IN DIE CASTINGS**  
Melvin B. Trimble, Toledo, and James H. Koch, Oregon, Ohio, assignors to National Lead Company, New York, N.Y., a corporation of New Jersey  
Filed July 7, 1967, Ser. No. 651,886  
Int. Cl. B28b 7/20; B22d 19/00, 17/00  
U.S. Cl. 164—112 10 Claims

The present disclosure is of a method of forming undercuts in die castings. A severable insert is attached to either a core or to the die. The assembly is then placed into a die. Molten metal is injected into the die cavity and is solidified. In one embodiment after removing the casting from the die, the core is displaced from the casting, and the displacement severs one portion of the insert which



remains with the core. In another embodiment, where the insert has been attached to a die half, the insert is severed as the casting is displaced relative to the die. The portion of the insert, which has defined the desired undercut, is then removed from the die casting.

**3,461,946**  
**METHOD OF DIE CASTING**  
Gustav Nysellius, Stamford, Conn., assignor, by mesne assignments, to Vasco Metals Corporation, Latrobe, Pa., a corporation of Pennsylvania  
Filed Sept. 14, 1966, Ser. No. 579,265  
Int. Cl. B22d 17/04, 35/00  
U.S. Cl. 164—113 2 Claims



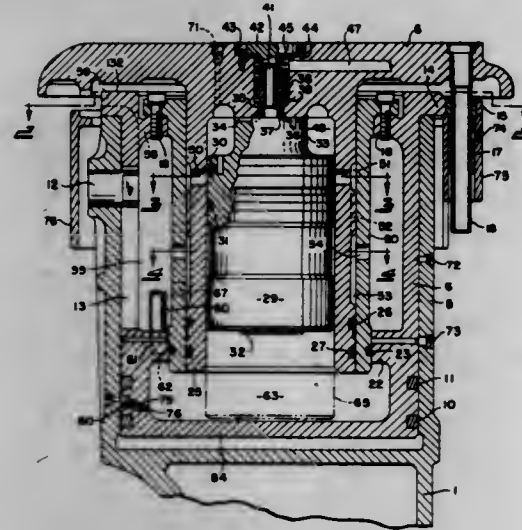
A horizontally disposed heated sleeve, from which charges of molten metal are supplied by a reciprocating plunger to a gate and die cavity through a heated nipple which is aligned with the gate and open from the top of the sleeve, is connected by a supply conduit to a source of supply and is automatically refilled by maintaining the liquid level within the source of supply between the top of the charging sleeve and the top of the nipple.

**3,461,947**  
**SHOCKLESS JOLT MOLDING MACHINE WITH AIR SPRING MEANS**  
Edward D. Abraham, Cleveland, and Robert W. Ellms, North Olmsted, Ohio, assignors, by mesne assignments, to The Sherwin-Williams Company, Cleveland, Ohio, a corporation of Ohio  
Filed Apr. 10, 1967, Ser. No. 629,599  
Int. Cl. B22c 15/30, 15/14  
U.S. Cl. 164—197 18 Claims

A jolt-squeeze type foundry molding machine having



a table with a ram supported on a chamber of air to move



upwardly to strike the bottom of the table as the latter drops to provide a shockless jolt.

3,461,948

#### BLOW PLATE ASSEMBLY

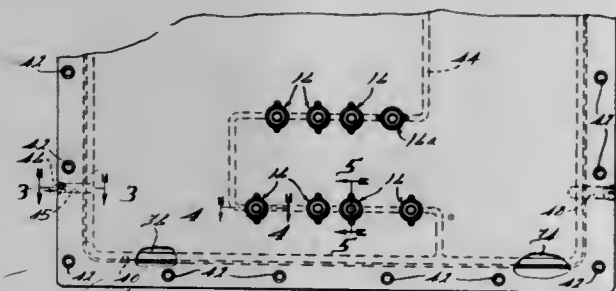
Ralph K. Londal, Farmington, Lloyd A. Schroeder, Southfield, and Wendell M. Doolin, Bloomfield Hills, Mich., assignors to Automotive Pattern Co., Detroit, Mich., a corporation of Michigan

Continuation-in-part of application Ser. No. 534,807, Mar. 16, 1966. This application Apr. 18, 1967, Ser. No. 634,415

Int. Cl. B22c 7/06, 15/22

U.S. Cl. 164—201

32 Claims



A device for use in conjunction with a support member comprising one side of a fluent material reservoir and defining an annular discharge bore adapted to communicate fluent material within the reservoir to an associated mold or the like, the device including a hollow cylindrical member defining a central passage through which the fluent material is communicable, an external jacket member extending coaxially of the first mentioned member and surrounding a portion thereof, the inner periphery of the jacket member and the outer periphery of the first mentioned member defining a fluid circulating chamber therebetween, a tip assembly disposed on the lower end of the device and engageable with the associated mold or the like, fluid passage means formed in the support member and communicable with the upper end of the fluid circulating chamber, and means for detachably securing the device to the support member including an annular flange section formed integrally of said jacket member and clamping means adapted to clampingly secure the flange section to the lower side of the support member.

#### 3,461,949 APPARATUS FOR MAKING THREADED MOULDS

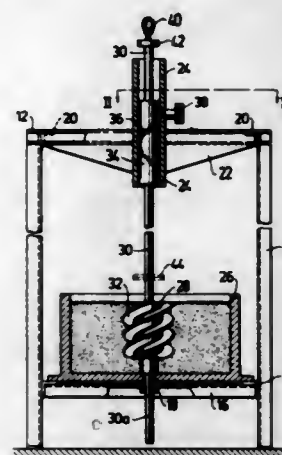
Nils Emil R. Nilsson, Saltjö-Boo, Sweden, assignor to Svenska Rotor Maskiner Aktiebolag, Nacka, Sweden, a corporation of Sweden

Filed Sept. 27, 1966, Ser. No. 582,311

Int. Cl. B29d 1/00; B22c 9/22

U.S. Cl. 164—216

7 Claims



Apparatus for making moulds to produce multi-threaded screw castings comprising a frame and a moulding flask and a stationary guide sleeve mounted thereon. The apparatus includes a shaft rotatably and axially movably mounted in said guide sleeve. The shaft carries a pattern of a multi-threaded screw casting at one end and a cylindrical portion slidable in said guide sleeve at said other end. The cylindrical portion has a single helical groove having the same pitch as the multi-threaded screw of the pattern. The guide sleeve carries a pin which is positioned to engage said helical groove whereby upon rotation of said shaft it moves axially relative to said sleeve and rotates following the pitch of said helical groove.

#### 3,461,950 APPARATUS FOR PRODUCING ADJUSTABLE RECIPROCATION OF A CONTINUOUS CASTING MOLD

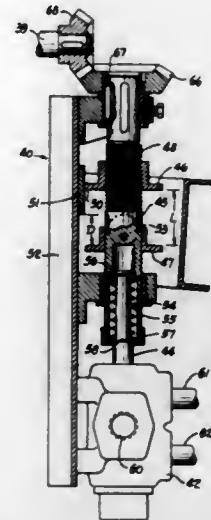
Anatol Michelson, Glenolden, Pa., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Filed Oct. 28, 1966, Ser. No. 590,291

Int. Cl. B22d 11/00, 27/08; F011 31/00

U.S. Cl. 164—260

3 Claims



Apparatus for producing adjustable reciprocation of a continuous casting mold. The disclosed apparatus includes a frame for supporting a continuous casting mold and a hydraulic cylinder for reciprocating the mold. Supply of hydraulic fluid to the cylinder is controlled by a four-

way control valve actuated by movement of the frame transmitted to the valve operator through an adjustable lost motion connection.

#### 3,461,951 LOWERING TROUGH ASSEMBLY FOR USE WITH A CONTINUOUS CASTING MACHINE

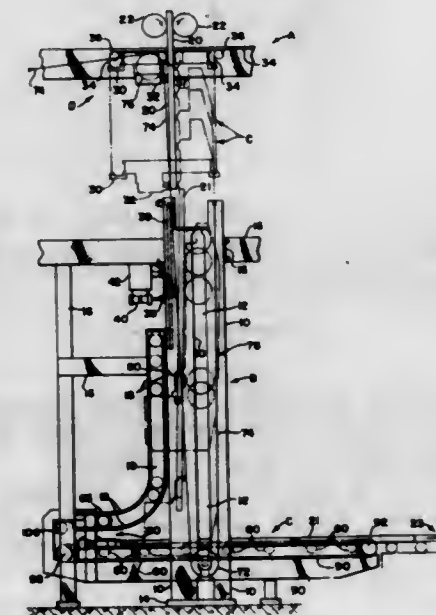
Alexander Szentaszloi, West Chester, and Melvin L. Weiss, Broomall, Pa., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Filed Feb. 10, 1967, Ser. No. 615,208

Int. Cl. B22d 11/12

U.S. Cl. 164—282

6 Claims



A handling apparatus for receiving the billets or slabs severed from a continuous casting after it exits in a downward direction from a continuous casting machine. The apparatus includes a cradle or frame adapted to be moved from a vertical, slab receiving, position to a horizontal, slab discharging, position and having a transversely extending power driven stop member for abutting the end of the billet or slab.

#### 3,461,952 APPARATUS AND METHOD FOR DISSIPATING HEAT FROM A HEAT SOURCE

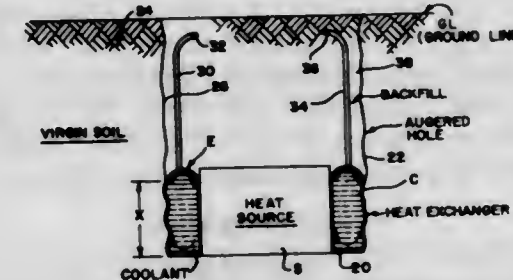
Robert M. Decker, Parma, and Kenneth W. Klein, Bay Village, Ohio (both of P.O. Box 5000, Cleveland, Ohio 44101)

Filed Oct. 9, 1967, Ser. No. 673,637

Int. Cl. F28d 21/00; F28f 7/00

U.S. Cl. 165—1

24 Claims



Apparatus and method are disclosed herein for dissipating heat from a heat source, such as an electrical transformer, into a heat absorbing medium, such as soil, having irregular shaped walls facing the heat source. The

heat exchanger is interposed between the heat source and the irregular shaped walls, and includes flexible means defining an expandable, closed chamber. As the chamber is filled with fluid it expands so that the walls of the exchanger make area surface contact with the irregular shaped walls of the heat absorbing medium and thereby provide a good path for transfer of heat from the source into the heat absorbing medium.

#### 3,461,953 VACUUM DRYER SHELF TEMPERATURE CONTROL

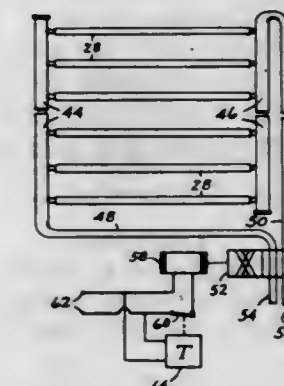
Leonard C. Costello, Warminster, and Karl H. Wiegmann, Huntingdon Valley, Pa., assignors to Hull Corporation, Hatboro, Pa., a corporation of Pennsylvania

Filed Aug. 15, 1967, Ser. No. 660,716

Int. Cl. F28f 27/00; F28d 21/00

U.S. Cl. 165—12

4 Claims



A plurality of vertically spaced hollow shelves in a vacuum dryer housing communicating with a pair of vertical manifolds which are connected selectively through a solenoid valve arrangement to a circulating source of heating fluid. A timer controlled switch in the electric circuit of the solenoid valve effects periodic reversal of flow of heating fluid through the shelves.

#### 3,461,954 ACTIVE HEAT TRANSFER DEVICE

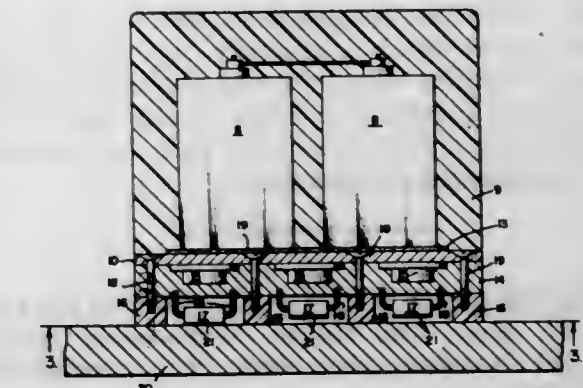
Hampden O. Banks and Richard H. Sparks, Westminister, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

Filed May 29, 1967, Ser. No. 642,098

Int. Cl. G05d 23/10; F28f 13/00

U.S. Cl. 165—32

5 Claims



A continuous heat source transfers heat to a desired device such as a battery. A plurality of bimetallic, heat-activated transfer switches transfer or bleed away heat from the heat source to a heat sink in a controlled manner. This makes it possible to maintain the temperature of the battery within predetermined levels.



3,461,955

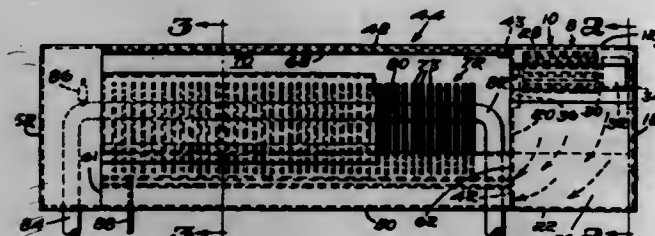
**HEAT EXCHANGE APPARATUS**

Robert S. McKinnon, 124 Temple St., West Roxbury, Boston, Mass. 02132

Continuation of application Ser. No. 538,820, Mar. 30, 1966. This application Mar. 25, 1968, Ser. No. 715,691  
Int. Cl. F28f 13/12; F24f 3/04

U.S. Cl. 165-123

6 Claims



Apparatus to heat or cool, and humidify as desired. A blower at one side has an air inlet and an air outlet communicating with a receiving passage of a heat exchange device having a container to hold liquid. A heat exchanger is directly above said receiving passage and has fin portions that extend into said container.

3,461,956

**HEAT EXCHANGE ASSEMBLY**

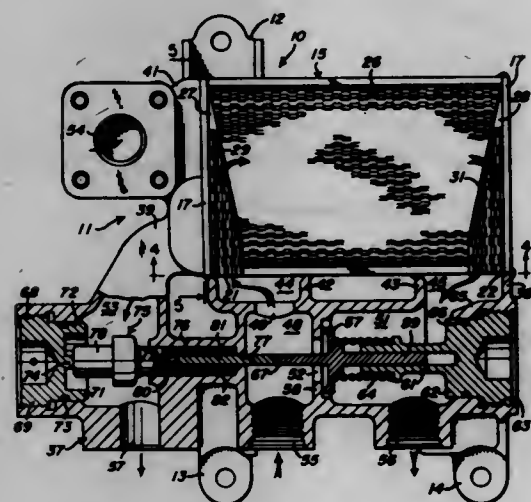
Howard R. Otto, Dayton, Ohio, assignor to United Aircraft Products, Inc., Dayton, Ohio, a corporation of Ohio

Filed Nov. 28, 1967, Ser. No. 686,124

Int. Cl. F28f 3/04; G05d 23/12

U.S. Cl. 165-166

10 Claims



A heat exchanger assembly in which a plate and fin type heat exchanger has uniquely formed plate components for simplified assembly and cooperates with manifolded means mounted to faces of the heat exchanger, the manifolded means including a fluid flow control valve of novel adjustment characteristics.

3,461,957

**UNDERWATER WELLHEAD INSTALLATION**

Francis G. West, The Hague, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Mar. 30, 1967, Ser. No. 627,126

Claims priority, application Great Britain, May 27, 1966, 23,827/66

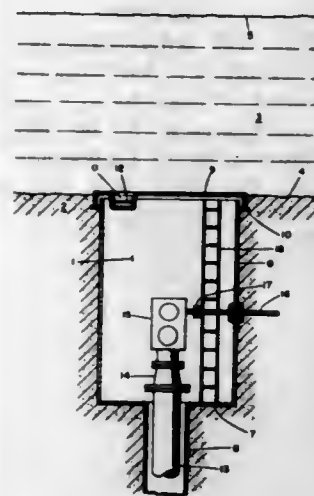
Int. Cl. E21b 33/035, 43/01

U.S. Cl. 166-5

3 Claims

An underwater wellhead structure arranged substantially flush with the floor of a body of water for enclosing and protecting a wellhead of an underwater well.

The structure comprises an enclosed cellar buried in the ocean floor having a roof of flat or domed configuration and a door in the roof to provide access to the cellar.



Well-treating fluid, e.g., glycol, may be stored in the cellar and selectively injected into the well by means of a pump positioned in the cellar.

3,461,958

**METHODS AND APPARATUS FOR INSTALLATION AND REMOVAL OF PREVENTER STACKS IN OFFSHORE OIL AND GAS WELLS**

Cicero C. Brown, % Brown Oil Tools, Inc.,

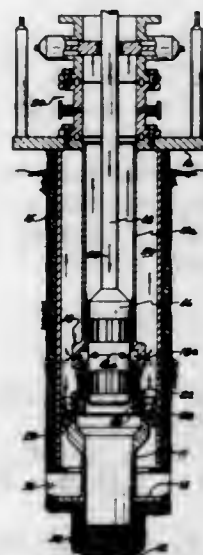
P.O. Box 19236, Houston, Tex. 77024

Filed Jan. 16, 1967, Ser. No. 609,572

Int. Cl. E21b 33/035, 33/06

U.S. Cl. 166-5

10 Claims



In the installation and recovery of stacks of blowout preventers in offshore oil wells, the preferred apparatus providing a pressure fluid chamber below the preventer stack and adjacent the casing string, a releasable or severable connection in the casing string, a path for conducting pressure fluid into the chamber for expansion to lift the preventer stack from the well bore, the chamber communicating an upward lifting force to the preventer stack in response to pressure increase in the chamber.

3,461,959

**RETRIEVABLE BRIDGE PLUG**

Martin B. Conrad, P.O. Box 1026,

Downey, Calif. 90240

Filed Aug. 19, 1965, Ser. No. 480,899

Int. Cl. E21b 33/124, 33/129, 23/06

U.S. Cl. 166-123

19 Claims

A retrievable bridge plug having a well wall sealing rubber, internal valves, and an anchor assembly in which

slip units including interconnected pairs of slip elements coact with an expander cone located between the slip

respectively, to convey fluid to spaced apart packer means and into the space therebetween. Also, concentrically disposed, outer and inner tubular members of selective, predetermined length extend from respective first and second



elements, and control rod effects actuation of the valves and controls operation of the anchor assembly.

3,461,960

**METHOD AND APPARATUS FOR DEPOSITING CEMENT IN A WELL**

Ernest B. Wilson, 55 Tiel Way,

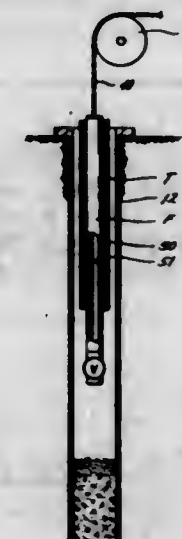
Houston, Tex. 77019

Filed May 8, 1967, Ser. No. 636,879

Int. Cl. E21b 33/13, 41/00

U.S. Cl. 166-168

1 Claim



A method and apparatus for depositing water activated cement, either wet or dry in a well bore wherein such cement is encapsulated in capsules which are water soluble or which disintegrate in water or breakable containers which are dropped to the bottom of the well bore where the capsules break or disintegrate to release the wet cement, and in those instances where dry cement is used, the water also activates the cement.

3,461,961

**WELL TOOL COMBINATION AND ADAPTER**

Clayton L. Phillips, Houston, Tex., assignor of one-fourth

to Don R. Switzer, Houston, Tex.

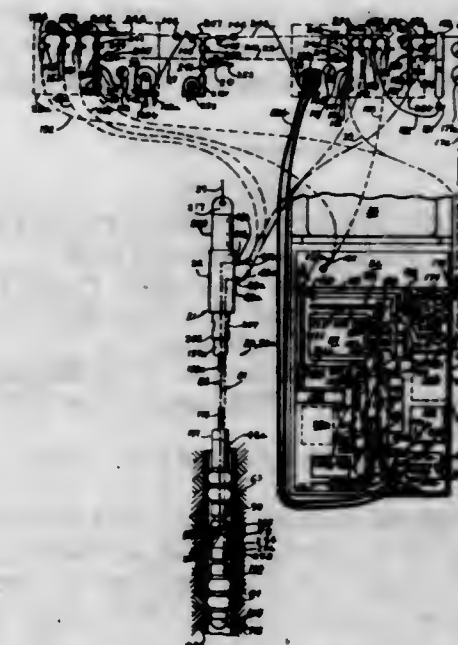
Filed Mar. 2, 1967, Ser. No. 620,043

Int. Cl. E21b 33/124, 23/00

U.S. Cl. 166-187

6 Claims

The invention encompasses methods and apparatus associated with, and including, in a vertically moveable combination, a tool providing first and second flow channels,



flow channel communication for connection with a cross-over adapter which connects the respective tubular members with lower and higher pressure fluid sources, respectively, to set the packer means and to pressurize any succession of spaces for leak test and/or other purposes.

3,461,962

**PIPE STRING FILL-UP TOOL**

James W. Harrington, Morgan City, La. 70380

Continuation-in-part of application Ser. No. 585,006,

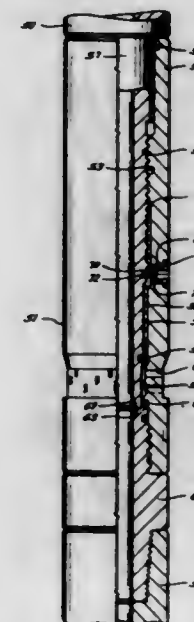
Oct. 7, 1966. This application June 22, 1967, Ser.

No. 653,292

Int. Cl. E21b 43/00, 17/02, 43/10

U.S. Cl. 166-226

2 Claims



A fill-up tool is described comprising two telescoping tubular members for installation in a pipe string to permit the liquid in a well bore to enter the pipe string with a minimum of restriction, as the pipe string is lowered into the well bore. The two members are connected together by screw threads so that relative rotation of the members will move the members axially relative to each other. One



member is provided with lateral openings through which the liquid in the well bore can flow into the tool and into the pipe string when the tool is in its open position. The other member is provided with seals to close off the lateral openings, when the tool is in its closed position. The tool is opened by unscrewing the two members. This is the position of the tool as the string is run into the hole. When the pipe string has been lowered into the well bore to the desired depth, relative rotation of the members to make up the threaded connection between them will close the tool.

3,461,963

# METHOD OF HYDROCARBON RECOVERY BY IN-SITU COMBUSTION

John N. Dew and William L. Martin, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 408,386, Nov. 2, 1964. This application Nov. 15, 1966, Ser. No. 594,377

Int. Cl. E21b 43/14, 43/20, 43/24

U.S. Cl. 166-263

8 Claims

Water is injected through a first well into an oil bearing formation in an amount equal to between 1 percent of the pore volume and that required for breakthrough into a second well (theoretically 100 percent of the pore volume). Subsequently, oil recovery by in situ combustion is conducted in the formation between the two wells, preferably in a direction moving from the second well to the first well. The technique can be applied with multiple wells.

3,461,964

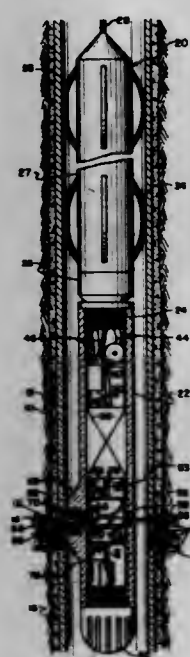
# WELL PERFORATING APPARATUS AND METHOD

Alexis A. Venghiattis, Weston, Conn., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware  
Filed Sept. 9, 1966, Ser. No. 578,304

Int. Cl. E21b 43/11

U.S. Cl. 166-297

14 Claims



Apparatus for forming perforations or foraminous screens, in situ, in the wall of well bores or the like wherein the apparatus includes a quantum device arranged to emit a beam of coherent, monochromatic electromagnetic energy of sufficient intensity to penetrate the casing and/or tubing and, where applicable, formations surrounding the well bore. Specifically, the apparatus includes a laser device that is movable in the well bore that can be discharged when desired to selectively form the perforations.

3,461,965

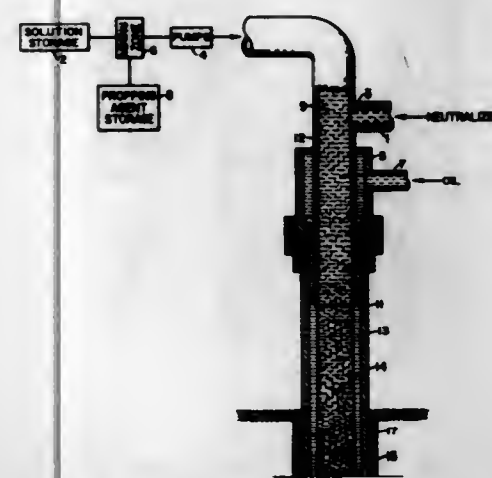
# FRACTURING OF EARTH FORMATIONS

Leon H. Robinson and Robert E. Williams, Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware  
Filed June 29, 1967, Ser. No. 649,894

Int. Cl. E21b 43/26

U.S. Cl. 166-308

10 Claims



An earth formation is fractured by producing a high pressure stream of a pH-sensitive water thickener at a low pH, and before injection of the stream into the formation, increasing the viscosity by raising the pH of the stream. The pH may be increased at the earth's surface by adding a neutralizing agent to the stream, in which case an annular ring of oil is formed between the well pipe and the stream to reduce pressure drop in the well pipe. The preferred stream content is an aqueous solution of carboxy vinyl polymer. Neutralizing agents may be inorganic salts and bases, and nonamine salts and bases.

3,461,966

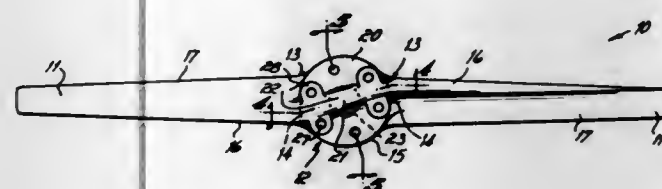
# UNITARY FIXED PITCH AIRCRAFT PROPELLER

David Biermann, Piqua, Ohio, assignor to Hartzell Propeller, Inc., Piqua, Ohio, a corporation of Ohio  
Filed Oct. 16, 1967, Ser. No. 675,496

Int. Cl. B64c 11/10, 11/22

U.S. Cl. 170-159

13 Claims



A one piece metallic aircraft propeller having at least two blades integral with a hub, the central portion of said hub being imperforate.

3,461,967

# ROW FINDER FOR ROW CROP HARVESTERS

Novell E. Wells, 927 Ranch Road, Boise, Idaho 83702  
Filed Mar. 14, 1966, Ser. No. 534,205

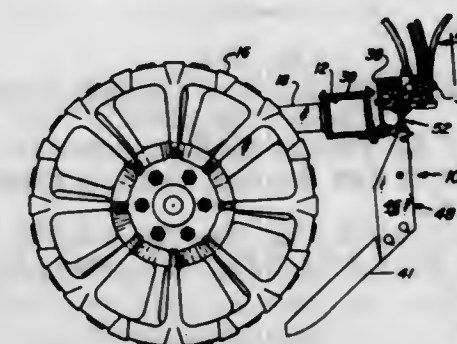
Int. Cl. A01d 25/00, 33/00

U.S. Cl. 171-8

5 Claims

A device for sensing misalignment of row crops and steering a harvester into alignment with the crop in response to such sensing. The device includes a pair of sensing fingers pivoted for vertical movement on the horizontal portion of an inverted T-shaped shaft which itself is mounted for horizontal movement about the

vertical axis of the shaft. Rotative movement of the shaft is translated by a link to reciprocative movement of an



actuator arm of a steering valve operatively connected to a harvester steering cylinder.

3,461,968

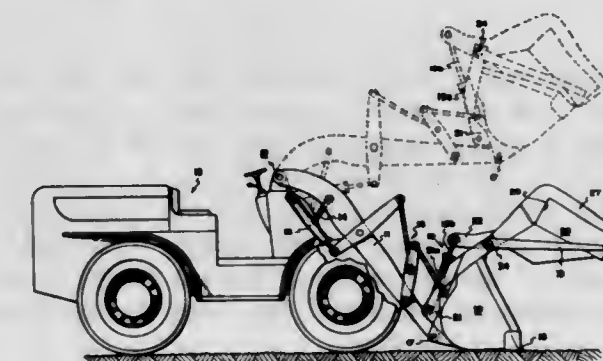
# SCREENING LOADER

Lester A. Longley, Las Vegas, Nev., assignor to Radio Corporation of America, a corporation of Delaware  
Filed Apr. 28, 1966, Ser. No. 546,005

Int. Cl. E02f 3/81, 3/86; B07b 1/28

U.S. Cl. 171-132

6 Claims



A mobile screening machine wherein a scoop of open trough formation is arranged to scoop up material to be screened and to screen the scooped material through a hinged screening cover for the scoop. This cover carries a screen arranged to be vibrated when the scoop is elevated and turned upside down.

3,461,969

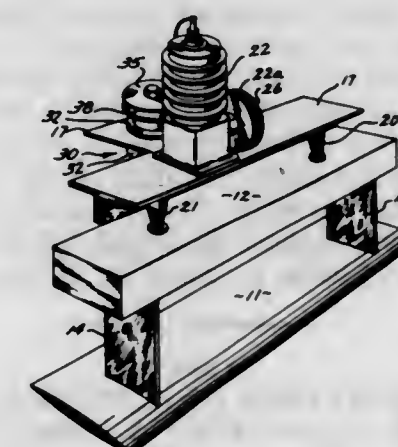
# SONIC SUBSURFACE SOIL CULTIVATOR

Albert G. Bodine, Jr., 7877 Woodley Ave., Van Nuys, Calif. 91406  
Filed May 20, 1966, Ser. No. 551,628

Int. Cl. A01b 79/00, 35/02

U.S. Cl. 172-1

8 Claims



A substantially flat blade member, the broad surfaces of which are oriented horizontally, is positioned in the soil a short distance below the surface thereof by means of relatively flat arm members which extend through the

surface of the soil. An elastic bar member interconnects the arm members where they extend out of the soil. The bar member and blade member are sonically energized by means of an orbiting mass oscillator and are caused to elastically vibrate at a resonant vibration frequency. While such sonic resonant vibration is occurring, the blade member is drawn horizontally through the earth to fluidize a swath of earth a short distance below the surface without significantly tilling the earthen material at and immediately adjacent to the surface.

3,461,970

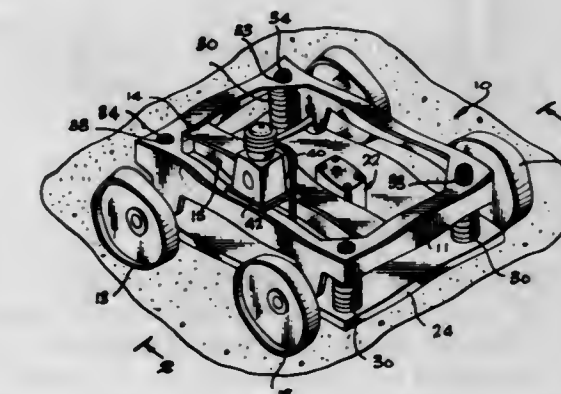
# SONIC METHOD AND APPARATUS FOR BREAKING CRUSTS ON AGRICULTURAL SOIL

Albert G. Bodine, Los Angeles, Calif.  
(7877 Woodley Ave., Van Nuys, Calif. 91406)  
Filed Sept. 13, 1966, Ser. No. 579,120

Int. Cl. A01b 79/00, 35/32

U.S. Cl. 172-1

11 Claims



A device and method for breaking up a soil crust comprised of an elastically vibrated resonator plate disposed spatially above and generally parallel to the crust, the plate being vibrated by an orbiting mass oscillator so as to establish a resonant standing wave pattern in the plate with the sonic energy transmitted from the plate through intervening air to the crust, causing the desired result.

3,461,971

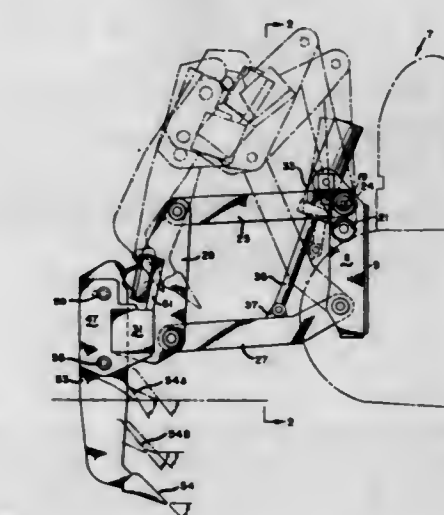
# VYBA MOUNT

Roger Sprekel, Oakland, Calif., assignor to American Tractor Equipment Corporation, a corporation of California  
Filed July 5, 1966, Ser. No. 562,843

Int. Cl. A01b 15/12, 23/04

U.S. Cl. 172-710

1 Claim

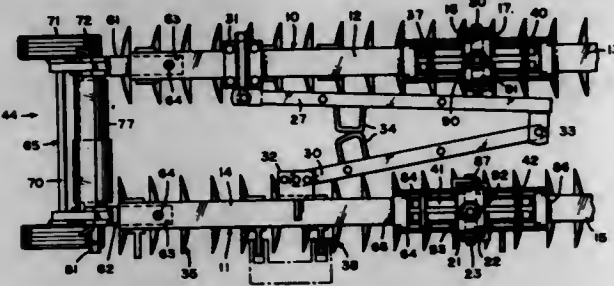


This invention relates to an earth ripping tool in which a preloaded resilient member is provided between the upper end of the shank of the ripper tool and the shank support and wherein the effect of the resilient member is



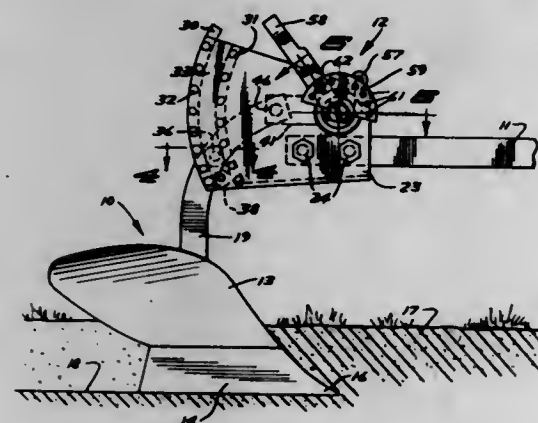
to keep the shank of the ripper tool moving in a fore and aft direction as the load on the shank varies due to the varying hardness of the soil or rock through which the ripping tool is moved, thus greatly increasing the capacity of the ripper.

**3,461,972**  
**CARRIER FOR DISC HARROW**  
William R. McKay, Lynwood, Calif., assignor to Alexander Manufacturing Company, a corporation of Mississippi  
Filed May 18, 1966, Ser. No. 551,051  
Int. Cl. A01b 63/16, 73/00  
U.S. Cl. 172—240 15 Claims



The carrier is for use in conjunction with a foldable harrow and includes interconnected harrow frames movable to a parallel folded position. Detachable transport units are connected to opposite ends of the folded harrow frames and elevating means are provided for selectively raising the harrow for transportation. Each harrow frame is in two sections and associated sections are held in arched longitudinal relation by bridge member interconnecting the sections.

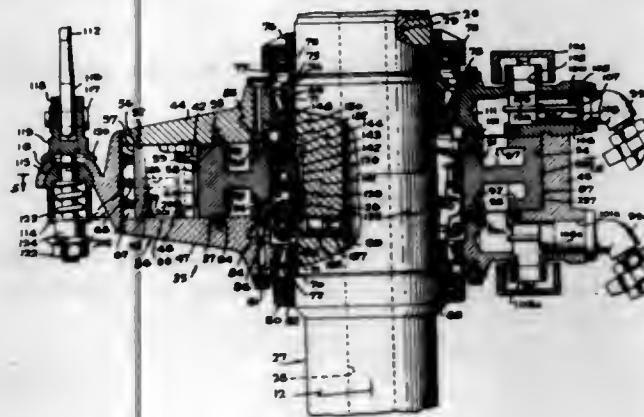
**3,461,973**  
**YIELDING PLOW BOTTOM**  
Cletus J. Geurts, Box 42, Gwinner, N. Dak. 58040  
Continuation-in-part of application Ser. No. 486,712, Sept. 13, 1965. This application Aug. 17, 1967, Ser. No. 661,301  
Int. Cl. A01b 61/04, 15/02  
U.S. Cl. 172—264 11 Claims



A plow bottom connected to a beam with a combined guide, holding and release assembly for yieldably holding the plow bottom in the ground working position. The guide of the assembly comprises two pair of upwardly curved tracks forming spaced guideways for rollers mounted on opposite sides of the plow standard for controlling the movement of the plow bottom so that the point of the plow share does not go below the furrow bottom when clearing an obstruction. The upper end of

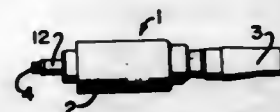
the standard is connected to a crank arm biased by a torsion spring to hold the plow bottom in the ground working position.

**3,461,974**  
**SPINNER DEVICE FOR TURNING WELL PIPE OR THE LIKE**  
Josef Bartos, La Puente, Calif., assignor to Abegg and Reinhold, Los Angeles, Calif., a corporation of California  
Filed June 26, 1967, Ser. No. 648,913  
Int. Cl. E21b 3/02; E21c 7/10; F04c 1/02  
U.S. Cl. 173—3 24 Claims



A spinner for turning a section of well pipe and including a vane type motor disposed about a tubular pipe sub which is connected to the upper end of the well pipe, and having a clutch adapted to break the coupling between the motor and the pipe sub in response to the development of pressure in the drilling fluid within the well string, to thereby prevent damage to the motor or other apparatus by turning of the string during drilling.

**3,461,975**  
**FLUID PRESSURE OPERATED WRENCH**  
Otmar M. Ulbing, Berkshire, N.Y., assignor to Ingersoll Rand Company, New York, N.Y., a corporation of New Jersey  
Filed Aug. 29, 1967, Ser. No. 664,100  
Int. Cl. E21c 5/08; F01c 21/12  
U.S. Cl. 173—12 9 Claims

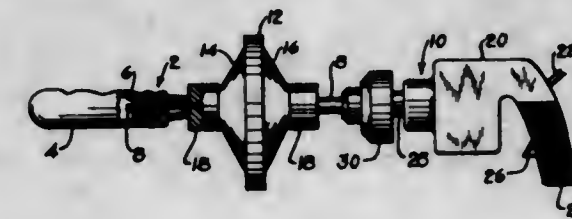


A wrench for tightening a fastener to a predetermined torque. A first shaft is rotated by a motor and a second shaft is adapted to have a fastener driving implement such as a socket connected thereto. There are mating arms on both the first and second shafts for transferring the rotation of the first shaft to the second shaft. When a torque which will stall the motor is reached, air pressure is supplied through a suitable valving arrangement to pockets in the mating arms to rotate the second shaft relative to the first shaft. This secondary rotation means is used to achieve the final torque which is in excess of that capable of being produced by the motor.

**3,461,976**  
**PORTABLE TOOL STABILIZER**  
John B. Nemec, 28740 U.S. Federal Highway, Homestead, Fla. 33030  
Filed Dec. 15, 1967, Ser. No. 691,003  
Int. Cl. B23d 79/10  
U.S. Cl. 173—163 4 Claims

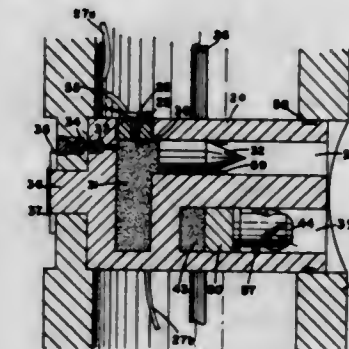
A portable hand tool stabilizer attachment for supporting and stabilizing one end of a tool mounting shaft hav-

ing a rotatable tool mounted between the ends of the shaft while a portable power unit supports the other end



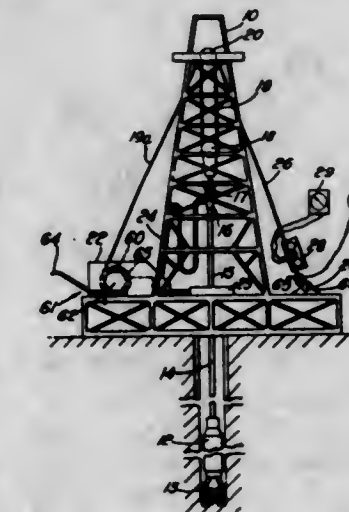
of the shaft and rotates the tool. The stabilizer includes a handle, and a bearing connected to the handle for allowing the tool mounting shaft to rotate freely therein.

**3,461,977**  
**CASING PERFORATING AND SCREEN PLUG SETTING DEVICE**  
Harriet A. Taggart, 17130 Horace St., Granada Hills, Calif. 91344  
Filed May 27, 1968, Ser. No. 732,351  
Int. Cl. E21b 7/00, 43/116; E21c 19/00  
U.S. Cl. 175—4.5 4 Claims



The invention relates to a device which will selectively perforate a well casing, and at the same time insert a filter plug in the perforation which will be held fast, and prevent sand and other unconsolidated materials from entering the casing.

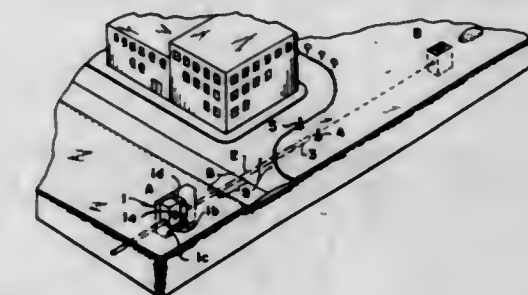
**3,461,978**  
**METHODS AND APPARATUS FOR BOREHOLE DRILLING**  
Frank Whittle, Walland Hill, Chagford, Devonshire, England  
Filed Apr. 26, 1967, Ser. No. 633,816  
Claims priority, application Great Britain, Apr. 27, 1966, 18,516/66  
Int. Cl. E21b 3/06, 19/08; E21c 5/06  
U.S. Cl. 175—27 6 Claims



An apparatus for use in drilling boreholes has a draw-works provided with a braking means. A fastline is anchored to the draw-works and a deadline is anchored

to an anchorage member. A derrick supports a drill string in conjunction with the fastline and deadline. A bit weight sensor produces a first signal proportional to the tension in the deadline, and a device is provided which produces a second signal proportional to the rate of change of tension in the deadline. The bit weight is varied by a control means in accordance with the first signal. When the second signal reaches a maximum value, it is applied to the control means in such a way as to maintain the first signal substantially at the then existing level while drilling continues.

**3,461,979**  
**RESONANT VIBRATORY DRIVING OF SUBSTANTIALLY HORIZONTAL PIPE**  
Leo R. Newfarmer, La Jolla, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Filed Apr. 21, 1967, Ser. No. 632,595  
Int. Cl. E21b 47/024, 7/04  
U.S. Cl. 175—45 10 Claims



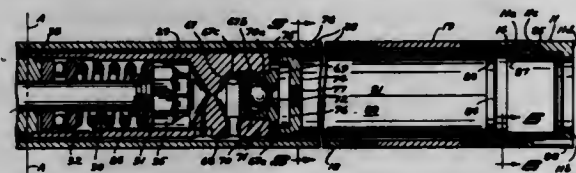
An elongated pipe is driven substantially horizontally through an earth formation by resonant vibratory means. An inclinometer which comprises an annular chamber of non-conductive material with a conducting ring in each end of the chamber and being partially filled with a conductive material to form part of an indicator circuit which is interrupted when tilted an excessive amount is placed in the forward end of the conduit or other elongated member that is being driven substantially horizontally through the earth. The instrument also contains a second part of the circuit which includes electromagnetic field-inducing means and is provided with means in the instrument responsive to the vibration of driving to switch from the clinometer circuit to the magnetic circuit. Electromagnetic sensing and indicating instruments are placed along the desired path of the conduit to receive the magnetic signal and indicate its lateral position relative to the desired course.

**3,461,980**  
**ROTARY DRILLING OF WELLS**  
John Kelly, Jr., Arlington, Tex., assignor to Mobil Oil Corporation, a corporation of New York  
No Drawing. Filed Sept. 15, 1967, Ser. No. 668,185  
Int. Cl. E21b 21/04  
U.S. Cl. 175—70 18 Claims

This specification discloses a rotary drilling process utilizing an aqueous-base mud in which a discrete slug of hydrophobic liquid containing an oil-wetting surfactant is introduced into the mud column. The treating slug is circulated into the well annulus where it contacts one or more formations penetrated by the well and renders them water-resistant. The treating slug may be preceded and followed by buffer systems comprised of aqueous and/or oleaginous liquids. Such liquids may be of a viscosity greater than that of the aqueous-base drilling mud. The densities of the treating slug may be near that of the aqueous-base mud.

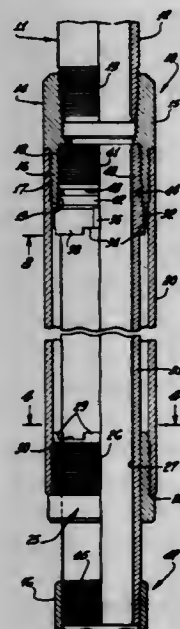


**3,461,981**  
**WIRE LINE CORE BARREL APPARATUS**  
 Ray K. Casper and Albert L. Linn, Minneapolis, Minn., assignors to E. J. Longyear Company, Minneapolis, Minn., a corporation of Delaware  
 Filed Apr. 30, 1968, Ser. No. 725,399  
 Int. Cl. E21b 9/20, 25/00  
 U.S. Cl. 175—246 7 Claims



Core barrel apparatus that includes a drill stem having an annular core bit, a landing ring and a latch seat, and a core barrel inner tube assembly having a landing ring mounted on a latch body for abutting against the drill stem landing ring to support said assembly, said latch body having grooves for bypassing drilling fluid in the area adjacent the landing rings, an inner tube, two separate third tube sections in the inner tube, and a stop ring and a plunger for retaining the tube sections in place on the inner tube.

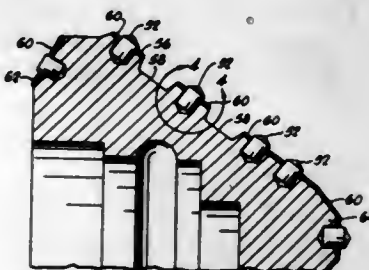
**3,461,982**  
**SAFETY RELEASE BUMPER TOOL**  
 Daniel Richard Reardon, P.O. Box 7097, Long Beach, Calif. 90807  
 Filed Mar. 8, 1968, Ser. No. 711,667  
 Int. Cl. E21b 1/10, 23/00, 1/04  
 U.S. Cl. 175—294 4 Claims



A tool for connecting the tubular mandrel of a hydraulically expandable deep well packer with a tail pipe, said tool including an upper sub screwed upwardly onto said mandrel and having external right hand threads and internal left hand threads, an external mandrel with internal right hand threads at its upper end for screwing same onto said sub external right hand threads, and internal left hand threads at its lower end, and an annular internal nut having external left hand threads screwing into the lower end of said external mandrel. An internal tubular mandrel slideably fits within said nut and has an annular external shoulder at its upper end which slideably fits within said external mandrel, and left hand external threads which screw into the internal left hand threads of said sub. The lower end of the inner mandrel connects to and supports said tail pipe during the operation of installing said packer and tail pipe in a well. Clockwise rotation of said packer mandrel when said tail pipe is stuck in the well, unscrews said inner tubular mandrel from said sub and permits telescopic extension

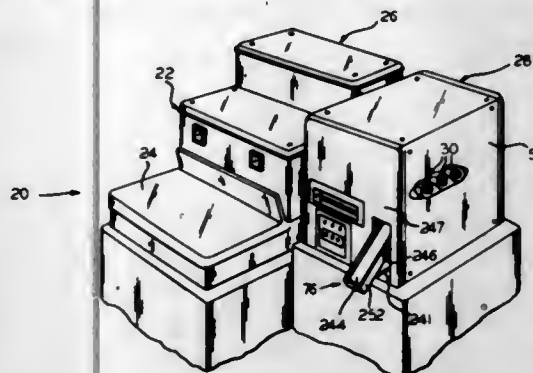
and contraction of said bumper thereby applying jarring upward blows to said tail pipe in the effort to dislodge the same. Opposed annular faces of said nut and annular shoulder have interlocking lugs for unscrewing said nut from within said outer mandrel after said tool is fully extended as aforesaid and said packer mandrel is rotated clockwise, thereby disconnecting said packer from said tail pipe, permitting said packer and sub and external bumper mandrel to be withdrawn from the well.

**3,461,983**  
**CUTTING TOOL HAVING HARD INSERT IN HOLE SURROUNDED BY HARD FACING**  
 Lester S. Hudson and Eugene G. Ott, Dallas, Tex., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware  
 Filed June 28, 1967, Ser. No. 649,638  
 Int. Cl. E21b 9/10; C09c 1/68  
 U.S. Cl. 175—375 7 Claims



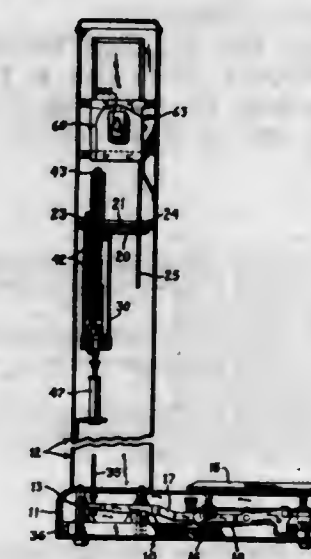
Apparatus that includes a member having a surface thereon exposed to an abrasive environment, the member having a relatively hard insert pressed into a hole in the member and having a hard facing material on the surface of the member surrounding the insert. A method of manufacturing the apparatus wherein the hole is plugged and hard facing material is applied to the surface around the plug. After the hard facing material has been permanently bonded to the surface, the plug is removed and the hard insert pressed into the hole to complete the apparatus.

**3,461,984**  
**LABEL PRINTING AND DISPENSING APPARATUS AND METHOD OF LABELING PACKAGES**  
 Duane E. Phillips, Oxford, Roger C. Schultz, Pardeeville, and Herbert H. Beck, Portage, Wis., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware  
 Filed July 23, 1965, Ser. No. 474,441  
 Int. Cl. G01g 23/28  
 U.S. Cl. 177—3 5 Claims



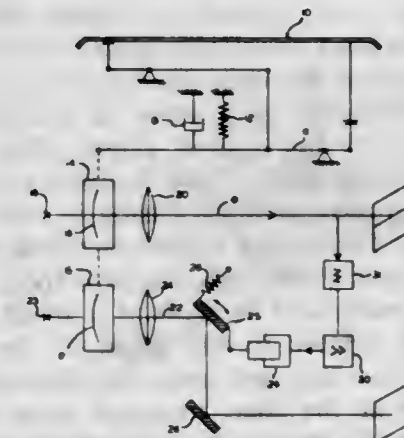
An apparatus for weighing individual quantities of perishable foods wrapped in thermoplastic wrap, for pricing each quantity and for printing the price thereof on a strip mounted pressure sensitive label. The apparatus includes strip pulling means for pulling the strip through first and second printing stations. The first printing means includes engagement means for independently advancing the strip. Control means are provided for discontinuing strip advance by the strip pulling means during printing by the second printing means and for actuating the engagement means during printing by the first printing means.

**3,461,985**  
**WEIGHER WITH AUTOMATIC TICKET ISSUING MECHANISM**  
 Kenneth C. Allen, Dayton, Ohio, assignor to The Hobart Manufacturing Company, Troy, Ohio, a corporation of Ohio  
 Filed May 22, 1962, Ser. No. 196,696  
 Int. Cl. G01g 23/38  
 U.S. Cl. 177—7 5 Claims



1. A ticket issuing weighing scale for issuing a ticket for each weighing on said scale, comprising a weighing mechanism, first switch means connected to be operated by said mechanism with the initial movement of said mechanism from the balance position with no weight on said scale, second switch means connected to be operated upon movement of said mechanism corresponding to a substantially greater weight on said scale than the weight required for the operation of said first switch means, a ticket issuer having a motor operable upon each energization thereof through a cycle of operation to issue a ticket, nonrepeat control means for said motor including first relay means connected for operation by said second switch means to initiate operation of said motor through said cycle of operation to issue a ticket, and further relay means controlled by said first relay means and by said first switch means and having contacts to prevent further operation of said first relay means until said first switch means has been released by the removal of substantially all of the weight from said scale.

**3,461,986**  
**OPTICAL WEIGHING APPARATUS**  
 Berend B. Schierbeek, Leidschendam, Netherlands, assignor to Maatschappij Van Berkel's Patent N.V., Rotterdam, Netherlands, a limited-liability company of the Netherlands  
 Filed Aug. 15, 1967, Ser. No. 660,705  
 Claims priority, application Netherlands, Aug. 22, 1966, 6611777  
 Int. Cl. G01g 23/32  
 U.S. Cl. 177—178 7 Claims

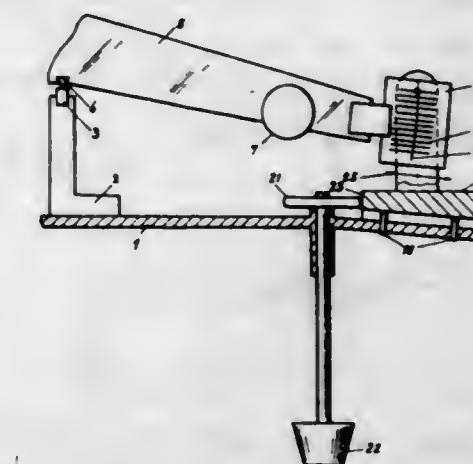


An optical weighing apparatus for postal use and the

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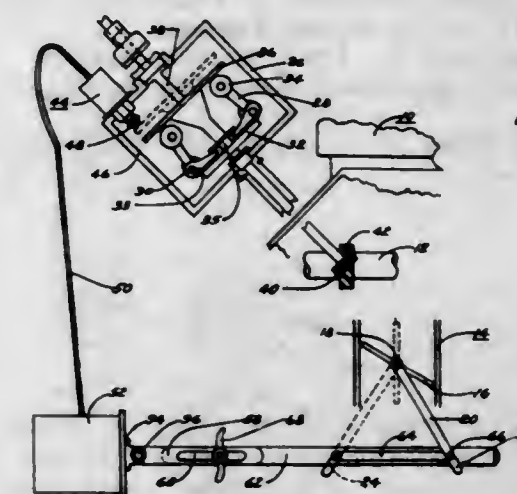
like including the optical projection of the weight and computed rate in decimal form where purely digital indication of the rate is provided.

**3,461,987**  
**PRECISION BALANCE**  
 Max Appius, Goldach, Switzerland, assignor to Mikrowa Fein-und Schnellwaagen AG, Walzenhausen, Appenzell, Switzerland  
 Filed Dec. 22, 1966, Ser. No. 603,964  
 Claims priority, application Switzerland, Jan. 25, 1966, 946/66  
 Int. Cl. G01g 23/32  
 U.S. Cl. 177—178 6 Claims



A direct-reading single-pan precision beam balance with a scale of parallel lines at one end of the beam, an extension of one of the lines passing through the pivot axis of the beam. The scale is projected on a fixed screen by means of an optical system whose axis has a portion perpendicular to the scale and movably arranged so that the perpendicular portion of the optical axis can be shifted in a path parallel to the position of the zero line on the scale at zero load on the balance.

**3,461,988**  
**ENGINE GOVERNOR RESPONSIVE TO VEHICLE SPEED**  
 Benjamin B. Jacobson, 108 Twin Shores Blvd., Sarasota, Fla. 33577  
 Filed June 15, 1967, Ser. No. 646,259  
 Int. Cl. B60k 27/06, 31/00  
 U.S. Cl. 180—105 4 Claims

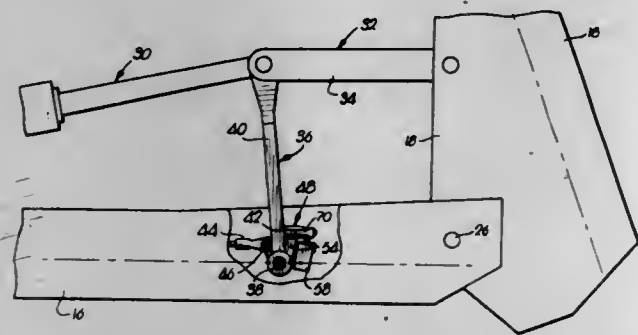


An engine speed control governor for a vehicle having a device for metering the flow of combustible charge to the engine and wherein a speed control element, responsive to the speed of the vehicle, reduces the flow of fuel to the engine when the speed of the vehicle exceeds a selected speed to prevent the engine from operating at excessive speeds. The control, being responsive to vehicle



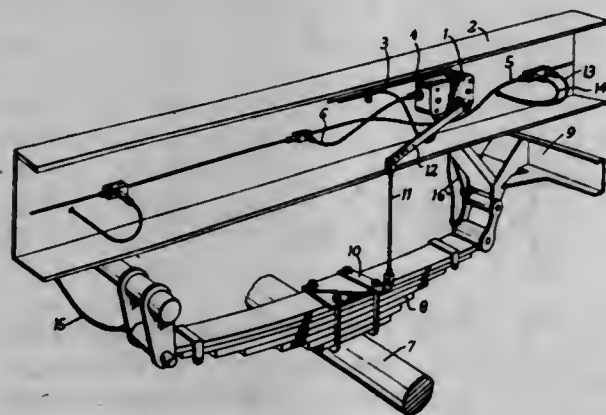
speed, permits the engine to operate at sufficiently high speeds to develop maximum rated engine horsepower when required by the load imposed on the engine.

**3,461,989**  
**MECHANISM FOR PREVENTING EXCESSIVE RELATIVE SWINGING OF AN ARTICULATED AERIAL DEVICE**  
William A. Prescott, Grandview, Mo., and Raymond J. Wacht, Overland Park, and Wayne R. Stallard, Westwood Hills, Kans., assignors, by mesne assignments, to A. B. Chance Company, Centralia, Mo., a corporation of Missouri  
Filed Nov. 29, 1967, Ser. No. 686,524  
Int. Cl. E06c 5/36  
U.S. Cl. 182—19 10 Claims



Safety mechanism for an aerial lift prevents tipping by automatically limiting the extent to which the elevated operator's station may be moved toward a position where a potentially dangerous situation might be presented. This is accomplished by use of a sensor located adjacent the zone of articulation between a pair of booms and operable in response to movement of linkage which pivotally interconnects the booms. The linkage used to move the booms generally has more movement than required to move the booms through their various positions. A sensor controls and limits the maximum movement of the booms. The effect of the sensor is to deactivate the power means which elevate the booms immediately upon the operator's station reaching a preselected position well within the limits of adequate safety whether ascent or descent is accomplished by simultaneous operation of both booms or either of them and regardless of which boom is operated first.

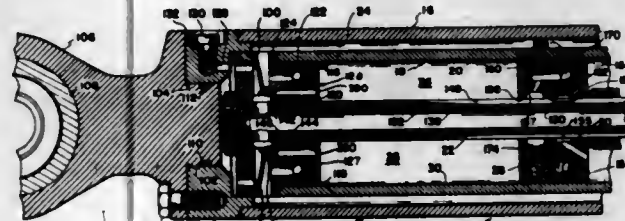
**3,461,990**  
**TRAILER LUBRICATION SYSTEMS**  
Peter William Stripp and Reginald Ralph May, Plymouth, Devon, England, assignors to Tecalemit (Engineering) Limited, Plymouth, Devon, England  
Filed Jan. 17, 1967, Ser. No. 609,847  
Claims priority, application Great Britain, Jan. 17, 1966, 2,150/66  
Int. Cl. F16n 13/18; F16f 1/24; F04b 19/22  
U.S. Cl. 184—7 5 Claims



A vehicle lubrication system comprises a lubricant pump mounted or adapted to be mounted on a vehicle and an

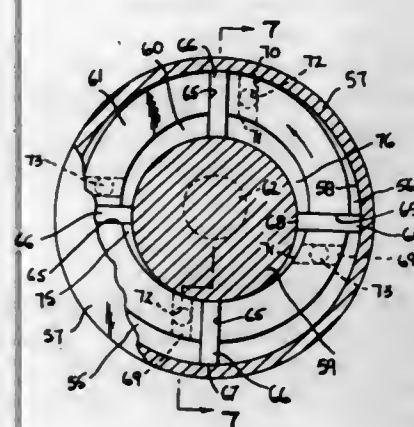
operating member which operates the pump and is movable in response to movements of the vehicle or a part thereof, such as an axle.

**3,461,991**  
**BIDIRECTIONAL METERING SHOCK ABSORBER**  
Marion Arendarski, Kalamazoo, Mich., assignor to Pneumo Dynamics Corporation, Cleveland, Ohio, a corporation of Delaware  
Original application Oct. 13, 1965, Ser. No. 495,512, now Patent No. 3,367,453, dated Feb. 6, 1968. Divided and this application Sept. 19, 1967, Ser. No. 687,936  
Int. Cl. F16d 57/00  
U.S. Cl. 188—88 9 Claims



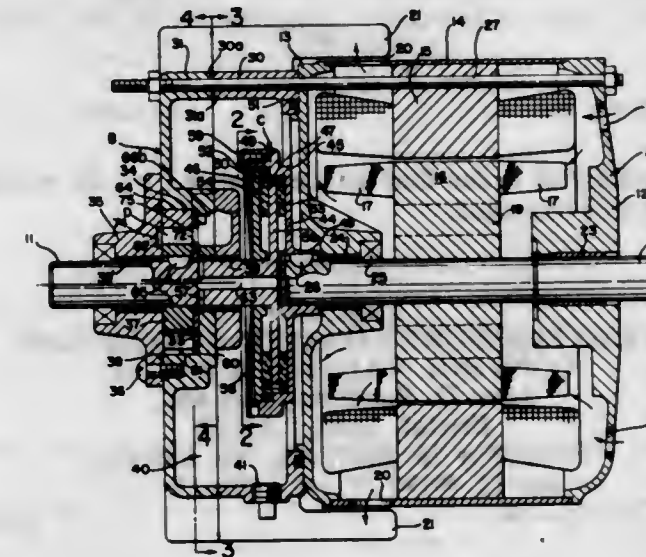
This application discloses a bidirectional metering shock absorber of the piston and cylinder type wherein the piston is snubbed or decelerated at the end of the stroke and wherein rapid acceleration of the piston is allowed during movement away from the end of the stroke.

**3,461,992**  
**HYDRAULIC ROTARY POWER TRANSFER MECHANISM**  
Arnold A. Frasca, 5801 Yorktown Road, Lorain, Ohio 44053  
Filed Oct. 12, 1967, Ser. No. 674,927  
Int. Cl. F16d 31/02, 31/04  
U.S. Cl. 192—60 4 Claims



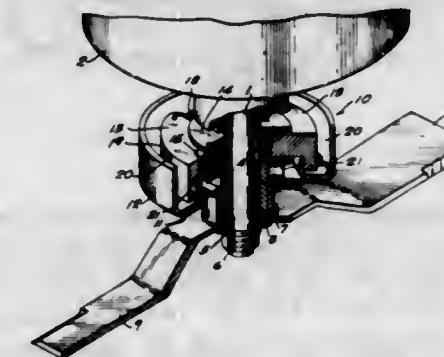
A powered or driving shaft revolves an armature or rotor within a casing containing hydraulic fluid. Movable elements are mounted on the rotor and cooperate with the casing, as the rotor revolves, to displace the hydraulic fluid through a defined circulatory path from the pressure side of an element to the opposite side thereof. Metering means in the circulatory path serve to restrict the volumetric circulation to any desired extent, thus artificially loading the revolving rotor and establishing a fluid coupling between the rotor and the casing in reaction to the artificial loading. The casing is free to rotate and is connected to an output shaft. The reaction force will cause rotation of the casing and its shaft at a speed or angular velocity which is related to the speed of the rotor, the degree of restriction imposed upon the circulation of the hydraulic fluid and the load imposed upon the output shaft. The device, in association with other mechanisms, may be utilized as a power transfer mechanism or torque converter, as a clutch, or as a braking device.

**3,461,993**  
**HYDRAULICALLY RELEASED FRICTION CLUTCH**  
Robert Wesley Brundage, St. Louis, Mo., assignor to The Emerson Electric Mfg. Co., St. Louis, Mo.  
Filed May 18, 1966, Ser. No. 551,133  
Int. Cl. F16d 13/44, 25/00, 19/00  
U.S. Cl. 192—91 10 Claims



A variable speed power source in which a variable slippage clutch interconnects a pair of shafts, a hydraulic pump is driven by one of the shafts with the pump including a variable orifice in the output thereof for creating a pressure which varies as the speed of the pump varies. The pressure at the orifice is communicated to the variable slippage clutch to control the amount of slippage of the clutch. A valve may be positioned in the output of the pump with the valve being biased to a normally open position. The valve includes pressure actuated means for urging the valve closed against the bias with the pressure actuated means being in communication with the pressure at the orifice means whereby as the pressure at the orifice increases, the valve will be urged in a closed direction. The pump may employ two ports, either one of which may be an output port, depending on the direction of the pump rotation and a flow directing valve may be associated with both ports and operative to direct the flow of hydraulic fluid from whichever port is the output port to the orifice. The arrangement disclosed provides better speed regulation and minimizes hunting problems heretofore experienced when there has been load variations.

**3,461,994**  
**CENTRIFUGAL CLUTCH AND BRAKE**  
Robert J. Dallman, Shorewood, and Anthony L. Haag, Cedarburg, Wis., assignors to North American Clutch Corporation, Milwaukee, Wis., a corporation of Wisconsin  
Filed Sept. 1, 1967, Ser. No. 665,053  
Int. Cl. F16d 23/10, 43/24  
U.S. Cl. 192—105 5 Claims



This invention relates to a centrifugal clutch and brake construction for a rotating element. The invention includes a series of clutch shoes associated with a drive

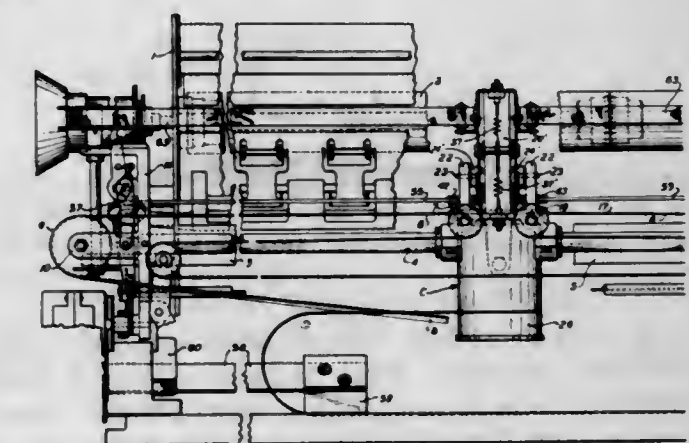
shaft or rotor, and as the rotor rotates, the shoes move outwardly by centrifugal force to force the outer surface of each shoe into contact with an inner surface of a driven rotor or drum connected to the rotating element, to thereby drive the element. In addition, each shoe is provided with an inner surface adapted to engage an outwardly facing surface of the drum as the shoes move inwardly when rotation of the drive shaft ceases and engagement of these surfaces provides a braking action to prevent free wheeling of the rotating element.

**3,461,995**  
**INFLATABLE ESCAPE CHUTES**  
Sidney Mitchell, Farncombe, England, assignor to R.F.D. Company Limited, Godalming, England, a British company  
Filed Nov. 8, 1967, Ser. No. 681,373  
Claims priority, application Great Britain, Nov. 17, 1966, 51,582/66  
Int. Cl. B64d 25/14; B63c 9/04  
U.S. Cl. 193—25 6 Claims



This invention relates to inflatable escape chutes used in disembarking persons from aircraft in emergency situations. If an aircraft makes an emergency landing or crashes on land, the chute is used for its primary purpose of simply evacuating passengers from the aircraft exit. However it is also known to use an inflatable chute as a life raft in the event of the aircraft crashing into the sea.

**3,461,996**  
**REED OPERATED PRINTER**  
Ludwig J. Kapp, Montville, N.J., assignor to Monroe International, Inc., a corporation of New York  
Filed Dec. 20, 1966, Ser. No. 603,330  
Int. Cl. B41j 1/32, 23/04  
U.S. Cl. 197—55 8 Claims



An initial potential energy is stored within a resilient power reed as deflected by the high energizing of an electromagnet. When the magnet is caused to be deenergized, the reed is released and will resonate at its natural frequency to provide the power for operating a printing head. Circuitry means responding to a deenergizing signal to the magnet is timed to act when kinetic energy in the return oscillation of the reed is at substantially zero and at lower energy will reenergize the magnet to complete the return movement of the reed and restore full potential energy therein.



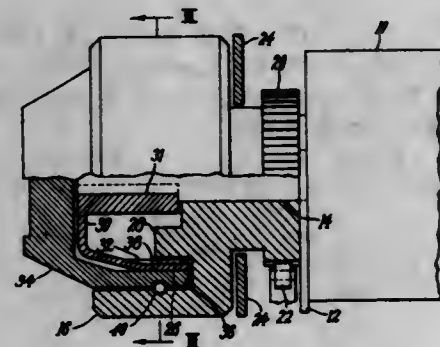
3,461,997

**KNOB ASSEMBLY FOR TYPEWRITER PLATEN OR THE LIKE**

Donald R. Humphreys, Topsfield, Mass., assignor to USM Company, Boston, Mass., a corporation of New Jersey

Continuation-in-part of application Ser. No. 662,700, Aug. 23, 1967. This application Oct. 21, 1968, Ser. No. 769,267

Int. Cl. B41j 19/06, 19/76; F16h 33/00  
U.S. Cl. 197—121 3 Claims



A compact assembly, preferably of molded plastic parts, for angularly moving a typewriter roller or platen about its axis either in discrete steps by means of a coarse adjusting member integrally having a sprocket cooperative with detent means, or with infinitely fine adjustment by means of gearing comprising a harmonic drive actuator having a wave generator surface thereon cooperative with a flexspline. The device, in two illustrative forms, enables a typist using one hand optionally to index the roller or select any angular position without regard to its line spacing means.

3,461,998

**IMPRESSION RIBBON AND METHOD OF MAKING SAME**

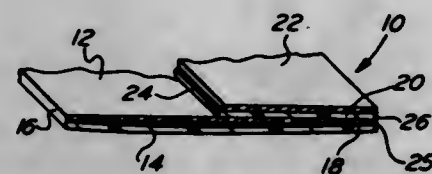
Walter Ploeger, Jr., North Bellmore, N.Y., assignor to Filmon Process Corporation, New York, N.Y., a corporation of New York

Filed Jan. 24, 1967, Ser. No. 611,460

Int. Cl. B41j 31/04

U.S. Cl. 197—172

6 Claims



A method of making a multi-layer impression ribbon is provided wherein a layer of fabric having a transfer medium thereon is joined to a superimposed layer of ink impervious film only along one edge so that the layers may independently expand or contract in width.

3,461,999

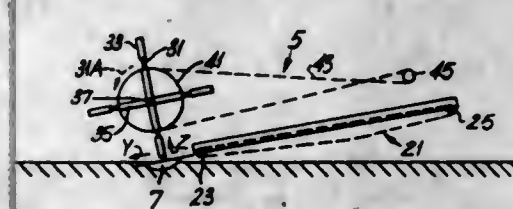
**AGRICULTURAL IMPLEMENTS**

John Tim Fryer, Silsoe, England, assignor to National Research Development Corporation, London, England, a British corporation

Filed Apr. 11, 1967, Ser. No. 630,065  
Claims priority, application Great Britain, Apr. 18, 1966, 16,827/66

Int. Cl. B65g 65/06, 15/00, 17/00  
U.S. Cl. 198—9 9 Claims

feed articles onto a conveyor and having paddles which are rigid circumferentially of the paddle wheel but can



flex radially in order that articles trapped by the paddles shall not be damaged.

3,462,000

**FLUID PRESSURE CONTROL SYSTEM AND CONTROL VALVE THEREFOR**

John D. Beckman, Box 683,

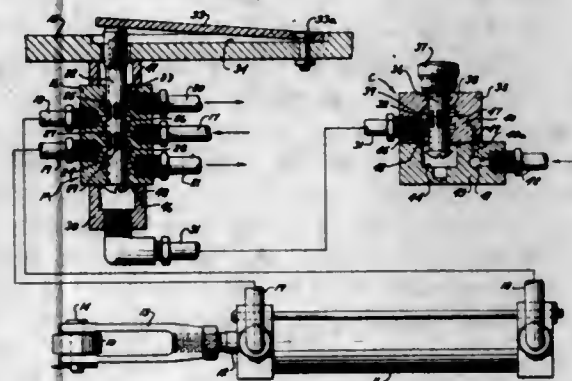
Bristol, Tenn. 37620

Filed May 16, 1967, Ser. No. 638,963

Int. Cl. B65g 47/34; F15b 13/04

U.S. Cl. 198—28

9 Claims



Control system having master valve for supply of operating fluid to and exhaust of operating fluid from a fluid pressure device and having a self-cancelling control valve for the master valve with a single control line between the control and master valves.

3,462,001

**CONTAINER ORIENTING APPARATUS**

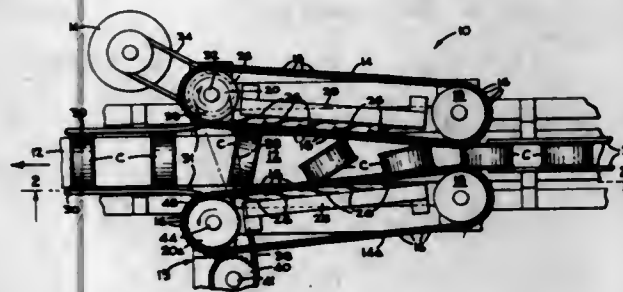
John Boyce, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed May 26, 1967, Ser. No. 641,576

Int. Cl. B65g 47/24, 15/16

U.S. Cl. 198—33

3 Claims



An apparatus for turning a series of spaced cylindrical containers which are resting on their cylindrical surfaces through 90° in a horizontal plane. The apparatus includes a conveyor belt for carrying the containers and a pair of belts between which the containers are arranged to pass with their side edges being gripped by the belts, one of said belts being driven at a faster speed than the other so as to effect the turning of each container about a vertical axis.

3,462,002

**VARYING-PITCH CHAIN-LIKE ARRANGEMENT TO DRIVE LOADS AT VARIABLE SPEED**

Paul Zuppiger, Athenaz, Geneva, Switzerland, assignor to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

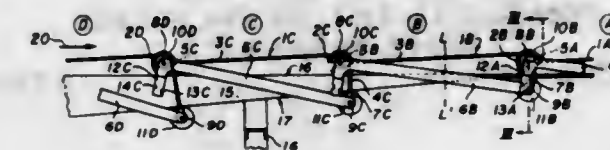
Filed July 6, 1967, Ser. No. 651,549

Claims priority, application Switzerland, July 6, 1966, 9,989/66

Int. Cl. B65g 23/00, 21/12

U.S. Cl. 198—110

10 Claims



An arrangement for, inter alia, driving loads at varying speed, which comprises guide means providing top and bottom cam surfaces having a varying spacing and a succession of links connected to one another to form a chain-like structure. Each link is provided with a longitudinal rope strand whose length is varied under the action of the cam surfaces.

3,462,003

**CARRIER ATTACHMENT APPARATUS**

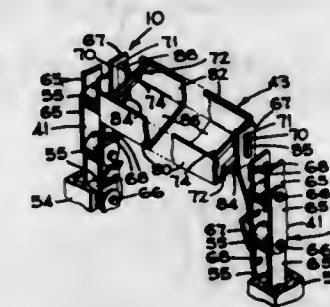
Samuel A. Mencacci, Antwerp, and John G. Hagerborg, St. Niklaas-Waas, Belgium, assignors to International Machinery Corporation S.A., St. Niklaas-Waas, Belgium, a Belgian corporation

Filed June 7, 1967, Ser. No. 644,280

Int. Cl. B65g 17/12, 17/16

U.S. Cl. 198—151

13 Claims



Apparatus for attaching the ends of carriers of different sizes or shapes to chains of a hydrostatic cooker. Each attachment apparatus includes an arm bolted to the associated link and having its outer end slotted to provide a slidable connection for supporting the carrier outwardly beyond both pivot points of the supporting link. Brackets connected to the ends of the carrier have tongues loosely received in the slots of the associated arms to slidably support the carrier and permit flexing of the carrier relative to the chain.

3,462,004

**COOLING BED CONSTRUCTION**

William J. Hill, Holden, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts

Filed June 9, 1967, Ser. No. 644,893

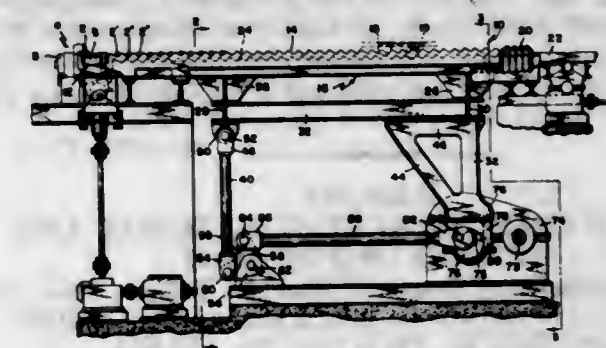
Int. Cl. B65g 25/04

U.S. Cl. 198—219

4 Claims

This invention shows a cooling bed for use in a mer-

chant or bar mill made in a manner permitting the bed to be any desired width and free of the mechanical



complications that are present when attempts are made to widen known constructions.

3,462,005

**ARRANGEMENT FOR CONTROLLING THE MOLD WIDTH IN A TYPE CASTING MACHINE**

Julius Schneider, Maximiliansplatz 9,

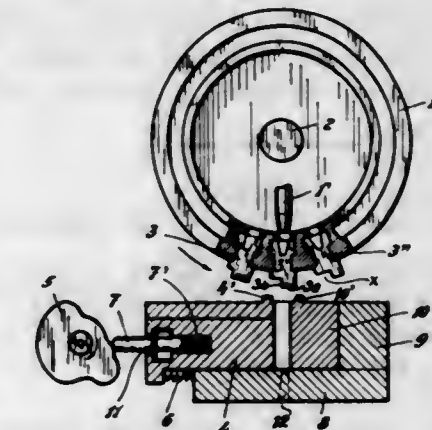
Munich 2, Germany

Filed Oct. 17, 1966, Ser. No. 587,045

Int. Cl. B41b 9/04, 9/10

U.S. Cl. 199—73

6 Claims



The mold of a type casting machine has an open side which is closed during casting by a matrix. Two opposite walls of the mold which bound the open side carry abutments outside the mold cavity. One of the two walls moves inward and outward of the mold cavity in the casting cycle, and its inward movement is limited by engagement of abutment faces on the matrix with the abutments on the two opposite walls, whereby the mold width is determined.

3,462,006

**DISPLAY PACKAGE AND CARTON THEREFOR**

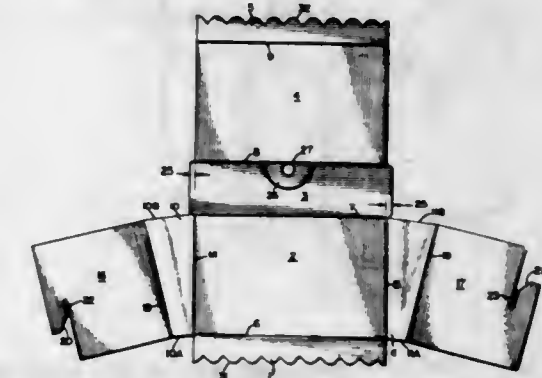
Jerry Bernard Scott, Berwyn, Ill., assignor to U.S. Plywood-Champion Papers Inc., Hamilton, Ohio, a corporation of New York

Filed June 18, 1968, Ser. No. 737,975

Int. Cl. B65d 5/50

U.S. Cl. 206—45.14

10 Claims

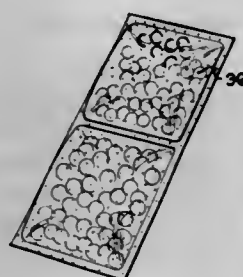


A display package having a carton that is capable of being made from one piece of foldable materials such as



paperboard. The carton has a slot along its bottom through which goods can depend from within the carton and through the slot. The carton has a tapering cross section that converges towards the slot and retaining means that are supported on each side of the slot and extend up into the carton to oppose the removal of goods through the slot.

**3,462,007**  
**QUILTED PLASTIC PACKING MATERIAL AND METHOD OF FORMING**  
James E. Helder and Roger R. Rhoads, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio  
Filed Oct. 25, 1967, Ser. No. 678,033  
Int. Cl. B65d 85/00; B32b 31/06, 27/14  
U.S. Cl. 206—46

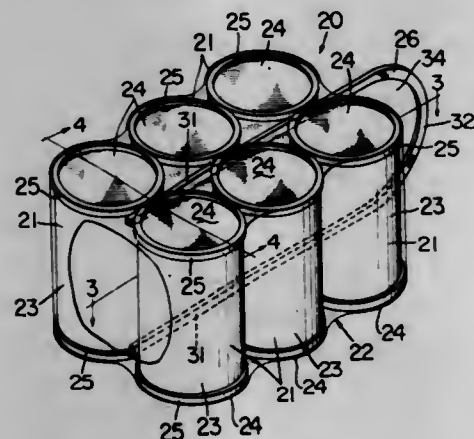


A quilted cushioning unit comprising a plurality of connected, but physically isolated envelopes, each of said envelopes loosely enclosing a plurality of resilient beads.

**3,462,008**  
**STORAGE AND HANDLING OF CHEMICAL SUBSTANCES**  
Geoffrey T. Tibbs, Hill Croft, 58 High Lane, Chester County, Woodley, England  
No Drawing. Filed June 26, 1967, Ser. No. 648,934  
Int. Cl. B65d 79/00

U.S. Cl. 206—47  
A package unit comprising a container having two interactive materials stored therein. The interactive materials are in layers or strata in the container and the active materials are gelled to reduce reaction at the interfaces between the layers.

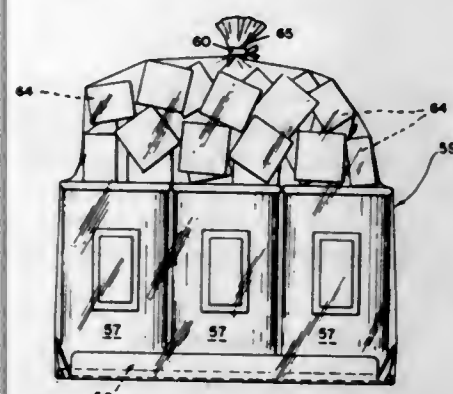
**3,462,009**  
**PACKAGE MEANS FOR CONTAINER MEANS**  
Donald C. Moore, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware  
Filed Mar. 7, 1967, Ser. No. 621,254  
Int. Cl. B65d 85/62  
U.S. Cl. 206—65



This disclosure relates to package means for packaging container means such as cylindrical cans, for example, and a method of packaging such cans wherein yieldable rod-like means is provided and arranged between ad-

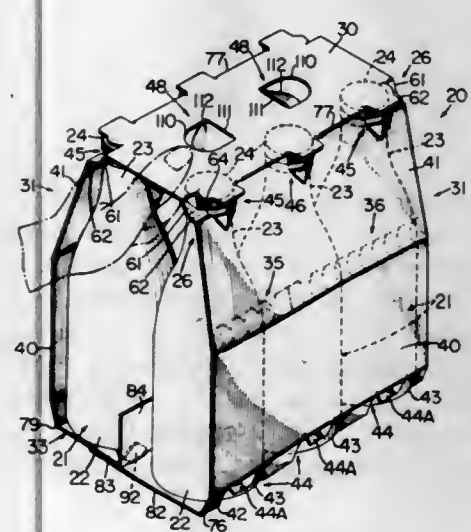
jacent cylindrical side surface means of such cans and substantially transverse to their central axes and overwrap means is used to overwrap such cans while compressing them against the yieldable rod-like means to thereby prevent relative movement between such cans and wherein such yieldable rod-like means may be used to define handle means for the package thus formed.

**3,462,010**  
**CONNECTOR FOR CONTAINERS AND PACKAGE**  
Joseph Portola Hamilton, 1006 47th St., Emeryville, Calif. 94608, and Alexander Donald, 420 Family Farm Drive, Woodside, Calif. 94062  
Filed Sept. 15, 1967, Ser. No. 667,935  
Int. Cl. B65d 85/62  
U.S. Cl. 206—65



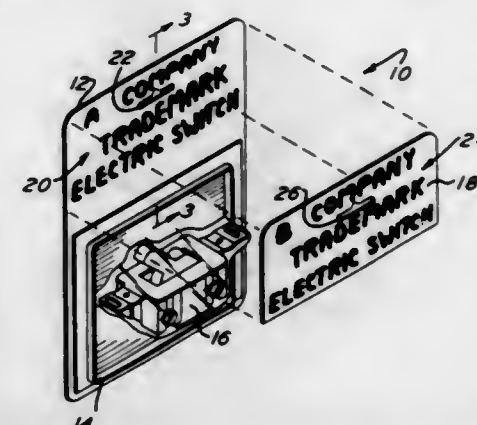
A connector for securing together one of the ends of a plurality of containers such as are commonly used for beverages, to provide a unitary package for shipment, display, and for manual carrying.

**3,462,011**  
**TUBULAR CARRIER AND BLANK FOR MAKING SAME**  
Melville T. Farquhar, Bon Air, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware  
Filed Jan. 18, 1968, Ser. No. 698,892  
Int. Cl. B65d 85/62, 21/02, 81/00  
U.S. Cl. 206—65



This disclosure relates to a tubular carrier for a plurality of bottles, or the like, having a substantially L-shaped retaining flange adjacent each top corner of such carrier wherein each L-shaped flange retains its configuration and holds an adjoining container within the carrier under substantially all handling conditions including the forceful urging thereagainst of an adjoining container during carrying of the carrier as well as upon grasping and pulling of a terminal end portion of the carrier top wall to move such carrier.

**3,462,012**  
**DISPLAY CARD**  
Bernard Fineman, 7038 Woodbine Ave., Philadelphia, Pa. 19151, and Isadore Fineman, 1469 Wistar Drive, Wyncote, Pa. 19095  
Filed Mar. 13, 1968, Ser. No. 712,639  
Int. Cl. B65d 73/00; A44b 7/00  
U.S. Cl. 206—78

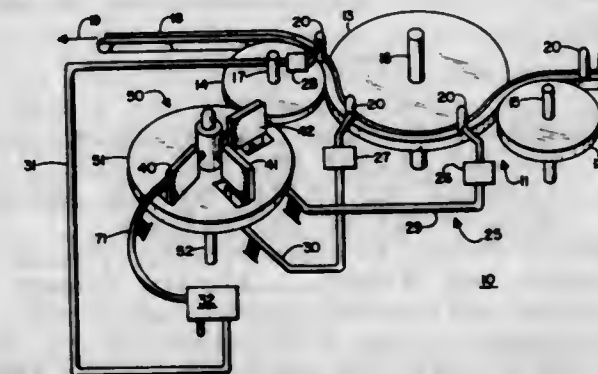


A display card having a commodity secured thereon. An overlay is provided for the display card and is secured thereon. The overlay includes printing having the name of the vendor of the commodity or the vendor's trademark. The overlay is configured to the same size and shape as the base display card.

**3,462,013**  
**METHOD FOR BENEFICIATING CLAY BY FLOTATION OF COLORED IMPURITIES**  
Venancio Mercade, Metuchen, N.J., assignor, by mesne assignments, to Engelhard Minerals & Chemical Corporation, Menlo Park, N.J., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 415,503, Dec. 2, 1964. This application July 19, 1967, Ser. No. 654,336  
Int. Cl. B03d 1/02; B01d 21/01

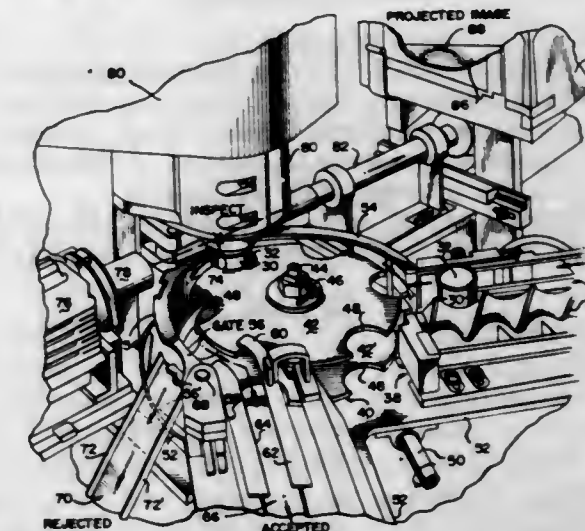
U.S. Cl. 209—5  
Colored titaniferous impurities in clay are removed from the clay by froth flotation of a sodium silicate dispersed pulp of the clay in the presence of flotation reagents selective to the flotation of the colored impurities and a small amount of a water-soluble aluminum salt or manganous salt.

**3,462,014**  
**CONTROL APPARATUS**  
John A. Kallevig and Neil C. Sher, St. Paul, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware  
Filed May 15, 1967, Ser. No. 638,477  
Int. Cl. B07c 9/00, 3/12  
U.S. Cl. 209—72



This application discloses a control system for the inspection and rejection of a plurality of devices which move sequentially through a plurality of testing stations. The system includes memory elements to store information conveyed from the inspection stations and to convey such information to the rejection station. Both a fluidic system and an electrical system are disclosed.

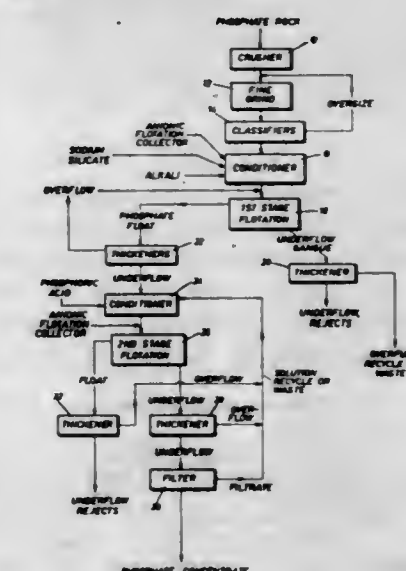
**3,462,015**  
**CONTOUR CHECKING DEVICE**  
Oliver J. Tysver, Park Forest, Henry J. Keinonen, Hickory Hills, and Ernest M. Gore, Chicago, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York  
Filed Sept. 28, 1965, Ser. No. 490,806  
Int. Cl. B07c 5/34; G01m 3/00; G05b 3/14  
U.S. Cl. 209—80



Disclosed herein are a method and a device for mechanically positioning a container having an end joined thereto by a double seam for electronically inspecting the profile of the contour formed by the double seam. At an inspection station, a lower chuck engages the container and resiliently urges it into engagement with an upper chuck and a seam roller. While the container is being rotated at the inspection station, the position of the shadow of the seam on a shadow graph is detected at a number of points by a plurality of optical sensors. Electronic logic circuitry receives the inputs from the sensor and determines the acceptability of the container.

**3,462,016**  
**PHOSPHATE FLOTATION PROCESS**  
Charles Herbert George Bushell, Montrose, British Columbia, Horst Eberhard Hirsch, Trail, British Columbia, and Randolph Mathias Lauer, Chapman Camp, British Columbia, Canada, assignors to Cominco Ltd., Montreal, Quebec, Canada, a company of Canada  
Filed Aug. 28, 1967, Ser. No. 663,640  
Claims priority, application Canada, Dec. 29, 1966, 979,171  
Int. Cl. B03d 1/00

U.S. Cl. 209—166



A two-stage anionic flotation process for beneficiating phosphate-bearing materials containing calcium and magnesium carbonates and siliceous gangue material. In the



first stage, the siliceous gangue material is selectively depressed and removed as underflow tailings while phosphate and carbonaceous materials are floated. The floated material is conditioned in an aqueous solution containing phosphoric acid and passed to the second flotation stage in which the carbonaceous material is floated and the phosphate minerals are recovered as an underflow concentrate.

3,462,017

**PHOSPHATE FLOTATION PROCESS**

Charles Herbert George Bushell, Montrose, British Columbia, and Horst Eberhard Hirsch, Trill, British Columbia, Canada, assignors to Cominco Ltd., Montreal, Quebec, Canada, a corporation of Canada  
No Drawing. Filed Aug. 28, 1967, Ser. No. 663,491  
Claims priority, application Canada, Dec. 29, 1966, 979,170

Int. Cl. B03d 1/02

U.S. Cl. 209—166

10 Claims

A two-stage anionic flotation process for beneficiating phosphate-bearing materials, especially phosphate rock high in silica, calcium carbonate and magnesium carbonate, in which silica is selectively depressed and removed as underflow tailings in the first stage and phosphate minerals de-activated in an aqueous solution of alkali phosphate and recovered as underflow concentrate in the second stage, the calcium carbonate and magnesium carbonate being floated in each stage.

3,462,018

**DRUM SIEVES**

Niels E. Hastrup, Copenhagen-Valby, Denmark, assignor to F. L. Smidth & Co., New York, N.Y., a corporation of Delaware

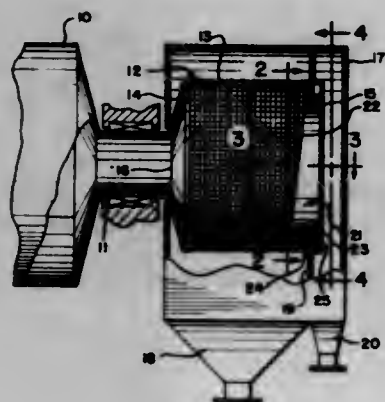
Filed Nov. 3, 1967, Ser. No. 680,502

Claims priority, application Great Britain, Nov. 8, 1966, 49,939/66

Int. Cl. B07b 1/22

U.S. Cl. 209—284

6 Claims



A channel is provided at the outlet end of a drum sieve through which tailings must pass before being discharged from the drum. The channel is circumferentially bounded by a sieve for further separation of fines and thus increased capacity and substantially complete separation are realized without increase in length of the drum sieve.

3,462,019

**STORAGE, DISPENSING AND FILTERING BAG**

Jack W. Ireland, 485 North Ave., Tallmadge, Ohio 44278

Filed Sept. 12, 1966, Ser. No. 578,807

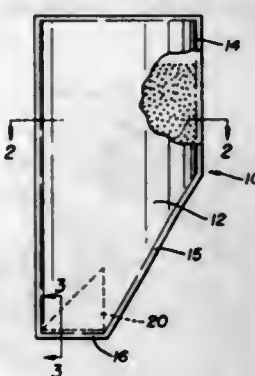
Int. Cl. B01d 35/28, 35/16

U.S. Cl. 210—244

3 Claims

A multi-purpose bag for storing, dispensing and filtering coating materials. The bag is made of flexible air and moisture proof material and initially is fully closed

for purposes of transporting and storing powder-like material. A dispensing portion is provided for dumping the powder into a liquid for mixing purposes. A loading portion is also provided so that the admixture can then



be returned to the bag. Finally, a filtering portion is provided with a normally interiorly carried filter which can be exposed so that the admixture can be filtered out through the filtering screen.

3,462,020

**DISPLAY DEVICE**

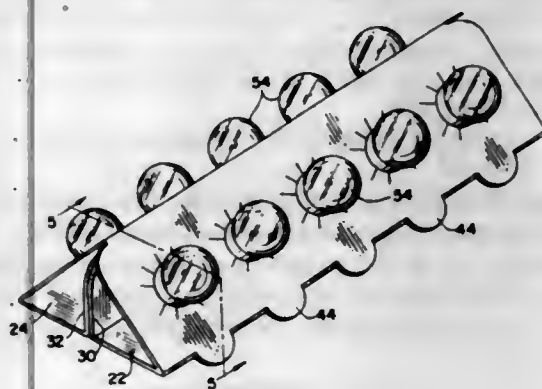
Charles J. Hall, Toronto, Ontario, Canada, assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed June 1, 1967, Ser. No. 646,416

Int. Cl. A47f 7/00; A47g 29/80; B65d 5/50

U.S. Cl. 211—13

12 Claims



A display device for a plurality of articles in which the device is triangular in cross section. Article receiving means disposed in sloping side walls of the device include a flap which is pushed out of the plane of the side walls into engagement with a segmented base. Flap extensions on abutting segments of the base are suitably retained to provide a vertical support for the apex of the device.

3,462,021

**LOAD-RESISTING STRUCTURES MADE OF THIN-WALLED, SQUARE TUBING AND CONNECTED WITH NOVEL SQUARE, NON-TWISTING COUPLINGS**

Eugene E. Hawke, 14 Lonsdale Road, Toronto, Ontario, Canada, and William A. Mackie, Toronto, Ontario, Canada; said Mackie assignor to said Hawke  
Continuation-in-part of application Ser. No. 387,884, Aug. 6, 1964. This application Jan. 29, 1968, Ser. No. 701,184

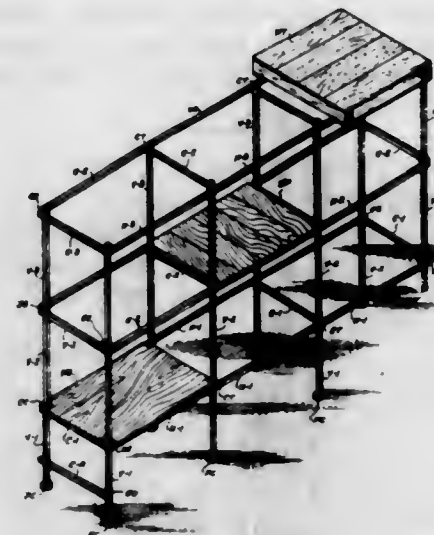
Int. Cl. A47f 5/01; F16l 19/02; A47b 45/00

U.S. Cl. 211—182

19 Claims

A load-resisting or load-supporting structure is provided which is comprised of thin-walled, square tubing connected with novel square, non-twisting couplings. The load-resisting or load-supporting structure is constituted of a plurality of horizontally and perpendicularly arranged

square horizontal tubular members which are safely and securely joined together by means of the novel square, non-twisting couplings. These couplings have a novel construction including the provision of a rugged, strongly struction and provide new results. These results include great frictional forces developed between contacting sur-



faces within the novel couplings whereby great holding power is provided frictionally. By incorporating a tapered holding pin in the novel coupling, double safety and security are provided. Although square couplings are the preferred form for practical, commercial and industrial use, the invention may be embodied in polygonal couplings for special situations.

3,462,022

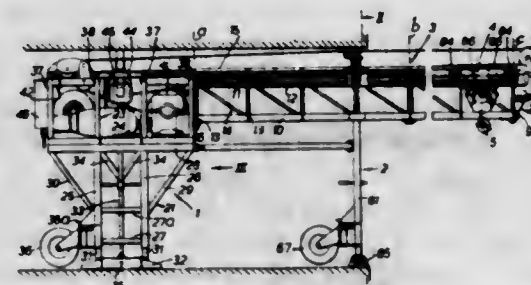
**PORTABLE CONSTRUCTION TRANSPORTERS**

Richard Sydney Edridge, The Thatched House, Warrington, Surrey, England  
Filed Mar. 21, 1967, Ser. No. 624,833  
Claims priority, application Great Britain, Mar. 22, 1966, 12,650/66

Int. Cl. B66c 5/02, 19/00; B66 23/60

U.S. Cl. 212—15

16 Claims



A transporter for raising loads up to and then moving them into an upper story of a building and comprising a jib consisting of twin booms and extending from inside the building through a portal frame, to a cantilevered outer end projecting from the building, an anchorage structure at the inner end of the jib and a trolley mounted between the booms and carrying the load-raising hook.

3,462,023

**REINFORCEMENT MEMBER FOR TELESCOPING BOOM ASSEMBLY**

John L. Grove, Greencastle, Pa., assignor, by mesne assignments, to Grove Manufacturing Company, Shady Grove, Pa., a corporation of Pennsylvania and a wholly-owned subsidiary of Walter Kidde & Company, Inc.  
Filed July 12, 1967, Ser. No. 652,863

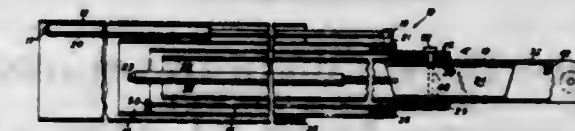
Int. Cl. B66c 23/06, 23/62

U.S. Cl. 212—55

2 Claims

This invention relates generally to telescopic crane

booms and more particularly to means for reinforcing the area of juncture between the fly section and third



section of a four-section, fully extendible and retractable, heavy-duty, telescopic boom.

3,462,024

**DRAFT GEAR**

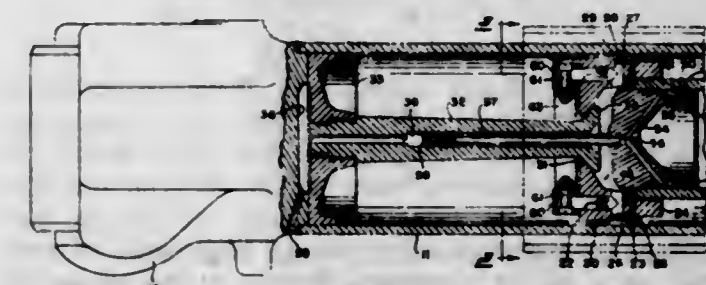
Erwin H. Hartel, Brunswick, Ohio, assignor to The Cleveland Pneumatic Tool Co., Cleveland, Ohio, a corporation of Ohio

Filed May 16, 1967, Ser. No. 638,911

Int. Cl. B61g 9/06, 9/08

U.S. Cl. 213—8

12 Claims



A draft gear in the form of a hydropneumatic shock absorber providing end-of-car cushioning in draft as well as in buff. The gear dissipates energy through dynamic damping during buff action by forcing oil at high velocity through a continuously varying orifice, and an air charge provides a preload in both directions and serves also to return the unit to neutral after a stroke in either direction. During such return, the oil flows oppositely to the flow during buff at a valve controlled rate to prevent sudden extension. A special relief-valve arrangement affords overload protection in the event of harder than normal impact during buff.

3,462,025

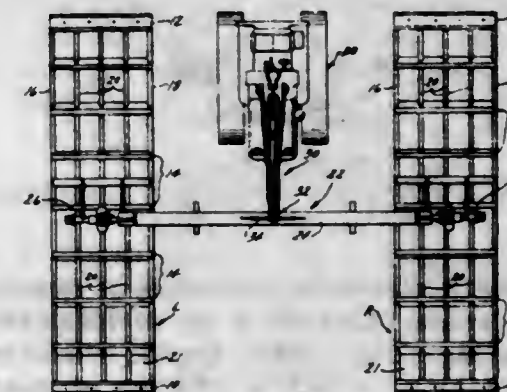
**APPARATUS FOR ERECTING PREFABRICATED PANELS AND THE LIKE**

Norman R. Toffolon, Plainville, Conn., assignor, by direct and mesne assignments, to Norman R. Toffolon and Louis Toffolon, as joint tenants  
Application Sept. 29, 1966, Ser. No. 589,159, now Patent No. 3,333,322, dated Aug. 1, 1967, which is a continuation-in-part of application Ser. No. 138,520, Sept. 15, 1961. Divided and this application May 10, 1967, Ser. No. 637,553

Int. Cl. B25j 3/00

U.S. Cl. 214—1

12 Claims



Apparatus for erecting prefabricated panels comprising a beam assembly for supporting counterbalancing similar panels at opposite ends and accommodating ma-



nipulation of the panels whereby they can be picked up, transported, and swung about one or more axes for erection in situ.

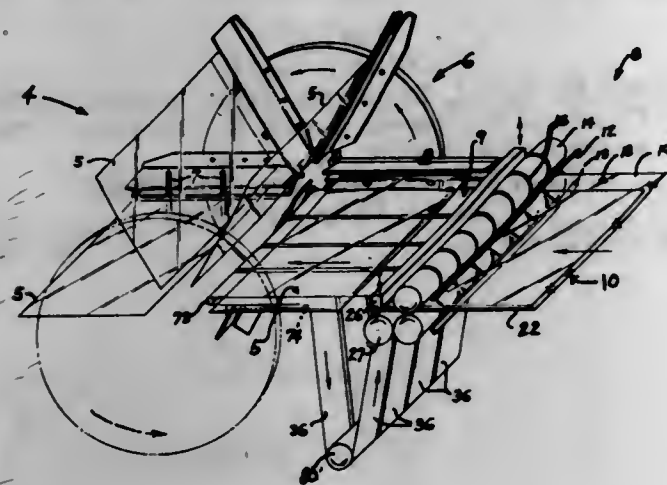
3,462,026

### MACHINE FOR AUTOMATICALLY PLACING BAGS ON A WICKET

Lawrence Maccherone, Emerson, N.J., assignor to Roto American Corporation, Paramus, N.J.  
Filed Apr. 24, 1967, Ser. No. 633,126  
Int. Cl. B65g 57/03, 57/08

U.S. Cl. 214—8

10 Claims



Machine for automatically placing bags with mounting holes on a wicket is adapted for use at the output of a high-speed bag production line. The machine comprises a revolving carriage having clamping means adapted to grasp the bag and to revolve the bag over to a position adjacent to the wicket with the mounting holes exposed and positioned to engage the legs of the wicket. A conveyor adjacent to the revolving carriage brings the bags from the output of the production line to the carriage. As the carriage revolves, actuating means close the clamping mechanism near the conveyor for grasping the bag near the mounting holes with these holes exposed, and as the carriage continues to revolve the actuating means releases the clamping means after the bags have been individually engaged on the wicket. The revolving movement serves advantageously to cool the regions of the bag which were heat sealed to form the bag in the production line.

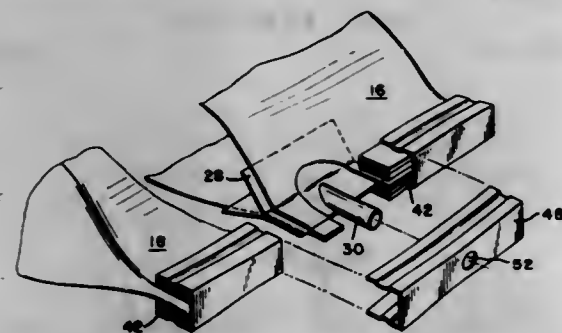
3,462,027

### DUNNAGE DEVICE

Edmund C. Puckhaber, 1427B Fernwood-Glendale Road, Spartanburg, S.C. 29302  
Filed Aug. 14, 1967, Ser. No. 660,424  
Int. Cl. B65g 1/14, 1/20; B65d 33/16

U.S. Cl. 214—10.5

4 Claims



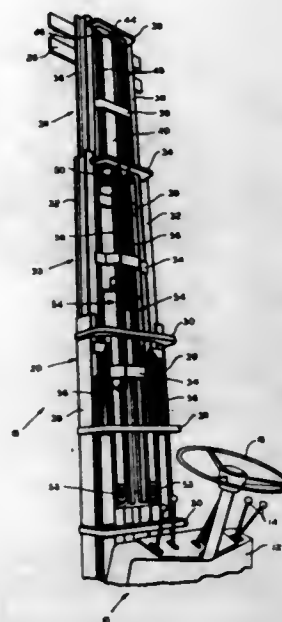
This invention relates to the cushioning of cargo during shipment and relates particularly to an inflatable dunnage device having a thin, durable flexible inflatable bladder surrounded by a protective covering of nonwoven spun bonded polypropylene, the device having novel valve and end sealing means and method and being disposable because of its inexpensive construction.

### 3,462,028 APPARATUS FOR REEVING CONDUITS IN EXTENDIBLE UPRIGHTS

Alberto E. Pi, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan  
Filed June 12, 1967, Ser. No. 645,367  
Int. Cl. B66f 9/12, 9/22; B66b 9/20

U.S. Cl. 214—95

3 Claims



Apparatus for reeving fluid conduits and electrical conductors to attachments mounted on the carriage of three-stage extendible uprights.

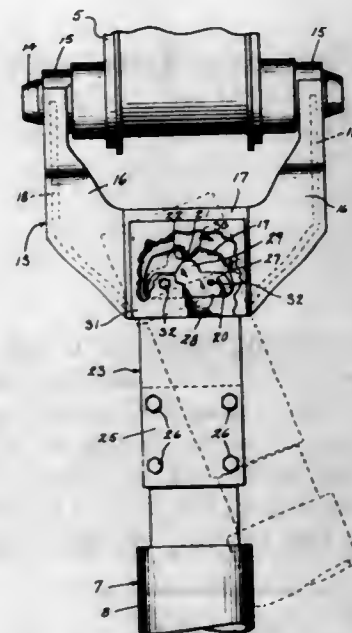
3,462,029

### ROCKER SUPPORT FOR BUCKET ATTACHMENT

George W. Mork, South Milwaukee, Wis., assignor to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware  
Filed Feb. 2, 1968, Ser. No. 702,708  
Int. Cl. E02d 3/44, 3/62

U.S. Cl. 214—138

5 Claims



A support for the clamshell bucket attachment of a stick clam excavator comprises a first bracket attached to an excavator stick and including parallel depending plates provided with rocker openings having elongated, flat bottom edges transverse to the plane of movement of the stick. A second bracket attached to a bucket assembly includes spaced arms between the plates which carry rock-

ing lugs. The lugs are received in the openings and are rockable therein to allow limited transverse pivotal motion of the bucket assembly; and have elongated, flat bottom edges which are in alignment and engageable with the bottom edges of the openings to minimize oscillation of the attachment. The upper edges of the openings and lugs are shaped to define sets of facing, centrally located relatively closely spaced tapered thrust bosses which take initial thrust loads and minimize lost motion between the two brackets, but which can slide past one another in either direction to allow rocking.

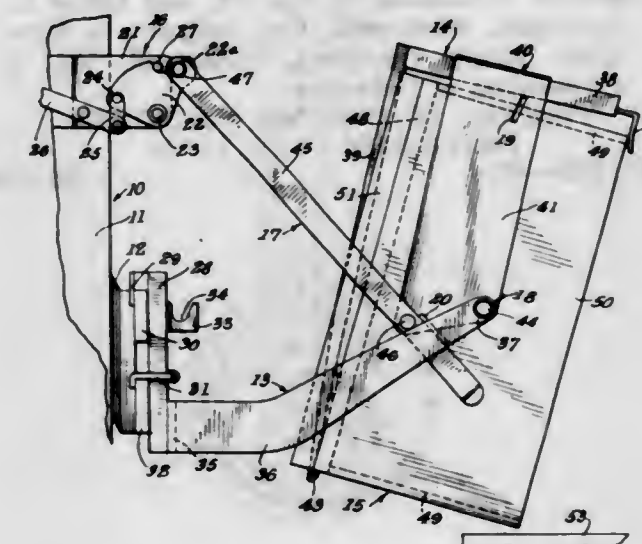
3,462,030

### CONTAINER DUMPER

William A. Allen, San Bernardino, Calif., assignor to Jarke Corporation, Niles, Ill., a corporation of Illinois  
Filed Sept. 1, 1967, Ser. No. 665,699  
Int. Cl. B65b 69/00

U.S. Cl. 214—317

5 Claims



Mechanism for attachment to a forklift for upending a container to dump the contents thereof, and comprising means to effect a hooking engagement between lift forks that are pivotally connected to the lift carriage of the lift fork and the container to retain the latter against forward displacement when being upended as said forks are moved about said pivotal connection, the latter movement being effected by hooking a frame comprised of a pair of arms and a connecting tube to hook means provided at an elevated position on the mast of the forklift, and lowering the carriage to cause the mentioned pivotal movement of the forks and upending of the container.

3,462,031

### REFUSE PACKER BODY

James F. Wehr, New Holstein, Wis., assignor to Robert B. Evans, doing business as M-B Company, New Holstein, Wis.

Filed Aug. 3, 1967, Ser. No. 658,140

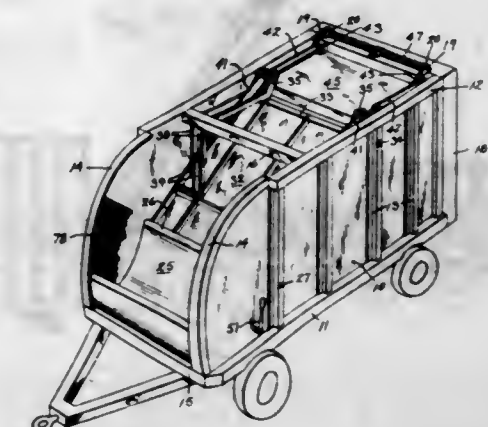
Int. Cl. B65f 3/02

U.S. Cl. 214—518

14 Claims

A packer body is shown mounted on a mobile chassis and including a container divided into an open forward loading compartment and a rear storage compartment having a discharge opening at the end of the container which is normally closed by a door. A bucket is pivotally mounted in the loading compartment and is movable by a hydraulic cylinder operating on a toggle linkage to shift the bucket between a lower position in which it receives refuse and an upper dumping position. A packer plate is pivotally supported in the container and is movable through an arc from a normal position closing the passage

between the storage and loading compartments to an upper position and then downwardly back to its normal position to sweep refuse from the bucket into the storage compartment and to compact the refuse. Such movement of the packer plate is accomplished by a hydraulic cylinder working on a toggle linkage. The packer plate is further movable into and through the storage compartment



to discharge refuse through the discharge opening. This movement is accomplished by a further hydraulic cylinder which shifts the mounting of the hydraulic cylinder that operates the packer plate linkage. A safety door is also shown for the loading end, which door must be closed to permit a hydraulic control system to function to operate the hydraulic cylinders.

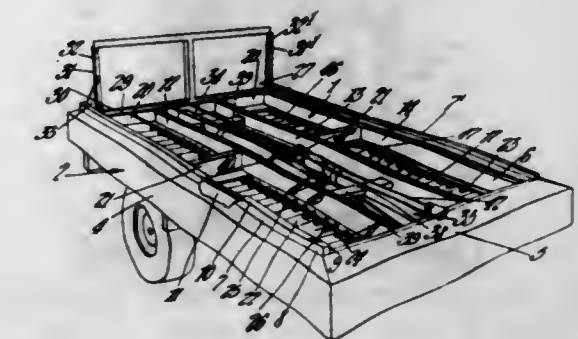
3,462,032

### PLANAR MOVING LOADING DEVICE

David C. Dunkley, Old Park Farm, Toddington, Bedfordshire, England  
Filed June 4, 1965, Ser. No. 461,558  
Claims priority, application Great Britain, June 4, 1964, 23,187/64, Patent 1,117,901  
Int. Cl. B60p 1/22

U.S. Cl. 214—83.24

5 Claims



A load moving member having planar movement including a plurality of fluid pressure cylinders, rams, pulleys and a cable trained over the pulleys whereby the planar distance that the load moving member can be moved is greater than the stroke of any of the rams.

3,462,033

### DUMPING VEHICLE WITH DETACHABLE BODY MECHANISM

Robert J. Ploch, Jackson, Mich., assignor, by mesne assignments, to Kysor Industrial Corporation, Cadillac, Mich., a corporation of Michigan  
Filed Oct. 20, 1966, Ser. No. 588,198  
Int. Cl. B66f 9/06

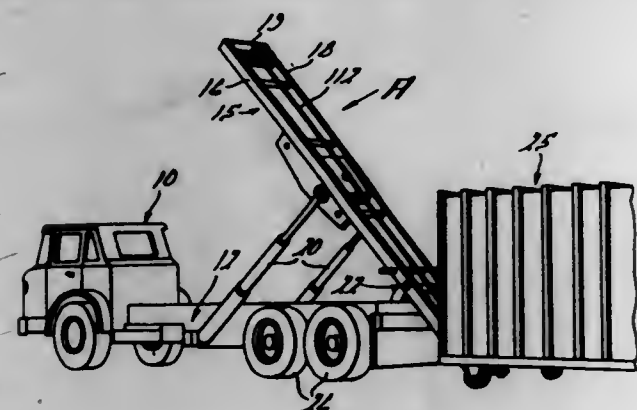
U.S. Cl. 214—505

7 Claims

Cargo handling means for tilt-bed vehicles includes a winch drum of large diameter arranged flat between the side rails of the tilt frame with its axis of rotation per-



pendicular to the plane of the frame. A cable is trained forwardly from the drum to an inclined front pulley having a portion of its groove between and close to one side rail and an opposite portion of the groove above the plane of the side rails. The drum and pulley are large



in proportion to the cable diameter without occupying substantial space above the tilt frame. Multiple motors are mounted between the rails. Drive pinions are lubricated from an oil well open on one side but trapping the lubricant when the frame is tilted. The front pulley has a cable takeup motor and a cable clamping roller.

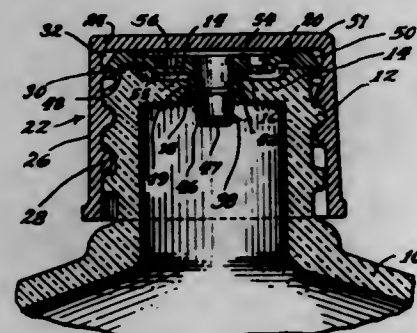
### 3,462,034 MEANS FOR CLOSING AND SEALING A BOTTLE OR CONTAINER

Arthur A. Friedberg, West Hempstead, N.Y., assignor to W. Braun Company, Chicago, Ill., a corporation of Illinois

Filed Aug. 25, 1967, Ser. No. 663,294  
Int. Cl. B65d 53/00

U.S. Cl. 215-40

10 Claims



Providing a bottle or container with a restricted opening, and a closure cap with a liner having a plug portion which enters the restricted opening to seal the opening, the liner being connected to the cap so that it remains as part of the cap for repeated closing and sealing of the bottle or container.

### 3,462,035 PLASTIC BOTTLE CAP WITH INTEGRAL HANDLE

Jean Grussen, 6 Rue Adolphe Yvon, Paris, France

Filed July 25, 1968, Ser. No. 747,635  
Claims priority, application France, July 28, 1967, 116,185; Feb. 9, 1968, 139,392; July 2, 1968, 157,591

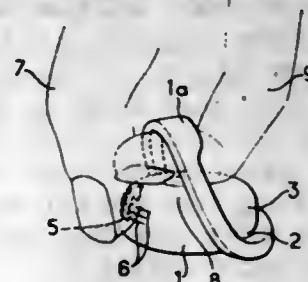
Int. Cl. B65d 39/16, 41/16

U.S. Cl. 215-41

24 Claims

A one-piece plastic bottle cap, comprising a crown-shaped main part encircled by a reinforcing ring which holds the main part on the bottle and is integral therewith

over a 60° sector, but may be swung upwardly and used to pull the cap off the bottle. The cap has two depending



skirts and the inside of the outer skirt is provided with retaining means for engagement over the peripheral ridge on the mouth of a bottle.

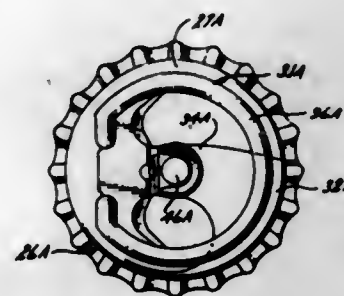
### 3,462,036 EASY OPEN MEANS FOR BOTTLES AND THE LIKE

Frederick A. Stenstrom, Bon Air, and Alfred L. Garriques, Richmond, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Oct. 17, 1966, Ser. No. 587,170  
Int. Cl. B65d 17/16, 17/20

U.S. Cl. 215-46

20 Claims



This disclosure relates to a bottle cap construction wherein a tear section is defined by score means in the bottle cap construction so that the tear section is initially integral with the remainder of the bottle cap throughout the entire juncture of the tear section with the remainder of the bottle cap. The tear section has at least one edge thereof extending from the top portion of the bottle cap to the free edge of the rim portion that is utilized to crimp the bottle cap to the open end of the bottle, a ring pull tab being secured to the tear section at the top portion of the bottle cap to facilitate the pulling of at least one edge of the tear section from the closure member to open the bottle.

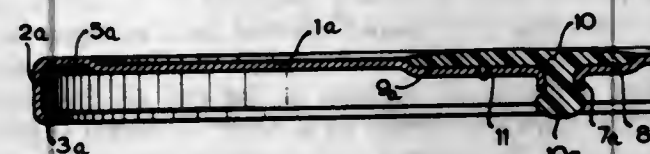
### 3,462,037 VENTED CLOSURE

Alexander Keller, 7 Pestalozzistrasse, 404 Neuss (Rhine), Germany

Filed Aug. 24, 1967, Ser. No. 663,170  
Claims priority, application Germany, Aug. 29, 1966, K 60,123; Jan. 17, 1967, K61,193  
Int. Cl. B65d 51/16

U.S. Cl. 215-56

8 Claims



A cover for a container which is to be maintained at subatmospheric pressure. The cover comprises a wall which consists of a first material and is provided with an opening. A closure member of a second material overlies

one side of the wall in the region of the opening thereof and comprises a portion which sealingly extends into the opening. One of the materials is elastically deformable so that the portion of the closure member is removable from the opening by exertion of withdrawing force on the closure member.

### 3,462,038 SQUARE BARREL-LIKE CONTAINER

George Richard Morris, Long Lane, Mo., assignor of fifteen percent to Alva Donald Messenheimer, Bethesda, Md.

Continuation-in-part of application Ser. No. 553,385, May 27, 1966. This application May 25, 1967, Ser. No. 641,330

U.S. Cl. 217-72

Int. Cl. B65d 9/32

21 Claims



A barrel-like container made of quarter-sawn staves having a thickness of between 3/4 and 1/2 of an inch wherein the body staves have a straight longitudinal axis and the container has no bilge. The adjacent body staves and the heads are secured together by an elastomeric bonding agent. By these techniques it is possible to construct a "square barrel-like container" that is adapted for aging whiskey.

### 3,462,039 SWITCH BOX ANCHOR AND TOOL FOR MAKING SAME

Herbert L. Gies, 1 Norfolk St. N., Hamilton, Ontario, Canada

Filed May 22, 1967, Ser. No. 640,191  
Int. Cl. H02g 3/08

U.S. Cl. 220-3.6

4 Claims



A bolt contracting type of switch box anchor for hook-on attachment to the usual front flange of the box before the insertion thereof in a wall opening, formed of a single strip of flat bendable material.

### 3,462,040 DEVICE FOR REDUCING THE EVAPORATION OF WATER FROM DAMS, TANKS AND LIKE WATER STORAGE UNITS

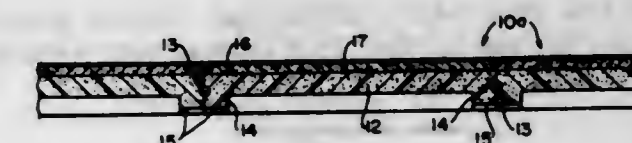
James Galloway, 20 Ford St., West Midland, Western Australia, Australia

Filed Nov. 17, 1966, Ser. No. 595,049  
Claims priority, application Australia, Dec. 1, 1965, 67,347/65; Dec. 9, 1965, 67,728/65; July 4, 1966, 7,620/66

Int. Cl. B65d 87/18

U.S. Cl. 220-26

8 Claims



Evaporation of water from dams, tanks, etc. is reduced by means of panels adapted to float on the water surface. The panels are preferably hexagonal, are made of an expanded plastic material; they may be weighted by the application of a concrete layer and they may also be provided with a heat reflecting layer. The panel edges may be formed with projecting flanges; also, grooves may be arranged in the panel edges and/or the bottom surfaces.

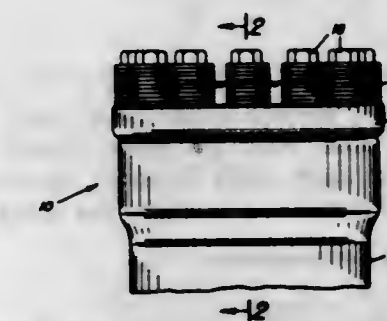
### 3,462,041 HIGH PRESSURE SEALING STRUCTURE

Robert O. Wilson, Monroe County, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware

Filed Sept. 13, 1968, Ser. No. 759,738  
Int. Cl. B65d 53/00

U.S. Cl. 220-46

4 Claims



A lightweight sealing structure is described which defines a variable pressure cavity such as that used in hydroacoustic oscillators. The structure includes an end cap bolted to a housing, with the housing defining an interior wall. The cap includes a depending skirt to a line-to-line pressure engagement with the interior wall and includes an O-ring at its bottom end which is urged into constant engagement with the interior wall despite and during pressure fluctuations within the cavity.

### 3,462,042 TEAR TOP CAN WITH CAPTIVE TEAR STRIP

Ralph J. Stolle, Lebanon, Ohio, assignor to The Stolle Corporation, Sidney, Ohio, a corporation of Ohio

Filed Jan. 13, 1967, Ser. No. 609,198  
Int. Cl. B65d 17/20

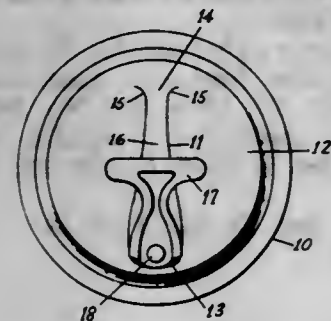
U.S. Cl. 220-54

2 Claims

A tear top can having in a can end a score line defining a tear strip to which a pull tab is secured wherein the tear strip extends diametrically substantially across the entire can end and is relatively wide at one end and relatively narrow at the other end, the score line being



interrupted at the narrow end of said strip and the pull tab being secured to said strip adjacent its side end, where-



by said tear strip when pulled open remains attached to the can but can be bent over the can side when it is desired to drink directly from the can.

3,462,043

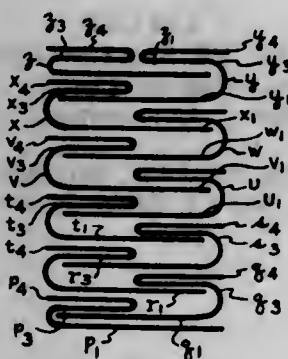
#### SHEET MATERIAL ASSEMBLY WITH INTERFOLDED WEBS INCLUDING HALF WEB FOLDS

Richard H. Frick, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware  
Original application Aug. 19, 1966, Ser. No. 573,585, now Patent No. 3,401,928. Divided and this application June 5, 1968, Ser. No. 734,603

Int. Cl. B65h 13/00

U.S. Cl. 221-48

1 Claim



A longitudinally folded stack of webs in which each web has its top half folded back upon itself along the longitudinal center line, with the webs simply lying unconnected on top of each other to form the stack or adjacent webs being interfolded to form the stack.

3,462,044

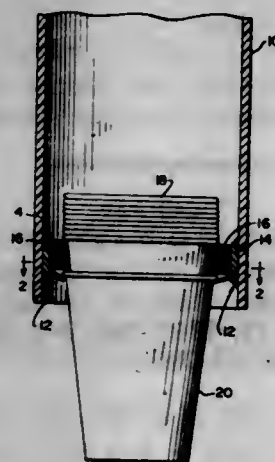
#### CUP DISPENSER WITH BRISTLE RETAINING ELEMENTS

Charles A. McKenna, Chicago, Ill., assignor to Solo Cup Company, Chicago, Ill., a corporation of Delaware  
Filed Dec. 28, 1966, Ser. No. 605,412

Int. Cl. A47f 1/04; G07f 11/16

U.S. Cl. 221-308

3 Claims



A dispenser for paper cups or the like, such as plastic, in which the means for retaining the cups in a stack in the

dispenser and for discharging single cups are bristled members wherein the bristles engage the rims of the lowermost cups in functioning to retain or to discharge.

3,462,045

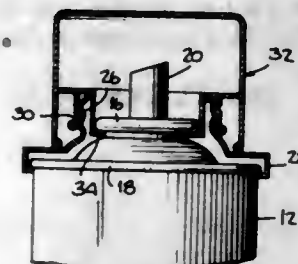
#### SAFETY AEROSOL COVER CAP

Iral J. Markowitz, 579 E. 42nd St., Brooklyn, N.Y. 11203  
Filed Nov. 6, 1967, Ser. No. 680,937

Int. Cl. B65d 47/06; B67a 5/32

U.S. Cl. 222-182

3 Claims



A safety aerosol cover cap of two-piece construction with threadable means securing same together so that rotation of either or both of the cap elements will not disengage the cover cap from the aerosol or pressurized container and expose the valve depress button to use by children, particularly of the toddler age group.

3,462,046

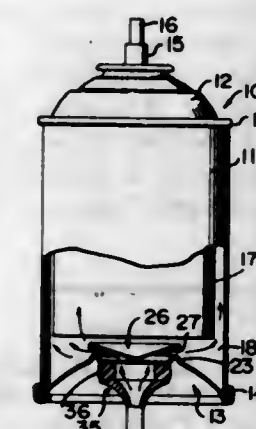
#### AEROSOL CONTAINER AND VALVE THEREFOR

Herbert D. Bartels, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York  
Filed May 3, 1966, Ser. No. 547,362

Int. Cl. B65d 83/14; F16k 15/14; B65b 31/00

U.S. Cl. 222-394

10 Claims



A dispensing container having an apertured end closure, an annular bead surrounding the aperture, and a flexible disc secured with its periphery in generally overlying sealed relationship to the annular bead. The periphery of the disc is either downwardly or upwardly directed and may be in turn provided with a bead corresponding to the bead formed in the closure.

3,462,047

#### VALVE FOR PROPORTIONED CO-DISPENSING OF TWO FLUIDS

James K. Huling, Belleville, Ill., and Jerome A. Gross, Clayton, and Richard C. Hug, St. Louis, Mo., assignors to Clayton Corporation, St. Louis, Mo., a corporation of Delaware  
Filed Oct. 24, 1967, Ser. No. 677,589

Int. Cl. B65d 83/06; F16k 31/00

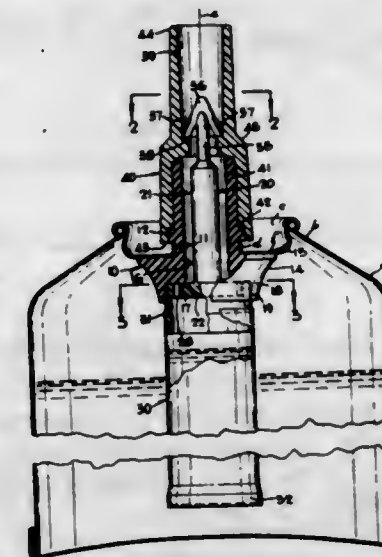
U.S. Cl. 222-402.23

10 Claims

In the type of valve whose head has ports perforated and a collapsible bag attached, two fluids are simultane-

ously dispensed, one flowing inward from around the head and the second from the bag. In the present invention, accurately proportioned rates of flow of the two fluids are maintained. A flexible skirt which rims the

cessive laps of a length of ribbon and in which said ribbon portions are yieldably engaged so that said portions may be twisted when applied to the slot to form twisted ornate bow loops. The device has a second slot disposed cross-



valve seat prevents the valve head from moving laterally, proportionately opening the seat and the perforated ports. Metering slots in the side of the valve head, under the skirt, are proportioned to the flow rate of the ports.

3,462,048

#### PLASTIC DISPENSING NOZZLE WITH CAPTIVE CAP

John Henchert, Oak Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York  
Original application Jan. 19, 1961, Ser. No. 83,727, now Patent No. 3,282,477, dated Nov. 1, 1966. Divided and this application Mar. 30, 1966, Ser. No. 538,756

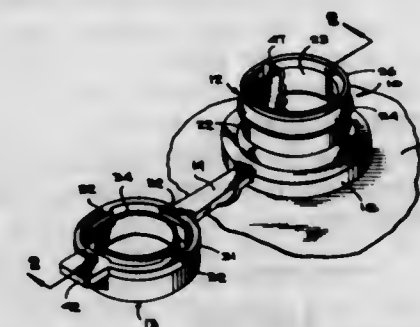
Int. Cl. B65d 47/08, 41/18, 51/20

U.S. Cl. 222-546

1 Claim

U.S. Cl. 223-66

10 Claims



This disclosure relates to a one-piece plastic dispensing nozzle having a captive cap. The principal feature of the disclosure has to do with the provision of a continuous locking rib on the exterior of the nozzle and forming the interior surface of the skirt of the cap with a plurality of circumferentially spaced locking ribs which are engageable beneath the locking rib of the nozzle to provide for the retention of the cap on the nozzle under normal conditions, and to permit the cap to be readily removed either during normal use or because of undesirably high pressures within the associated container.

3,462,049

#### DEVICE FOR TIEING RIBBON BOWS

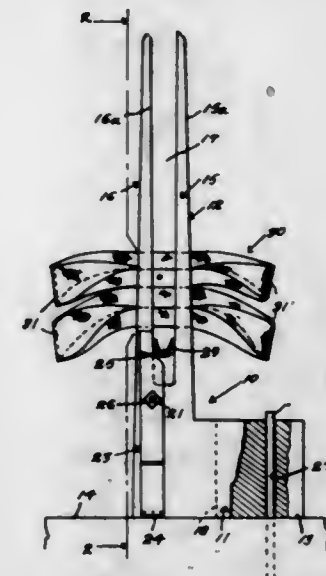
Raymond P. Smith, 174 Catawissa Ave., Williamsport, Pa. 17701  
Filed Oct. 13, 1967, Ser. No. 675,189

Int. Cl. A41h 43/00; D06c 15/08

U.S. Cl. 223-46

6 Claims

A device for use in tying ornamental ribbon bows for use on corsages, floral sprays, gift packages and the like, having a slot for receiving intermediate portions of suc-



3,462,050

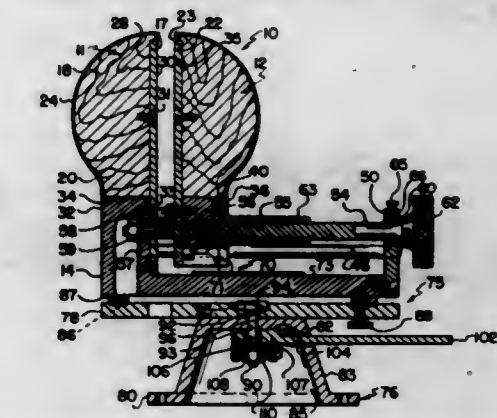
#### ADJUSTABLE WIG MOUNT

Irene B. Hensley, 3274 Canterbury Road, Westlake, Ohio 44145  
Filed July 22, 1965, Ser. No. 473,926

Int. Cl. D06c 15/00

U.S. Cl. 223-66

10 Claims



An adjustable wig mount for both setting and stretching wigs including a base with a pair of relatively movable non-compressible pin receptive wig blocks having a general overall configuration of that of the human head supported by a pair of spaced apart upstanding fixed supports located on the base. A support means is provided for rotatably supporting said base.

3,462,051

#### GARMENT FINISHER WITH SLEEVE FORMERS

George Schlemmer, Atlanta, Ga., assignor to Southern Mills, Inc., Atlanta, Ga., a corporation of Georgia  
Filed Aug. 7, 1967, Ser. No. 658,754

Int. Cl. A41h 5/00; D06c 15/00

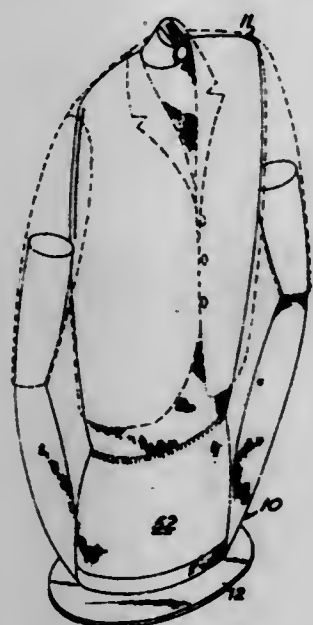
U.S. Cl. 223-70

5 Claims

A garment finisher including an inner frame with sleeve support members extending upwardly on each side



thereof and an outer porous bag fitted over the frame with sleeve inflating tubes fitted over the sleeve support members wherein a coat or similar wearing apparel is fitted over the bag and frame with the sleeve support



members and sleeve inflating tubes inserted up the sleeves of the coat, and steam or similar garment treating fluid is injected into the bag, to inflate the bag and its sleeve inflating tubes to fit the garment, and to pass the fluid through the torso and sleeves of the garment.

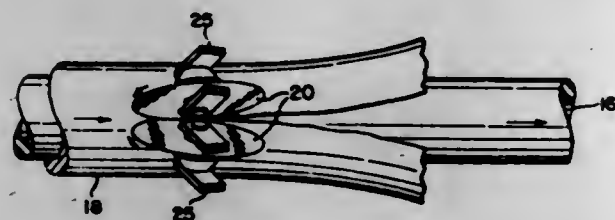
### 3,462,052 APPARATUS FOR REMOVING COVERING MATERIAL

William S. Wagner, Navarre, Ohio, assignor to E. W. Blas Company, Canton, Ohio, a corporation of Delaware

Filed Mar. 15, 1967, Ser. No. 623,306  
Int. Cl. B26f 3/02; B65h 35/10

U.S. Cl. 225-2

5 Claims



The disclosure relates to a stripping device for removing an outer layer of material from one underneath without damage to the underneath layer. In a specific application of the invention for the manufacture of rubber hose, a lead sheath is extruded around the hose prior to its being vulcanized. After vulcanization, the lead encased hose is guided through the inventive stripping device which comprises a pair of rotary blades, each blade having its axis of rotation inclined toward the hose so that the peripheral edges of the blades continuously converge during rotation at a point of contact intermediate the lead sheathing and hose leaving a nexus in the scoring line. The axis of each blade furthermore lies in a common plane inclined sufficiently in the direction which the lead encased hose is moving to cause the blades to diverge beyond the point of contact to an extent causing the nexus to progressively tear and the sheath to separate from the hose.

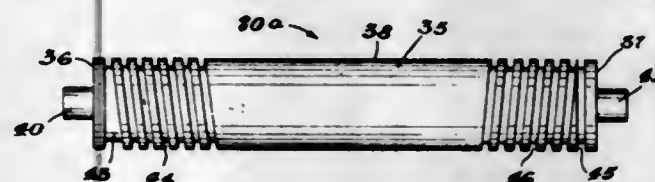
### 3,462,053 METHOD AND APPARATUS FOR PROCESSING FILM HAVING BEADED PORTIONS

Raymond Douglas Behr, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Nov. 8, 1967, Ser. No. 681,387  
Int. Cl. B65h 23/02, 27/00, 17/00

U.S. Cl. 226-6

7 Claims



Film having beads disposed adjacent the edge portion is readily maintained in a flattened condition by passing film over a roll having threaded portions of opposite hand disposed generally adjacent opposite ends, the roll having circumferential grooves generally corresponding to the beaded portions of the film.

### 3,462,054 MULTIPLE STRIP LEADER

Sanford Wayne Foor, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Mar. 20, 1967, Ser. No. 624,410  
Int. Cl. G03b 1/02; B65h 17/00

U.S. Cl. 226-91

11 Claims



A leader for multiple strips or webs of material which is formed of flat, flexible material and which comprises a threading portion with guide edges for initial alignment with respect to a given feed path and at least two strip attaching portions which are laterally spaced and longitudinally staggered with respect to the direction of leader feed along the path so that the leading ends of several strips can be attached to the leader, concurrently threaded along the path in spaced lateral alignment and will emerge from the path at different times.

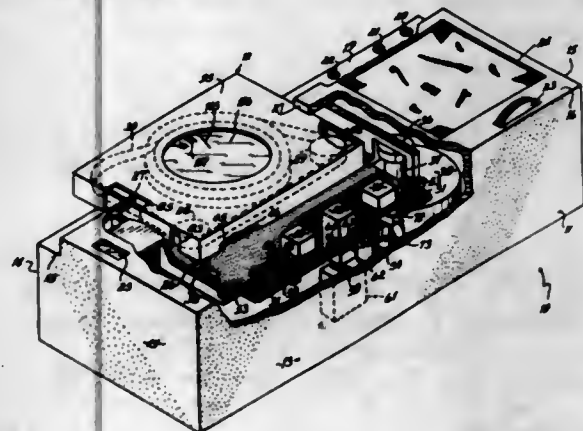
### 3,462,055 MAGNETIC TAPE TRANSDUCER

David H. Trott, Cincinnati, Ohio, assignor to Courier Enterprises, Cincinnati, Ohio, a limited partnership of Ohio

Filed Nov. 22, 1967, Ser. No. 684,998  
Int. Cl. B65h 17/42, 17/50, 17/22

U.S. Cl. 226-108

11 Claims



A magnetic transducer in which an endless tape cartridge is movable in a first direction for slow speed drive

and in a second direction for fast forward, the cartridge having a counter integral therewith.

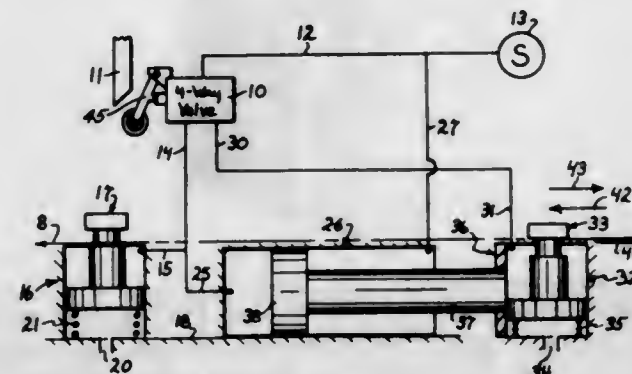
### 3,462,056 STOCK FEEDER

Albert W. Scribner, 6 Country Club Road, Darien, Conn. 06820

Filed Aug. 15, 1967, Ser. No. 660,808  
Int. Cl. B65h 17/36, 17/44

U.S. Cl. 226-150

2 Claims



A fluid operated stock feeding control and actuating device having a single four-way valve that controls a main double acting fluid motor that is adapted to reciprocate a feed slide in feeding and indexing directions, a first single acting fluid motor means that is adapted to actuate a stock clamp from a release position to a stock clamping position, and a second single acting fluid motor means for moving a stock gripper from a release position to a stock gripping position and for applying the operative stock gripping forces to the stock being fed; fluid pressure being supplied to the head end of the main fluid motor and to the first single acting fluid motor means during a non-feeding indexing stroke of the device, and being supplied to the rod end of the main fluid motor and to the second single acting fluid motor means during a stock feeding stroke of the device.

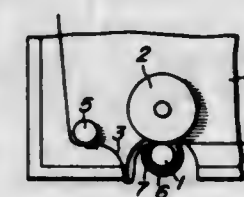
### 3,462,057 TAPE GUIDE DEVICE FOR MAGNETIC RECORD- ING AND REPRODUCING APPARATUS

Kozo Yamamoto, Hirakata-shi, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed Dec. 11, 1967, Ser. No. 689,550  
Claims priority, application Japan, Feb. 3, 1967, 42/9,651; Feb. 10, 1967, 42/11,523  
Int. Cl. B65h 27/00

U.S. Cl. 226-181

3 Claims



A tape guide device for a magnetic recording and reproducing apparatus having a tape guide member which acts to prevent a magnetic tape from entwining around the capstan even with an insufficient take-up force for the magnetic tape at the beginning of the tape drive, and at the same time, ensures a smooth drive for the magnetic tape. The tape guide member consists of a semi-cylindrical body and a bent strip formed integrally with the body, and may have felt ring retainers also integrally formed therewith.

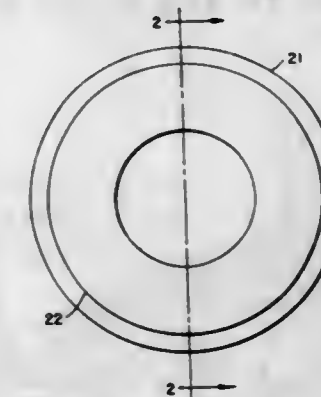
### 3,462,058 SELF-ADHERING FEED ROLL

Samuel A. Redman, Kettering, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Nov. 20, 1967, Ser. No. 684,274  
Int. Cl. B65h 17/20

U.S. Cl. 226-191

5 Claims



A self-adhering feed roll comprising a molded tire or ring of polyurethane material, the diameter of which is less than the diameter of the hub on which it is mounted, which pre-loads the tire, thereby preventing any slippage of the tire on the hub. The inner surface of the tire is molded with finger-like projections formed at an acute angle with the outer surface of the hub. The outer surface of the hub contains a series of horizontal grooves which coact with the finger-like projections to further allow the tire to resist any sliding movement on the hub. The outer surface of the tire is molded with radial cogs to assist in moving very friable material.

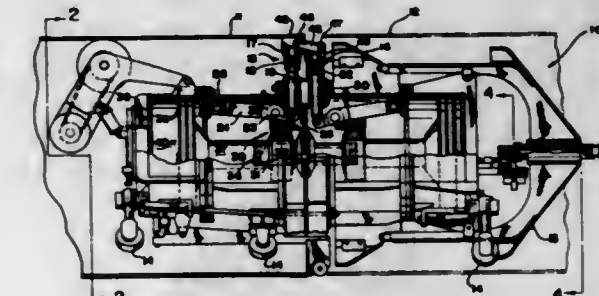
### 3,462,059 INTERNAL ALIGNMENT CLAMP

Howard C. Bauer, Bedford, Ohio, and Robert G. Bell, Calgary, Alberta, Canada, assignors to Bauer & Associates, Inc., Solon, Ohio, a corporation of Delaware

Filed Jan. 15, 1968, Ser. No. 697,930  
Int. Cl. B23k 1/20, 5/22, 9/02

U.S. Cl. 228-5

13 Claims



A clamping assembly having a frame adapted to move through the interior of cylindrical pipe sections. A first and second set of clamping shoes are movably carried by the frame and are adapted to independently, clampingly engage the inner peripheral wall of the cylindrical pipe. Cam assemblies are operably connected to each set of clamping shoes to move them into engagement with the peripheral wall of the cylindrical pipe. An air travel motor operatively connected to a driving means in contact with the inner wall of the cylindrical pipe propels the clamping assembly. A system of levers and valves detect the position of the clamping assembly relative to the end of the pipe and through cooperation with the air travel motor prohibits it from falling out of the pipe. Manual means are also provided to govern the action of the air travel motor and, therefore, the movement of the assembly.



3,462,060

**DEVICE FOR AUTOMATICALLY SUPPLYING WELDING RODS TO BLOWPIPES**  
Louis Minjolle, Evreux, France, assignor to Commissariat a l'Energie Atomique, Paris, France, a French body corporate

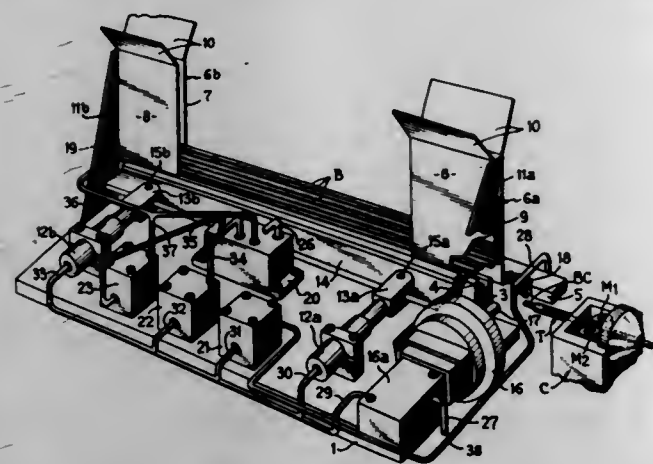
Filed Nov. 1, 1967, Ser. No. 679,791

Claims priority, application France, Nov. 24, 1966, 84,786

Int. Cl. B23k 1/00, 5/00

U.S. Cl. 228—41

9 Claims



A supply device for supplying welding rods to a blowpipe comprising a feed device in which the welding rods are disposed in parallel relationship, a presenting device for presenting the rods to the blowpipe, a transfer device for transferring each rod from the feed device to the presenting device, a thrust device for exerting a thrust on each rod dropping into the presenting device, detecting means detecting the issue of each rod from the presenting device and a time synchronizing device responsive to the detecting means for controlling successively the transfer device and thrust device.

3,462,061

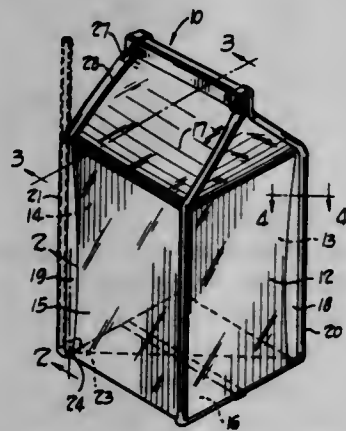
**SELF-SUPPORTING PLASTIC CONTAINER**  
William S. Shore, Cleveland, Ohio, assignor to Diamond Shamrock Corporation, Cleveland, Ohio, a corporation of Delaware

Continuation-in-part of application Ser. No. 654,241, July 18, 1967, which is a continuation-in-part of application Ser. No. 567,935, July 26, 1966. This application July 29, 1968, Ser. No. 748,457

Int. Cl. B65d 5/00, 1/22, 39/00, 83/00

U.S. Cl. 229—7

6 Claims



The disclosure is directed to a thin-walled, self-supporting container formed of plastic film or sheet. The body of the container is of generally tubular form and is generally polygonal in cross section. The intersections of the generally polygonal side walls are provided with external tubes to provide rigidity for the upright body portion. One of the external tubes is adapted to function as an integral straw.

3,462,062

**INTERLOCK SPACE SAVING CONTAINERS**

Alvin E. Miller, 4 Hampstead Road,

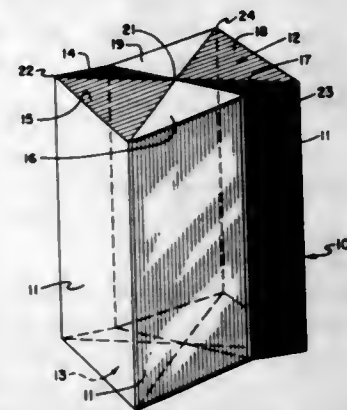
Asheville, N.C. 28804

Filed Sept. 20, 1967, Ser. No. 669,128

Int. Cl. B65d 1/00, 7/42

U.S. Cl. 229—8

4 Claims



A hexagonal container or carton having end surfaces which interlock and close pack with cooperating end surfaces of similar containers or cartons when stacked vertically, having side walls adapted for close nesting without voids when arranged with other similar containers or cartons in horizontal rows, and having a tripod supporting base.

3,462,063

**REINFORCED CONTAINER**

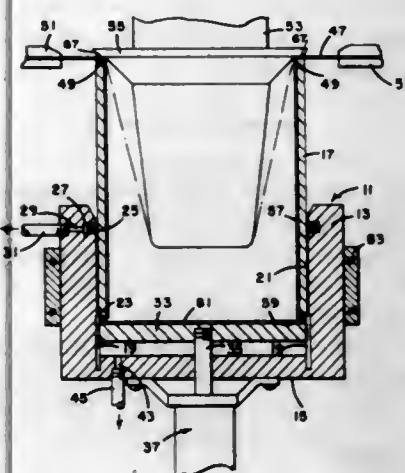
Arthur L. McGee, San Jose, Calif., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

Original application Oct. 20, 1965, Ser. No. 498,823, now Patent No. 3,366,019, dated Jan. 30, 1968. Divided and this application Sept. 25, 1967, Ser. No. 670,223

Int. Cl. B65d 5/56, 5/46

U.S. Cl. 229—14

3 Claims



A container having a generally rigid sleeve and a seamless plastic shell which lines the inside wall of the sleeve, extends across one end and the adjacent edge thereof to form a container end wall and is mechanically interlocked with the sleeve.

3,462,064

**CONTAINERS**

Eugene E. Macchi, Ho-Ho-Kus, N.J. (% Continental Packaging Corp., 555 N. Michigan Ave., Kenilworth, N.J. 07033)

Continuation-in-part of application Ser. No. 558,502, June 17, 1966. This application Feb. 27, 1968, Ser. No. 708,665

Int. Cl. B65d 85/32

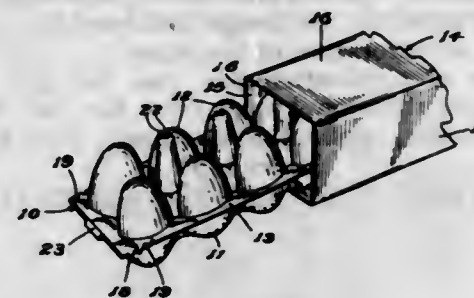
U.S. Cl. 229—29

5 Claims

A telescopic two-piece container with an inner tray and outer carton in the form of a sleeve, the periphery of the tray being constituted as a laterally projecting rim

in a plane the distance whereof from the bottom of the tray approximates and preferably is less than half of the corresponding dimension from top to bottom walls of the sleeve, permitting inspection through the open area above the rim, and said rim making line contact with the adjacent walls of the sleeve approximately midway of the height of such walls thereby deterring collapse

adjacent walls wherein such extension flaps are folded into a common plane and interlocked together without requiring separate fastening means and such flaps are held interlocked in such a manner that the carton cannot be opened except by tearing a portion thereof.



of said walls and also preventing lateral crushing of the tray and its contents, said tray having a plurality of posts medially between the sides thereof and projecting upwardly beyond the plane of said rim into contact with the top wall of the sleeve, and the container providing interlocking means between the tray and sleeve effective automatically upon sliding the tray into the sleeve.

3,462,065

**FOLDABLE CARTON AND BLANK WITH TRIANGLE SHAPED CORNER**

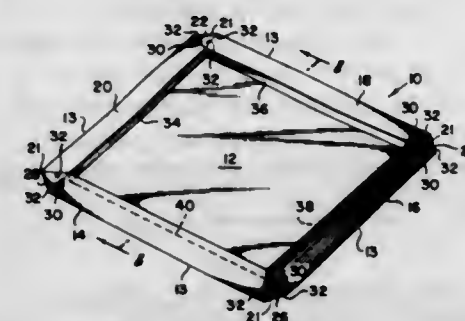
Norman John Asman, Appleton, Wis., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Feb. 26, 1968, Ser. No. 708,281

Int. Cl. B65d 5/24

U.S. Cl. 229—31

18 Claims



A carbon blank having bottom and side panels and having a web corner comprising five triangular panels hingedly connected to one another and to adjacent side panels. Only the center triangular panel has its base in edge-to-edge contact with the bottom panel. A carton is constructed from the blank by forming a pleat on each side of the center panel to permit abutment of side edges of the center panel with side edges of adjacent side panels. An attractive triangular shaped corner is thus produced which is reinforced by said pleats.

3,462,066

**TAMPERPROOF CARTON AND BLANK FOR MAKING SAME**

Melville T. Farquhar, Bon Air, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Sept. 29, 1967, Ser. No. 671,633

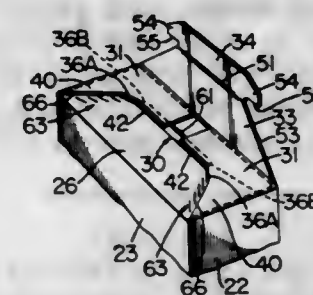
Int. Cl. B65d 5/10

U.S. Cl. 229—39

14 Claims

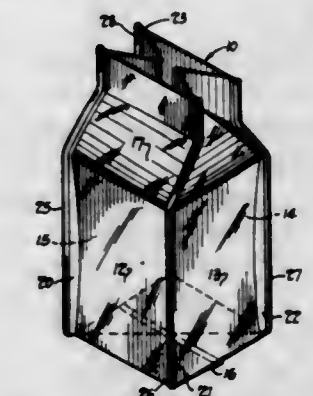
This disclosure relates to an improved tamperproof carton, and blank for making same, having at least one closure defined by a set of extension flaps extending from

The disclosure relates to a reusable plastic bag, and, in particular, a hook and closure means for such a bag. The hook and closure means is of the two-element type, having each element heat sealed to an opposing wall of the bag mouth and with fastening or locking means on



**SELF-SUPPORTING PLASTIC CONTAINER**  
William S. Shore, Cleveland, Ohio, assignor to Diamond Shamrock Corporation, Cleveland, Ohio, a corporation of Delaware  
Continuation-in-part of application Ser. No. 654,241, July 18, 1967, which is a continuation-in-part of application Ser. No. 567,935, July 26, 1966. This application July 25, 1968, Ser. No. 747,753  
Int. Cl. B65d 5/42, 1/22, 39/00, 83/00  
U.S. Cl. 229—49

6 Claims



The disclosure is directed to a thin-walled, self-supporting container formed of plastic film or sheet. The body of the container is of generally tubular form and is generally polygonal in cross section. The intersections of the generally polygonal side walls are provided with integral tubes to provide rigidity for the upright body portion. Bulge controlling ribs are also provided at or near the intersections of the side walls to give the filled containers a means for opposing the effect of hydrostatic pressures.

3,462,068

**BAG AND CLOSURE MEANS**  
Heikki S. Suominen, Petsamonkatu 14, Tampere, Finland

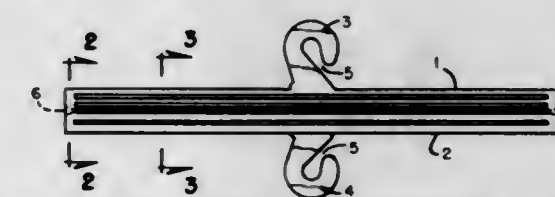
Filed Jan. 2, 1968, Ser. No. 695,115

Claims priority, application Finland, Jan. 4, 1967, 18/67

Int. Cl. B65d 33/24; A45c 13/26

U.S. Cl. 229—54

6 Claims





the adjacent faces of the two elements to permit sealing of the mouth of the bag. The two element handle and closure means is formed as an integral unit with the two elements lying in the same plane, but the handle and closure means is so formed as to permit a folding over of the longitudinal strip so as to bring the two elements into a mating relationship and thereby forming a unitary handle for insertion into the bag mouth.

3,462,069

**THERMOPLASTIC CARRIER BAGS**

Helkki S. Suominen, Petsamonkatu 14,  
Tampere, Finland

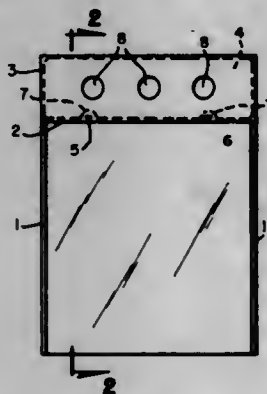
Filed Jan. 22, 1968, Ser. No. 699,535

Claims priority, application Finland, Jan. 24, 1967,  
187/67

Int. Cl. B65d 31/02, 31/12

U.S. Cl. 229—54

5 Claims



The disclosure relates to thermoplastic carrier bags having one or more transversely extending sleeves at the mouth of the bag in which may be inserted a printed card or the like for identifying the product and for general advertising and/or decorative purposes. The card insert and the sleeve are properly dimensioned relative to each other so that the entire length of the card fits within the sleeve; moreover, the width of the card is slightly less than that of the sleeve so that it can be readily inserted into the sleeve. To ensure that the card will remain in the sleeve under normal conditions of use, the card is provided with one or more indentations along an edge thereof, and the interior of the sleeve is provided with corresponding obstructions along one edge so that when the card is in place within the sleeve each obstruction fits into the corresponding indentation or recess in the card.

3,462,070

**CLOSURE FOR FLEXIBLE PACKAGES**

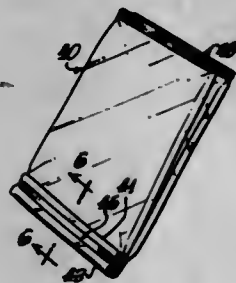
Arthur P. Corella, 8166 Vanscoy Ave.,  
North Hollywood, Calif. 91605

Filed Feb. 5, 1968, Ser. No. 703,013

Int. Cl. B65d 31/12, 33/16

U.S. Cl. 229—56

10 Claims



A closure is designed for packages made from heat sealable films, and is especially adapted to a polyethylene film that is sealable on both sides. The closure construction permits its use to divide a package into two compartments, in such a manner that the compartments can be placed in communication with each other without

breaking the exterior seal of the package, or the closure can be applied to close one side of an ordinary package having one compartment.

3,462,071

**ARRANGEMENTS FOR RADIAL FLOW COMPRESSORS FOR SUPERCHARGING INTERNAL COMBUSTION ENGINES**

Alexander Garve, Augsburg-Hochzoll, Germany, assignor to Maschinenfabrik Augsburg-Nürnberg AG, Augsburg, Germany, a corporation of Germany

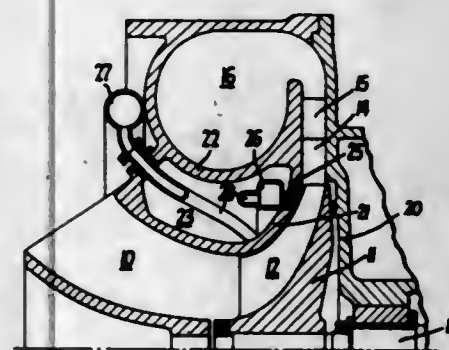
Continuation of application Ser. No. 546,456, Apr. 29, 1966. This application Apr. 4, 1968, Ser. No. 718,957

Claims priority, application Germany, May 4, 1965,  
M 65,103

Int. Cl. F04d 27/02; F01k 23/14; F02b 33/12

U.S. Cl. 230—114

5 Claims



Apparatus as provided in accordance herewith as a radial flow rotary compressor for exhaust-driven superchargers for supercharging a two-cycle internal combustion engine, with which apparatus is provided a source of auxiliary gaseous propellant and nozzle means for directing the auxiliary propellant against the trailing faces of the compressor blades for providing an additional driving force thereto, with said nozzle means being disposed obliquely radially outwardly in the direction of the impeller blades to direct said auxiliary propellant at an angle to the blades for producing, in addition to said auxiliary driving force, an encompassing gaseous envelope about the circumference of the said blades acting as an aerodynamic throttle to enhance the uniformity and efficiency of performance of said compressor particularly at slow or idle speeds of said internal combustion engine.

3,462,072

**SCREW ROTOR MACHINE**

Lauritz Benedictus Schibbye, Saltsjö-Duvnäs, Sweden, assignor to Svenska Rotor Maskiner Aktiebolag, Nacka, Sweden, a corporation of Sweden

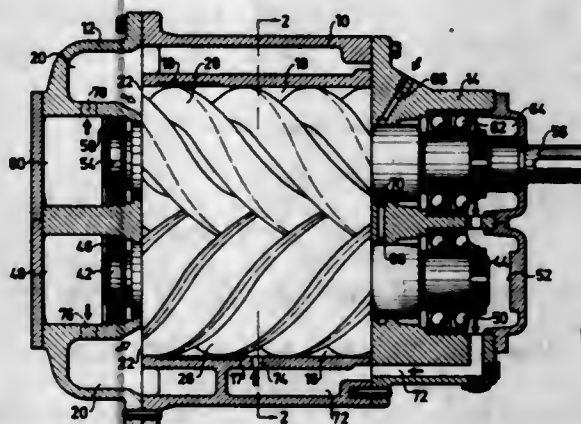
Filed May 2, 1968, Ser. No. 726,135

Claims priority, application Great Britain, May 3, 1967,  
20,454/67

Int. Cl. F04c 17/12, 27/00, 29/02

U.S. Cl. 230—143

7 Claims



An oil drainage system for a screw rotor compressor with supply of oil to the working space, in which oil from

at least one chamber enclosing rotor bearings is drained to an opening in the walls of the working space.

3,462,073

**AIR COMPRESSOR**

Linus E. Russell, Springfield, Ohio, assignor to Peters and Russell, Inc., Springfield, Ohio, a corporation of Ohio

Filed Dec. 15, 1966, Ser. No. 602,058

Int. Cl. F04b 45/04, 21/02

U.S. Cl. 230—170

14 Claims



An air compressor or like device employing a reciprocable diaphragm having means therewith forming a shell-like pumping chamber. The pumping stroke rocks fluid in the line of flow between radially displaced intake and outlet valves, the orientation of the rocking means effecting an optimal drive of fluid. A generally new intake valve unit provides for full flow therethrough on suction strokes and a positive seal on compression strokes. The valve further includes means to obviate the existence of a pressure head in the pumping chamber on starting up.

3,462,074

**AIR COMPRESSOR APPARATUS AND METHOD**

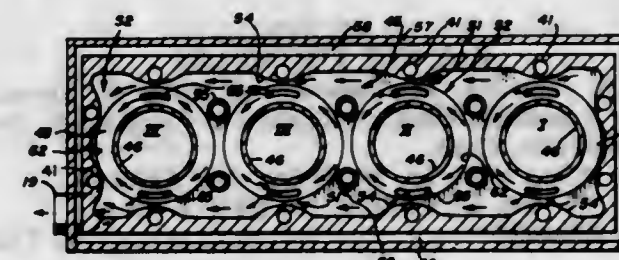
John E. Grimmer, 9763 Eastridge Drive,  
El Paso, Tex. 79925

Filed Feb. 23, 1968, Ser. No. 707,698

Int. Cl. F04b 27/00, 39/12

U.S. Cl. 230—181

15 Claims



Multiple chamber reciprocating type compressor apparatus including air receiving chamber arranged to receive compressed air passed through outlets of each compression chamber. Air receiving chamber having a series of interconnected venturi-like internal passage portions disposed along its lengthwise extent, each suitably arranged in receiving relation to a compression chamber air outlet so that compressed air discharge through one compression chamber air outlet into receiving chamber produces air flow in a venturi-like passage portion of other of said outlets with a corresponding reduction in pressure in area of other said outlets. Preselected succession of compressed air discharges in direction of outlet of receiving chamber producing cumulative effect on velocity of air flow in each succeeding venturi-like passage portion. Cylinder head apparatus including air receiving chamber, air inlets, air outlets, cooling jacket for receiving chamber and seat for valve mechanism for each compression chamber formed as a body arranged to mount in a closing relation to upper portions of multiple compression chambers.

3,462,075

**HERMETIC COMPRESSOR CONSTRUCTION**

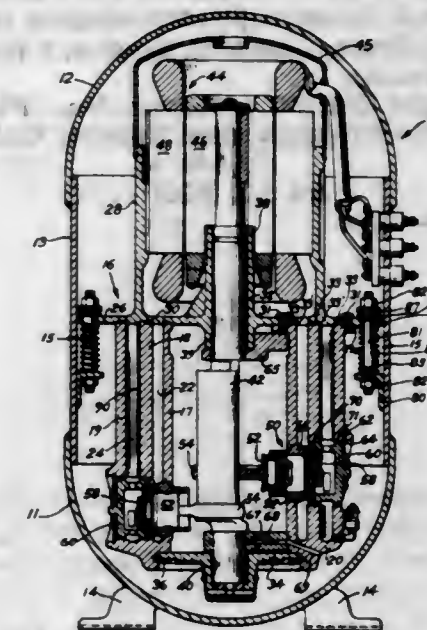
William R. Dirk, Marshalltown, Iowa, and Sidney A. Parker, Fort Worth, Tex., assignors to Lennox Industries Inc., a corporation of Iowa

Filed Nov. 6, 1967, Ser. No. 680,628

Int. Cl. F04b 39/12, 39/00

U.S. Cl. 230—232

10 Claims



An improved compressor block assembly for a hermetic compressor comprising three concentric walls cast integrally with a base to form a lower portion of the compressor block and a separate plate member including a sleeve-like member cast integrally therewith secured to the top of the lower portion. An unobstructed annular space is formed between the outer and middle walls of the compressor block. A cylindrical discharge gas muffler having baffles therein is disposed in the annular space to provide a circuitous path for muffling the discharge gas during operation of the compressor.

3,462,076

**SELF-CLEANING CENTRIFUGAL SEPARATOR DRUM HAVING AN EXTERNAL PISTON VALVE**

Peter Steinacker, Oelde I. Westphalia, Germany, assignor to Westfalia Separator A.G., Oelde, Westphalia, Germany, a corporation of Germany

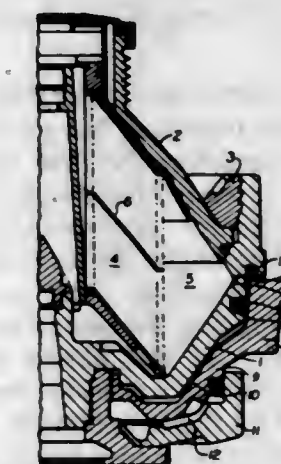
Filed Oct. 20, 1967, Ser. No. 676,805

Claims priority, application Germany, Nov. 4, 1966,  
W 38,446

Int. Cl. B04b 11/00

U.S. Cl. 233—20

3 Claims



Centrifugal separator having peripheral piston valve operative to open and close peripheral ejection ports by up and down movement with a sealing ring peripherally



about the centrifuge drum between it and the piston wherein the sealing ring is resiliently elastic and has a relatively hard portion on the face thereof proximate the interior surface of the piston.

3,462,077

# ARRANGEMENT FOR CONTROLLING AN ARBITRARY NUMBER OF PUNCHES

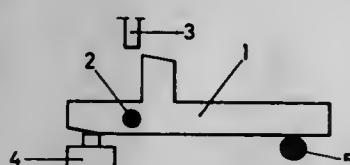
Luciano Pozzi, Stannum, Sweden, assignor to Aktiebolaget Original-Odhner, Goteborg, Sweden, a joint-stock company of Sweden

Filed Oct. 21, 1966, Ser. No. 588,512  
Claims priority, application Sweden, Oct. 21, 1965, 13,640/65

Int. Cl. B26f 1/04

U.S. Cl. 234-114

2 Claims



An arrangement for selectively driving punching mandrels or punches of a tape or like punching mechanism, which mandrels are operated by T-shaped levers or catches pivotally mounted on a shaft which is reciprocated for each step of movement of the tape, the levers being pivoted at one side of their centers of gravity so that a small magnetic force applied to that end of the lever at the opposite side of the pivot holds the end as the shaft reciprocates and thus moves the stem of the T into position to engage the corresponding punch mandrel as the shaft reciprocation continues.

3,462,078

# CONTROL SYSTEM FOR A BAKING OVEN

Boleslaw Houchman, Rehov Chatam Sopher 11, Tel Aviv, Israel

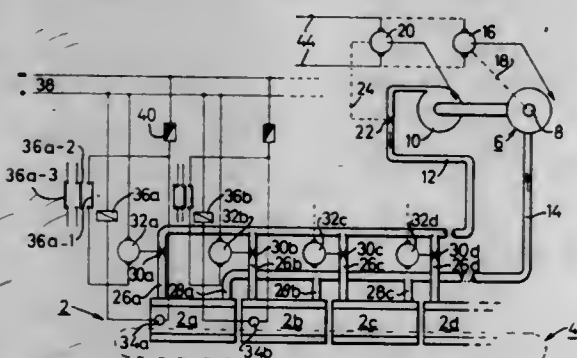
Filed Oct. 2, 1967, Ser. No. 672,353

Claims priority, application Israel, Oct. 14, 1966, 26,691

Int. Cl. F23n 1/00; G05d 23/19; F27b 9/02

U.S. Cl. 236-15

4 Claims



A baking oven comprises a plurality of heated zones, a central burner for supplying hot gasses to two or more zones, means for regulating the flow of the hot gasses to each of the zones, a temperature sensitive device in each zone, a control circuit for automatically controlling each of the zone regulating means in response to the temperature sensed in its respective zone, and burner control means for controlling the burner so as to automatically regulate the quantity of hot gasses produced thereby. The control circuit includes a bridge having a pair of resistances controlled by the temperature sensitive device in each zone, one of the resistances being normally included in one arm of the bridge and being shunted therefrom by the actuation of the temperature sensitive device in its respective zone, the other electrical resistance of the pair being in a second arm of the bridge and being con-

trolled by the temperature sensitive device in an opposite manner.

3,462,079

# LEVER AND FULCRUM PIN ARRANGEMENT FOR A CONTROL DEVICE OR THE LIKE

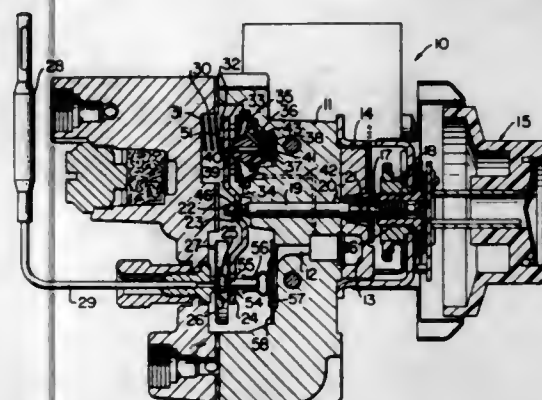
Roy C. Deml, Greensburg, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Oct. 17, 1967, Ser. No. 675,836

Int. Cl. G05d 23/12; F16k 31/44; G05g 1/04

U.S. Cl. 236-99

11 Claims



This disclosure relates to a control device having a valve member that is moved relative to its valve seat in response to a temperature sensing device, the valve member being operated by a lever having an intermediate portion thereof fulcrumed on an end means of an adjustable fulcrum pin that has its position adjusted by a control knob setting of the control device whereby the temperature sensing device acts on one end of the lever and the other end of the lever acts on the valve member. The fulcrum pin has a transversely disposed rod at the fulcrum end thereof and the fulcruming portion of the lever is so constructed and arranged that only the opposed sides of the lever engage against the opposed ends of the rod to provide a stable arrangement allowing for more mispositioning of the parts of the control device before the lever will be upset on the fulcrum pin.

3,462,080

# FAUCET FOUNTAIN

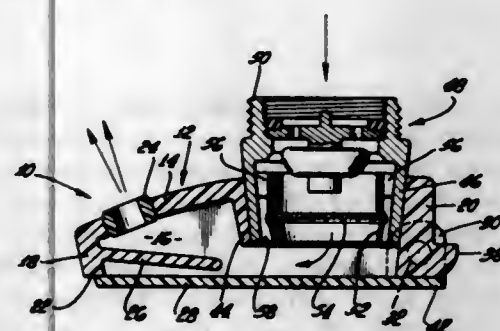
JoAnn S. Howard, Inglewood, and John E. Demaree, South Pasadena, Calif., assignors to Franklin S. Briles, Rolling Hills, Calif.

Filed Mar. 13, 1967, Ser. No. 622,660

Int. Cl. E03b 9/20; E03c 1/08

U.S. Cl. 239-27

17 Claims



Apparatus connectable to a faucet permitting selective use of the faucet as a drinking fountain. A pivoted vane or flap underneath the body of the apparatus is normally biased upwardly to a closed position wherein a relatively light flow of water from the faucet will be diverted by the vane upwardly through a fountain spout in the body. A relatively heavy flow of water from the faucet will cause the vane to pivot downwardly rendering the fountain inoperative and providing downward flow of water from the faucet.

## 3,462,081 SYSTEM FOR AIRLESS SPRAYING OF TWO LIQUIDS

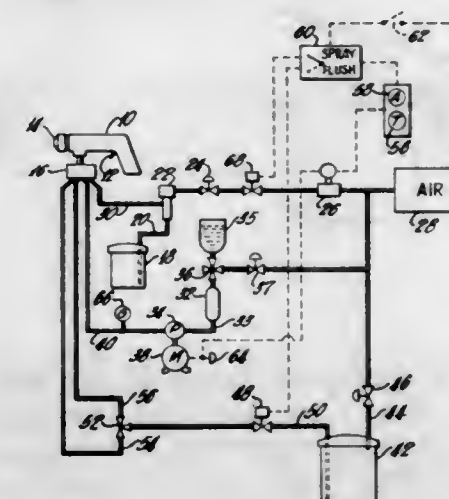
Robert J. Gelin and Teren K. Sprow, Newark, Ohio, assignors to Owens-Corning Fiberglass Corporation, a corporation of Delaware

Continuation-in-part of application Ser. No. 515,422, Dec. 21, 1965. This application Apr. 5, 1968, Ser. No. 719,216

Int. Cl. B05b 15/02, 7/04

U.S. Cl. 239-71

12 Claims



A system is provided for the airless, and specifically hydraulic, atomization of a resin and a catalyst. The resin and the catalyst are precisely proportioned and yet supplied to a spray device at such pressures to achieve airless atomization of the resin and catalyst, which are combined just prior to being sprayed. The precise proportioning enables a minimum amount of the catalyst to be used and the elimination of the air atomization also results in a number of advantages, particularly in the utilization of a greater percentage of the coating materials.

3,462,082

## FLUID DISPENSING APPARATUS

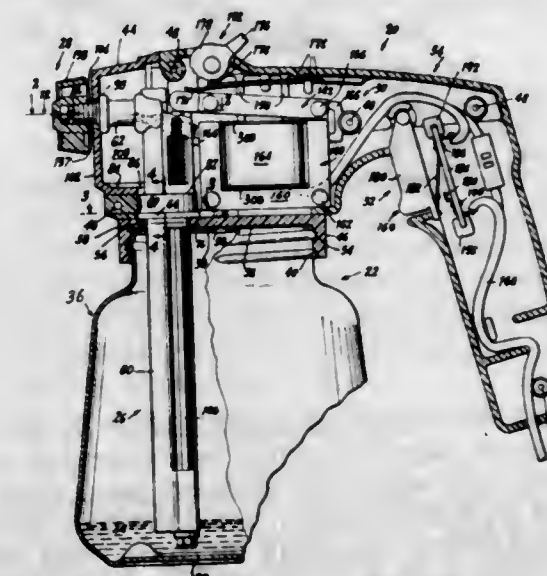
Milton C. Everett, Nassau County, N.Y., assignor to Kastar, Inc., Bellport, N.Y., a corporation of New York

Filed Jan. 10, 1967, Ser. No. 608,351

Int. Cl. B05b 9/04, 7/30; B67d 5/54

U.S. Cl. 239-332

40 Claims



A portable, self-contained adjustable electrically powered fluid spraying device is disclosed having a vibration armature motor mounted within a housing and a modular pump adapted to be readily removed, disassembled, assembled and replaced relative to the housing. The pump

comprises a piston and a small pumping chamber provided with a restricted outlet passage and an inlet check valve. A leaf spring and cam-type stop provide adjustable pump displacement and a swirl chamber type adjustable diffusor nozzle provides an adjustable spray pattern.

3,462,083

## MIXING NOZZLE AND DISPERSION METHOD

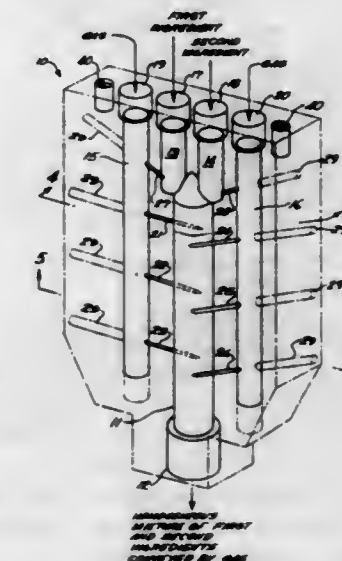
Glenn E. Kautz, Sewickley, Pa., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 19, 1966, Ser. No. 602,987

Int. Cl. B05b 7/10, 7/06, 9/00

U.S. Cl. 239-400

5 Claims



A mixing nozzle for homogeneously mixing two co-reactive liquids and for delivering a stream of reacting mixture, especially for preparing polyurethane foams. The nozzle receives metered streams of the two co-reactive liquids and also receives inert gas which mixes and expels the ingredients at a location which is remote from the flow control devices for the system. The nozzle is useful in practicing an improved method of dispersing polyurethane foam at locations remote from the flow control devices.

3,462,084

## ADJUSTMENT FOR GAS BURNERS

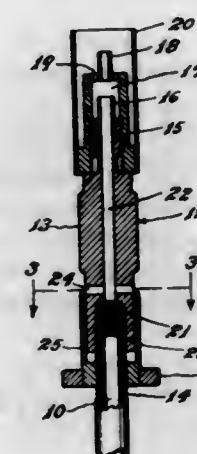
William N. Aleshin, 880 Main St., South Windsor, Conn. 06074

Filed June 8, 1967, Ser. No. 644,646

Int. Cl. B05b 7/06, 7/12

U.S. Cl. 239-431

1 Claim



An air adjustment for gas burners, particularly for the well known type of burners using propane gas and including a burner unit that is attachable to a gas cylinder; said burner unit comprising a burner nozzle and a



gas valve for controlling the supply of gas to the nozzle. Said nozzle has a finely adjustable air valve to control the amount of air supplied to a flame burning on the nozzle.

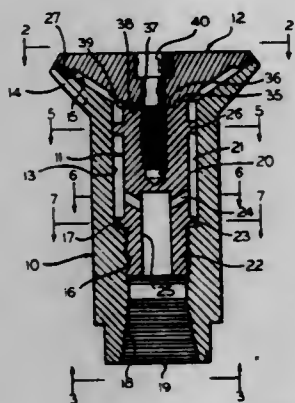
### 3,462,085 CIRCULAR NOZZLE

Anthony R. Nugarus, Chicago, Ill., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts

Filed Dec. 1, 1967, Ser. No. 687,169  
Int. Cl. B05b 1/06

U.S. Cl. 239—515

6 Claims



A circular nozzle for generating a thin conical film of high viscosity material at elevated temperatures for coating articles with a packaging film.

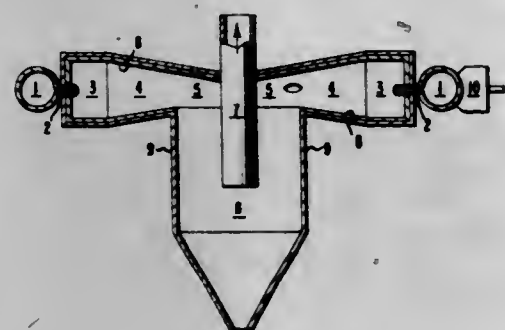
### 3,462,086 FLUID ENERGY MILLING PROCESS

Louis Bertrand and Harry E. McCarthy, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 1, 1966, Ser. No. 562,322  
Int. Cl. B02c 19/06, 21/00, 23/02

U.S. Cl. 241—5

6 Claims



A process is provided in which the inward radial velocity of the vortex relative to its angular velocity is such that  $dDp/dr < 0$ , where  $Dp$  is the diameter of the equilibrium particle and  $r$  is the corresponding vortex radius, to effect an inwardly increasing equilibrium particle size. This is accomplished by providing a critical degree of progressively inward decreased in the cross-section of the intermediate zone such that  $dh/dr$  is greater than the value of

$$\left( \frac{h}{2C_{DP}} \times \frac{dC_{DP}}{dr} \right) - \left( \frac{\sqrt{V_r^2 + V_t^2}}{V_r} \times C_{DW} \right) - \left( \frac{h}{2\rho g} \times \frac{d\rho g}{dr} \right) + 2h$$

where:

$C_{DP}$  is the coefficient of particulate drag;  
 $V_r$  is the tangential velocity of the fluid;  
 $V_t$  is the radial velocity of the fluid;  
 $C_{DW}$  is the coefficient of wall drag; and  
 $\rho g$  is the fluid density.

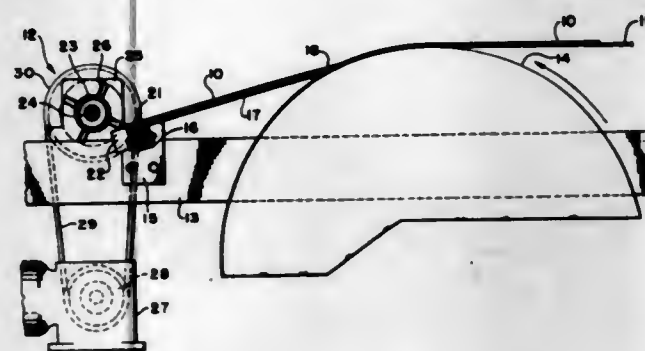
### 3,462,087 FLAKING MACHINE

Arthur W. Butler, Garfield Heights, Francis W. Purdy, Maple Heights, and Charles J. Meyer, Bay Village, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 20, 1966, Ser. No. 521,971  
Int. Cl. B02c 23/02, 13/00

U.S. Cl. 241—186

3 Claims



Apparatus for the continuous flaking of wax sheet and the like advanced along a conveyor and transferred by a scraper blade to breaking mechanism including a comb onto which the leading edge of the sheet moves and a rotor having pins rotating through the comb to fracture the sheet. The feed of the sheet is at a controlled rate, with the pins striking the sheet at a small angle to avoid significant drag and also having rearwardly sloped ends so that only the leading edges of the rotating pins strike the sheet.

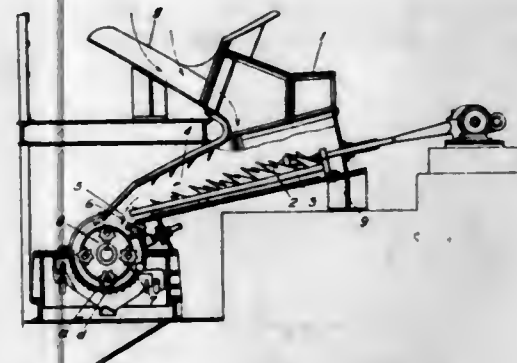
### 3,462,088 MACHINE FOR CRUMBLING METALLIC CHIPS

Emil Ionescu, Brasov, Rumania, assignor to Ministerul Industrii Constructoare de Masini, Bucharest, Rumania

Filed Nov. 21, 1966, Ser. No. 595,760  
Claims priority, application Rumania, Nov. 23, 1965, 50,572

U.S. Cl. 241—186

7 Claims



A machine for crumbling metallic chips by the action of a plurality of hammers carried by a rotor and a breaking head through which the hammers pass, chips being delivered in a positive manner to the breaking head by a feeding arrangement composed of pusher rods disposed in a feed tunnel leading to the breaking head region and carrying spurs which are directed toward the breaking head region, the pusher rods being arranged to undergo reciprocating movement within the tunnel so as to continuously feed metallic chips to the breaking head region due to the combined influence of the inclination of the spurs and the reciprocating movement of the pusher rods.

### 3,462,089 MECHANICAL DEFIBERING MEANS

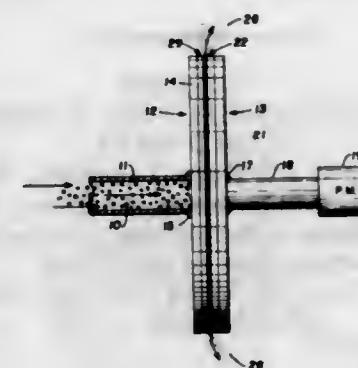
Bailey Duane Whitlow, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 21, 1966, Ser. No. 603,481

Int. Cl. B02c 1/10, 7/12, 7/00

U.S. Cl. 241—296

6 Claims



A face plate for a pulp slurry refiner disk. The plate comprises a metal substrate provided with upstanding, sharp edged teeth and a relatively thin, dense, hard, wear and corrosion resistant, vapor deposited coating over at least that portion of the face plate conventionally exposed to the pulp slurry, the coating having a Moh's scale hardness of about 8 to 9 and preferably being a titanium carbide coating having a ductile metal dispersed therein.

### 3,462,090 LINER FOR GRINDING MILLS

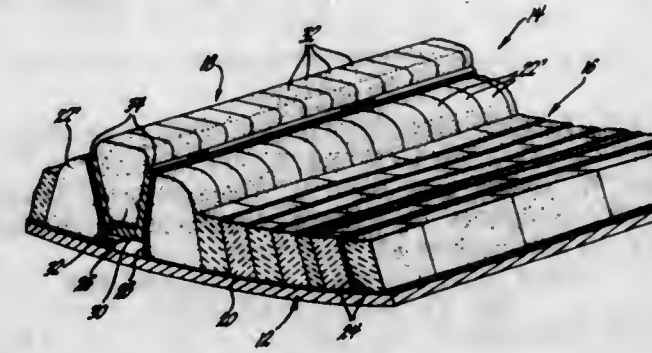
Benjamin Daniel Landes, Denver, and Ramon Paricio, Jr., and Richard E. Andrews, Golden, Colo., assignors to Coors Porcelain Company, Golden, Colo., a corporation of Colorado

Filed Dec. 14, 1966, Ser. No. 601,728

Int. Cl. B02c 17/22

U.S. Cl. 241—299

14 Claims



Liner assembly for cylindrical grinding mill wherein a plurality of liner units are circumferentially disposed; each unit includes two subunits each of which comprises a plurality of ceramic blocks disposed on a retaining sheet having spaced retaining flanges. Between adjacent units is a wedge member wherein is disposed and retained a second plurality of ceramic blocks.

### 3,462,091 CROSS WOUND COIL WINDING MACHINE

Richard N. Adrien, Somersworth, N.H., and Lee E. Dugan, Arlington, Mass., assignors to General Electric Company, a corporation of New York

Filed Mar. 8, 1968, Ser. No. 711,781

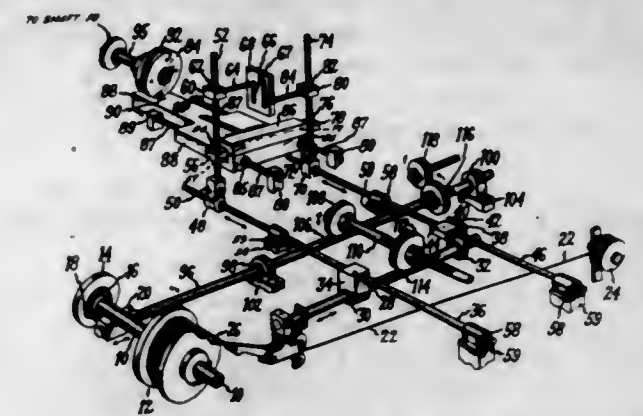
Int. Cl. H01f 11/04

U.S. Cl. 242—7.15

7 Claims

A coil winding machine for winding a cross wound open mesh coil. The winding machine includes a needle member through which the wires threaded to accurately

ly place the wire in the desired position on the winding spool. The winding needle is actuated by a pair of cams and a stroke adjustment to move the needle along the



spool and maintain the wire tangent to the surface of the spool. An additional actuation in the form of a gear train is provided to maintain the needle the required distance from the spool as the coil is wound on the spool.

### 3,462,092 TEXTILE BOBBIN CHUCK

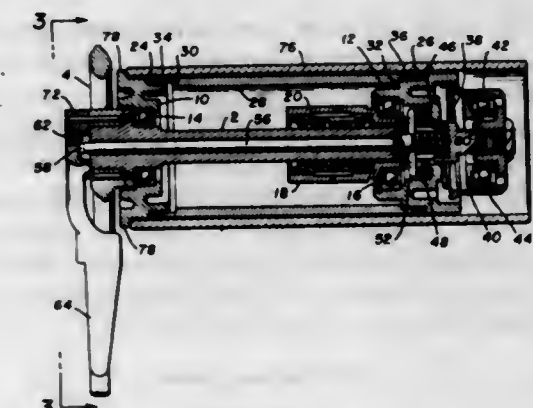
David M. Mullins, Pensacola, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Oct. 11, 1967, Ser. No. 674,613

Int. Cl. B65h 75/30

U.S. Cl. 242—46.4

7 Claims



A bobbin chuck having brake and clutch assemblies integrated to provide uninterrupted, sequential braking and clutching applications.

### 3,462,093 WEB WINDING MACHINE

Walter E. Peery, Princeton, N.J., assignor to Eureka-Carlisle Company, Scranton, Pa., a corporation of Delaware

Filed Oct. 22, 1965, Ser. No. 501,631

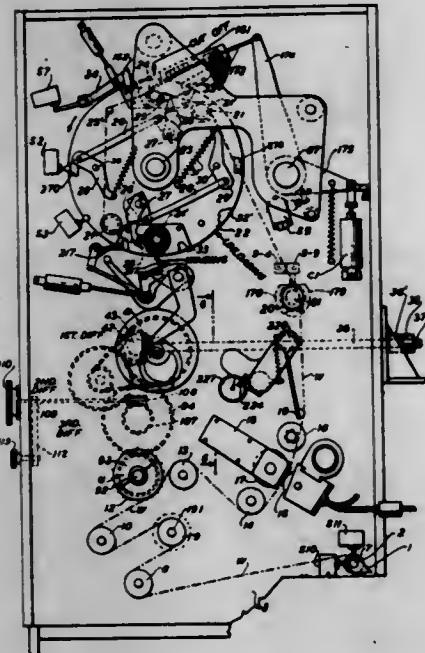
Int. Cl. B25h 35/02

An apparatus for winding and cutting a predetermined length from a continuously fed web having succession of like designs or indicia thereon such that the cut is in register with the design or indicia. A pair of web winding mandrels are rotatably mounted on a rotatable turret to receive the web after it has been printed; the turret being in turn mounted to index each mandrel between a starting position where the previous running web is cut and the rest of the web is started upon a fresh mandrel, a winding position where the major portion of the web is coiled upon the mandrel, and an unloading position where the finished coil is removed from the mandrel. The mechanism of the apparatus is driven through a plurality of interconnected planetary drive systems such that the feed of the web upon the mandrel is synchronized with the input from the press upon which the web is being printed, with the movement of the turret upon which the mandrel



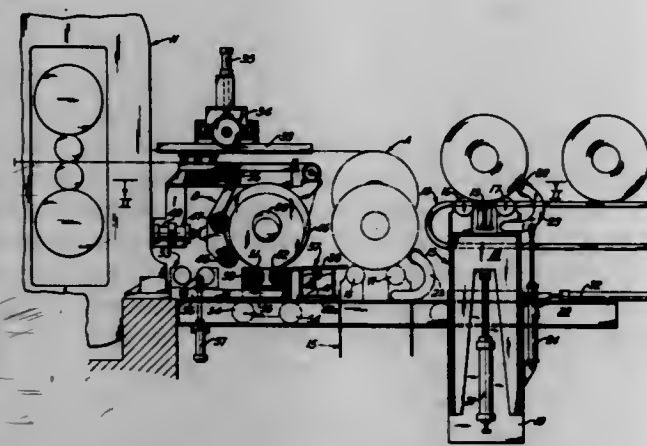
is mounted, and with an enveloper mounting the web cut off mechanism; such that these various mechanisms are driven in synchronism with each other. The web winding mandrels are formed in two sections each with cooperating cam surface biasing substantially the longitude and the length thereof with one section mounted for slidable movement upon the other along the cam sur-

port ramp is adapted to be positioned in an operative position transversely of the path of movement of the coils and in an inoperative position remote from said path. In the operative position, the coil supporting ramp serves as a support for a loosely wound coil, which is allowed to roll over the ramp to the mill. When the ramp is in its operative position, there is provided an opening through which a tightly formed coil supported by a carrying car is brought to the mill.



face, with both sections normally forming opposed circular sections of a given diameter, and with both sections cooperating with means operable upon operation of the turrets to a given index positions for displacing same along the cam surface to reduce the diameter of the sections. Appropriate electrical circuitry is provided to facilitate the operation of the various elements of the mechanism and for providing a count to signal and control operation of the cut off mechanism so as to precisely cut the web between successive indicia.

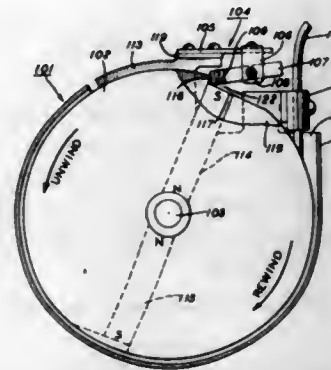
**3,462,094**  
**APPARATUS FOR TRANSFERRING LOOSELY AND TIGHTLY FORMED COILS OF METALLIC STRIP**  
Charles Storer Shumaker, Glenshaw, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Feb. 6, 1968, Ser. No. 703,368  
Claims priority, application Great Britain, Feb. 22, 1967, 8,509/67  
Int. Cl. B21c 47/14  
U.S. Cl. 242—79 4 Claims



A coil support ramp arranged between a coil carrying car and an uncoiling apparatus in a manner that the sup-

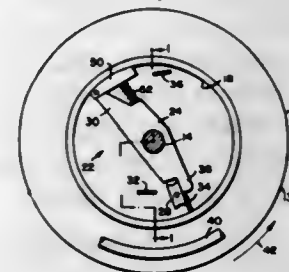
**3,462,095**  
**LATCH MECHANISM FOR A RETRACTILE CORD REEL**

Harry A. Hilsinger, Jr., Hope Township, Warren County, and Wilfred J. Kindermann, Chatham, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York  
Filed Aug. 14, 1967, Ser. No. 660,377  
Int. Cl. B65h 75/48  
U.S. Cl. 242—107.7 8 Claims



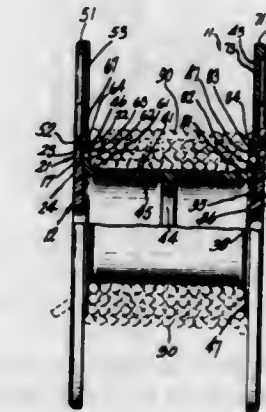
In a spring loaded reel for automatically retracting and storing a line or cord, an automatic latch is held magnetically in the unlatched position or is shifted magnetically to a latched position depending upon the rotational speed and position of the reel, thereby permitting the cord to be held at any particular position of travel at the option of the user without placing spring tension on the cord.

**3,462,096**  
**BRAKE, LOCK AND RELEASE MECHANISM FOR AUTOMATIC REWIND REELS**  
Sidney W. Bailey and John R. Montgomery, Trumbull, Conn., assignors to Sybron Corporation, Rochester, N.Y., a corporation of New York  
Filed Nov. 13, 1967, Ser. No. 682,308  
Int. Cl. B65h 75/48, 17/44  
U.S. Cl. 242—107.7 7 Claims



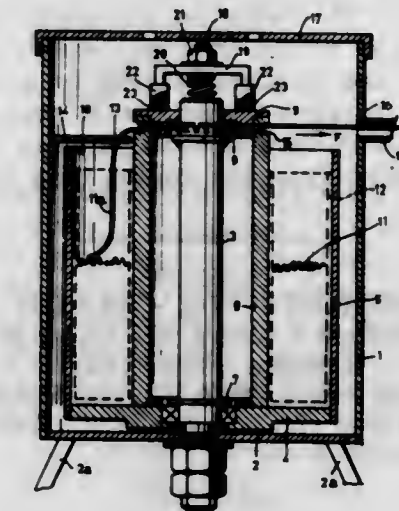
Disclosed is a brake mechanism for automatic rewind reels which includes a brake drum formed in the hub of a reel. A brake shoe, engageable with the drum, is adapted to oscillate cyclically about the center of the hub through arcs of greater and lesser lengths and moves into tight frictional engagement with the drum only when the shoe travels through the greater arcs.

**3,462,097**  
**UNITARY SPOOL ASSEMBLY**  
Robert M. Wilson, Battle Creek, Mich., assignor to Dare Products, Incorporated, Battle Creek, Mich., a corporation of Michigan  
Filed Mar. 17, 1967, Ser. No. 623,979  
Int. Cl. B65h 75/14  
U.S. Cl. 242—118.4 12 Claims



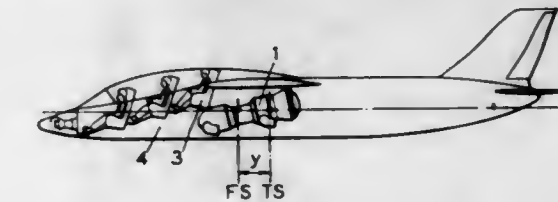
A mounting dispensing spool assembly made of resilient material having a one-piece molded body member with a large arbor opening provided to receive two end plates having bearing surfaces with a smaller diameter than the arbor opening with the body portion and the end plates having unique provisions for receiving their companion portions and including various methods of securing the end plates to the molded body member.

**3,462,098**  
**WIRE DISPENSING DEVICE**  
Andrea Sommo, Settimo Torinese, Torino, Italy, assignor to Sommo Andrea & C. S.n.c., Settimo Torinese, Torino, Italy  
Filed Sept. 22, 1967, Ser. No. 669,876  
Claims priority, application Italy, Sept. 24, 1966, 777,454/66  
Int. Cl. B65h 49/00  
U.S. Cl. 242—129.8 3 Claims



A wire dispensing device has a fixed casing, enclosing a rotatable support for a reel or coil. The wire passes through a guide and makes at least one turn around the support before passing through an outlet in the casing, so that withdrawal of the wire causes dispensing rotation of the support.

**3,462,099**  
**VTOL AIRCRAFT**  
Hans Hollendieck, Bremen-Huchting, and Hans Justus Meier and Erich Adolf Wilhelm Rutzen, Bremen, Germany, assignors to Vereinigte Flugtechnische Werke Gesellschaft mit beschränkter Haftung, Bremen, Germany  
Filed Mar. 21, 1966, Ser. No. 535,931  
Claims priority, application Germany, Mar. 26, 1965, V 28,143  
Int. Cl. B64c 29/00; B64d 27/20  
U.S. Cl. 244—55 4 Claims



A power unit arrangement for a VTOL aircraft having a relatively heavy elongated jet power unit arranged in the interior of the fuselage and centrally to the medial plane of the fuselage near the centre of gravity of the aircraft, with the centre of gravity of the power unit located on the end of the power unit, two thrust jets, preferably swivel jets with jet deflection arranged on both sides of the fuselage, said power unit installed exhaust first forwardly with its centre of gravity being installed rearwardly in the fuselage with its centre of gravity located behind the centre of gravity of the aircraft, at least a distance sufficient to cause a tail heavy torque about the transverse axis of the aircraft.

**3,462,100**  
**PNEUMATIC LIFTING PLENUM CHAMBER FOR VEHICLES**  
Pierre Albert Marie De Valroger, 21 Rue Saint-Guillaume, Paris, France  
Filed Feb. 20, 1967, Ser. No. 617,412  
Claims priority, application France, Feb. 21, 1966, 50,429, Patent 1,469,450; Sept. 27, 1966, addition 77,793  
Int. Cl. B60v 3/08; B64c 25/00  
U.S. Cl. 244—100 8 Claims

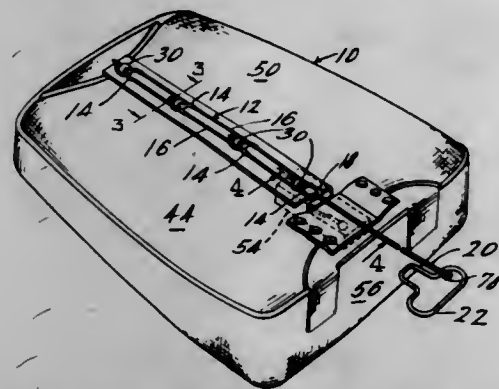


A pneumatic plenum chamber as a lifting support chiefly adapted for the taking off and landing of aircraft on fluid cushions. The plenum chamber is bounded upwardly by the lower surface of the aircraft wing, laterally by longitudinal partitions and to the fore and aft by movable flaps in fluid-tight contacting relationship with the partitions. At the moment of the landing, said flaps and partitions engage the ground fluid-tightly. The partitions are expandable in their own plane, so that they may always rest on the ground when the height of the aircraft above ground and its angle of incidence vary. The flaps are kinematically connected with one another in a manner such that opening of one of them produces closing of the other.

**3,462,101**  
**PARACHUTE RIPCORD**  
Francis X. Chevrier, Santa Ana, Calif., assignor to Hi-Tek Corporation, Santa Ana, Calif., a corporation of California  
Filed Mar. 13, 1968, Ser. No. 712,686  
Int. Cl. B64d 17/52; A44b 17/00, 19/00  
U.S. Cl. 244—148 7 Claims  
A safe parachute ripcord including serial release pins connected to two parallel release cables. The parachute



pack is fitted with spaced, apertured locking posts or cones adapted to receive grommets attached to the closure flaps of the pack. Each release pin includes a generally U-shaped bail-like body having hollow sides and a connecting center portion and a locking pin. The locking pin, which is fixed to the center bight portion of the body, is adapted to fit through the aperture on the locking post to lock the grommets onto the locking posts. The hollow

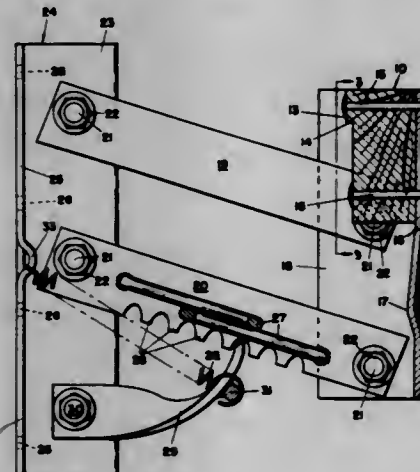


sides of the body are adapted to receive, and to be fastened to, the two parallel release cables. The release pins are placed on the cables at the spacing of the locking posts. One of the U-shaped bodies, without the locking pin, is connected to the ends of the parallel cables, and a single release cable is attached to its center portion. The single release cable is attached to a hand grip for manual operation.

**3,462,102**  
**AUXILIARY MOTOR MOUNTING BRACKET**  
Walter Rivers, % Walt's Trailer Shop,  
Coeur d'Alene, Idaho 83814  
Filed Jan. 22, 1968, Ser. No. 699,625  
Int. Cl. F16m 1/02

U.S. Cl. 248-4

2 Claims



A mounting bracket for an auxiliary outboard motor and having a motor mounting block supported by parallelogrammatic support means for vertical movements in a plane parallel to the transom of a boat to which it is attached and having cross bracing to withstand oblique racking forces effected by steering movements of the motor and bead means on the block to preclude accidental displacement of the motor clamp.

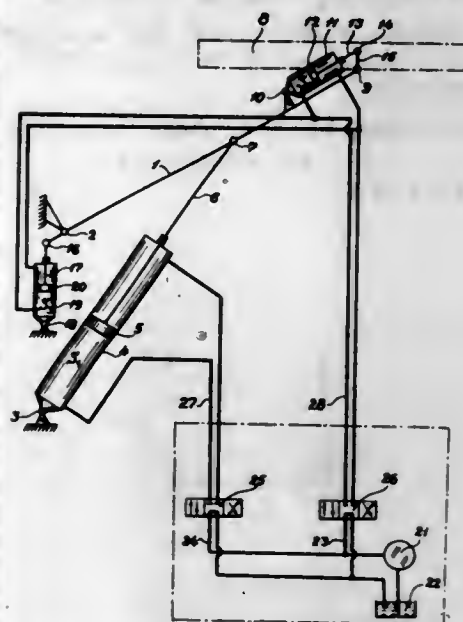
**3,462,103**  
**HYDRAULIC GUIDING BOOM FOR A ROCK DRILL**  
Rolf Strom, Helsinki, Finland, assignor to Oy Tampella Ab., Tampere, Finland, a corporation of Finland  
Filed Dec. 8, 1966, Ser. No. 600,145  
Claims priority, application Sweden, Dec. 14, 1965, 16,222/65  
Int. Cl. F16m 11/00

U.S. Cl. 248-13

2 Claims

Arrangement for rock drill booms to maintain seat direction the same regardless of boom movements by inter-

posing hydraulic motors between boom and support and boom and seat. Conduits interconnect the hydraulic

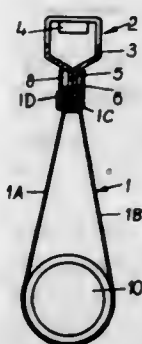


motors for flow of fluid to maintain seat direction regardless of boom movement and to simplify drilling of parallel bores.

**3,462,104**  
**SUSPENSION MEANS**  
Franz Johann Jakob Müller and Helmut Müller, both of  
132 Königsteiner Strasse, Frankfurt am Main-Unter-  
liederbach, Germany  
Filed Mar. 2, 1967, Ser. No. 620,055  
Claims priority, application Germany, Mar. 3, 1966,  
M 68,610  
Int. Cl. F16l 3/02

U.S. Cl. 248-62

16 Claims



A device for suspending an object, such as a pipe, from a support surface, such as a ceiling, is disclosed herein to have a carrier which is adapted to be secured to the support surface and which mounts a shackle. A suspension band looped around the object passes through a slot in the shackle and is secured thereto by a clamping ring.

The invention refers to hangers or suspension devices with which objects, such as tools, pipes or similar things, can be suspended from the ceiling of a room or other structures.

**3,462,105**  
**ANCHORAGE FOR CHURCH PEW**  
Richard J. Kohrt, 909 Dodge St.,  
Kewaunee, Wis. 54216  
Filed Feb. 3, 1967, Ser. No. 613,884  
Int. Cl. F16m 11/20; A47g 29/02; E02a 27/50  
U.S. Cl. 248-188.8

2 Claims



An anchorage for supporting a pew, above a floor, on a stud projecting upwardly from the floor.

3,462,106

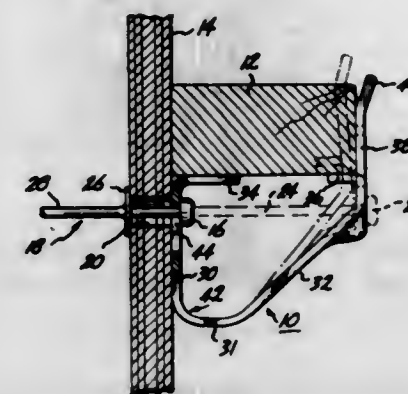
WALER BRACKET

Frank E. Buyken, 1517 Rainier Ave. S.,  
Seattle, Wash. 98144

Filed Oct. 11, 1967, Ser. No. 674,602

Int. Cl. A47h 1/10; E04g 11/06, 17/06  
U.S. Cl. 248-205

2 Claims



A waler bracket adapted to engage a tie-rod including a ledge to support a waler and a vertical wall member adapted to press against the outside surface of a waler forcing the waler to press against a concrete form.

3,462,107

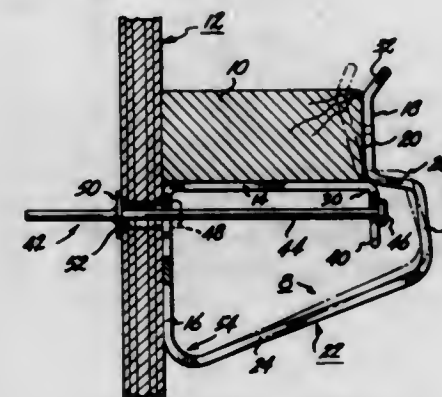
WALER BRACKET

Frank E. Buyken, 1517 Rainier Ave. S.,  
Seattle, Wash. 98144

Filed Oct. 11, 1967, Ser. No. 674,603

Int. Cl. A47h 1/10; E04g 11/06, 17/06  
U.S. Cl. 248-205

4 Claims



A waler bracket including a generally flat ledge member for receiving a waler, a depending plate member joined to the inner end of the ledge member, an upstanding wall member independent of the ledge member and disposed adjacent the outer end thereof, an arm member connecting the plate member and the upstanding wall member and a keyhole slot in the plate member to receive the head of a tie-rod.

3,462,108

WALER BRACKET

Frank E. Buyken, 1517 Rainier Ave. S.,  
Seattle, Wash. 98144

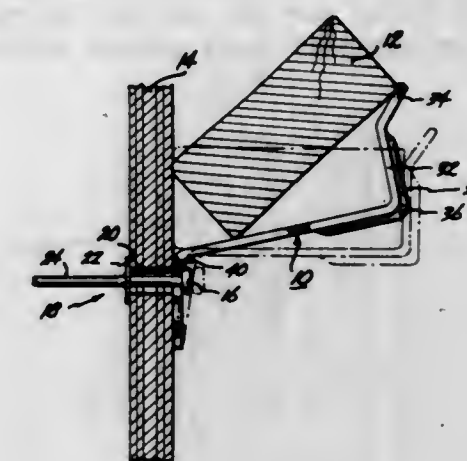
Filed Oct. 11, 1967, Ser. No. 674,604

Int. Cl. A47h 96/06  
U.S. Cl. 248-205

2 Claims

A waler bracket adapted to interlockingly engage the

head of a tie-rod including a plate member connected to a waler supporting ledge and a vertical member connected



to the outer end of the ledge member adapted to engage the outside edge of a waler.

3,462,109

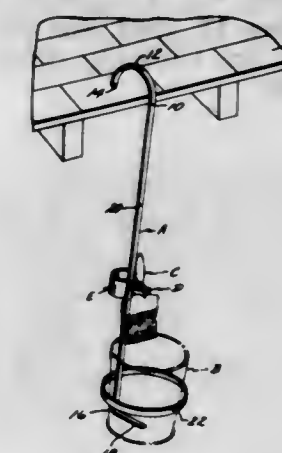
PAINTER'S POT AND BRUSH SUPPORT

Luther C. Forbes, 3317 Walnut St.,  
Long Beach, Calif. 90807

Filed May 4, 1967, Ser. No. 636,183

Int. Cl. B44d 3/12  
U.S. Cl. 248-210

1 Claim



A painter's accessory adapted to removably support a painter's pot, together with a brush removably held in a fixed position thereabove, which pot and brush are held by the support at substantially waist height and approximately arm's length to minimize the necessity of bending over on the part of the user when painting a structure such as a house, or the like, from a scaffold or walkboard.

3,462,110

SUPPORT ASSEMBLY

Edward P. Cheslock, Kennett Square, Pa., assignor to  
E. W. Bliss Company, Canton, Ohio, a corporation of  
Delaware

Filed June 26, 1967, Ser. No. 648,599  
Int. Cl. F16n 13/02

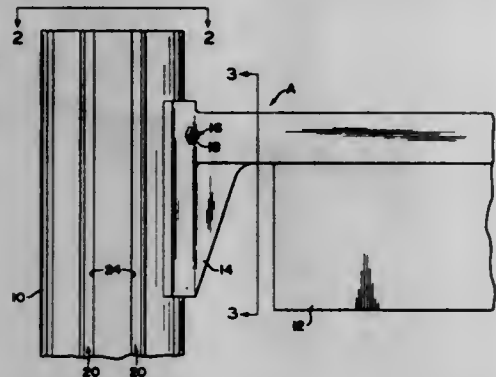
U.S. Cl. 248-221

6 Claims

A support assembly especially suited for supporting street lights, signs and like structures. The assembly comprises an elongated vertically extending support pole having at least one longitudinally extending groove formed therein and extending a substantial distance therealong. The groove has a first portion which opens to the outer surface of the pole and a second portion connected to

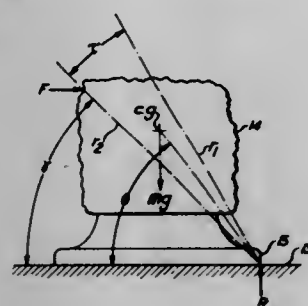


the first portion and spaced inwardly from the outer surface of the pole. The second portion has side walls spaced a distance greater than the width of the first portion. Positioned within the groove is a bolt formed from a material harder than the pole and having a head portion and an elongated shank portion with a longitudinal



axis and a threaded outer end. The head portion is received in the second portion of the groove and the shank portion extends radially outwardly of the pole through the second portion. The head portion of the bolt is formed so that when the bolt is rotated in the groove the periphery of the head portion engages the side walls of the groove and locks the bolt in position in the groove.

**3,462,111**  
**APPARATUS BASE CONFIGURATION FOR REDUCTION OF SLIDING AND TIPPING**  
Rembert R. Stokes, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York  
Filed Dec. 13, 1967, Ser. No. 690,286  
Int. Cl. A47g 29/00  
U.S. Cl. 248—346 2 Claims

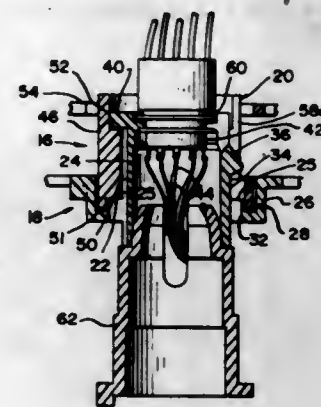


To reduce the tendency of apparatus to slide or tip in response to an applied force, two materials with diverse coefficients of friction are selectively affixed to the base of the apparatus. A material with a high coefficient of friction is affixed to a portion of the apparatus base area and contacts the desk or utility surface upon which the apparatus is placed. A second material which is affixed to the uncovered perimeter of the base, and has a relatively low coefficient of friction, is offset so that it only comes into contact with the utility surface upon incipient tipping of the apparatus, thereby preventing further tipping by allowing the apparatus to slide.

**3,462,112**  
**CONNECTOR ASSEMBLY FOR PIVOTALLY MOUNTED DISPLAY TUBE**  
Theodore F. Vom Brack, Arlington Heights, and Paul A. Novak, Wauconda, Ill., assignors to Warwick Electronics Inc., a corporation of Delaware  
Filed Aug. 4, 1967, Ser. No. 658,484  
Int. Cl. A47b 95/00  
U.S. Cl. 248—349 7 Claims

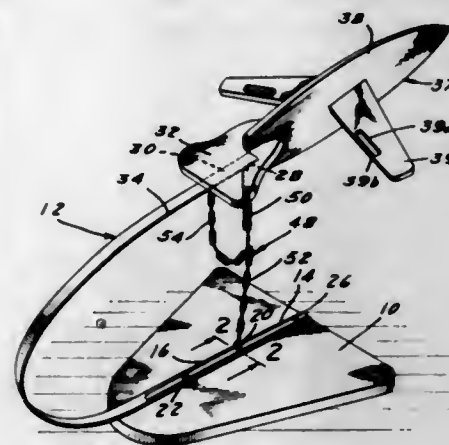
A connector assembly for a television receiver of the type having a display tube pivotally mounted above a base enclosing the functional components for receiving

signals and transposing the same into a video and audio presentation. The rotational movement of the display tube is limited by a locking finger which may be selectively urged to a position beyond the normal limits of rotational



movement to place the components of the connector assembly in a position for disassembly by relative axial movement thereof to permit disconnection and withdrawal of the display tube assembly from the base portion.

**3,462,113**  
**EXERCISING APPARATUS**  
Norman A. MacLeod, 1330 N. Fullerton Road, La Habra, Calif. 90631  
Filed Jan. 7, 1966, Ser. No. 519,270  
Int. Cl. A63g 9/00  
U.S. Cl. 248—387 1 Claim



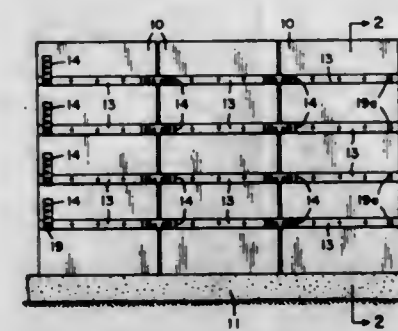
A child's jumper. The seat is secured to a flat spring steel bar which is bent upon itself into a U-shaped configuration to provide spring resilience to the device. The spring is held in its U-shape by a two-part retainer comprising an inextensible chain secured at each end to opposite legs of the U, and a coil spring secured to the center of the chain and to the leg of the U having the seat mounted on it. The other leg of the U is adjustably mounted to a base.

**3,462,114**  
**LUG SCREW FOR CONSTRUCTION FORMS**  
Walden H. O'Dell, Sr., 2118 Victor St., St. Louis, Mo. 63104, and Walden H. O'Dell, Jr., 2595 Cheshire, St. Louis, Mo. 63119  
Filed Nov. 21, 1966, Ser. No. 601,279  
Int. Cl. E09g 17/06; F16b 35/04  
U.S. Cl. 249—195 3 Claims

Lug screw means for wooden construction form sheet assembly locking keys that will not loosen or dig out of the form sheets as the keys are released, and lug screw

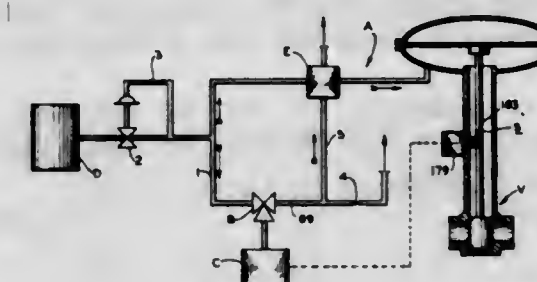
means per se in which the exterior surfaces engaged in the form sheets are not provided with threads or knurling

(e) a valve stop member having an opening communicating with the other end of said solenoid openings; and



or are not roughened in any way that would allow the same to pull loose or dig out of the form sheets.

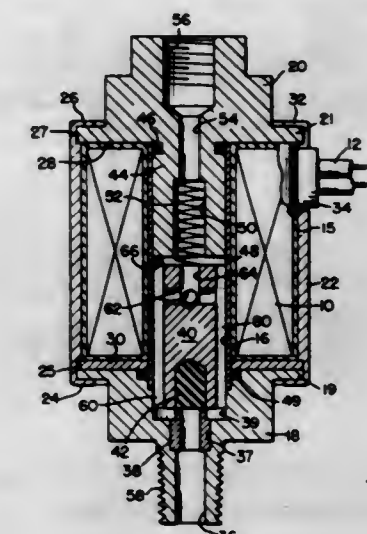
**3,462,115**  
**ELECTROPNEUMATIC VALVE POSITIONER**  
George E. Barker, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
Continuation-in-part of application Ser. No. 412,921, Nov. 23, 1964. This application May 14, 1965, Ser. No. 455,797  
Int. Cl. F16k 29/02, 31/08  
U.S. Cl. 251—29 15 Claims



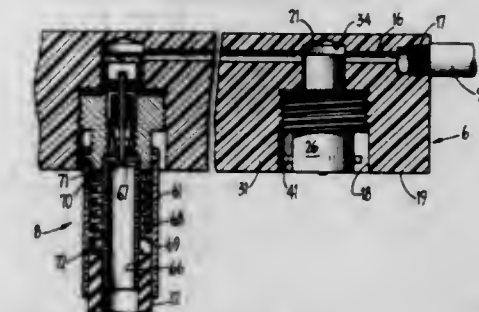
An electropneumatic valve positioner for controlling the valve plunger of a controllable valve in response to a control signal. The valve positioner includes a fluid pressure source, a relay acting upon the plunger and a pulsed solenoid control valve. An electrical sensor on the plunger of the main valve initiates a signal to the control circuit of the pulsed solenoid valve which will, in turn, actuate the relay to cause movement of the valve plunger of the main valve. The sensor will create a signal in proportion to the change of position and this will, in turn, generate a force pulse to create proper dithering action in the pulsed solenoid valve.

**3,462,116**  
**SOLENOID VALVE AND METHOD FOR MAKING THE SAME**  
William A. Wright, Jr., Clifton Springs, N.Y., assignor to Wright Components, Inc., Clifton Springs, N.Y., a corporation of New York  
Filed Feb. 6, 1964, Ser. No. 342,944  
Int. Cl. F16k 31/06  
U.S. Cl. 251—139 9 Claims

1. A solenoid valve comprising:  
(a) a housing;  
(b) a solenoid with an axially extending opening and mounted in said housing;  
(c) flow-through valve means in said opening;  
(d) a valve body member having an opening and a valve seat communicating with one end of said solenoid opening;



**3,462,117**  
**VALVE ACTUATED OXYGEN SUPPLY SYSTEM**  
Lars H. Lind, % A.I.R. Corp., Oakland International Airport, Oakland, Calif. 94614  
Filed Mar. 8, 1967, Ser. No. 621,573  
Int. Cl. F16l 37/28  
U.S. Cl. 251—149.6 9 Claims



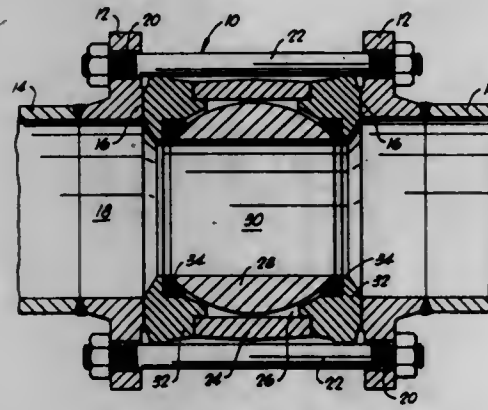
An oxygen system having a manifold with a plurality of valve elements disposed substantially entirely within the confines of the manifold, with such elements being adapted to be opened by a valve actuator, the valve actuator being attached to the hose of an oxygen mask.

**3,462,118**  
**BALL VALVE FOR USE BETWEEN FLANGES**  
Domer Scaramucci, Oklahoma City, Okla., assignor to Balon Corporation, Oklahoma City, Okla., a corporation of Oklahoma  
Filed Aug. 7, 1967, Ser. No. 658,667  
Int. Cl. F16k 5/06, 51/00; F16l 19/02  
U.S. Cl. 251—151 16 Claims

A ball valve for use between standard ASA flanges, wherein the body of the valve is shaped to accommodate the bolts connecting the flanges without interference, and is of the maximum internal diameter consistent with the provision of a seal no greater in diameter than the seating faces of the flanges, whereby the maximum size of valve ball can be used to maximize the flow capacity of the valve. The valve body is supported by retaining



rings at each end which engage the flanges and transmit a compressive load from the flanges to the body, as well as elasticity; and the cooperating, relatively outboard ring is fashioned with a lesser diameter to establish the relative



as for carrying upstream and downstream seals in positions to sealingly engage the valve ball.

3,462,119

### TUBING VALVE AND METHOD OF MANUFACTURE

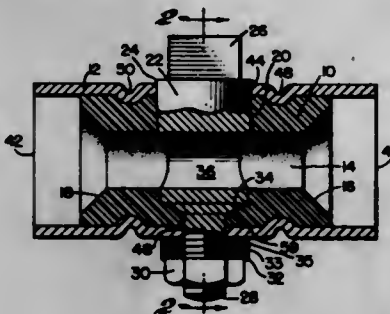
Russell G. Smith, Cincinnati, Ohio, assignor to Continental Manufacturing Company, Cincinnati, Ohio, a corporation of Ohio

Filed Feb. 23, 1966, Ser. No. 529,474

Int. Cl. F16k 5/04, 15/18

U.S. Cl. 251—309

9 Claims



The invention involves a plug valve assembly and the method of producing the same which comprises driving a tightly-fitting axially bored cylindrical valve body of pliable plastic material into the open end of a tube, drilling through said tube and body a diametral hole to provide a valve plug chamber with a frusto-conical seat about said bottom hole inserting a transversely ported rotatable valve plug through one end of the diametral hole into the valve chamber and onto the valve seat therein, and then securing the plug against the seat for rotatable movement.

3,462,120

### BALL VALVE

Werner K. Priese, Barrington, Ill., assignor to Hills-McCanna Company, Carpentersville, Ill., a corporation of Illinois

Filed June 27, 1966, Ser. No. 560,566

Int. Cl. F16k 5/06, 27/06, 31/60

U.S. Cl. 251—315

10 Claims

A ball valve is constructed with pairs of cooperating seat rings for supporting and gasketing the flow control ball. A relatively larger diameter, inboard seat ring is formed of a material having a relatively high modulus of

inboard-outboard relationship and is fabricated of a material having a relatively low modulus of elasticity.

3,462,121

### LADLE STOPPER HEAD ASSEMBLY

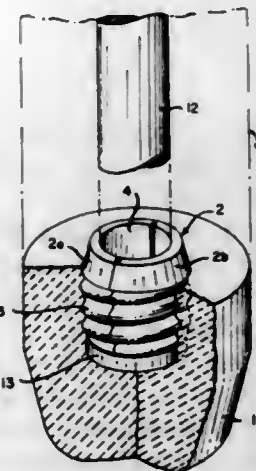
Eugene R. Smull, Monroeville, Pa., assignor to Vesuvius Crucible Company, Swissvale, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 367,158, May 13, 1964. This application Dec. 19, 1966, Ser. No. 628,176

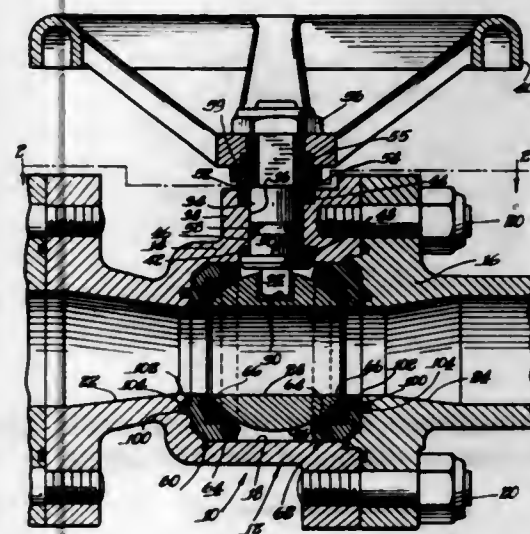
Int. Cl. F16k 25/00, 51/00, 5/02

U.S. Cl. 251—357

1 Claim



Ladle stopper head assembly including an insert comprising a plurality of cooperating sections of frangible refractory material fitting together to form a hollow generally cylindrical member, the sections comprising portions of an originally unitary member which can be sold and shipped in unitary form and which is weakened so that it can by the user be easily fractured into said plurality of sections by subjecting it to shock, the sections being adapted to be fitted together and having abutting face portions having interfitting projections and depressions resulting from the fracturing which when the sections are fitted together insure precise relative positioning thereof to form a member having the same form as the originally unitary member, such interfitting projections and depressions being the sole means insuring precise relative positioning of the sections.



### 3,462,122 MOTOR-OPERATED LOAD-HANDLING APPARATUS WITH PRESSURE-SENSITIVE MEANS CONTROLLING MOTOR ACCELERATION

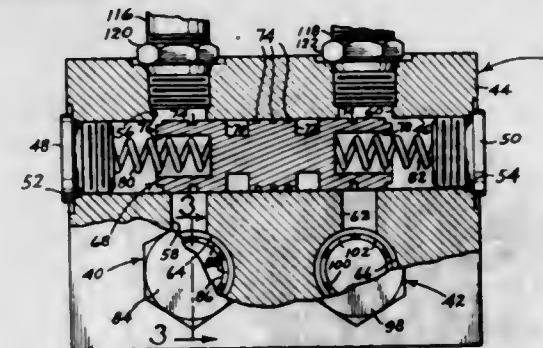
Thomas E. Dixon, Lake Grove, Oreg., assignor to Cascade Corporation, Portland, Oreg., a corporation of Oregon

Filed Aug. 21, 1967, Ser. No. 662,150

Int. Cl. F15b 11/04, 13/042

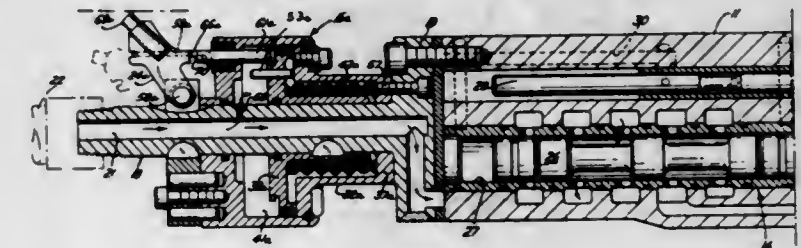
U.S. Cl. 253—1

7 Claims



In load-handling equipment the combination of a movable load support, a fluid-operated motor for moving the support, and a device responsive to the pressure of fluid supplied to the motor to inhibit accelerated operation thereof due to the action of a load on the support through regulating the exhaust of fluid from the motor. The device includes a spring-biased movable piston against which fluid supplied to the motor acts to move the piston, and a valve closure part joined to and movable with the piston to open and close off a passage through which fluid exhausting from the motor flows.

the one pneumatically advanceable relative to the other while the other is held stationary. A traction head being mounted to the housing at the rear of the rod, and another being mounted to the piston rod at the front of the rod. Each head having legs pneumatically pivotable to contact the duct wall; and adapted to grip the wall so as to hold the related housing or piston, as the case may be, stationary when a rearward force is applied



to the head, and the legs being releasable from gripping condition when a forward force is applied to the head. A traction piston in each head normally maintaining the legs in contact with the wall is operable upon shut-off of pneumatic power to the rod to collapse the legs out of contact with the wall so as to permit the rod to be pulled by means of its air supply line backwardly out of the duct.

3,462,125

### APPARATUS FOR HANDLING WELL TOOL CABLES

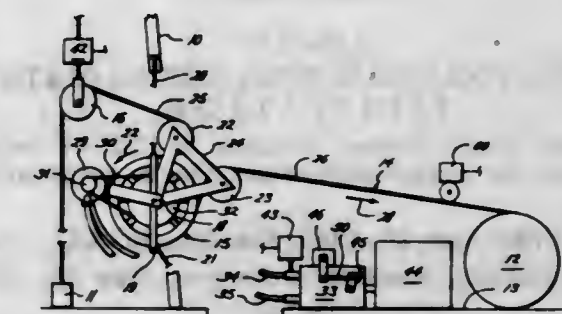
Lee H. Gollwitzer and William A. Whitfill, Jr., Houston, Tex., assignors to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Continuation of application Ser. No. 574,170, Aug. 22, 1966. This application Aug. 3, 1967, Ser. No. 658,092

Int. Cl. B66d 1/48, 1/76; F16d 31/00

U.S. Cl. 254—172

15 Claims



The particular embodiments described herein as illustrative of one form of the invention are directed to cable-handling apparatus including a powered sheave assembly an opposing force will be applied to the cable to partially wrapped so that when power is applied to the sheave, an opposing force will be applied to the cable to partially offset tension forces acting thereon. Controls are provided to respond to the tension forces and speed of the cable for governing the rate of speed of the sheave as well as torque applied thereto.

### 3,462,123 JACKING AND SUPPORT MECHANISM FOR VERTICALLY EXTENSIBLE CAMPER

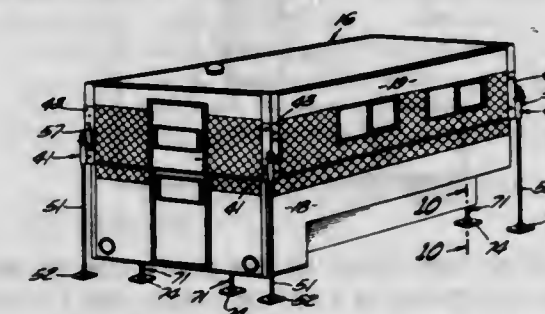
Joseph E. Oliver, Le Grand, Calif., assignor of ten percent to Lester J. Gendron, Madera, Calif.

Filed Sept. 19, 1966, Ser. No. 580,382

Int. Cl. B66f 7/26; B60p 1/64, 3/32

U.S. Cl. 254—45

5 Claims



A plurality of relatively long supporting legs is removably attached to the upper compartment of a camper body having a lower compartment vertically relatively movable with respect to the upper compartment. A plurality of relatively short supporting legs is removably attached to the lower compartment. By appropriately manipulating the attendant compartment moving mechanism, the camper body can readily be transferred from a vehicle-supported location to a ground-supported position, and vice versa.

3,462,124

### DUCT RODDER HAVING COLLAPSIBLE TRACTION HEADS

Howard R. Fischer, New Hartford, N.Y., assignor to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey

Filed May 22, 1967, Ser. No. 640,312

Int. Cl. E21c 29/16

U.S. Cl. 254—134.6

10 Claims

A duct rodder for threading a line through a duct, having a piston motor comprising a housing and a piston,

3,462,126

### DISCONNECTABLE METAL UPRIGHT SECURED TO A PEDESTAL

Rodolphe Demanega, Sion, Valais, Switzerland, assignor to Marie-Josephe Demanega, Valais, Switzerland

Filed Nov. 7, 1967, Ser. No. 681,132

Claims priority, application Switzerland, Nov. 25, 1966, 8,294/66

Int. Cl. E04c 3/32

U.S. Cl. 256—65

4 Claims

An upright supporting railings, road signals or the like



comprising a vertical tube engaging its pedestal through a bayonet coupling and provided with means for locking the tube against rotation and comprising for instance, ports formed in the side-wall of the tube and engaged by railing members. In this case, the removal of the railing members by unauthorized persons is prevented by rods extending vertically through the inner ends of such railing members inside the vertical tube, which rods can be removed only through the upper end of the upright tube



which is normally closed by an axial rod which can be released through its lower end registering with a port in the side-wall of the upright tube. In a modification, the vertical tube is held against rotation by engagement between a vertical diametrical projection on an element vertically shiftable inside the tube and dropping for the angular position corresponding to engagement of the bayonet coupling into a corresponding recess of the pedestal.

3,462,127

# SYSTEM FOR MEASURING THE RADIATION PATH IN A LASER

Guy Mayer, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France

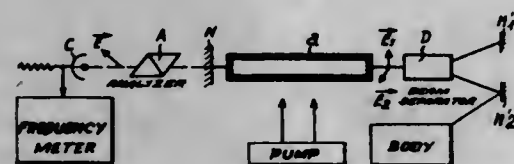
Filed Apr. 29, 1964, Ser. No. 363,487

Claims priority, application France, May 10, 1963, 934,362

Int. Cl. G01b 9/02

U.S. Cl. 356—106

5 Claims



The invention relates to laser devices used for measuring changes in the optical length of a pencil of light which travels between two mirrors. The arrangement comprises an active material and pumping means for setting up along two optical paths having a common portion, respective laser radiations having different polarizations; each optical path ends at one side on separate mirrors, and at the other side on a common semi-transparent mirror beyond which are provided means for sensing the beat frequency of the above mentioned radiations. Separator means are inserted between the active material and the two first mentioned mirrors for splitting said paths.

3,462,128

# METERING AND MIXING DEVICE

Robert Dalleis, Saint-Maur, Val-de-Marne, Roger Robic, Levallois Perret, Hauts-de-Seine, and Glaele Dufour, Paris, France, assignors to The Dunlop Company Limited, London County, England, a British company

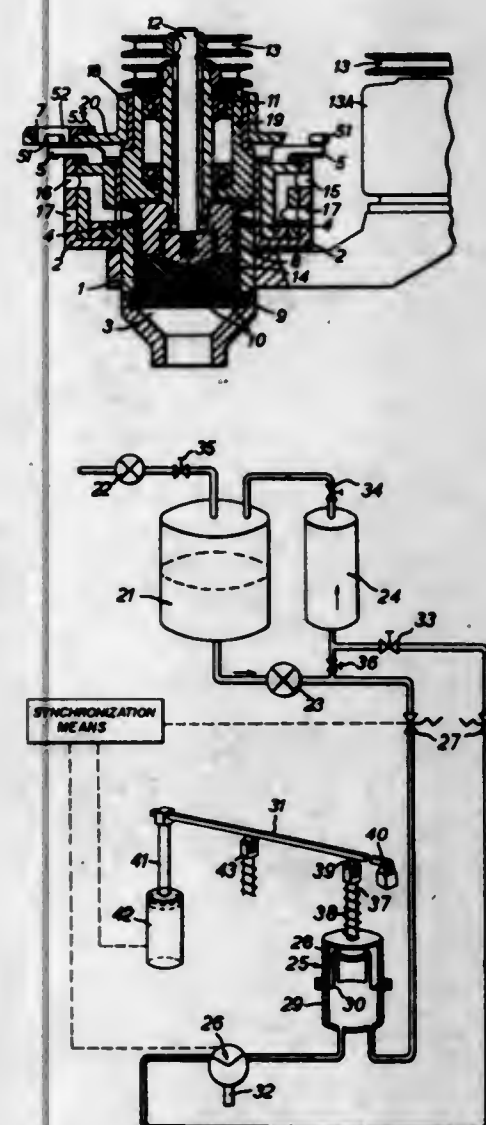
Filed May 24, 1966, Ser. No. 552,585

Claims priority, application France, Oct. 13, 1965, 34,830

Int. Cl. B01f 15/02, 7/10; B67d 5/56

U.S. Cl. 259—6

6 Claims



Liquids, such as ingredients in the production of polyurethane foam, are mixed in a device comprising a mixing chamber having at least two inlets for the liquid ingredients, an outlet for the mixed ingredients and at least two rotors mounted within said chamber for rotation about a common axis or about axes substantially parallel to each other, the rotors being arranged so that the periphery of each rotor can sweep close to at least a portion of the mixing chamber wall, at least one of said rotors having peripheral indentations to assist mixing. The liquids to be mixed are measured and dispensed in successive equal amounts in a dispenser having an inlet communicating with a reservoir for the liquid. The mixer has at least one valve having an inlet port which communicates with the outlet of the dispenser, a by-pass port which communicates with the reservoir, and an outlet port for discharge of the liquid. Means is provided to circulate the liquid sequentially from the outlet of the dispenser to the mixer valve and the inlet of the dispenser, means is provided to interrupt flow of liquid to the dispenser, and a common actuating means is utilized to effect synchronization of: (a) interruption of flow of liquid to the dispenser, (b) operation of the dispenser to discharge liquid to the valve and (c) adjustment of the valve to allow the liquid to flow through the outlet port.

3,462,129

# APPARATUS FOR TREATING HIGHLY VISCOUS MATERIALS

Bernard L. A. van der Schee, Velp, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware

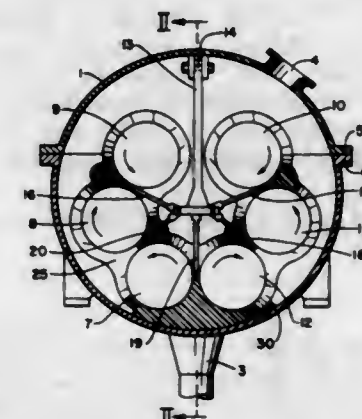
Filed Oct. 26, 1967, Ser. No. 678,276

Claims priority, application Netherlands, Nov. 3, 1966, 6615482

Int. Cl. B01f 7/12, 7/28

U.S. Cl. 259—6

4 Claims



Apparatus for mixing, blending, homogenizing, dispersing low viscosity material in, and/or removing light fractions from high viscosity materials and the like consisting of a series of parallel, essentially cylindrical rolls and having means to increase the surface area of said materials, said means being a plurality of comb-like members coupled together and adapted for movement along the surface of said rolls.

3,462,130

# METHOD AND APPARATUS FOR BLENDING BULK SOLIDS

Hans-Joachim Schmidt-Holthausen, Leverkusen, and Hermann Backsen, Hamburg, Germany, assignors to Fuller Company, Catasauqua, Pa., a corporation of Delaware

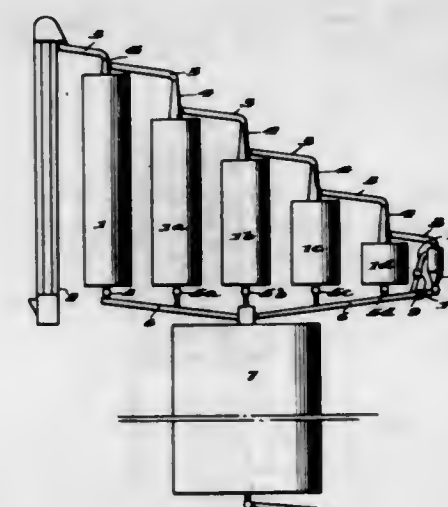
Continuation-in-part of application Ser. No. 451,896, Apr. 29, 1965. This application Apr. 26, 1968, Ser. No. 724,504

Claims priority, application Germany, Apr. 30, 1964, P 34,167

Int. Cl. B01f 5/24; B28c 5/04

U.S. Cl. 259—18

12 Claims



A granular solids blending system and method of blending wherein the system includes a plurality of compartmentalized solids storage units each successively receiving solids from the same source and each unit having different volumes so as to cause the solids to be stored different

3,462,131

# MIXING DEVICE

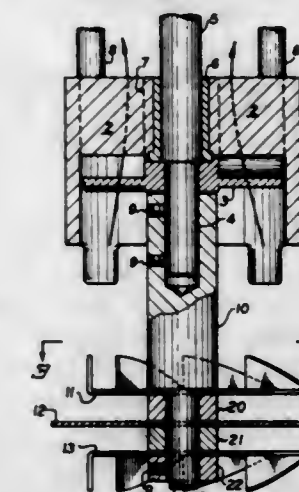
Edward F. Hill, 97 Winthrop Road, Hilldale, N.J. 07642

Filed Mar. 18, 1968, Ser. No. 713,716

Int. Cl. B01f 5/12, 7/22, 7/26

U.S. Cl. 259—95

5 Claims



A device for mixing, blending, and homogenizing viscous fluid constituents employs, in addition to a bladed rotor in a housing the upper portion of which is slotted to permit ejection of the mixed fluid; a slotted disc between two similarly slotted discs each having segments bent out of the plane of the disc forming vertically extending blades. The latter three discs are driven by an extension of the shaft which drives the bladed rotor in the housing thereby cutting into the fluid and further mixing, blending, and homogenizing the constituents thereof.

3,462,132

# SYSTEM FOR SURFACE AERATION OF LIQUID

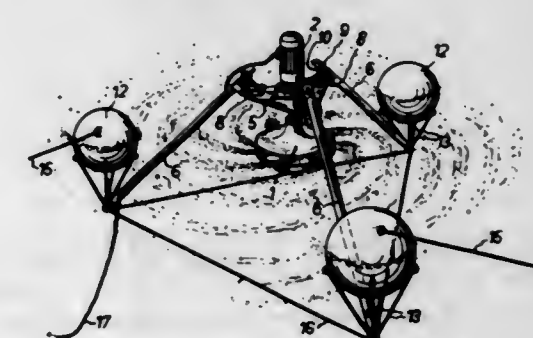
Joseph Richard Kaelin, Villa Seeburg, Buochs, Nidwalden, Switzerland

Filed Aug. 7, 1967, Ser. No. 658,766

Int. Cl. C02c 1/10; B01d 47/16

U.S. Cl. 261—87

3 Claims



A system for surface aeration of water, particularly for aeration or cleaning the water in rivers, lakes, creeks, or along beaches and shores, by means of an aeration rotor mounted on a floating carrier frame for at least partial immersion into the water to be aerated, said carrier frame being arranged to be anchored at any desired location along a shore where the water is to be aerated.

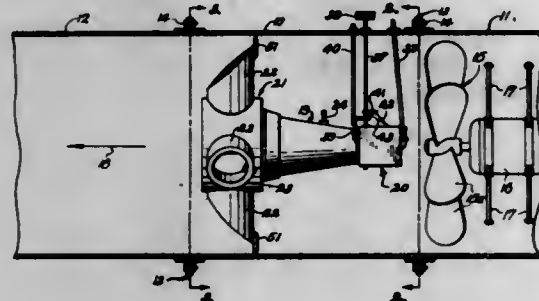


3,462,133

**GAS BURNER FOR HEATING MOVING AIR**  
James A. Brock, Kansas City, Mo., Robert H. Hughes, Shawnee Mission, Kans., and Edgar S. Downs, Worthington, Ohio, assignors to Butler Manufacturing Company, Kansas City, Mo., a corporation of Missouri  
Filed Oct. 30, 1967, Ser. No. 678,898  
Int. Cl. F231 9/04; F24h 3/02

U.S. Cl. 263—19

10 Claims



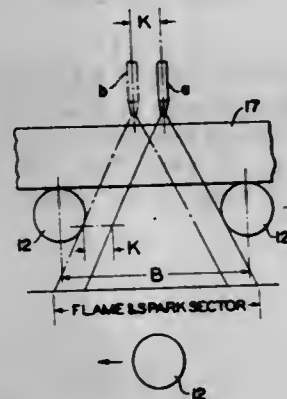
A conical combustion chamber is centered within a tubular housing through which air is moved. Air is fed in controlled amounts to the inlet end of the combustion chamber by a transversely oriented intake assembly providing adjustably sized intake ports adjacent the periphery of the housing and is mixed with gas at the inlet opening to the combustion chamber. The products of combustion are directed by a discharge structure having lateral discharge tubes into the air stream at points spaced outwardly from the axis of the main housing.

3,462,134

**CUTOFF TABLE WITH MEANS AUTOMATICALLY CONTROLLING POSITION OF ROLLS RELATIVE TO TORCH**  
Anatol Michelson, Glenolden, Pa., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware  
Filed Mar. 22, 1967, Ser. No. 625,215  
Int. Cl. B23k 5/00, 7/00; B22d 11/12

U.S. Cl. 266—23

3 Claims



This disclosure pertains to the art of cutting metal slabs and billets of predetermined length from a continuously cast strand and particularly to a table for supporting the billet while being separated from the moving strand. The table comprises a plurality of longitudinally spaced interconnected support rolls having wheels at each end which are guided by parallel rails extending along opposite sides of the table. The rolls are pulled along the rails at a speed equal to the withdrawal speed of the continuously cast strand during the cutting operation so that there is no relative movement between the rolls and strand. In the event the rolls are in an improper position relative to the strand and a cutting apparatus before cutting com-

mences, the rolls are moved longitudinally relative to the strand until the proper position is attained. For this purpose an electrical sensor is provided for detecting the position of each roll relative to the cutting apparatus and a two speed transmission is controlled by the sensor to automatically bring about the required repositioning of the rolls.

3,462,135

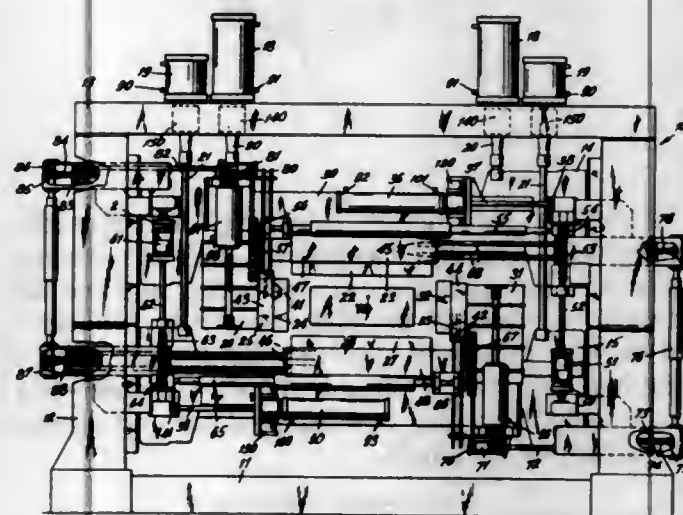
**SELF-SIZING THERMOCHEMICAL SCARFING APPARATUS WITH SCARFING UNIT LOCKING MEANS**

Alfred J. Miller, Westfield, Rudolf F. Hinschlager, West Orange, Stewart Allan, Livingston, and William C. Weldner, Summit, N.J., assignors to Union Carbide Corporation, a corporation of New York  
Original application Feb. 3, 1965, Ser. No. 430,096.  
Divided and this application Aug. 30, 1967, Ser. No. 729,826

Int. Cl. B23k 7/06

U.S. Cl. 266—23

2 Claims



Apparatus for scarfing successive rectangular metal bodies having different cross sectional dimensions, said apparatus including upper, lower, first side and second side scarfing units automatically adjustable to any size rectangular body and locking means to control movement of said units.

3,462,136

**TUNED VISCOUS VIBRATION DAMPERS**  
Rollin Douglas Rumsey, Buffalo, N.Y., assignor to Hoodalle Industries, Inc., Buffalo, N.Y., a corporation of Michigan  
Filed June 29, 1967, Ser. No. 650,017  
Int. Cl. B60g 11/18; F16f 1/14; F16d 57/00

U.S. Cl. 267—1

24 Claims



Resilient spokes connect an inertia mass to the hub of a housing defining a working chamber thereabout to enable energy absorbing relative oscillatory motion of the

mass in the housing, the oscillations being resisted by a viscous damping medium coupling between confronting shear film spaced parallel surfaces of the housing and the inertia mass.

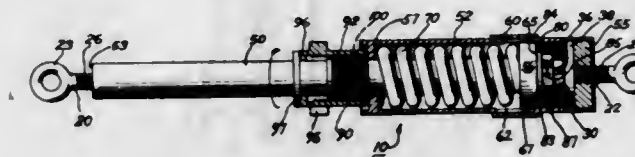
3,462,137

**AUTOMATIC LOAD BINDER**

William L. Grube, Northbrook, Ill., assignor to MacLean-Fogg Lock Nut Co., Mundelein, Ill., a corporation of Delaware  
Filed Sept. 15, 1967, Ser. No. 667,994  
Int. Cl. B60p 7/08; B61d 43/00; B65j 1/22

U.S. Cl. 267—74

15 Claims



A load binder having a pair of tightening screws keyed together in a sleeve and extending through the threaded ends of telescoping tubes which are connected to rotate together for axial relative screw movement. A main compression spring urges telescoping of the tubes in opposition to a tension load. A one-way clutch rides on the sleeve along a helical guideway in response to axial movements caused by load variations and is biased to engage and rotate the tubes only in a tightening direction for automatic maintenance of tension. A jackscrew release telescopes the tubes beyond the clutch travel limits for separation therefrom, allowing tube rotation in a loosening direction.

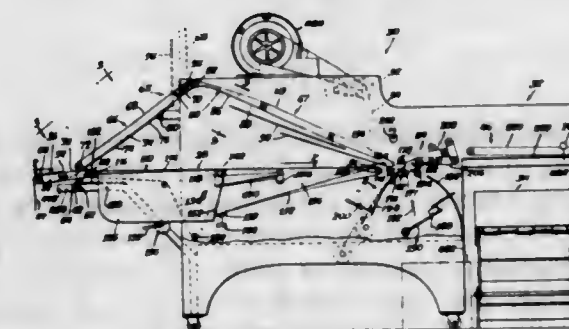
3,462,138

**LAUNDRY FOLDER**

Frederick W. Grantham, Hollywood, Calif.  
(152 W. Pico Blvd., Los Angeles, Calif. 90015)  
Filed Apr. 25, 1966, Ser. No. 545,823  
Int. Cl. B65h 45/12; D06f 89/00

U.S. Cl. 270—62

10 Claims



Laundry folder for folding small pieces, and including a plurality of different kinds of folding means (such as quarter fold and french fold), selectively operable and arranged for receiving the pieces from a common feed-board.

3,462,139

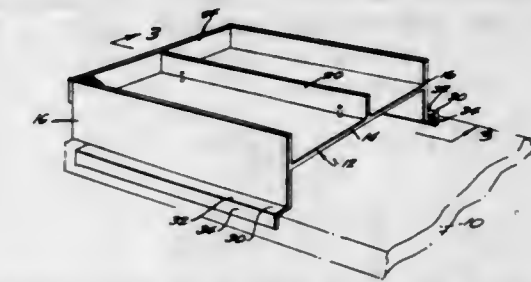
**COPY PAPER HOLDER ATTACHMENT**

Ron R. Brignac, New Orleans, La., assignor of forty-six and one-half percent to William A. Grice, and seven percent to Carroll L. Fogleman, both of Lake Charles, La.  
Filed Apr. 6, 1967, Ser. No. 628,930  
Int. Cl. B65h 1/00

U.S. Cl. 271—61

1 Claim

A copy paper holder attachment for mounting on copy or Xerox type machines and the like in which an H-shaped frame of transparent plastic material has the cross-mem-



ber thereof divided into paper-receiving sections, the central cross-member having a back wall, and in which there are L-shaped foot projections extending outwardly from each of the lower ends of the opposite upstanding sides of the H-shaped frame.

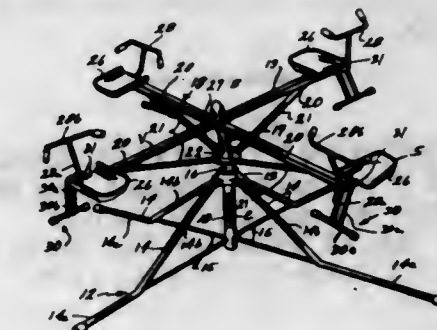
3,462,140

**AMUSEMENT APPARATUS**

Ivan Halaj, 476 W. 5th St., San Pedro, Calif. 90731  
Continuation-in-part of application Ser. No. 199,745, June 4, 1962. This application May 5, 1965, Ser. No. 453,261  
Int. Cl. A63g 1/12, 1/00

U.S. Cl. 272—33

1 Claim



1. An occupant propelled, gearless carrousel, to be driven by weight shifts of the occupants, comprising: a post means having an upper end and a lower end; support means including a support stand for holding said post means in a substantially vertical position, said upper end above said lower end; offset means affixed at the upper end of said post means and including a hub support angularly offset from axial alignment with said post means; bearing means including at least two spaced apart sets of bearings, mounted on said hub support for rotation relative said hub support; at least one pair of radially-extending diametrically-opposed spokes, joined to said bearing means whereby to rotate about an axis that is angularly offset from true vertical; and at least one pair of seat means affixed at the ends of said spokes, each of said seat means including a saddle affixed to the end of one of said spokes, a handle including a first shaft means extending upward from said saddle to receive the hands of an occupant and foot rest means including a second shaft means extending downward from said saddle to receive the feet of an occupant, whereby said occupant propel said carrousel by weight shifts resulting from side-to-side movement of said occupants on said seat means.

3,462,141

**MUSCLE CONDITIONING AND BUILDING APPARATUS FOR USE BY SKIERS**

Lloyd L. Robbins, 1627 South 13th East, Salt Lake City, Utah 84105  
Filed June 24, 1966, Ser. No. 560,298  
Int. Cl. A63c 11/00

U.S. Cl. 272—57

14 Claims

Apparatus for use by skiers to condition and build muscles while using ski equipment normally used upon

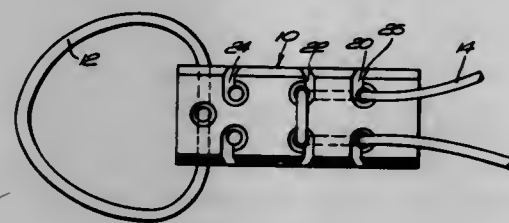


the ski slopes. The apparatus includes a base having a pair of upstanding arms with a track supported by the arms. A pair of rollers is adapted to individually engage each ski adjacent the tail thereof and each roller is further



adapted to ride upon the track. The skis, adjacent the tips thereof, engage the floor or other surface upon which the base rests so the skier is in a downhill position and may, from that position, manipulate the skis as he would upon the ski slope.

**3,462,142**  
**VARIABLE FRICTION TYPE EXERCISING DEVICE**  
Richard F. Sterndale, Shingle Camp Hill,  
New Hampton, N.H. 03256  
Filed May 10, 1966, Ser. No. 548,933  
Int. Cl. A63b 21/00; F16g 11/06  
U.S. Cl. 272-79 3 Claims

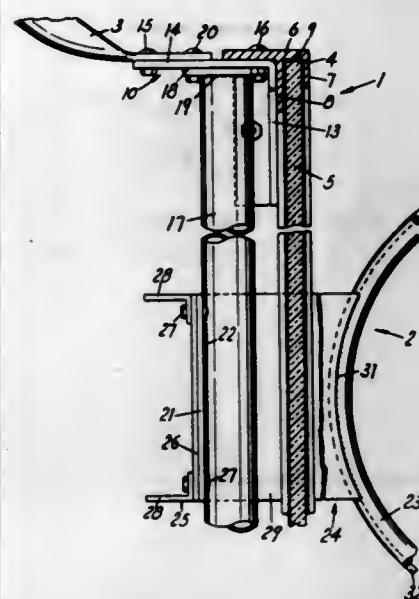


A device is provided for performing isometric exercises. The device comprises a block having sets of cooperating grooves in which a length of cord is slidably received in various selected arrangements. Depending upon the selection of grooves in which the cord is mounted the frictional resistance against pulling on the end of the cord is increased or decreased as desired. Means are provided for securing the block during the exercises.

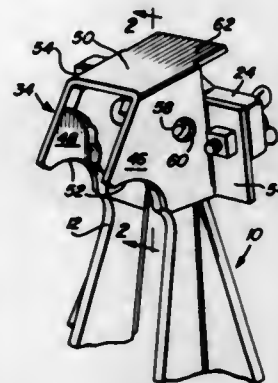
**3,462,143**  
**BASKETBALL GOAL WITH BACKBOARD ABOVE AND SEPARATELY SUPPORTED FROM THE GOAL HOOP**  
Bruce B. Bidelman, Max L. Maurer, and Jack Lawler, Marshall, and George R. Millard, Tekonsha, Mich., assignors to Ronan & Kunz, Inc., Marshall, Mich.  
Filed May 5, 1966, Ser. No. 547,871  
Int. Cl. A63b 63/00, 67/00  
U.S. Cl. 273-1.5 11 Claims

The backboard frame has supporting brackets at its corners adapted to be connected to mounting or supporting arms. The lower brackets have a tubular bar connected thereto and extending in spaced parallel relation behind the lower portion of the board. A mounting plate is rigidly connected to the center of the bar, and an angled basket supporting bracket has an upstanding arm rigidly secured to the mounted plate, and a forwardly

extending arm located in unconnected relation to the bottom of the backboard frame and projecting forwardly

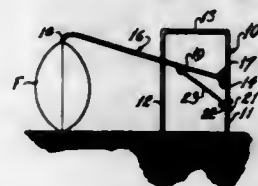


**3,462,144**  
**REPLACEMENT FLANGE FOR PIN SPOTTER RING TUBE GUIDE HOUSING**  
Anthony L. Griffin, 107 Division St., and David A. Griffin, 42 Storrie St., both of Amsterdam, N.Y. 12010  
Filed Aug. 24, 1967, Ser. No. 663,143  
Int. Cl. A63d 5/00  
U.S. Cl. 273-43 3 Claims



A repair or reinforcement structure for the ring tube guide housing of a centerless pin elevator wheel, the structure including a metal body configured to embrace a portion of the housing with mounting flanges of the repair structure generally coextensive with the mounting lugs of the housing, and said repair structure and housing have identically contoured ring engaging recesses.

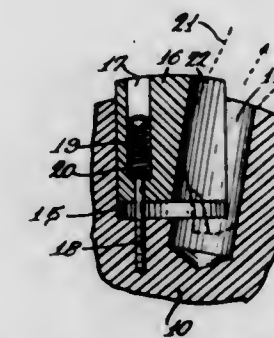
**3,462,145**  
**FOOTBALL KICKING TEE**  
William L. Shirley and Henry L. Lee, both of Union Springs, Ala. 36089, and Jeff D. Brantly, 3143 Cloverdale Road, Montgomery, Ala. 36106  
Filed June 13, 1966, Ser. No. 557,147  
Int. Cl. A63b 67/00  
U.S. Cl. 273-55 2 Claims



A football holder which may be used for right and left-footed kickers comprising a football holding arm te-

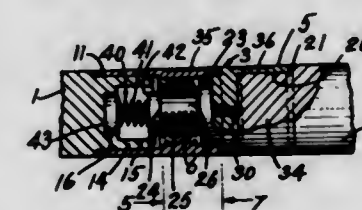
cured to one leg of a staple-like frame, the arm being movable from one side of that one leg of the frame, to the opposite side thereof, thus converting from right to left football holding position.

**3,462,146**  
**BOWLING BALL WITH THUMB RELEASING DEVICE**  
Hans W. Fellberg, 103 Wilmer Ave., Park Ridge, Ill. 60068  
Filed Nov. 29, 1967, Ser. No. 686,579  
Int. Cl. A63d 5/00  
U.S. Cl. 273-63 3 Claims



A device associated with the thumb hole of a bowling ball, and reciprocally movable therein, to provide the thumb of a bowler with a firm grip prior to delivery or throwing of the ball, said device being provided with a tension spring which permits the thumb through frictional engagement with the device to raise same slightly outwardly of the surface of the ball at an angle away from the thumb as the ball is released and then snap the device back into the thumb hole to permit normal rolling of the ball.

**3,462,147**  
**SECTIONAL BILLIARD CUE WITH EASY DETACHMENT FEATURE**  
Emanuel Mancuso, 3516 W. Alameda St., Burbank, Calif. 91505  
Filed Aug. 17, 1967, Ser. No. 661,435  
Int. Cl. A63d 15/08  
U.S. Cl. 273-68 2 Claims



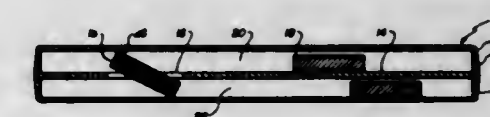
A billiard cue comprising a handle and a shaft joined by a connector. The connector includes a fitting having a socket provided with equally spaced apart threaded sectors secured to the shaft while the handle is provided with a stud having equidistantly spaced apart threaded sectors adapted to connect with the threaded sectors of the socket fitting on the shaft when the handle is turned relative to the shaft. A spring within the socket of the shaft fitting engages the end of the stud of the handle fitting to normally urge the two fittings to separate when the threaded sectors are disengaged.

**3,462,148**  
**GAME BOARD AND VEHICLE WITH VEHICLE TRAPPING MEANS**  
James A. Fors, 4958 W. Parker Ave., Chicago, Ill. 60639  
Continuation-in-part of application Ser. No. 98,979, Mar. 28, 1961. This application Sept. 13, 1965, Ser. No. 491,490  
Int. Cl. A63b 67/14; A63f 9/14  
U.S. Cl. 273-116 9 Claims



This invention relates to a game of skill. More particularly, it relates to a racing game in which a generally rectangular game board with rounded corners and an elongated central opening therein is provided. The board which thus defines an endless path and further carries a suitable indication of a starting line is mounted in a shallow open top box larger in dimensions than the board so that a trough of generally uniform width is provided between the perimeter of the board and the walls of the box. For use with the board a toy automobile is provided which is supported at the rear on a pair of wheels and at the forward end on a steel ball which is loosely retained in the automobile body so as to be readily rotatable therein and project downwardly below the automobile body to serve as a support. As a consequence of this structure when the automobile is supported on a surface inclined to the horizontal the forward end of the automobile moves downwardly in front of the remainder. In use the automobile is placed on the starting line on the board and by manual manipulation the automobile is caused to travel around the endless path provided by the board either as many times as possible or as rapidly as possible without causing the automobile to leave the path and enter the surrounding trough or the central opening thereupon interrupting its movement about the path. To this end in one embodiment of the invention the trough has a width which is less than the overall length of the automobile. In another embodiment the trough is provided with a plurality of laterally extending walls which divide it into sections. In other embodiments the trough is provided with a plurality of ribs either on the outer wall or on the floor of the trough. In still another embodiment magnets are mounted in the trough and alternatively the trough is provided with a sloping floor.

**3,462,149**  
**DIVIDED TRANSPARENT ENCLOSURE WITH PLAYING DISC**  
Gerald Grusin, 154 E. Erie St., Chicago, Ill. 60611  
Filed Jan. 9, 1967, Ser. No. 608,153  
Int. Cl. A63b 67/14; A63f 3/00; G09b 19/04  
U.S. Cl. 273-113 1 Claim



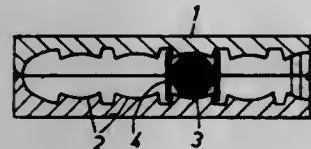
A toy or educational device including a transparent playing board in the form of a closed container having a center divider, and a number of parts slidably retained therein in a fashion such that they cannot turn over. The center divider has an aperture formed in it, through which



the parts can drop, from one side of the container to the other. By appropriately coloring the surface faces of each of the parts and/or by providing appropriate indicia on them, a child can be taught to identify letters, numerals, colors, the theory of sequence and further can improve his dexterity.

**3,462,150**  
**FOLDABLE GAME BOARD WITH GAME PIECE SEATING AND STORING MEANS**  
 Folke Eriksson, Villa Ulfso, Tranghalla, Sweden  
 Filed Jan. 17, 1966, Ser. No. 521,003  
 Int. Cl. A63f 3/02, 3/00  
 U.S. Cl. 273-131

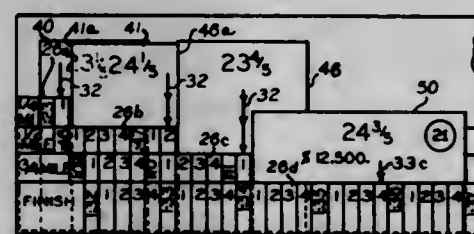
2 Claims



Game apparatus including a board having a number of positions, symmetrically disposed, onto which a plurality of movable pieces may be placed by two or more players, some of the pieces having two opposed surfaces with different colors and the remaining pieces having one of the colors on both sides of the piece, and a shield formed about the opposed surfaces and adapted to conceal the surface turned toward the face of the board. The board has conforming projections at each of the positions which permit interlocking of the playing pieces onto the board and clamping of a piece between two such projections when the board is folded at its center.

**3,462,151**  
**CHANCE CONTROLLED RACING GAME APPARATUS**  
 Joseph J. Parisi, 293 Mountainview Ave., Staten Island, N.Y. 10314  
 Filed July 13, 1966, Ser. No. 564,964  
 Int. Cl. A63f 3/00  
 U.S. Cl. 273-134

5 Claims

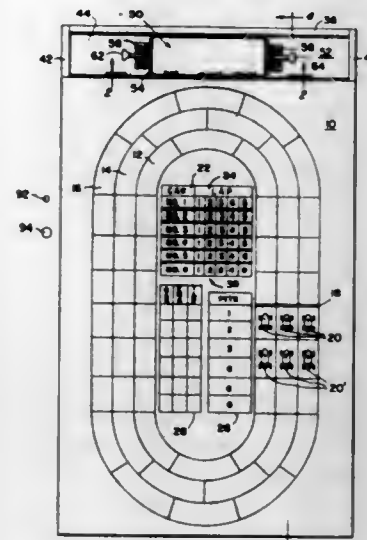


A game apparatus having (a) a board having a race course thereon marked in a series of lanes and divided into segments of 1/4 mile, 1/2 mile, 3/4 mile and Finish, each segment having a series of section marks and adjacent numerals indicating a range of elapsed time intervals, (b) a deck of cards each having one of said time intervals marked thereon and each card also having thereon a marker spaced from the leading edge of the card a distance proportional to the elapsed time represented by the card, and (c) a card holder and adding device having a series of pockets corresponding to the number of segments of the track for receiving cards from said deck, each pocket of the card holder having elapsed time markings corresponding to the elapsed time markings on the corresponding track segment, a card being

placed in each pocket, with the leading edge of each succeeding card disposed adjacent the marker on the preceding card, whereby the markers on the cards indicate the respective positions for playing pieces on the board at the end of each segment and at the finish of the race.

**3,462,152**  
**RACING GAME APPARATUS WITH MAGNETICALLY CONTROLLED SELECTOR DRUM**  
 William C. Royston, 2193 Meadowview Road, Sacramento, Calif. 95832  
 Filed July 21, 1967, Ser. No. 655,220  
 Int. Cl. A63f 3/02, 1/18  
 U.S. Cl. 273-134

3 Claims



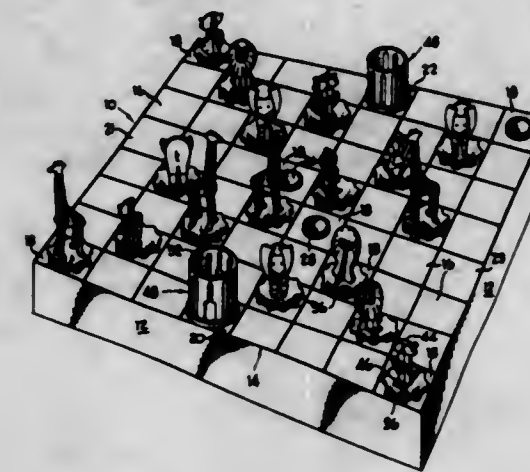
A game apparatus comprising a playing board having indicia thereon defining an oval race track, toy vehicles adapted to be moved about the track, indicia on the playing surface defining charts indicating the vehicle position, repair pits and troubles which may be encountered, two markers color matched with each vehicle, one adapted to be placed on the charts for indicating the relative positions of the vehicles, and the other adapted to be placed on the trouble chart to indicate a particular kind of trouble, and a rotatable drum having indicia thereon arranged in two columns, one indicating either an advance or a pit stop and the other indicating particular kinds of trouble requiring a pit stop, said drum being rotatable within a housing having aligned windows for exposing said indicia, said drum provided with magnetically permeable lugs secured to the periphery of the drum and a magnet secured adjacent the periphery of the drum to bring the drum to a stop, after being spun, only at selected positions.

**3,462,153**  
**BOARD GAME APPARATUS WITH UPWARDLY SPRING-BIASED PLAYING PIECES**  
 Denise C. Giraud, Chicago, Gordon A. Barlow, Evanston, and Marvin I. Glass, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership  
 Filed May 17, 1967, Ser. No. 639,167  
 Int. Cl. A63f 3/02  
 U.S. Cl. 273-134

2 Claims

Game apparatus including a playing board on which the players move a playing piece in the form of a cage in various directions in order to capture simulated animal playing pieces of their adversaries which are shown on cards taken from a deck, the cage being adapted to be placed about any of a plurality of simulated

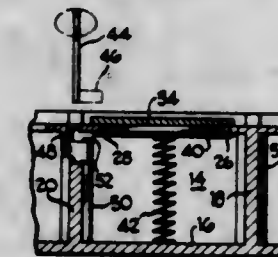
animals disposed on movable platforms upwardly spring-biased and releasable upon rotation thereof by means of club head and the club shaft for visibly aligning the club with respect to the user thereof. The striking face is de-



a cage placed thereabout such release causing an animal to be thrown out of the cage to be caught by the player.

**3,462,154**  
**BOARD GAME APPARATUS WITH CONCEALED, UPWARDLY PROJECTABLE PLAYING PIECE**  
 Denise C. Giraud, Burton C. Meyer, and Marvin I. Glass, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership  
 Filed Feb. 9, 1967, Ser. No. 614,911  
 Int. Cl. A63f 3/00  
 U.S. Cl. 273-135

5 Claims



A three-dimensional game board which is arranged generally to provide a sequence of hollow portions or cells, each having a removable cover. A playing piece is arranged for concealment beneath a selected cover in a latched biased position, and a key means is provided for insertion in an opening in the board and which will release the playing piece for upward movement when the latter is engaged by such key means. Each of the covers is distinctively illustrated, and the game includes a plurality of cards, bearing illustrations suggesting those on the board, which serve as clues to the players who are attempting to locate the concealed playing piece.

**3,462,155**  
**GOLF CLUB HAVING MEANS OF ALIGNING RELATIVE TO A USER**  
 David T. Pelz, 13129 Oriole Drive, Beltsville, Md. 20705  
 Filed July 10, 1967, Ser. No. 652,097  
 Int. Cl. A63b 53/00  
 U.S. Cl. 273-162

10 Claims

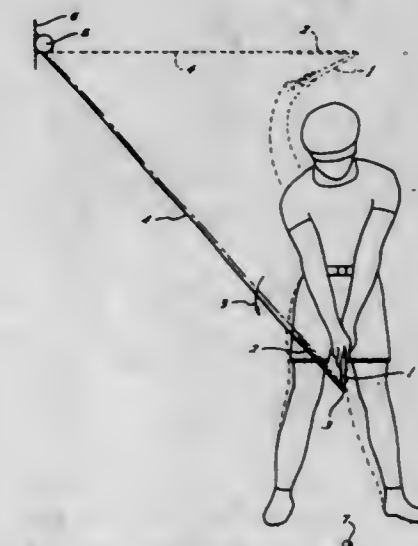
A golf club used for putting is of a construction to be swung in pendulum style between the legs of a person holding the club. The club is held in both hands of the user, and cooperating aligning means is provided on the



signed to impart top spin to a golf ball, and the design of the sole of the club head enables efficient use with side hill lies.

**3,462,156**  
**GOLF PRACTICE DEVICE**  
 Thurmond W. Gentry, 902 Ridge St., Houston, Tex. 77002  
 Filed Jan. 23, 1968, Ser. No. 699,849  
 Int. Cl. A63b 69/36  
 U.S. Cl. 273-186

6 Claims



Apparatus for practicing the proper golf swing comprising a handle grip, a cylindrical rod connected to one end of the grip by a swivel joint, a spring loaded reel, and a line attached at one end to the rod and attached at the other end to the reel. The reel is attached to a stationary object such as the wall of a room.

The swivel joint includes a socket portion affixed to the end of the handle and a mating ball portion integrally formed on one end of the cylindrical rod. The end of the socket portion has two longitudinal slots formed in its walls having widths slightly greater than the rod diameter. The sides of the first slot are radially positioned so that when the rod rides in this slot and the grip is held in the correct position for the beginning of the backswing the rod and cord lie in a straight line. The sides of the second slot are radially disposed so that when the rod rides in this slot and the grip is held in the correct position for the beginning of the forward swing the rod and cord lie in a straight line.



3,462,157

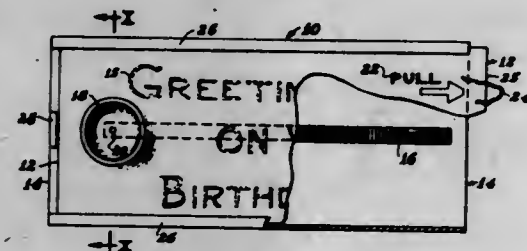
## AUDIBLE GREETING CARD

Eugene R. Barnett, 6268 Windsor Drive 46219, and Willard L. Barnett, 3367 W. Michigan St. 46222, both of Indianapolis, Ind.

Filed June 5, 1967, Ser. No. 643,528  
Int. Cl. G11b 3/00, 25/04, 25/06

U.S. Cl. 274-9

20 Claims



A "talking" greeting card, which audibly delivers a short message or greeting.

3,462,158

## REPEAT AND MANUAL RECORD CHANGER

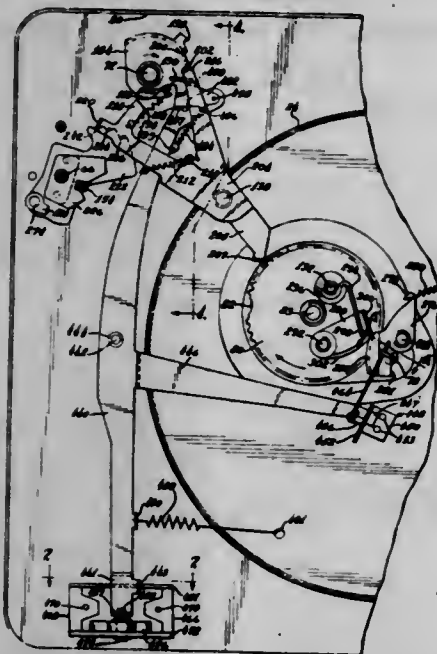
Ernest O. P. Tatter, Addison, and Philip Vazzano, Des Plaines, Ill., assignors to Warwick Electronics Inc., a corporation of Delaware

Filed July 15, 1966, Ser. No. 565,456

Int. Cl. G11b 17/10

U.S. Cl. 274-10

17 Claims



A record changer having a turntable with a center spindle provided with a shelf for support of a record stack, and ejector member movable on the spindle to eject the lowermost record in the stack for movement of the turntable, and a selectively operable control mechanism to cause repeat playing of a record on the turntable including a first positionable member to move said ejector member to a position where the ejector member is ineffective to eject a record and a second positionable member to control the set down position of a tone arm for the size of the record that is to be repeat played.

3,462,159

## FLOATING-RING TYPE SHAFT SEAL

Hans Baumann, Nussbaumen, and Edoardo Erni and Attila Horváth, Baden, Switzerland, assignors to Aktien-gesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company

Filed Apr. 27, 1967, Ser. No. 634,177

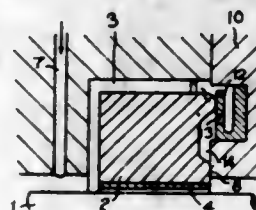
Claims priority, application Switzerland, June 17, 1966, 8,825/66; July 15, 1966, 10,323/66  
Int. Cl. F16j 15/34, 15/54

U.S. Cl. 277-27

8 Claims

A shaft seal structure for sealing a shaft where it ex-

tends to atmosphere through an opening provided in a wall of the housing in which the shaft is located is established by means of a floating ring which surrounds the shaft and is positioned in an annular recess opening in the direction of the shaft. A pressurized barrier fluid medium is introduced into the recess to apply an axially directed force on the floating ring so that a radially inner part thereof is caused to bear against a corresponding located internal sealing surface of the housing wall adjacent the wall opening at the passthrough point of the shaft



thereby to establish the shaft seal. In order to maintain mobility of the floating ring in a radial direction, a counter acting axial force is applied to the ring which acts to partially relieve the pressure which the ring exerts against the sealing surface. This counter acting axial force can be established in a mechanical manner by use of an axially resilient ring which acts axially against the floating ring, and it can also be established as a hydraulic force by introducing a fluid under pressure to the side of the floating ring opposite to that on which the pressurized barrier fluid exerts its pressure.

3,462,160

## SEAL FOR ROTATING CYLINDER

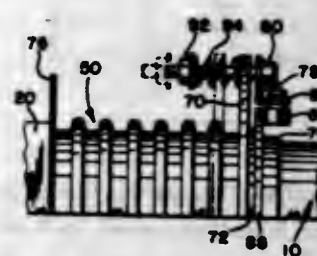
Otis J. Adams, Chagrin Falls, Ohio, assignor to Bartlett-Snow, a division of Bangor Punta Operations, Inc., Bangor, Maine

Filed Nov. 15, 1966, Ser. No. 594,445

Int. Cl. F16j 15/36, 15/38

U.S. Cl. 277-88

11 Claims



A seal for the end of a rotating cylinder which is subject to longitudinal expansion and contraction which includes a non-rotating bellows supporting a first annular seal with a second annular cooperating seal mounted on the cylinder, the two seals being clamped together by a spring assembly which is movable longitudinally with the end of the cylinder on expansion and contraction to maintain the pressure exerted by the assembly essentially constant.

3,462,161

## HIGH PRESSURE SEALING GASKET

Charles B. Daubenberger, Van Nuys, Bill J. Bryant, El Segundo, and Charles J. Daubenberger, Van Nuys, Calif., assignors to Da/Pro Rubber Company, Incorporated, Van Nuys, Calif., a corporation of California

Filed Mar. 20, 1967, Ser. No. 624,492

Int. Cl. F16j 15/00, 9/06; F16k 41/00

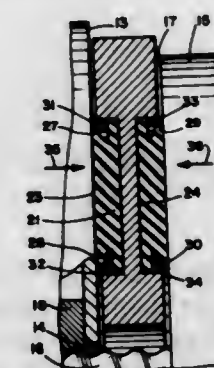
U.S. Cl. 277-166

3 Claims

A high pressure sealing gasket body carries within an annular channel on each opposite face an annular resilient sealing material surrounding the central opening in the

gasket body. The geometry of the sealing material within the annular channel is such that there is provided a reduced width raised portion extending out of the plane of the gasket body. The reduced width defines with the channel walls, cavities on either side of the raised por-

tion. When the gasket is pressed between opposing surfaces, the raised portion is expanded laterally to overlie the cavities. Pressure communicated to the cavities thus acts on the overlying portions of the resilient sealing material to urge it into tighter engagement with the surfaces and thus provide a high pressure seal.



tion. When the gasket is pressed between opposing surfaces, the raised portion is expanded laterally to overlie the cavities. Pressure communicated to the cavities thus acts on the overlying portions of the resilient sealing material to urge it into tighter engagement with the surfaces and thus provide a high pressure seal.

3,462,162

## UNIVERSAL CHUCK

Bernhard Stoeffler, Gartringen, Kreis Boblingen, Germany, assignor to Vulkan-Werk Wilhelm Diebold, Stuttgart-Feuerbach, Germany

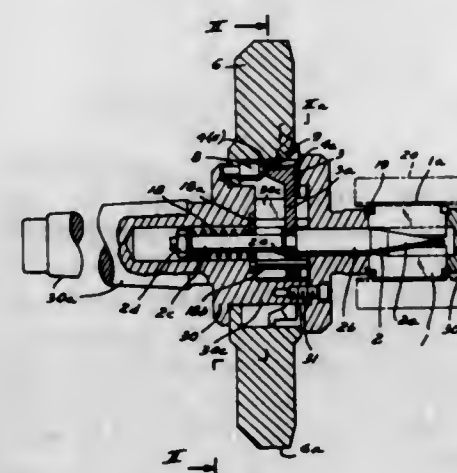
Filed Nov. 3, 1967, Ser. No. 680,564

Claims priority, application Germany, Nov. 10, 1966, V 32,317

Int. Cl. B23b 31/40, 5/22, 5/34

U.S. Cl. 279-2

16 Claims



A universal chuck has jaws which are moved outwardly by a cone-shaped end portion of a mandrel to which a cam plate is secured. When a hand wheel is manually turned, followers on the hand wheel act on cam portions of the cam plate to advance the mandrel against the action of a spring so that the jaws are operated.

3,462,163

## COLLET STOCK LOCK

Calvin O. Brown, Bartlett, Ill., assignor to Set Screw & Manufacturing Company, Bartlett, Ill., a corporation of Illinois

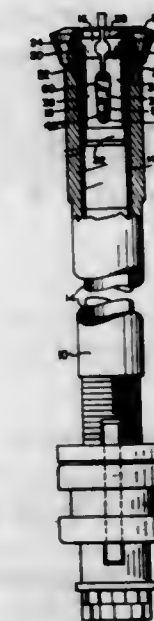
Filed Sept. 8, 1965, Ser. No. 485,869

Int. Cl. B23b 31/12, 5/22, 5/34

U.S. Cl. 279-50

16 Claims

There is disclosed a collet for supporting rod-like stock material during a machining operation, including a hollow body member, a plurality of gripping jaws at one



respective first and second apertures adapted slidably to receive the stock material therethrough, and means for moving one of the elements and its aperture laterally so as to clamp the stock material between side wall portions of the first and second apertures.

3,462,164

## SNAP RING DRILL CHUCK ASSEMBLY

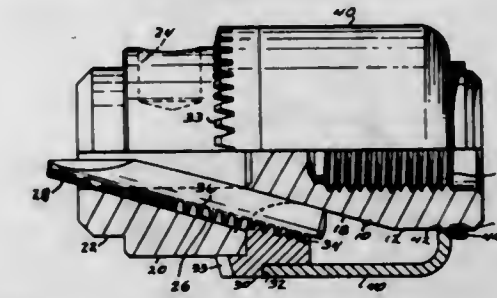
Lawrence W. Wightman, St. Louis, Mo., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri

Filed July 14, 1967, Ser. No. 653,445

Int. Cl. B23b 31/12, 5/22, 5/34

U.S. Cl. 279-62

3 Claims



A chuck body has the usual jaw guiding means and key operated gear nut which engages with and advances the jaws in a path at an angle to the body in work gripping engagement with a workpiece. The base end of the body is reduced in size and a cup-shaped housing of metal secured to a gear nut. The housing has an apertured end disposed in rotational engagement with the base of the body and held in position by a retainer on the base of the body beyond the cup.

3,462,165

## FRONT TOE PIECE FOR SAFETY

## SKI BINDINGS

Rudolf Brunner, 23 Wankstrasse, 8011 Baldham, near Munich, Germany

Filed Mar. 30, 1967, Ser. No. 627,601

Claims priority, application Germany, Apr. 5, 1966, B 86,542; Jan. 24, 1967, B 90,856

Int. Cl. A63c 9/00

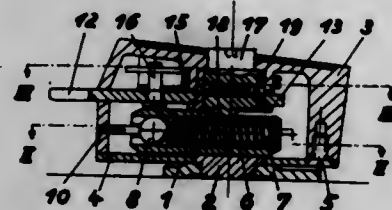
U.S. Cl. 280-11.35

9 Claims

A vertical support bolt is secured to a mounting plate on the ski. A closed housing toe piece is mounted on the



bolt. The bolt has a transverse bore in which is provided a spring and ball locking device normally locking a catch plate under normal torque conditions. During a spill, the



spring is compressed, and toe piece is released and swings out. A second spring is provided to return the toe piece to its initial position.

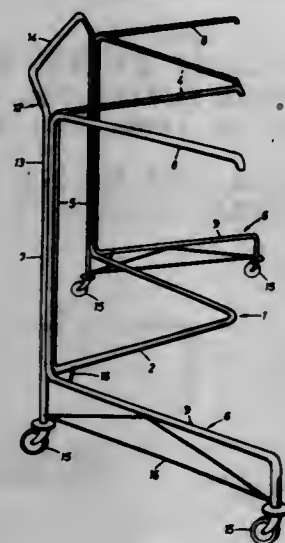
3,462,166

**TRANSPORT DEVICE FOR FURNITURE**

Karl H. Fuhrmann, Karlsruhe, Germany, assignor to Mann Mobil- und Einrichtungshauser KG, Karlsruhe, Germany, a company of Germany  
Filed July 26, 1967, Ser. No. 656,224  
Claims priority, application Germany, July 26, 1966, M 55,842  
Int. Cl. B62d 39/00

U.S. Cl. 280—33.99

2 Claims



A device for transporting articles of furniture is in the form of a tubular skeleton having a base for supporting an article of furniture. The base has horizontal members set at an angle to each other to permit nesting of the devices and is supported by casters. A vertical which does not obstruct loading of the base serves to support the furniture on the base and provide a handle for an operator.

3,462,167

**HYDRAULIC LIFT TRUCK**

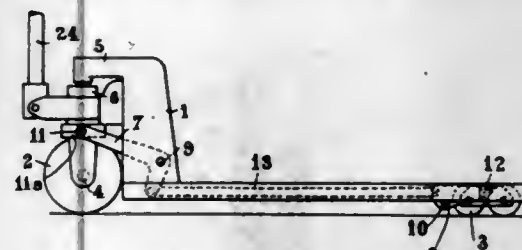
Alexis Rateau, 10 Ave. Eliseé Reclus, Paris, France  
Continuation-in-part of application Ser. No. 410,903, Nov. 13, 1964. This application June 5, 1967, Ser. No. 643,608  
Claims priority, application France, Nov. 18, 1963, 954,092  
Int. Cl. B66f 5/04; B62b 3/02

U.S. Cl. 280—43.12

5 Claims

A movable apparatus comprising a lift platform, wherein the hydraulic jack cylinder is disposed vertically, directly above the axle of the steerable front wheels, the upper portion of its piston supporting directly the front

portion of said lift platform, the pump cylinder being disposed horizontally and machined in an enlarged portion provided to this end at the upper and front portion of the jack cylinder; the steering pole is adapted to pivot



about a horizontal shaft carried by a strap consisting of an extension of the pump cylinder and comprises, about said shaft, an eccentric adapted directly to control the reciprocating movements of the pump piston.

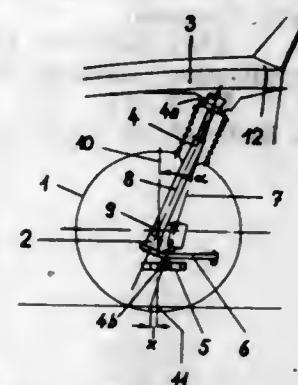
3,462,168

**INDEPENDENT WHEEL SUSPENSION FOR STEERABLE WHEELS OF MOTOR VEHICLES, ESPECIALLY PASSENGER MOTOR VEHICLES**

Eugen Gebler, Munich, Germany, assignor to Bayerische Motoren Werke A.G., Munich, Germany  
Filed Feb. 13, 1967, Ser. No. 615,483  
Claims priority, application Germany, Feb. 23, 1966, B 85,912  
Int. Cl. B62d 7/14

U.S. Cl. 280—96.2

10 Claims



An independent wheel suspension for the steerable wheels of motor vehicles, especially passenger motor vehicles, in which a steerable wheel is carried on a wheel carrier, is suspended from the vehicle body or frame on the one hand, by means of a spring element connected near its lower end with the wheel carrier and near its upper end to the vehicle body, and on the other, by means of a transverse guide arm or the like, and in which the axis of the spring element, for example, the axis of a hydraulic shock absorber intersects the vertical cross plane extending through the axis of rotation of the wheel substantially at the axis of the axle spindle while the steering axis intersects the vertical cross plane intermediate the axis of rotation of the wheel and the point of contact of the wheel with the road.

3,462,169

**COMBINED LOAD LEVELER AND OVERLOAD DEVICE**

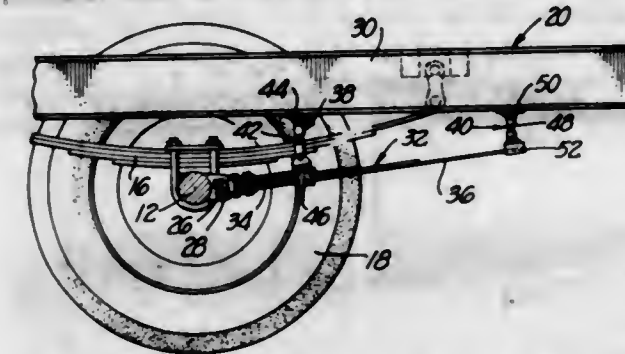
Alfred M. Carter, 733 Norumbega Drive, Monrovia, Calif. 91016  
Filed Oct. 16, 1967, Ser. No. 675,504  
Int. Cl. B62d 37/00; B60g 21/00, 11/34

U.S. Cl. 280—124

7 Claims

A combined leveling and overload device for a vehicle having an axle and a chassis resiliently supported on the axle, the device including a torque shaft extending lengthwise of and pivotally supported on the axle, arms extending laterally from the ends of the shaft toward one end of the chassis and having relatively stiff inner arm sections

adjacent the shaft and relatively resilient outer arm sections, whereby the arms have junctures between the arm sections and outer free ends, and means operatively connecting the chassis to the junctures and free ends,



respectively, of the arms in such a way that the torque shaft and inner arm sections constitute a load leveling device for the chassis and the outer arm sections constitute overload springs.

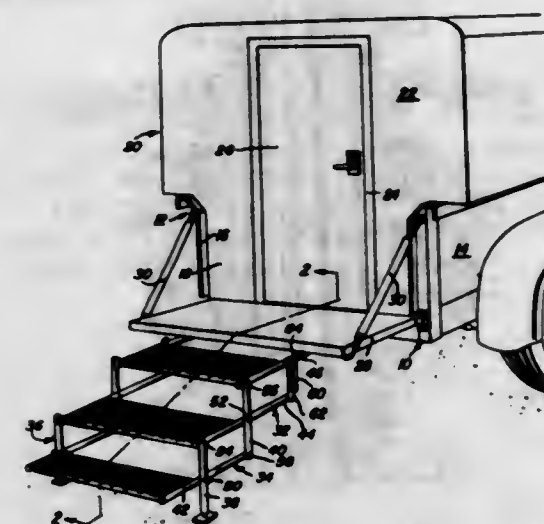
3,462,170

**CAMPER STEP CONSTRUCTION**

Theodore E. Smith, 5341 Hackberry Lane, Sacramento, Calif. 95841, and Andrew H. Smith, 8619 Stehlin Ave., Orangevale, Calif. 95662  
Filed May 2, 1967, Ser. No. 635,527  
Int. Cl. B60r 3/02; B60p 3/32; E06c 5/26

U.S. Cl. 280—166

5 Claims



A collapsible step construction defining an upper forward end and a lower rear end and consisting of a pair of opposite side frames including elongated upstanding riser members and elongated horizontal tread members, the horizontal tread members disposed below the uppermost tread members and the corresponding riser members of said frames being crossed and pivotally secured together intermediate their opposite ends and the upper ends of the riser members of each frame being pivotally secured to the adjacent rear ends of the tread members disposed immediately thereabove while the lower ends of the riser members are pivotally secured to the adjacent forward ends of the tread members immediately therebelow.

3,462,171

**RETRACTABLE WHEEL BRACKETS FOR CORRUGATED SHIPPING CARTONS AND SHOPPING CARTS**

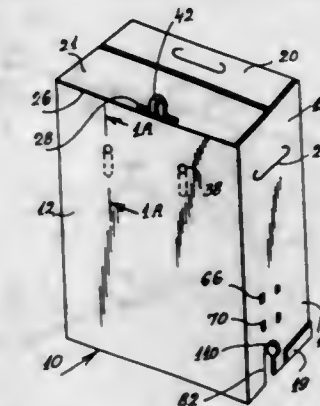
Sol Mitty, Neil Mitty, and Jerald Mitty, all of 144—45 78th Ave. Flushing, N.Y. 11375  
Filed Jan. 18, 1967, Ser. No. 610,060  
Int. Cl. B62b 1/04

U.S. Cl. 280—47.26

5 Claims

The disclosure described means for converting a corrugated shipping carton to a shopping cart, including inter-

changeable wheel bracket assemblies of various types and a slide-out handle. One type of wheel bracket assembly has a key bracket which attaches to a side of the carton



or which slides into a sleeve attached to the carton. Support plates can be attached to the brackets for supporting heavier loads.

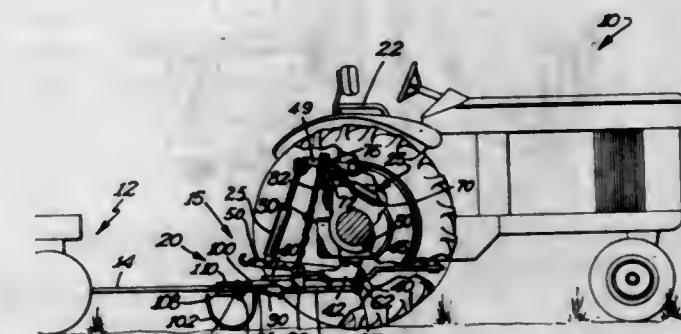
3,462,172

**POWER DRAW BAR HITCH**

Charles C. Thor, 65 10th Ave. NE., Hutchinson, Minn. 55350  
Filed June 1, 1967, Ser. No. 642,924  
Int. Cl. B60d 1/02, 7/00

U.S. Cl. 280—479

6 Claims



This power draw bar hitch to be used to connect tractors to a variety of implements, is characterized by the addition of a second pivoted lever or draw bar member pivotally mounted on the conventional draw bar member of a tractor which mounts a conically shaped pin at the extremity of the same adapted to fit through an aperture in a coupling member attached to the tongues of a variety of types of implements. Implements to be used with this hitch will mount a coupling member which includes a curved plate adapted to hold the tongue off of the ground and in a position to receive the conically shaped pin on the second draw bar member as it is elevated toward the first in a coupling operation. The conical shaped pin in addition to fitting through the aperture in the coupling member rests in an aperture in the draw bar member of the tractor to positively lock the coupling for draft purposes.

3,462,173

**DRAW BAR FOR TOWING VEHICLES**

August M. Bock, Elkhart, Ind. 46514  
Filed July 31, 1967, Ser. No. 657,261  
Int. Cl. B60d 1/14

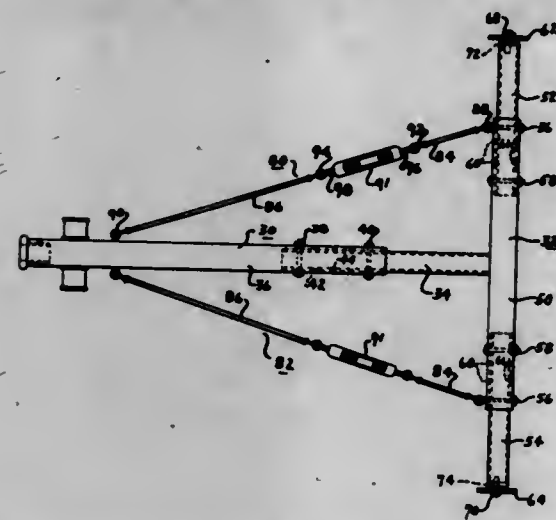
U.S. Cl. 280—484

10 Claims

A draw bar for towing trailers, mobile homes and the like, which is pivotally attached to the frame of the automobile near the rear axle and which has a longitudinal



member extending rearwardly and a rubber-like member or members suspending the draw bar at the rear end



under the automobile for free movement in all angular directions.

3,462,174

## ROTATABLE COUPLING

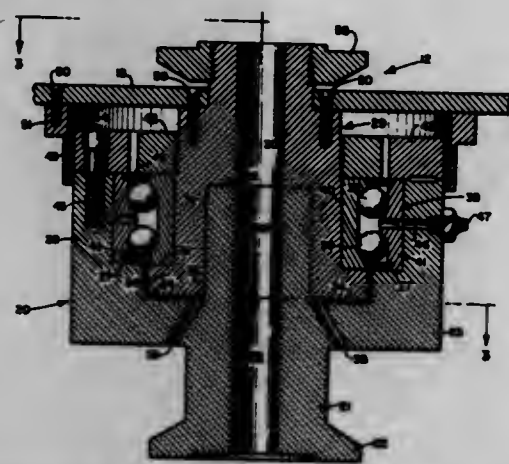
Garland E. Raley, Terre Haute, Ind., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

Filed Feb. 28, 1967, Ser. No. 619,414

Int. Cl. F16l 55/00

U.S. Cl. 285-14

7 Claims



An apparatus for coupling a stationary conduit to a rotating conduit adapted to carry flowable material at high temperature and pressure. The apparatus is particularly suited for coupling a plastic extruder to a rotating extrusion die. The coupling includes a stationary base having an inner upstanding annular wall section which receives over it the lower section of a rotatable support assembly in a close rotating fit. Bearing means rotatably join the stationary base to the upper rotatable support assembly. The extremely close fit between the mating portions of the stationary base and rotatable support assembly permit the rotatable coupling to operate without utilizing gasketing or packing means in the passages exposed to the material flowing through the coupling. Those surfaces of the stationary and rotating portion of the coupling in close proximity are lubricated by permitting a small quantity of the material flowing through the joint to leak therefrom.

3,462,175

## CONNECTOR FOR UNTHREADED PIPE, AND METHOD OF MAKING THE SAME

Don E. Johnson, Mesa, Ariz., assignor to

Sonel, Mesa, Ariz., a partnership

Filed Apr. 20, 1965, Ser. No. 449,412

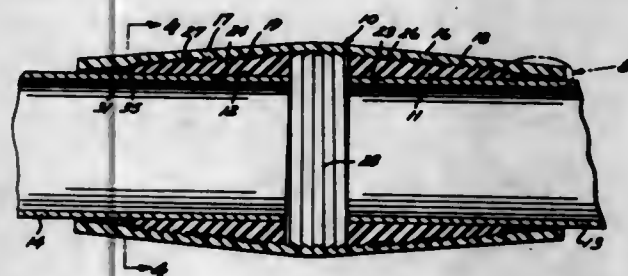
Int. Cl. F16l 21/02, 21/00, 25/00

U.S. Cl. 285-53

8 Claims

The disclosure relates to a connector for unthreaded pipes, such connector incorporating a relatively rigid

housing having an internal surface which is tapered and threaded. Mounted rotatably within the housing is a corresponding tapered and threaded elastomeric sleeve adapted to receive the end of a pipe section, so that rotation of



the housing and sleeve relative to each other creates a wedging, binding and sealing relationship such that leakage from the pipe is prevented. The disclosure also relates to a method of manufacturing the connector.

3,462,176

## ROTATABLE COUPLING WITH PASSAGES

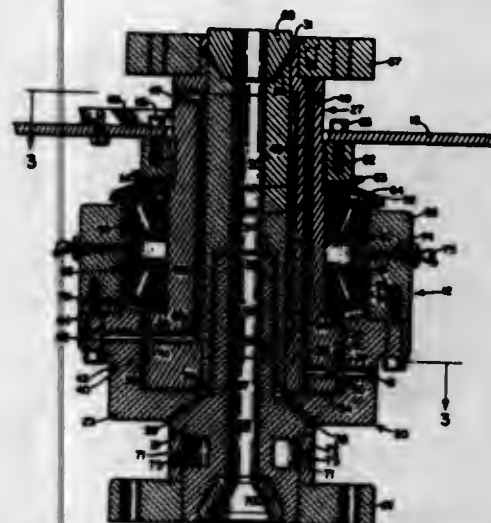
Richard W. Goodrum, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

Filed Feb. 27, 1967, Ser. No. 618,713

Int. Cl. F16l 39/00

U.S. Cl. 285-136

8 Claims



An apparatus for coupling a stationary conduit to a rotating conduit adapted to carry flowable material at high temperature and pressure. The apparatus is particularly suited for coupling a plastic extruder to a rotating extrusion die. The coupling includes a stationary base having an inner upstanding annular wall section which receives over it the lower section of a rotatable support assembly in a close rotating fit. Bearing means rotatably join the stationary base to the upper rotatable support assembly. The rotatable support assembly is provided with one or more passageways which continuously connect with one or more openings provided in the stationary base whereby utilities such as air, steam, hot oil, may be supplied to the extrusion die.

3,462,177

## FLEXIBLE HOSE AND COUPLING THEREFOR

Clayton H. Skinner, Kenmore, and Paul J. Sick, Buffalo, N.Y., assignors to Hewitt-Robins Incorporated, Stamford, Conn.

Original application July 22, 1965, Ser. No. 473,952.

Divided and this application July 31, 1967, Ser. No. 665,636

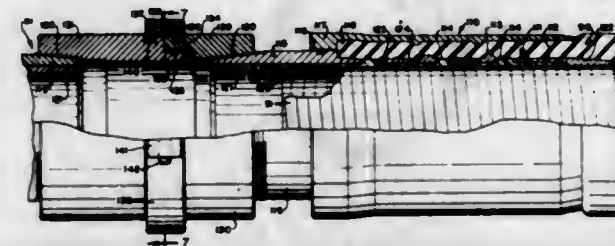
Int. Cl. F16l 33/22, 11/08

U.S. Cl. 285-149

10 Claims

The invention relates to a combined reinforced flexible hose and coupling unit. The coupling comprises two

fittings, each including an inward shank, an inward ferrule screwed thereon and forming an annular chamber around the shank and a tubular extension extending in an outward direction in relation to said shank. The tubular extensions of the two fittings are connected, for example, by a collar. The hose is of the spirally built-up type with a flexible peripheral bore support secured to said shank and an elastomeric reinforced body wrapped around said bore support. The bore support in each hose



length and the coupling shank are interconnected and the hose is built around both the bore support and the shank. The ferrule is long enough to extend along a substantial portion of the shank and is swaged against the hose to form a gripping connection therewith resistant against endwise pull. The ferrule, shank and tubular extension are also so designed and relatively dimensioned to permit the ferrule to be screwed on the shank after the hose has been built around the bore support and the shank.

3,462,178

## MECHANISM FOR MOUNTING ROTARY MEMBER IN FOOD PROCESSING MACHINERY

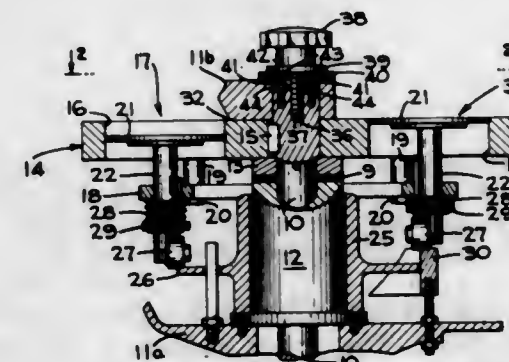
Eugene F. Felstehausen, Hoopston, Ill., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Dec. 1, 1966, Ser. No. 598,438

Int. Cl. F16d 1/06; F16c 3/10; B60b 27/06

U.S. Cl. 287-52.97

4 Claims



The present invention relates to food processing machinery of the type having a rotary member, or turret (as shown, for example, in U.S. Patent 3,153,808) and, more particularly, to mechanism for mounting the rotary member thereof. The rotary member is mounted on a base member by means of a two part hub which is separable to remove the rotary member for cleaning. Each portion of the hub has a flange, and, when the hub is assembled, the flanges hold the rotary member and base member in operating relationship. Each portion of the hub has an abutment surface which engages the abutment surface on the other hub portion when the hub is assembled to mount the rotary member. Mutual contact of the abutment surfaces on the respective portions of the hub assures the same precise spacing between the hub flanges when the hub is assembled, and hence assures precise clearance between the rotary member and the base member for rotation.

3,462,179  
SAFETY COUPLING OR CONNECTOR

Donald L. Hinkle, P.O. Box 2106,

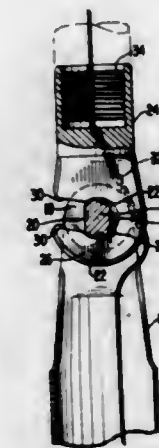
Clarksburg, W. Va. 26301

Filed Oct. 16, 1967, Ser. No. 675,603

Int. Cl. F16d 1/00; F16c 11/00

U.S. Cl. 287-100

2 Claims



A coupling or connector for joining a pair of members together in a manner that permits pivotal movement between each member within certain limitations. One member terminates in a hook portion that readily encompasses a transverse element in the yoked end of a second member upon being rotated through an arc of the predetermined number of degrees. The members will be retained in engagement with one another as long as neither member moves through an arc of said predetermined number of degrees. This abstract is neither intended to define the invention of the application which, of course, is measured by the claims, nor is it intended to be limiting as to the scope of the invention in any way.

3,462,180

## TENSIONING OF BOLTS, STUDS AND LIKE SCREW-THREADED MEMBERS

Thomas W. Bunyan, London, England, assignor to P & O

Pilgrim Valve Limited, London, England

Filed Dec. 29, 1966, Ser. No. 605,812

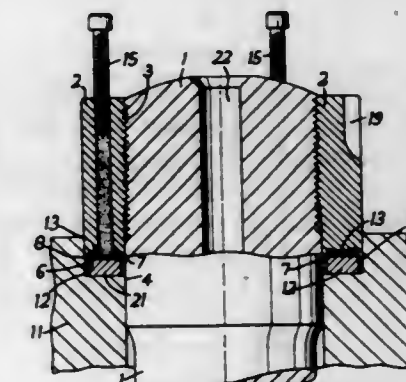
Claims priority, application Great Britain, Jan. 11, 1966,

1,191/66

Int. Cl. F16b 1/00, 7/00

U.S. Cl. 287-189.36

11 Claims



A nut or bolt with an annular channel below the nut or bolt head closed by an axially slidable annular piston, and constituting an annular pressure chamber in which pressure is applied to move the nut or bolt head by reaction against the piston to tension the bolt or other shank on which the nut has been screwed. One or both walls of the channel slide externally against smooth close-fitting surfaces to ensure support against transverse force components in the chamber. The pressure distributing medium in the chamber may consist of a putty-like material.

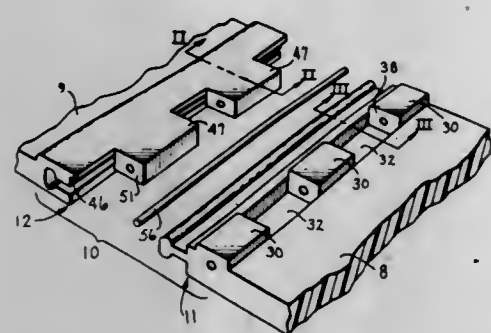


3,462,181

**JOINT STRUCTURE**

Robert E. Lewis, White Pigeon Township, St. Joseph County, Mich., assignor to L & T Machine Products, Inc., Centreville, Mich., a corporation of Michigan  
 Filed Apr. 3, 1967, Ser. No. 627,900  
 Int. Cl. F16b 1/00; E04c 1/10, 1/30  
 U.S. Cl. 287—189.36

7 Claims U.S. Cl. 292—347



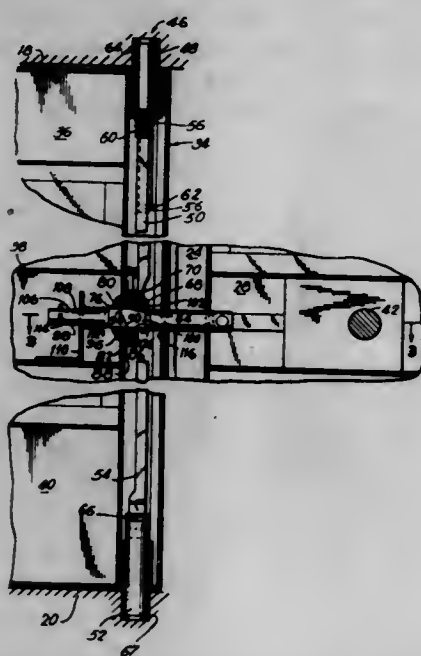
A joint for interconnecting first and second members or opposite ends of the same member, said joint having a tongue and groove connection for releasably interconnecting the members and preventing relative movement thereof in a direction transverse to the axis of said groove. The members also having interfitting teeth integrally formed thereon for preventing relative movement thereof in a direction parallel to the groove axis. The tongue and groove and the interfitting teeth are integrally formed on the members to permit rapid and inexpensive manufacture and assembly while providing a joint having high strength and durability.

3,462,182

**DOOR LOCKING MECHANISM**

Louis L. Schacht, New York, N.Y., assignor to Schacht Associates, Inc., Bronx, N.Y., a corporation of New York  
 Filed Apr. 18, 1966, Ser. No. 543,271  
 Int. Cl. E05c 9/16, 7/00, 1/06  
 U.S. Cl. 292—36

5 Claims



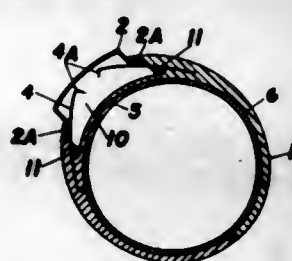
A pair of oppositely hung swinging doors have a top and bottom flush bolt mechanism including linkages, a crank plate and an actuating device for the crank plate disposed in the meeting stile of one door. The actuating device normally closes an aperture in the surface of the stile. A horizontal dead bolt is disposed in a horizontal bore on a rail of the other door and is extendable into the aperture in the stile of the said one door.

3,462,183

**SHOCKPROOF DOORKNOB**

Robert E. Dudley, 1765 Sherman St. 80203, and Walter L. McDaniel, 940 Clarkson St. 80218, both of Denver, Colo.  
 Filed June 19, 1967, Ser. No. 646,847  
 Int. Cl. E05b 1/04

6 Claims



A metallic, grounded doorknob having an insulated cover and an initially non-grounded, conducting button moves to grounded position under the influence of a person's hand and extracts static electricity from the person's body when the doorknob is grasped, without noticeable shock to the person.

3,462,184

**GOLF BALL PICK UP DEVICE**

Theodore B. Russell, 2190 NE. 124th St., North Miami, Fla. 33161  
 Original application Aug. 22, 1966, Ser. No. 574,061, now Patent No. 3,401,970. Divided and this application June 13, 1968, Ser. No. 736,772  
 Int. Cl. B25j 15/00  
 U.S. Cl. 294—19

8 Claims



A golf ball pick up device for the handle of a golf club, preferably the putter. The device includes a cup made of resiliently flexible material, such as rubber or plastic, applied directly to the handle of the putter, and a pair of loops of resilient wire having bases embedded in the material of the cup and projecting from the closed end of the cup in spaced parallel relation. By manipulating the putter, the loops can be engaged over a golf ball to facilitate picking it up.

3,462,185

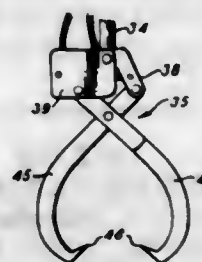
**HYDRAULIC LOG GRAB ATTACHMENT**

John P. Thomas, P.O. Box 9496, Fort Worth, Tex. 76107  
 Filed Oct. 31, 1967, Ser. No. 679,377  
 Int. Cl. B66c 1/10, 3/00; B25b  
 U.S. Cl. 294—118

1 Claim

A hydraulic log grab for mounting on a prime mover such as a tractor and wherein the weight of the log increases the set pressure of the tongs. The tongs are rotatably mounted on the end of at least one rearwardly extending arm or boom which is pivotally connected with the prime mover and operated in a vertical plane. In

addition to a tong linkage whereby the weight of the log increases the set pressure, there is a hydraulic cylinder



across the tong linkage for initially setting the tong points and for releasing the log.

3,462,186

**WHEELED SUPPORT FOR A PATIENT IN A BODY CAST**

Bernard H. Kesling, 230 Marycrest Drive, Reading, Ohio 45237  
 Filed June 2, 1967, Ser. No. 643,240  
 Int. Cl. A61g 1/02

U.S. Cl. 296—20

2 Claims



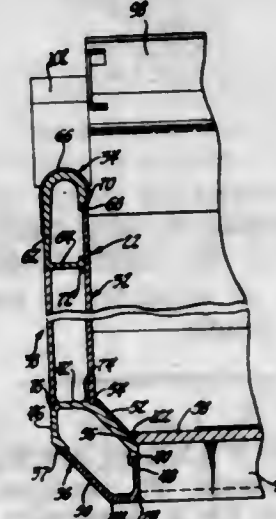
A wheeled support for a patient in a body cast having a transverse rod connecting leg portions of the cast which includes a backing board, a transverse support mounted on the backing board for engaging and supporting the rod, wheels for supporting the backing board and means for supporting the backing board in upright position with the wheels raised off the ground.

3,462,187

**DUMP BODY**

John Hassler, Cleveland, Ohio, assignor, by mesne assignments, to Euclid, Inc., a corporation of Ohio  
 Filed Apr. 21, 1967, Ser. No. 632,667  
 Int. Cl. B62d 27/00; B60p 1/00; B61d 17/00  
 U.S. Cl. 296—28

11 Claims



A dump body for a vehicle wherein the side walls are joined to the floor by a longitudinally extending corner beam having locating surfaces formed therewith for accommodating and accurately positioning one end of the main plates associated with the side wall and floor.

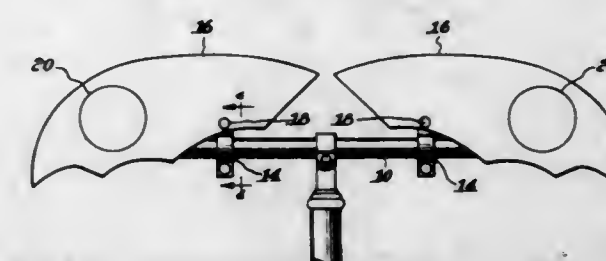
3,462,188

**COMBINED WIND AND HAND GUARD FOR BICYCLES**

Manuel Edgar, Denver, Colo. (SFC RA 55194809, U.S.A. S&MA, LSD, APO, N.Y. 09052)  
 Filed Sept. 5, 1967, Ser. No. 665,509  
 Int. Cl. B62j 23/00, 17/00

U.S. Cl. 296—78.1

4 Claims



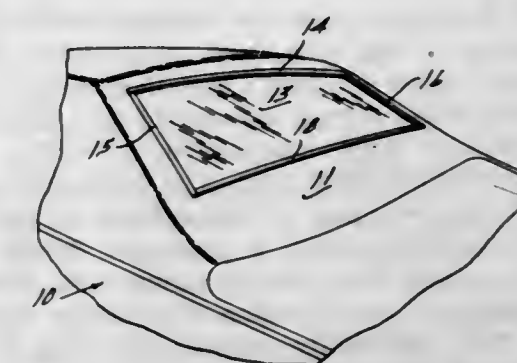
A device adapted to be secured to the handle bars of a bicycle or tricycle to protect the rider from the wind and also protect his hands. This device also has a special appearance which encourages young riders to use same and enables him to participate in various games with other riders.

3,462,189

**FLEXIBLE BACKLIGHT FLOW-THROUGH VENTILATION SYSTEM**

Keshav S. Kavthekar, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware  
 Filed June 14, 1967, Ser. No. 645,938  
 Int. Cl. B60j 1/18, 9/04; B60h 1/24  
 U.S. Cl. 296—146

3 Claims



A flow-through ventilation system for a vehicle body in which a body window opening has a window closure of resilient semi-rigid or flexible strength glass positioned therein. An air outlet from the interior of the vehicle is created by flexing the window closure to space a marginal portion of the latter from the adjacent weather seal mounted in the body opening.

3,462,190

**CHAIR SUPPORT ASSEMBLY**

William H. Campbell, Cleveland, Tenn., assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware  
 Filed July 5, 1967, Ser. No. 651,260  
 Int. Cl. A47c 1/02

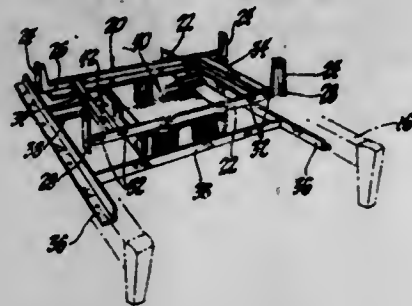
U.S. Cl. 297—85

13 Claims

An assembly for interconnecting a wooden chair frame and a wooden chair support base. The assembly includes a pair of spaced rail members having brackets secured thereto by fastener means and being adjustable for attachment to various different chair frames of various different widths. There is also included a metal support



frame means adapted to be attached to a wooden chair support base. An operative means interconnects the rail



members and the support frame means to allow relative moment therebetween which in turn allows the chair frame to move relative to the chair support base.

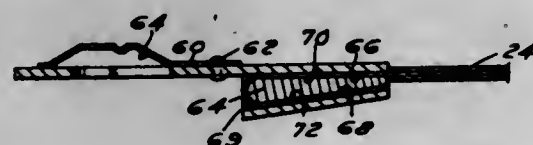
### 3,462,191 ENERGY DISSIPATER FOR SAFETY BELT ASSEMBLY

Hans G. Erneman, Royal Oak, Mich., and Alfred F. Spranger, 19296 Rockcastle, Harper Woods, Mich. 48236; said Hans G. Erneman assignor to Alfred F. Spranger, Wayne County, Mich.

Filed Aug. 9, 1967, Ser. No. 659,464  
Int. Cl. B60r 21/10

U.S. Cl. 297—385

2 Claims



This invention relates to improvements in safety belt assemblies of the type used in airplanes and vehicles. This application discloses a recoilless means of dissipating a portion of the energy transmitted to a safety belt during a collision or rapid deceleration, by plastic deformation of a corrugated metal strip. The dissipation of a portion of the energy which is transmitted to the safety belt when it is constraining a passenger during a collision, limits to a safe level the maximum total force to which the passenger's pelvic region is subjected during the collision. This materially reduces the risk of substantial injury to the passenger's pelvis.

### 3,462,192 MOTOR VEHICLE SAFETY BELT APPARATUS

Robert H. Fredericks, Birmingham, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 27, 1967, Ser. No. 693,960  
Int. Cl. A62b 35/00; A47d 15/00; B60r 21/10

U.S. Cl. 297—389

8 Claims



A shoulder harness safety belt arrangement including a belt segment adapted to restrain a vehicle passenger seated in a forward facing, adjustable passenger seat. One end of the belt segment is secured to a vertically extending portion of the passenger compartment roof panel rearward of the torso of the passenger when the seat is

in its most rearward position of adjustment. Resiliently deformable belt stiffening means are secured to a portion of the belt segment proximate said one end and position said portion substantially parallel to the longitudinal axis of the vehicle when no external forces are applied to the belt segment.

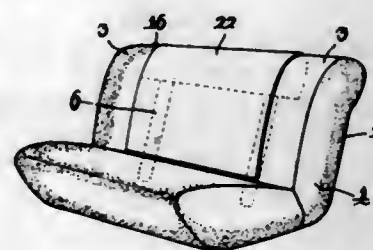
### 3,462,193 SEAT WITH A MOVABLE HEADREST

Yasuo Tamura, 3-2, Nihonbashi-Kayaba-cho, Chuo-ku, Tokyo, Japan

Filed Oct. 13, 1967, Ser. No. 675,196  
Claims priority, application Japan, Oct. 27, 1966, 41/99,051; Apr. 26, 1967, 42/26,297  
Int. Cl. A47c 7/38, 1/10; A61g 15/00

U.S. Cl. 297—410

10 Claims



A car seat comprising a backrest having a hollow part, a headrest movably disposed in the hollow part of the backrest for substantially vertical movement, and means for moving the headrest into a plurality of positions.

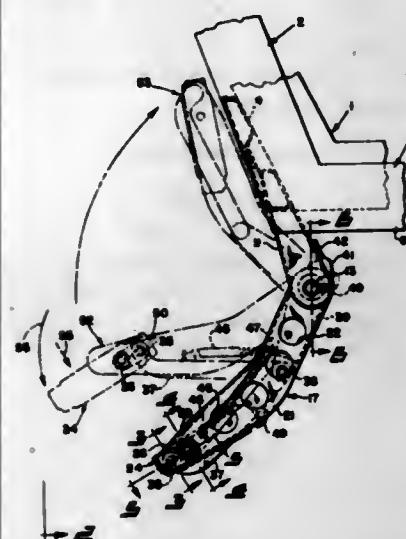
### 3,462,194 ADJUSTABLE FOOTREST ASSEMBLY

George F. Gielow and Robert L. Edwards, Mansfield, Ohio, assignors to Artnell Company, Chicago, Ill., a corporation of Delaware

Filed Sept. 26, 1967, Ser. No. 670,613  
Int. Cl. A47c 7/50

U.S. Cl. 297—425

14 Claims



An adjustable footrest for vehicle seating and the like using a treadle pivoted between hangers with a toggle linkage connected to the treadle holding the hangers in different positions of elevation in response to pivotal movement of the treadle.

### 3,462,195 SWING SEAT AND SUPPORT MEANS

Paul E. Allen, Ephrata, Pa., assignor to Woodstream Corporation, Lititz, Pa., a corporation of Pennsylvania

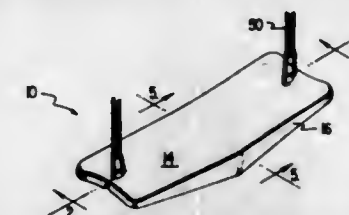
Filed Oct. 18, 1967, Ser. No. 676,129  
Int. Cl. A63g 9/12

U.S. Cl. 297—452

5 Claims

A swing seat and support means including a plastic seat member having centrally aligned holes adjacent the opposite ends thereof and a metal support bar member hav-

ing a center portion extending beneath the center of the seat to support the same and having a pair of upstanding



loop portions which project through the holes to enable the seat to be suspended.

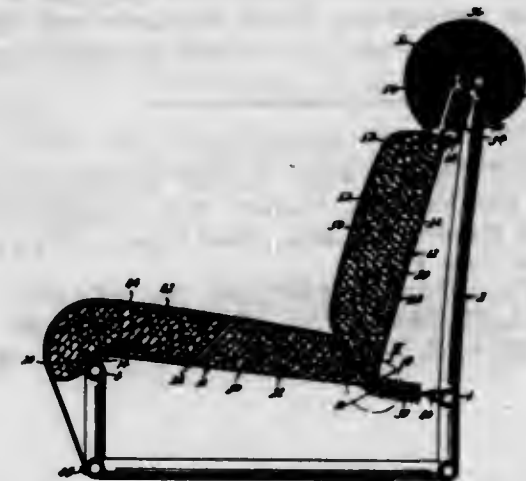
### 3,462,196 UPHOLSTERED SEAT CONSTRUCTION

Harmon W. Arnold and Lloyd E. Tieman, Carthage, Mo., assignors to Flex-O-Lators, Inc., Carthage, Mo., a corporation of Missouri

Filed Sept. 26, 1967, Ser. No. 670,705  
Int. Cl. A47c 7/24

U.S. Cl. 297—455

9 Claims



An upholstered chair construction having a frame, a flexible seat cushion decking panel secured at its front edge to said frame, a flexible back cushion decking panel secured at its upper edge to said frame, the rearward edge of said seat panel and the lower edge of said back panel being joined by a connection which is free or "floating" relative to said frame, each of said panels being interconnected to said frame, or to the other panel, by resiliently extensible members yieldable in a direction at right angles to the axis of the connection between said panels, whereby to permit yielding of said panels transversely to their planes.

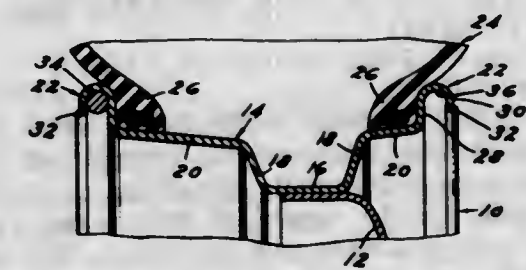
### 3,462,197 WHEEL RIM AND BALANCING WEIGHT FOR A MOTOR VEHICLE

Jacques J. Bajer, Grosse Pointe Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Mar. 1, 1967, Ser. No. 619,736  
Int. Cl. B60b 1/00, 27/00

U.S. Cl. 301—5

2 Claims



A rim and balance weight combination for a motor vehicle wheel wherein the rim has a flanged edge portion that is adapted to resiliently retain a balancing weight formed from steel.

### 3,462,198 BALANCER FOR ROTATING BODY

George R. Omer, 555 Kingsley Trail, Bloomfield Hills, Mich. 48013

Filed July 26, 1967, Ser. No. 659,280  
Int. Cl. B60b 1/00, 27/00; G05g 1/00

U.S. Cl. 301—5

13 Claims



This disclosure relates to devices for automatically statically and dynamically balancing a rotating body such as an automobile wheel, clothes washer or drier tub and the like, in which a hollow annulus containing a balancing medium is mounted on the rotating body and secured thereto for both radial and axial displacement with respect to the axis of rotation of the body. The axial displacement of the annulus serves to correct for dynamic unbalance of the rotating body while the radial displacement serves to augment static as well as dynamic counterbalancing forces of the balancing medium in the annulus.

### 3,462,199 SILO UNLOADER

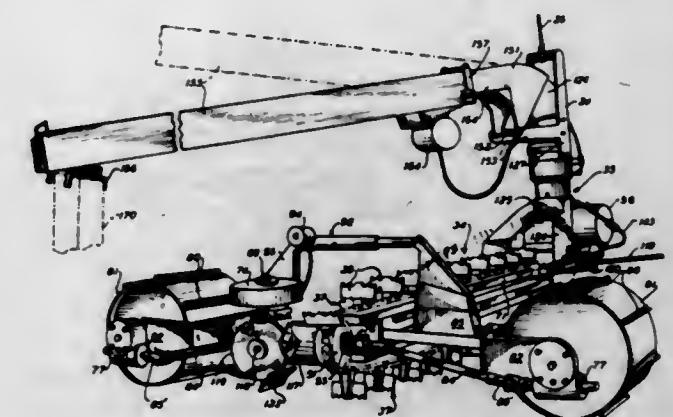
Samuel D. Harris and James H. Downing, Louisa, Va., assignors to Harris Company, Inc., Mineral, Va., a corporation of Virginia

Continuation-in-part of application Ser. No. 566,409, July 19, 1966. This application May 18, 1967, Ser. No. 648,518

Int. Cl. B65g 53/40, 65/36

U.S. Cl. 302—56

23 Claims



A silo unloader in which a first part gathers ensilage from the outer periphery toward the center, while it rotates around the interior of the silo, a second part which blows the gathered ensilage either out of the silo or up to a third, or discharge, part which conveys it to the outside of the silo, power being supplied from the outside through slip ring means to a main motor which drives the first and second parts and a control motor which effects a proper leveling of the machine.

### 3,462,200 FLUID PRESSURE PROPORTIONING MEANS

Richard L. Lewis, John A. Van Amrooy, and Donald W. Smith, St. Joseph, Mich., assignors to The Bendix Corporation, a corporation of Delaware

Filed Dec. 16, 1966, Ser. No. 682,397  
Int. Cl. B60t 13/00, 8/18; F15b 7/00

U.S. Cl. 303—6

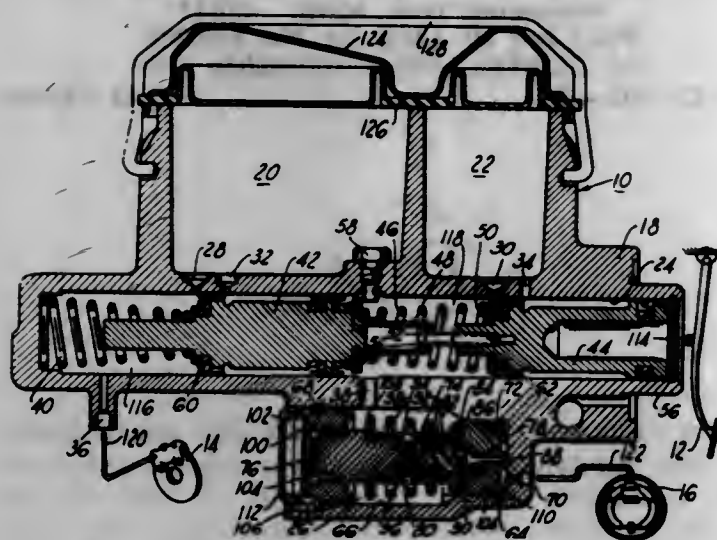
7 Claims

This invention relates to a simplified proportioning means employing a differential area piston within a



housing that includes a resilient poppet valve and a concentric spring arrangement. The invention is also re-

a wooden or frangible handle is mounted. The solid metal portion extends through such frangible handle and an internally threaded metal socket is rigidly secured to the



lated to the integration of such a proportioning valve in a fluid actuator.

3,462,201

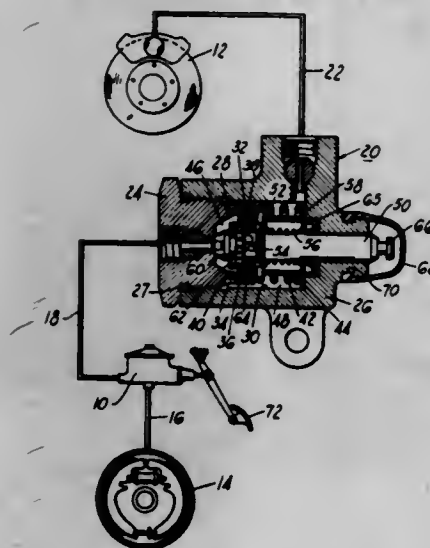
**PRESSURE HOLD-OFF VALVE**

Richard L. Lewis and Donald W. Smith, St. Joseph, Mich., assignors to The Bendix Corporation, a corporation of Delaware

Filed Apr. 13, 1967, Ser. No. 630,710  
Int. Cl. B60t 13/00; F16k 17/26, 45/00

U.S. Cl. 303-6

5 Claims



A fluid pressure responsive hold-off valve having a pressure responsive stem and a pressure responsive valve seat the former of which is adapted to be relatively movable with respect to the latter, which valve is adapted to control fluid pressure delivery from an actuator to a motor.

3,462,202

**HANDLE FOR PAINT ROLLER**

Kenneth R. Stoddart, Fond du Lac, Wis., assignor to Bestt Rollr Inc., Fond du Lac, Wis., a corporation of Wisconsin

Filed Jan. 10, 1968, Ser. No. 696,798  
Int. Cl. B25g 3/30; B44d 3/28

U.S. Cl. 306-30

3 Claims

This disclosure comprises a metal frame for a paint roller or the like which has a solid metal portion on which



end of such solid portion. When an extension is fitted in such socket the bending strain is transmitted directly to such metal portion and not to such frangible handle.

3,462,203

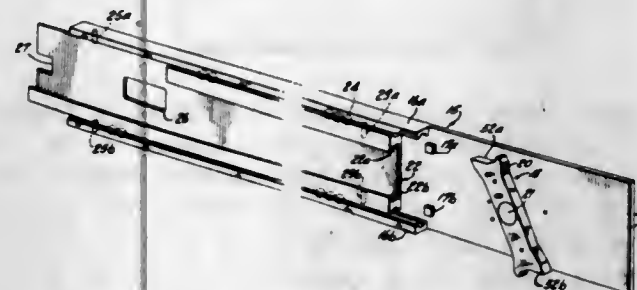
**SAFETY STOP FOR SLIDE MECHANISM**

Joseph T. Del Vecchio, Nantuet, N.Y., assignor to Grant Pulley & Hardware Corp., West Nyack, N.Y., a corporation of New York

Filed July 19, 1967, Ser. No. 654,557  
Int. Cl. F16c 21/00, 29/00; A47b 88/00

U.S. Cl. 308-3.6

8 Claims



Telescoping slides support a drawer or electronic chassis in a cabinet. A bar-like stop member is pivotally fixed at the rear of each slide. The stop has two similar cam faces on its ends. The stop acts to stop the slide from being pushed in all the way; requires the slide to be pulled back before it can be fully closed; and limits the distance it can be pulled back.

3,462,204

**SHAFT BEARING**

Hideo Sagara, Hiroshima-shi, Japan, assignor to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan

Filed Aug. 26, 1966, Ser. No. 575,304  
Claims priority, application Japan, Aug. 27, 1965, 40/52,241; Oct. 5, 1965, 40/60,953; June 2, 1966, 41/35,581

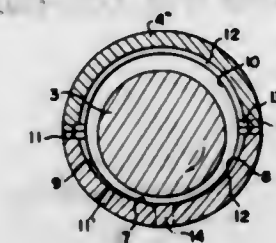
Int. Cl. F16c 1/24, 17/16, 13/02

U.S. Cl. 308-122

11 Claims

A shaft bearing rotatably supporting a shaft journal of a high speed rotor embraces the journal and has its bearing surface spaced radially therefrom to provide a radial clearance for the supply of fluid under pressure between the bearing surface and the journal. The bearing surface includes an arcuately extending pressed portion disposed beneath the journal and toward which the journal is urged by gravity and other external forces acting transversely of the journal in the direction of the pressed

portion. The arrangement is such that the journal can move freely in any direction, other than toward the pressed portion, a greater extent than toward the pressed portion so that, when the rotor is unbalanced and rotating



at a speed in excess of 3000 r.p.m., the journal center vibrates laterally of the bearing through a path having a radius of longitudinal curvature whose lower limit is larger than the radial clearance.

3,462,205

**NEEDLE-ROLLER BEARING**

Frank M. Darr, Houston, Tex., and Chester A. Gronski, Newington, Conn., assignors, by mesne assignments, to Textron, Inc., Providence, R.I., a corporation of Delaware

Filed Sept. 28, 1967, Ser. No. 671,303  
Int. Cl. F16c 33/34, 33/78; F16o 1/24

U.S. Cl. 308-212

12 Claims



The invention provides a needle-roller bearing assembly in which the needle rollers are caged for retention and in which self-contained thrust-bearing elements are provided solely to sustain thrust loads of the needle rollers and cage when the assembly is subjected to an axial force field.

3,462,206

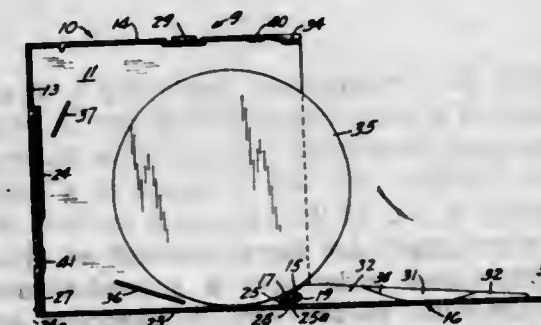
**REEL-STORAGE BOX**

Wayne O. Harnish and William F. Nettekoven, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Oct. 30, 1967, Ser. No. 678,811  
Int. Cl. A47b 81/06; A47f 1/04; G11b 1/00

U.S. Cl. 312-17

9 Claims



Thin rectangular reel-storage box having both a broad hinged panel which opens for removal of a stored reel from a side of the box as well as a narrow hinged door which opens for removal of a stored reel through the front. A plurality of the boxes may be assembled in bookshelf fashion and a desired reel removed simply by opening the door of the box in which it is stored.

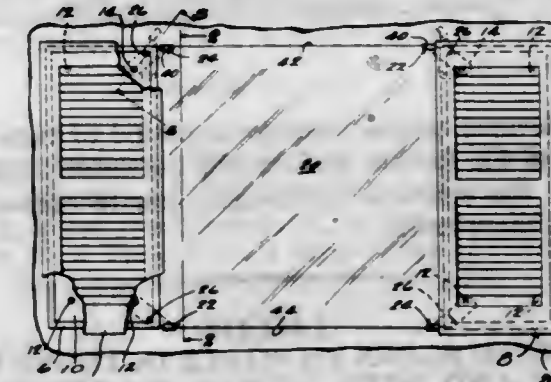
3,462,207

**CABINET INSTALLATION WITH MIRROR LOCK**  
Charles J. Newman and William G. Broese, Jr., Madison, Ind., assignors to The Grote Manufacturing Company, Inc., a corporation of Kentucky

Filed Sept. 26, 1967, Ser. No. 670,527  
Int. Cl. A47b 67/02, 67/00

U.S. Cl. 312-245

5 Claims



Laterally spaced cabinets individually usable without a mirror have rear walls to which are attached brackets for the support of a mirror extending between such cabinets. The lower two brackets are fixed to the respective cabinets; the upper two brackets are pivoted for movement between mirror-retaining and mirror-releasing positions and are anchored in the respective mirror-retaining positions by screws or the like which also contribute to the support of the cabinets.

3,462,208

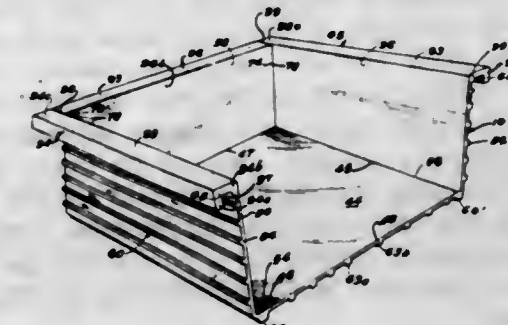
**DRAWER FORM**

William Horace Black, 3060 Pharr Court, Apt. 402 30317, and Clarence Edward Pittman, 3718 Peachtree Road, Apt. 1 30319, both of Atlanta, Ga.

Filed Dec. 27, 1966, Ser. No. 604,717  
Int. Cl. A47b 88/00; B65d 7/42, 25/00

U.S. Cl. 312-352

10 Claims



A plastic drawer form which is open at the front and has integrally formed bottom side and back walls in which the side edges and back edge are bonded together, the side and back walls having outwardly protruding lips along their upper edges. The common edges of the sides and back with the bottom are formed by bending the plastic. The drawer form is light in weight, having reinforcing ribs on one or both surfaces and is assembled into a completed drawer by attaching the open front to a suitable drawer front.

3,462,209

**METHOD OF MAKING VACUUM TYPE ELECTRIC INCANDESCENT LAMPS**

Elmer G. Fridrich, Munson Township, Geauga County, Ohio, assignor to General Electric Company, a corporation of New York

Filed Jan. 4, 1968, Ser. No. 695,698  
Int. Cl. H01j 9/18

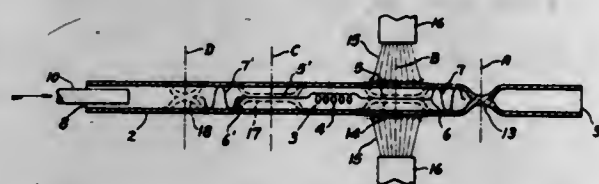
U.S. Cl. 316-19

4 Claims

An electric incandescent lamp of the vacuum type is manufactured by positioning the filament thereof in sealing relation within an envelope of fused quartz, flushing

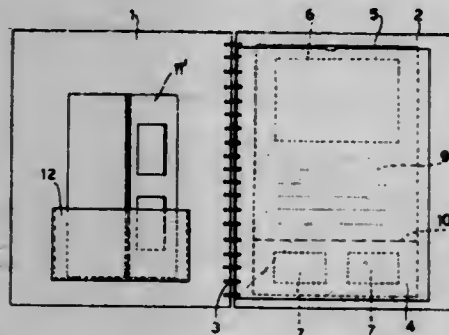


the interior of the envelope with helium gas to drive out the contained atmosphere therefrom and, during the continuance of the gas flushing operation, sealing the filament into the envelope, and then heating the sealed envelope



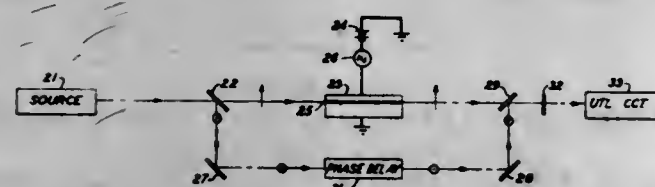
to an elevated temperature for a period of time sufficient to diffuse the helium gas therein outwardly through the wall of the envelope to thereby create substantially a vacuum therewithin.

**3,462,210**  
**BOOK WITH PAGES VIEWABLE IN THREE DIMENSIONS AND WITH VIEWER INCORPORATED**  
Aristide Monzani, Rome, Italy, assignor to Rizzoli Editore S.p.A., Milan, Italy, a company of Italy  
Filed Dec. 28, 1965, Ser. No. 515,121  
Claims priority, application Italy, Dec. 23, 1964, 27,302/64  
Int. Cl. G02b 27/22  
U.S. Cl. 350—140 3 Claims



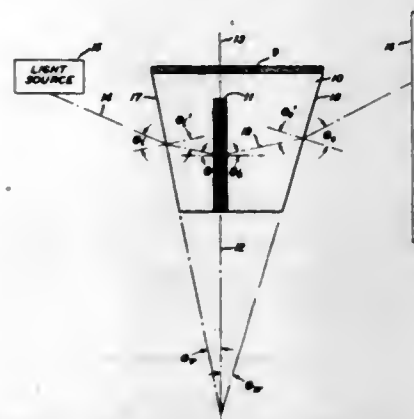
A book containing written and pictorial information, especially for divulging a series of steps in an operative process. The book contains removable leaves carried in transparent pockets joined to the cover leaves of the book. Each leaf has on its upper part images, designs and illustrative legend of a subject, and, on its lower part, two windows containing photographs of said subject for providing a stereoscopic view. A flat foldable stereoscopic viewer apparatus is carried in a pocket on the internal face of one of the cover leaves for viewing the photographs on the leaves.

**3,462,211**  
**SEMICONDUCTOR JUNCTION ELECTRO-OPTIC LIGHT MODULATOR**  
Donald F. Nelson and Franz K. Reinhart, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Sept. 22, 1965, Ser. No. 489,340  
Int. Cl. G02f 1/26, 1/28, 1/36  
U.S. Cl. 350—150 12 Claims



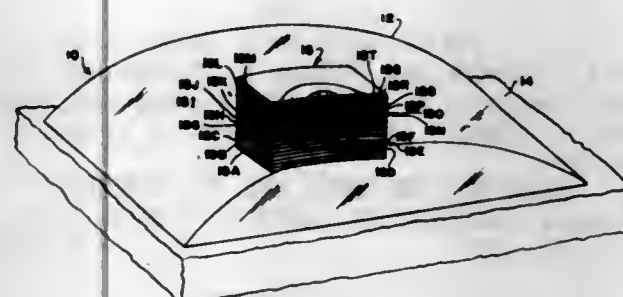
Described herein is an optional modulation system including a p-n junction in a semiconductor, in which the crystallographic orientation of the semiconductor is such that the phase shifts produced by the electro-optic effect and the waveguide effect are additive; thereby the phase modulation is enhanced.

**3,462,212**  
**POLYCHROMATIC BEAM DEFLECTION**  
Richard T. Denton, South Plainfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Oct. 18, 1965, Ser. No. 497,296  
Int. Cl. G02f 1/28, 1/36; G02b 5/18  
U.S. Cl. 350—160 3 Claims



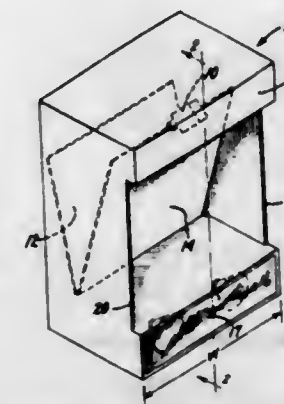
A polychromatic diffraction cell of the Debye-Sears type in which the tilt of a front surface of the cell is chosen to utilize the frequency varying nature of the index of refraction of the cell material to compensate the dispersion of the diffraction mechanism and in which the tilt of a back surface is utilized to realign the components into a collimated beam.

**3,462,213**  
**THREE-DIMENSIONAL OPTICAL DISPLAY APPARATUS**  
Roger Lannes De Montebello, 54 Blvd. Flandrin, Paris 16e, France  
Continuation of application Ser. No. 464,937, June 18, 1965. This application Aug. 26, 1968, Ser. No. 746,597  
Int. Cl. G02b 21/24  
U.S. Cl. 352—86 5 Claims



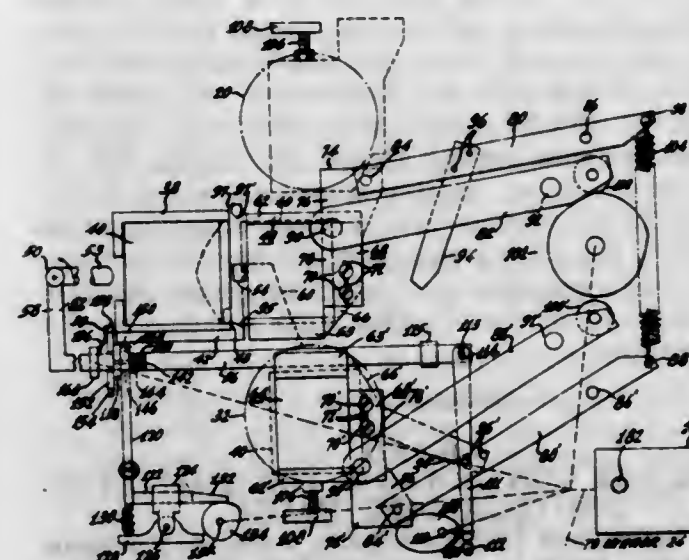
Apparatus for forming and displaying a three-dimensional image of a three-dimensional object. A plurality of two-dimensional photographs of successive sections of the object are prepared and are arranged in a relationship corresponding to that of the successive sections of the object. The photographs are moved through an optical path in a predetermined order and at a predetermined rate and are illuminated successively. A projection screen located in the optical path has a spiral, helical or other configuration so proportioned that, as the screen revolves, its image receiving surface successively occupies locations substantially normal to the projection beam and uniformly spaced from each other so that the images of the individual sections, when sequentially projected in suitably short flashes, appear to have the same relative orientation in space as the corresponding sections of the object.

**3,462,214**  
**CONFIGURATION FOR BACK PROJECTION**  
William E. Glenn, Jr., Scotia, N.Y., assignor to General Electric Company, a corporation of New York  
Filed Feb. 1, 1967, Ser. No. 613,243  
Int. Cl. G03b 21/14, 21/28  
U.S. Cl. 353—38 4 Claims



A back projection system 18 inches in depth is constructed by mounting the projector above and at a 30° angle with respect to the plane of a composite high gain projection screen having an integrally constructed Fresnel lens component. The Fresnel lens component inhibits the formation of areas of high intensity illumination upon the front face of the projection screen. An image projected at an angle of 60° upon a mirrored surface situated at a 30° angle with the projection screen is reflected to impinge orthogonally upon the back surface of the screen thereby maximizing the gain of the projection system. The location of the projector also permits a cabinet arrangement having an excellent speaker location.

**3,462,215**  
**SLIDE PROJECTOR INCLUDING TWO LIGHT PATHS AND ONE SLIDE MAGAZINE**  
Bjorn F. Floden, Palmyra, N.J., assignor to RCA Corporation, a corporation of Delaware  
Filed Aug. 25, 1967, Ser. No. 663,365  
Int. Cl. G03b 21/24  
U.S. Cl. 353—82 7 Claims



A slide projector having two light paths with one light path above the other. A slide gate is provided for each light path. Slides are taken out of the compartments of a single magazine, which may be either the drum or the straight type. The magazine is mounted at an elevation between the two light paths. Two slide holders are mounted for movement between two positions. The first position of the first slide holder is in the upper light path and the second position of the second slide holder is in a slide exchange position with respect to the slide magazine. The second position of the first slide holder is in a

slide exchange position with the magazine and the first position of the second slide holder is in the lower light path. The slides are moved back and forth between the magazine and the slide holders when the slide holders are in the slide exchange position. The magazine moves two steps forward and one step backward alternately to present full compartments to the slide holders when the slide holders have no slides therein and to present empty compartments to the slide holders when the slide holders have slides therein.

**3,462,216**  
**SLIDE PROJECTOR FOR A ROTARY SLIDE TRAY HAVING A SLIDE EDITING DEVICE**  
Frank P. Bennett, Northbrook, Ill., assignor to GAF Corporation, New York, N.Y., a corporation of Delaware  
Filed Apr. 17, 1967, Ser. No. 631,517  
Int. Cl. G03b 23/06  
U.S. Cl. 353—117 10 Claims



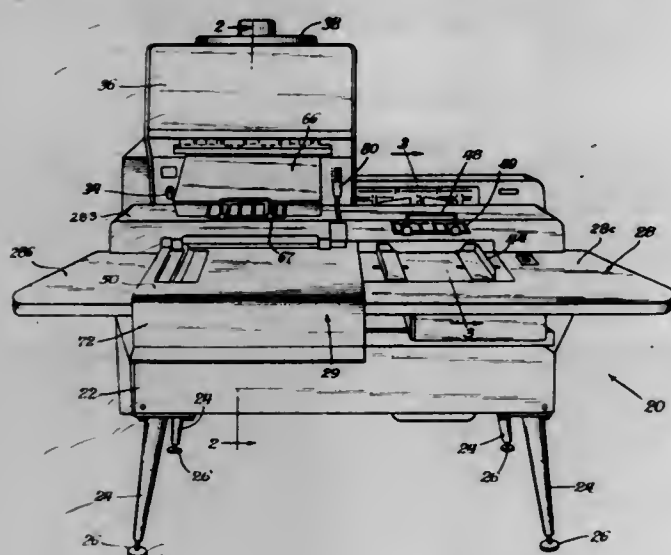
A slide projector having a housing with a slot therein to receive a vertically oriented circular slide tray. The projector includes a slide changing mechanism having pushing and return members engageable with opposite edges of a slide to move the slide to and from the projection gate. A slide editing mechanism permits manual removal of the slide from the gate for editing. The editing mechanism automatically disengages the slide return member to permit exit of the slide from the gate. Dual interlock devices are provided to prevent opening of the editing mechanism except when the slide changer is in its fully inserted position and to prevent movement of the slide changer when the editing mechanism is in its open position. The editing mechanism also operates a shutter for closing the projection gate during editing.

**3,462,217**  
**PHOTOELECTROSTATIC COPYING MACHINE**  
John L. Tregay, Weston, Conn., and Kristian L. Helland, Schaumburg, Ill., assignors to Addressograph-Multigraph Corporation, Mount Prospect, Ill., a corporation of Delaware  
Original application Aug. 12, 1964, Ser. No. 389,037. Divided and this application Apr. 6, 1967, Ser. No. 629,003  
Int. Cl. G03b 15/08  
U.S. Cl. 355—14 5 Claims

A photoelectrostatic copying machine in which a moving, charged copy sheet is exposed by a light image de-



rived from the illumination of a synchronized moving original to provide a latent image that is developed by a powder developer. The powder image is then fused. A pair of spaced switches operated in an overlapped relation by the moving copy sheet energize lamps for illuminating the original. An electric dispenser periodically op-



erated by a cam actuated switch adds power to the developer to replace consumed powder. The cam is motor driven in dependence on the running length of copy sheet developed, and the effective length of the cam surface for operating the switch is manually adjusted to change the amount of powder added.

**3,462,218**  
**FLOW CAMERA**  
William A. Pfaff, 12 Marys Lane,  
Centerport, N.Y. 11721  
Filed May 4, 1967, Ser. No. 636,197  
Int. Cl. G03b 27/48

U.S. Cl. 355-50

6 Claims



A microfilm flow camera for photographing a relatively small number of documents upon a film strip. A resilient roller drive moves the document across a flat transparent plate disposed in the object plane and in front of a lens for focusing the light from the document onto an image plane. The film during exposure is driven from a cassette into an elongated storage chamber from which, after the exposure, the film is rewound into the cassette.

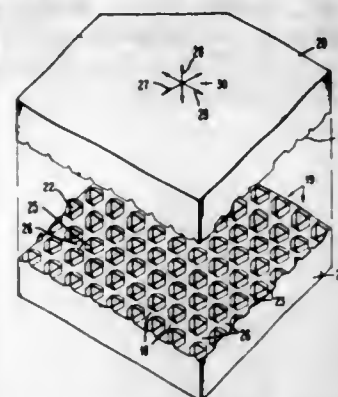
**3,462,219**  
**STEP AND REPEAT DEVICES**  
John B. Gunn, Mount Kisco, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed July 15, 1966, Ser. No. 565,437  
Int. Cl. G03b 27/42

U.S. Cl. 355-53

12 Claims

A pair of positioning plates is provided with each plate surface arrayed with projections and indentations which

allow the indexing of one plate relative to the other in more than a single direction. Each plate has like projec-



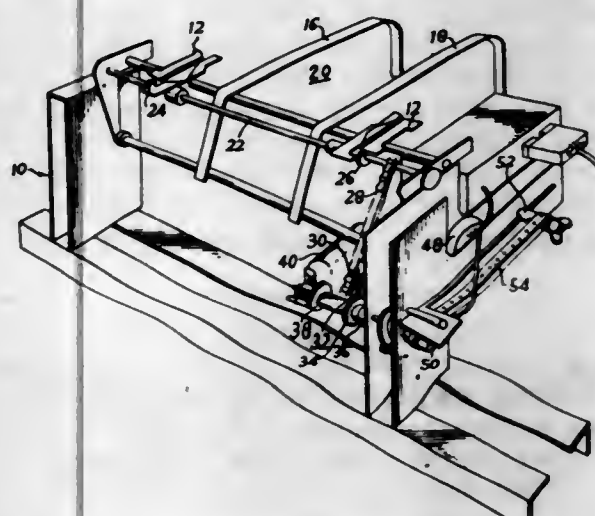
tions with the indentations therebetween formed to snugly accommodate the projections of the other plate.

**3,462,220**  
**PHOTOGRAPHIC COPYING APPARATUS**  
Eric W. P. Harris, Cumnor Hill, England, assignor, by mesne assignments, to A. C. Nielsen Company, Chicago, Ill.

Filed Oct. 13, 1966, Ser. No. 586,449  
Int. Cl. G03b 27/32

U.S. Cl. 355-64

10 Claims



Apparatus for feeding material to a work position comprising a conveyor having drive means for advancing the same and control means for coordinating the conveyor advancement with the performance of a work operation on the material carried by the conveyor. The control means includes sensing means for sensing the advance of the conveyor, arresting means controlled by the sensing means for stopping the conveyor, initiating means controlled by the sensing means for starting the performance of a work operation and restarting means for starting advancement of the conveyor after completion of a work operation.

**3,462,221**  
**METHOD FOR CONTROLLING THE QUALITY OF PHOTOGRAPHIC IMAGE**  
Mataichi Tajima and Tutomu Kimura, Ashigara-Kamigun, Kanagawa, Japan, assignors to Fujii Shashin Film, Kabushiki Kaisha, Ashigara-Kamigun, Kanagawa, Japan

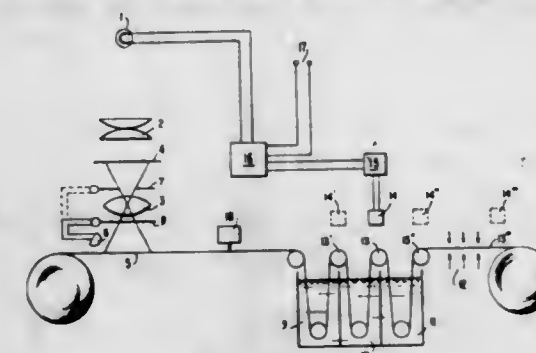
Filed Oct. 17, 1966, Ser. No. 587,058  
Claims priority, application Japan, Oct. 15, 1965, 40/63,295; Oct. 18, 1965, 40/63,813; Jan. 11, 1966, 41/1,175; Jan. 12, 1966, 41/1,667  
Int. Cl. G03b 27/78

U.S. Cl. 355-77

14 Claims

A method for controlling the exposure value in an automatic apparatus for exposing and processing light sensitive material. The method includes detecting the density of the image formed on the exposed, developed, and proc-

essed material after the end point of the developing process. The detected density is then converted into an electrical signal which controls the extent of exposure of subsequent material by using the signal to automatically ad-



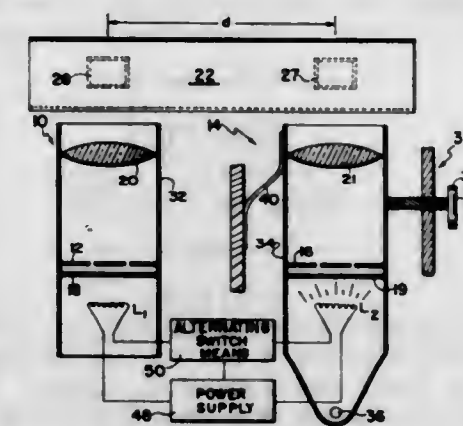
just an exposure control device. The same detected density signal is also used to control variables in the processing tank such as temperature and the speed at which the photosensitive material moves through the tank.

**3,462,222**  
**STEREOSCOPIC RANGE FINDER INCLUDING SEQUENTIALLY ILLUMINATED RETICLES**  
Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Sept. 2, 1966, Ser. No. 576,921  
Int. Cl. G01c 3/14

U.S. Cl. 356-12

14 Claims



1. A binocular rangefinder for determining the range of an object in a scene upon which the sight lines of a user's eyes may be converged, comprising:

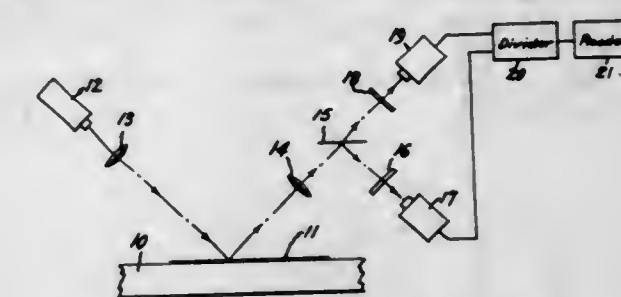
optical means including reticle means for imposing on a field of view common to both eyes a first reticle image observable exclusively by one eye and a second reticle image observable exclusively by the other eye such that the apparent separation between said first and second images is a function of the ocular convergence angle; means for making said images alternately visible; and range-determining means coupled to said optical means for varying the apparent separation between said images such that at any convergence angle of the eyes corresponding to a selected ranging distance the apparent separation between said images may be reduced to zero to provide a range determination.

**3,462,223**  
**OPTICAL STRAIN GAUGE**  
Jerome J. Tlemann, Burnt Hills, William E. Engeler, Scotia, and Marvin Garfinkel, Schenectady, N.Y., and Hellmut Fritzsche, Chicago, Ill., assignors to General Electric Company, a corporation of New York  
Filed Oct. 21, 1965, Ser. No. 499,391  
Int. Cl. G01b 11/16

U.S. Cl. 356-32

16 Claims

Strain in a member is measured optically by depositing a piezoreflexive film on the member being strained



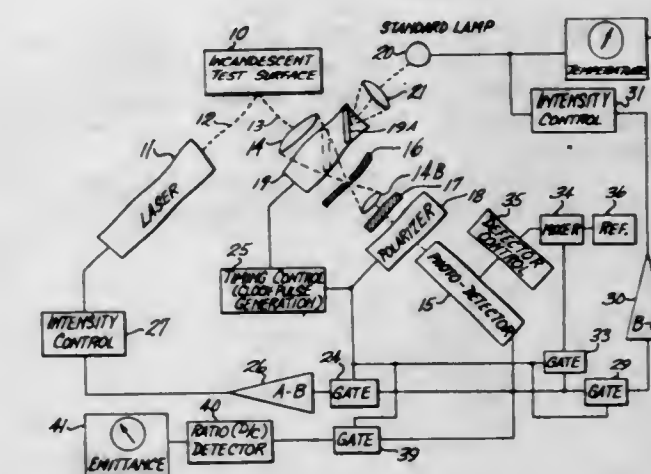
and directing optical energy upon the film. The spectrum of optical energy includes a wavelength at which the fractional change in reflectivity of the film exhibits a maximum. The reflected light is detected by light sensing means responsive to this wavelength, enabling the light sensing means to produce an output signal analogue of strain in the member.

**3,462,224**  
**POLARIZATION PYROMETER**  
Weightsstill W. Woods, Redmond, Dale L. Martin, Bellevue, and James K. Marshall, Seattle, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Oct. 17, 1966, Ser. No. 587,221  
Int. Cl. G01j 5/56

U.S. Cl. 356-47

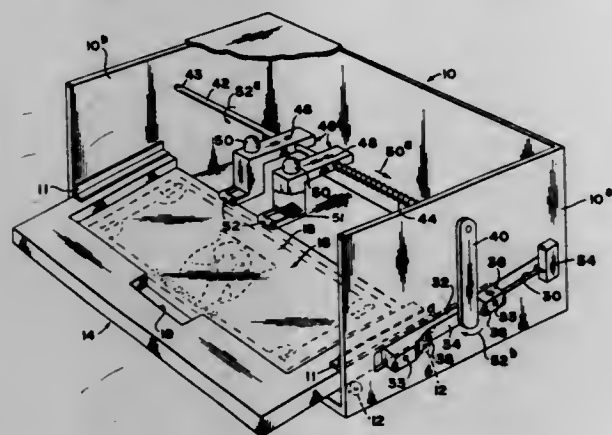
9 Claims



1. A temperature measuring system comprising in combination: a first standard radiant energy source; temperature indicating means coupled with said source; a second high intensity radiant energy source adapted to direct radiant energy onto the object the temperature of which is to be determined; radiation detection means responsive to radiation emitted by said first source and to radiation emanating from the object the temperature of which is to be determined by virtue of radiation and reflection of energy directed thereon by said second source; radiant energy polarizing means disposed between said detection means and the object; and intensity control means connected between said detection means and said sources and operative to adjust the intensity of the radiation emitted by said sources such that first and second output signals from said detection means, which are respectively proportional to the radiation emanating from the object when polarized along first and second axes by said polarizing means are substantially equal and also substantially equal to a third output signal from said detection means which is proportional to the radiation provided thereto from said first source.

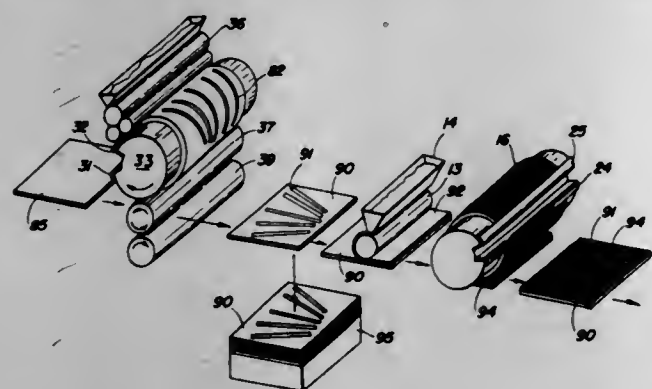


**3,462,225**  
**PAPER SECURITY VALIDATION APPARATUS**  
 Jack E. Bayha, Chesterland, Ohio, assignor to Transmarine Corporation, Chesterland, Ohio, a corporation of Ohio  
 Continuation-in-part of application Ser. No. 529,750, Feb. 24, 1966. This application Nov. 22, 1966, Ser. No. 596,141  
 Int. Cl. G06k 9/08; G01n 21/16; G07f 1/06  
 U.S. Cl. 356—71 6 Claims



An apparatus is provided for authentication of paper securities by moving a reticle transversely to the direction of linear movement of a paper security to be authenticated triggered by the movement of the security or the means carrying the security. The mechanical apparatus including cam action to achieve such transverse movement of the reticle relative to the security is covered by the invention.

**3,462,226**  
**PREREGISTRATION AND LAYOUT OF THREE-DIMENSIONAL PRINTS**  
 James E. Huffaker, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
 Filed Oct. 6, 1966, Ser. No. 584,918  
 Int. Cl. G01n 21/00, 21/04; B41c 3/00  
 U.S. Cl. 356—72 7 Claims

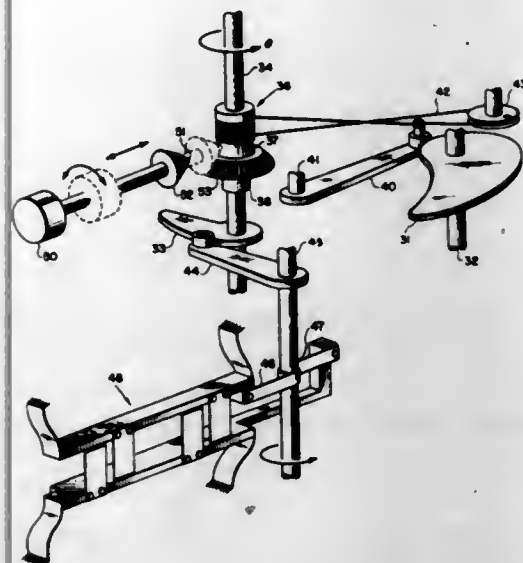


A method of assuring registry of uniform images with the embossed lenticular screen utilizing moire fringes generated by the line grating and said embossed lenticular screen.

**3,462,227**  
**WAVELENGTH PROGRAMMED MONOCHROMATOR DEVICE WITH ADJUSTABLE ENTRANCE AND EXIT CAM OPERATED SLIT MEANS FOR PROVIDING A VARIABLE PROPORTIONALITY FACTOR BETWEEN THEIR WIDTHS**  
 Donald George Tipotsch, Sunnyvale, Calif., assignor to Beckman Instruments, Inc., a corporation of California  
 Filed May 11, 1966, Ser. No. 549,358  
 Int. Cl. G01j 3/12 2 Claims

There is illustrated and described a mechanical system whereby the slit program of a monochromator in a

radiant energy analyzer may be multiplied by a proportionality factor. A slit cam is coupled to the wavelength drive and the slits of a monochromator and is programmed to provide constant energy as a function of wavelength. Interposed between the slit cam and the slits is a clutch

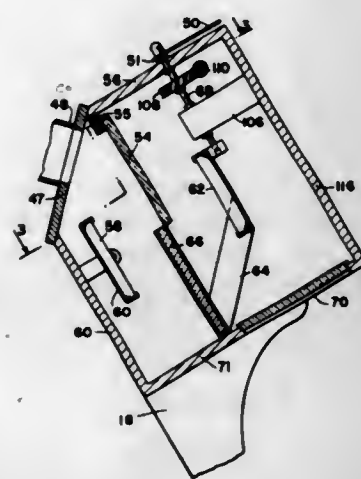


mechanism and a second exponential cam which allows the slit width to be multiplied by any desired proportionality factor. The clutch mechanism allows the relative position of the exponential cam to be varied in relation to the slit cam to provide the proportionality factor.

#### ERRATUM

For Class 356—106 see:  
 Patent No. 3,462,127

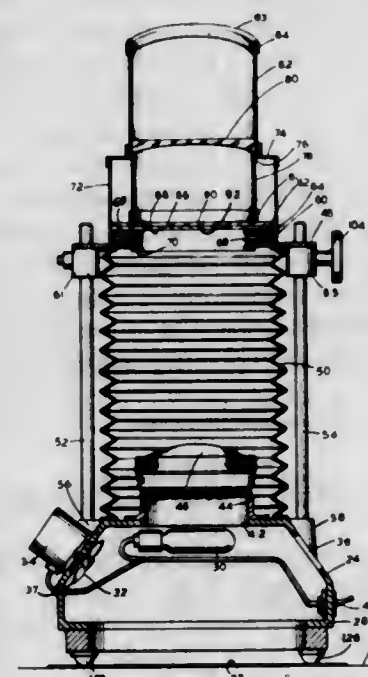
**3,462,228**  
**APPARATUS FOR COMPARING GRAPH CURVES INCLUDING A DICHOIC MIRROR**  
 Stephen E. Szasz and Lauren G. Kilmer, Tulsa, Okla., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware  
 Continuation of application Ser. No. 331,590, Dec. 18, 1963. This application Nov. 9, 1967, Ser. No. 681,937  
 Int. Cl. G01b 11/24; G02f 3/00  
 U.S. Cl. 356—168 4 Claims



Apparatus for superimposing images of objects displaced on a common plane. Light in the line of sight from the object plane to a viewing aperture is divided by a dichroic mirror into first and second light paths. The first light path is reflected to a first front surfaced mirror which

re-reflects it to the non-reflecting surface of a semi-transparent mirror. The second path passes through the dichroic mirror to a second front surfaced mirror which reflects it to the reflecting surface of the semi-transparent mirror. Passage of the first light path through the semi-transparent mirror and reflection of the second light path by the semi-transparent mirror results in two images at the viewing aperture. The second front surfaced mirror is pivoted about an axis to align the two images in one dimension, and the dichroic mirror and the first front surfaced mirror are pivoted as a unit to align the two images in the second dimension.

**3,462,229**  
**LITHOGRAPHIC COLOR ANALYZING**  
 Ralph C. Wicker, Rochester, N.Y., assignor, by mesne assignments, to Chesley F. Carlson Company, Minneapolis, Minn., a corporation of Minnesota  
 Original application Apr. 10, 1962, Ser. No. 186,555, now Patent No. 3,256,770, dated June 21, 1966. Divided and this application May 5, 1966, Ser. No. 547,958  
 The portion of the term of the patent subsequent to June 21, 1983, has been disclaimed  
 Int. Cl. G01b 11/04 1 Claim



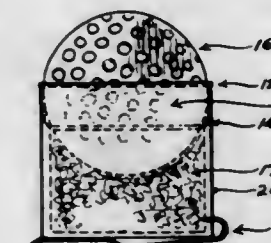
This invention relates to color lithographic work and more particularly to a method of analyzing the dot size in relation to the dot spacing of a selected color of a lithographic half color reproduction which comprises illuminating an area of the reproduction, any one color of which is to be analyzed, applying to said area a 95% half tone screen having uniform dot periodicity corresponding to the dot periodicity of the colors of the reproduction, and disorienting the axis of said screen from the axis of said one color a few degrees, whereby to produce an interference magnification of the dots of said one color only.

**3,462,230**  
**MEANS FOR CARRYING AND CLEANING GOLF BALLS**

Chester E. Beard, Box 99A, Hickory Flat, Miss. 38633  
 Filed Sept. 22, 1967, Ser. No. 669,810  
 Int. Cl. A46b 15/00; A63b 71/00; B08b 9/00  
 U.S. Cl. 401—11 8 Claims

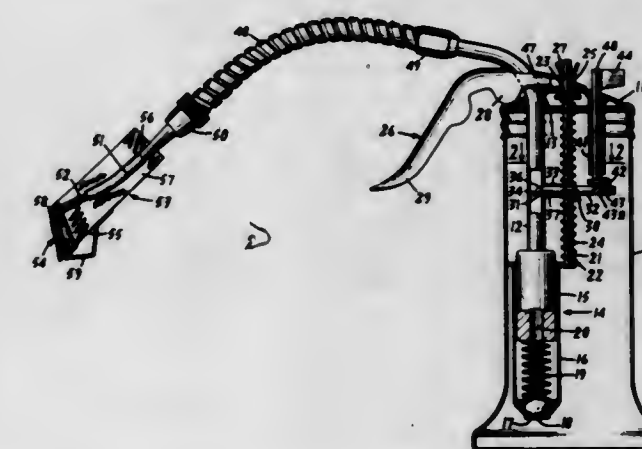
A device for carrying standard golf balls and for means for cleaning such golf balls preparatory to the use thereof, which device comprises a substantially cylindrical container of resilient and limitedly flexible plastic material

with a flexible and compressible moisture absorbent synthetic foam contained therein, the resilient and flexible container limitedly yielding under the insertion of a golf ball into the container and effectively



gripping the inserted golf ball against accidental removal while permitting rotation of the golf ball against the foam and the liquid retained therein, and such container flexibility permitting the ready removal of the golf ball from the container when desired.

**3,462,231**  
**PAINT APPLICATOR**  
 Francis J. Pomares, 124 Russell St., White Plains, N.Y. 10606  
 Filed May 1, 1967, Ser. No. 635,142  
 Int. Cl. B43k 5/02 11 Claims



In the particular embodiment of the invention disclosed herein, a hand-held paint container includes a finger-operated pump to transfer paint from the container through a flexible tube to a specially formed brush tip. In the tip, the paint is delivered through a duct to the bristles of the brush adjacent to their free end. A bypass within the container returns a controllable proportion of the paint from the conduit to assure a uniform flow to the tip under all conditions.

**3,462,232**  
**WRITING IMPLEMENT BODY CONNECTING ASSEMBLY**  
 Roland Longarzo, Valley Stream, N.Y., assignor to Union Pen & Pencil Corp., Mount Vernon, N.Y., a corporation of New York  
 Filed Feb. 7, 1967, Ser. No. 614,462  
 Int. Cl. B43h 7/00 7 Claims

This invention relates to writing implements such as ball point pens and mechanical pencils having operating mechanisms inserted within the barrel of such writing implement, and the particular feature of this invention is the provision of a combination of a writing implement barrel having a main body portion comprising separable parts in which the separable parts and the insert opera-



tional mechanism are all fastened together by a single connecting fastener combination which effectively assembles the parts of the barrel and the operating mechanism. This is accomplished in the preferred form of this in-



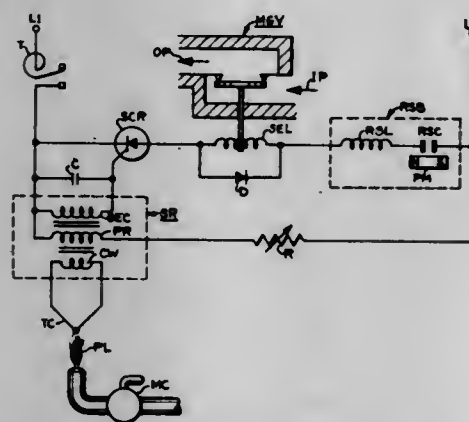
vention by providing the operational mechanism such as a ratchet mechanism with deformable means which will serve as a coupling for the separable parts of the writing implement barrel.

### 3,462,233 FUEL BURNER CONTROL UTILIZING SILICON CONTROLLED RECTIFIER

Russell B. Matthews, Goshen, Ind., assignor to Penn Controls, Inc., Oak Brook, Ill.  
Filed Dec. 1, 1967, Ser. No. 687,216  
Int. Cl. F23n 5/10; H01h 47/32

U.S. Cl. 431-25

5 Claims



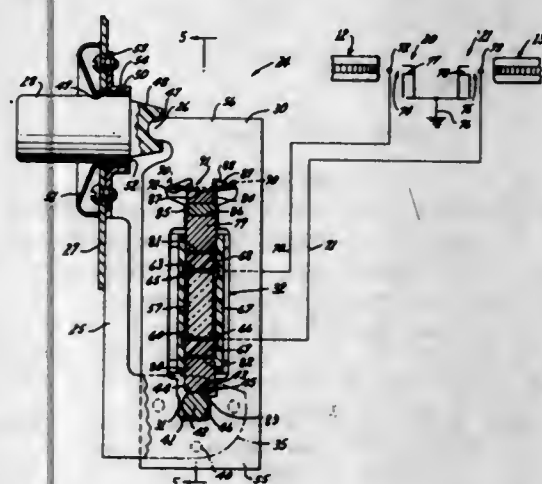
Fuel feeding means are energized through a silicon controlled rectifier which is selectively fired in response to a heated thermocouple. In the silicon controlled rectifier anode-cathode energizing circuit there is connected a pair of normally open reed switch contacts in series with an associated energizing coil. The reed switch contacts are actuated closed prior to the control being placed in operation and are then maintained in closed condition by a permanent magnet which is of insufficient strength to close the contacts by itself. The reed switch energizing coil is ineffective under normal operating conditions. However, under conditions where the silicon controlled rectifier becomes short circuited through its anode-cathode circuit, alternating current power flows through the reed switch contacts and energizing coil. The consequent alternating flux field of such coil overcomes the contact maintaining magnetic force of the permanent magnet, allowing the reed switch contacts to reopen and interrupt energization of the fuel feeding means. The combination of the reed switch, permanent magnet and energizing coil, thus, functions as a circuit breaker, upon detection of a shorted silicon controlled rectifier, to actuate the control to a safe condition.

### 3,462,234 IGNITION MEANS FOR COOKING APPARATUS AND THE LIKE

Charles D. Branson, Greensburg, and Francis S. Genbauffe, Irwin, Pa., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware  
Filed Sept. 25, 1967, Ser. No. 670,308  
Int. Cl. F23q 7/12, 3/00; F24c 3/10

U.S. Cl. 431-255

20 Claims



This disclosure relates to an ignition means for the pilot burner means of the main burner means of a cooking apparatus or the like by creating electrical sparks at the pilot burner means, the sparks being created by the altering of the stresses in piezoelectrical crystal means that is rocked relative to the supporting structure. In addition, such rocking of the crystal means is created by a push button member mounted on the cooking apparatus that can be concentrically mounted in a selector dial which can selectively interconnect a source of fuel to the pilot burner means whereby the pilot burner means can be turned off when the cooking apparatus is not being utilized.

### 3,462,235 RIGID CANDLE WICK AND RIGID CANDLE DEVICE

James R. Summers, 353 E. 50th St.,  
New York, N.Y. 10022  
Original application Sept. 21, 1966, Ser. No. 581,105, now  
Patent No. 3,380,797, dated Apr. 30, 1968. Divided  
and this application Dec. 5, 1967, Ser. No. 705,252  
Int. Cl. F23d 3/08

U.S. Cl. 431-289

20 Claims



A rigid core-wick combination for candles wherein a wick portion of normal capillarity and a non-metallic and non-explosive rigid core are employed with the core substantially consumed by a flame as the wick burns, the wick in substantially parallel relation to the core. The present invention may further include a rider adapted to descend as the rigid portion of the illuminating device is consumed.

## CHEMICAL

### 3,462,236 PROCESS FOR DYEING, PADDING OR PRINTING

Donald Kelghley Clough, Bolton, Bradford, England, assignor to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland  
No Drawing. Filed Mar. 21, 1966, Ser. No. 535,713  
Claims priority, application Switzerland, Mar. 26, 1965, 4,253/65  
Int. Cl. C09b 67/00; D06p 1/68

U.S. Cl. 8-54

5 Claims

Polyamide fibers are treated, prior to or during dyeing, with at most 4 percent by weight (based on the weight of the treating bath) of a carboxylic acid of restricted solubility in water. The dyeings can be effected and/or developed at temperatures of at most 100° C.

### 3,462,237 COMPOSITION OF MATTER

Lucien Sellet, Saddle River, N.J., assignor to Diamond Alkali Company, a corporation of Delaware  
No Drawing. Filed July 28, 1965, Ser. No. 475,600  
Int. Cl. C14c 3/18, 3/08

U.S. Cl. 8-94.21

47 Claims

Compositions are prepared using water soluble or water dispersible salts of treating agents, surfactants, epoxides, pigments, solvents and the like. The treating agents are polyurethane resins which are obtained by reacting an isocyanate terminated prepolymer with a hydroxyl containing nitrogen compound which is the Mannich condensation product of phenol, an aldehyde and an alkanolamine. If desired, the treating agent can be alkylolated by reaction of an aldehyde with reactive hydrogen atoms present in the phenol, hydroxyl containing nitrogen compounds and/or the reaction product of the nitrogen compound and prepolymer. Compositions of the treating agents are useful in the treatment of textiles, leather and other substrates.

### 3,462,238 PROCESS OF WHITENING ACRYLIC FIBERS

Julian J. Hirshfeld and Bertie Joseph Reuben, Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
No Drawing. Filed Apr. 7, 1966, Ser. No. 540,842  
Int. Cl. D011 3/10

U.S. Cl. 8-140

5 Claims

Acrylic fibers are made to appear whiter and brighter by contacting them with an aqueous solution containing a nitrogen-containing compound selected from the group consisting of sulfamic acid, and alkali metal and alkaline earth salts of sulfamic acid.

### 3,462,239 METHOD OF PREVENTING HYDROGEN SULFIDE CORROSION AND EMBRITTLEMENT

Theodore M. Swanson, El Cerrito, Calif., George H. Calhoun and William E. Bingman, Midland, Tex., and Richard S. Treseder, Oakland, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware  
No Drawing. Filed Jan. 25, 1967, Ser. No. 611,547  
Int. Cl. C23f 15/00, 11/04

U.S. Cl. 21-2.5

5 Claims

A method of preventing sulfide stress corrosion cracking of metals in contact with hydrogen sulfide containing fluids by contacting said metals with hot sour gases at a temperature of at least 150° F.

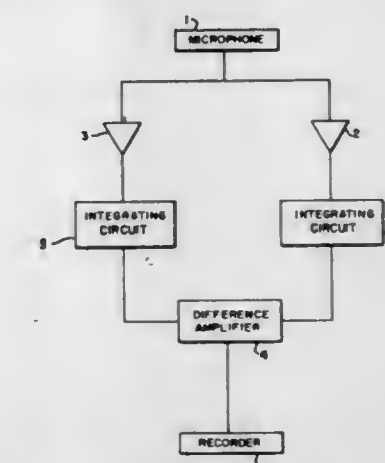
### 3,462,240 ACOUSTIC APPARATUS FOR EXAMINING A PIPELINE FOR LEAKS

Hendrik Bosselaar and Arnoldus J. van Riemsdijk, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Filed June 22, 1967, Ser. No. 648,156  
Claims priority, application Netherlands, July 12, 1966, 6609733

Int. Cl. G01m 3/08

U.S. Cl. 73-40.5

4 Claims



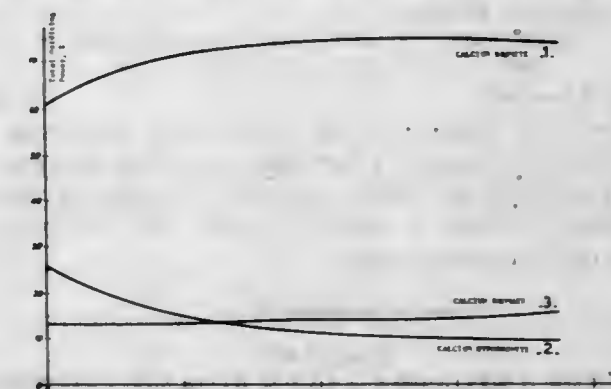
A pipeline leak detector wherein an instrument is transported through the pipeline to detect leaks. The instrument is equipped to detect and amplify acoustic vibrations caused by fluid flowing through both the pipeline and a hole in the pipeline. The detected vibrations are separated into two frequency ranges, one frequency being above the maximum frequency resulting from a leak, the second frequency being set at the maximum frequency resulting from a leak. Any difference between the amplitudes of the two frequencies indicates the presence of a leak.

### 3,462,241 DIRECT PRODUCTION OF SOLID CALCIUM BROMITE

Michel Sedley, Asnieres, France, assignor to Societe d'Etudes Chimiques pour l'Industrie et l'Agriculture, Paris, France  
Filed July 17, 1967, Ser. No. 653,941  
Claims priority, application France, July 22, 1966, 70,406; May 16, 1967, 106,449; May 22, 1967, 107,138  
Int. Cl. C01f 11/34; C01b 7/10

U.S. Cl. 23-85

12 Claims



Producing calcium bromite in solid form by mixing bromine and calcium hydroxide at below 20° C., regulating the pH during the mixing step, or alternatively maintaining substantially equimolar proportions of bromine and calcium hydroxide during the latter part of the mixing step; and after the mixing step is completed, adjusting the pH to about 9.3-10.5; then allowing the

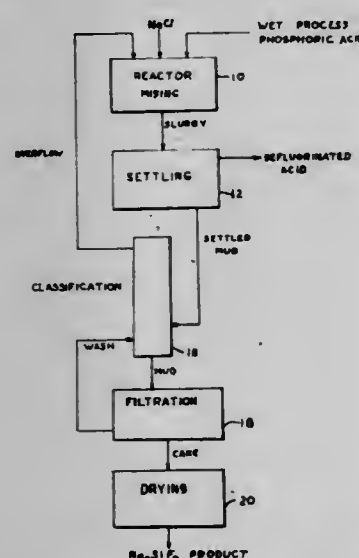


reaction to continue until the quantity of hypobromite remaining in the mixture represents less than about 15% of the total oxidizing power of the mixture; and thereafter recovering the solid precipitate.

**3,462,242**  
**PROCESS FOR PRODUCING FLUOSILICATES**  
James E. Barker, East Point, and Julian H. Robinson, Lithia Springs, Ga., assignors to Tennessee Corporation, New York, N.Y., a corporation of Delaware  
Filed July 26, 1967, Ser. No. 656,279  
Int. Cl. C01b 33/08

U.S. Cl. 23—88

12 Claims



A process for the manufacture of commercially pure sodium fluosilicate from wet process phosphoric acid (WPA) by reacting a sodium salt preferably sodium chloride with the fluosilicic acid present in the phosphoric acid under conditions of moderate agitation characterized by a Reynolds number of between 7600 and 8300, thereby precipitating the sodium fluosilicate as a particle having a size between 200 mesh and 325 mesh. The reactant containing the precipitate is discharged as a slurry to a settling tank where the precipitate is settled out and the clarified defluorinated acid passed out in a separate stream for further processing. The settled mud is then passed to a classifier where gypsum and other solids are floated out in the wash, the wash as overflow being recycled to the mixing reactor. The classified sodium fluosilicate is filtered and dried to obtain a commercially pure sodium fluosilicate.

**3,462,243**  
**PROCESS AND BURNER FOR THE CONVERSION OF AMMONIA INTO OXIDES OF NITROGEN**  
Jean Joseph Riga, Liege, Belgium, assignor to Societe Belge de l'Azote et des Produits Chimiques de Marly, S.A., Ougree, Belgium  
Filed Nov. 13, 1967, Ser. No. 682,202  
Int. Cl. C01b 21/26; B01j 9/04

U.S. Cl. 23—162

5 Claims

Method and apparatus for converting ammonia into oxides of nitrogen by forming a mixture of ammonia and an oxidizing gas into a plurality of streams, passing the streams through a catalytic mesh and reducing the pressure of the resultant gas.

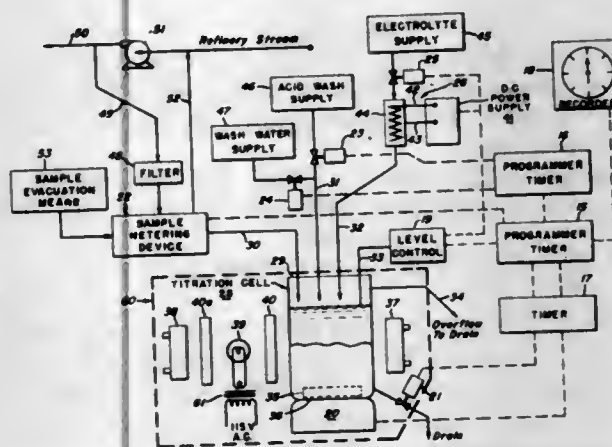
**3,462,244**  
**METHOD AND APPARATUS FOR MEASURING REACTIVE CONSTITUENTS**  
Frank A. Lelsey, Chicago, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana  
Filed Feb. 28, 1966, Ser. No. 538,444  
Int. Cl. G01n 33/20

U.S. Cl. 23—230

7 Claims

Method and apparatus for measuring the amount of an alkyl lead compound in a sample of hydrocarbon

liquid. An excess of 10–100 fold of silver ions is added to a predetermined sample amount of hydrocarbon liquid contained in a colorimetric cell. The alkyl lead compound



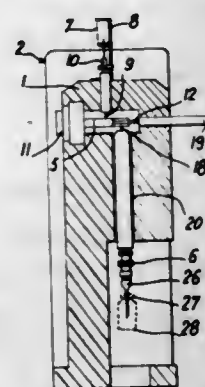
reacts with the silver ions to produce silver metal, and the amount of silver metal so formed is then photoelectrically measured. The cell is periodically washed with an acid to clean it of silver metal.

**3,462,245**  
**DEVICE FOR THE PRODUCTION OF RADIOELEMENTS**  
Marcel Eudes, Courbevoie, and Pierre de Vernejoul, Hopital D'Orsay, France, assignors to Societe Saint-Gobain Techniques Nouvelles, Courbevoie, France  
Filed Feb. 7, 1966, Ser. No. 525,728  
Claims priority, application France, Feb. 10, 1965, 5,010

U.S. Cl. 23—252

Int. Cl. B01d 59/28

4 Claims



A short-lived daughter product is separated from a long-lived radioelement fixed on an ion-exchange resin contained in an active ampoule situated within a lead shield by an eluant for the short-lived daughter product drawn through a hypodermic needle into a pump body from a supply ampoule and then pumped into the active ampoule. The eluate from the active ampoule passes by way of another hypodermic needle through the stopper of a retaining ampoule containing an inactive resin and thence from the device through a bacteriological filter.

**3,462,246**  
**FLUIDIZED BED REACTOR WITH IMPROVED CONSTRICTION PLATE**

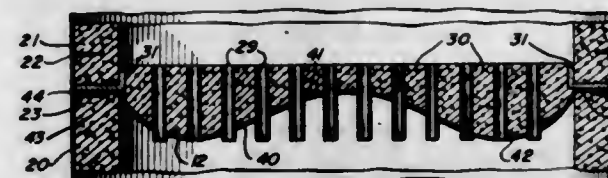
George G. Copeland, Wheaton, Ill., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware  
Continuation-in-part of application Ser. No. 460,163, June 1, 1965. This application May 16, 1966, Ser. No. 557,593  
Int. Cl. F27b 15/02; B01j 9/18

U.S. Cl. 23—284

5 Claims

An improved constriction plate for walled fluidized bed reactors wherein the construction plate is dished radially

from the center in one axial direction perpendicular to the constriction plate and then dished in the other direction. Refractory insulation is placed on the top side of the plate and tubular conduits extend through orifices in the plate, surrounded by protective tubes on the upper



side of the plate. An alternate supporting skirt and a stiffening ring bar is provided to enable the plate to expand and contract uniformly and substantially only in horizontal or lateral movement with relatively minor deformation of the constriction plate.

**3,462,247**  
**PREPARATION OF PHOSPHONITRILIC CHLORIDE POLYMERS**

Norman Lovelace Paddock, Wolverhampton, and Harold Trevor Searle, Birmingham, England, assignors, by mesne assignments, to Hooker Chemical Corporation, New York, N.Y., a corporation of New York  
No Drawing. Continuation of application Ser. No. 807,748, Apr. 21, 1959. This application Aug. 7, 1964, Ser. No. 388,291  
Int. Cl. C01b 25/00, 21/00, 7/02

U.S. Cl. 23—357

2 Claims

The time for the reaction, in solution, of phosphorus pentachloride with ammonium chloride to form polyphosphonitrilic chlorides is materially reduced by incorporating in the reaction medium, as catalyst, a metallic salt which is capable of forming a coordination complex with ammonia or an amine.

**3,462,248**  
**METALLURGY**  
Sidney G. Roberts, Opportunity, and Maurice C. Fetzer and James B. Hess, Spokane, Wash., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware  
Original application Dec. 14, 1956, Ser. No. 628,297, now Patent No. 2,967,351, dated Jan. 10, 1961. Divided and this application Jan. 18, 1960, Ser. No. 2,918

U.S. Cl. 29—182

19 Claims

Aluminum base alloys having superior elevated temperature properties when formed into articles from powdered metal containing alloying additions in amounts exceeding that which can be satisfactorily added by ordinary casting techniques.

**3,462,249**  
**FUEL OIL COMPOSITIONS CONTAINING GRAFTED POLYMERS**

Norman Tunkel, Perth Amboy, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware  
No Drawing. Filed Mar. 31, 1967, Ser. No. 627,297  
Int. Cl. C101 1/22, 1/18, 1/16

U.S. Cl. 44—62

8 Claims

Novel oil soluble ethylene grafted hydrocarbon polymers, copolymers, or terpolymers are added in an amount between about 0.01 and about 10.0 wt. percent to middle distillate fuels, lubricating oils, residual fuels or reduced crude oils to lower their pour points and/or improve their flowability and pumpability.

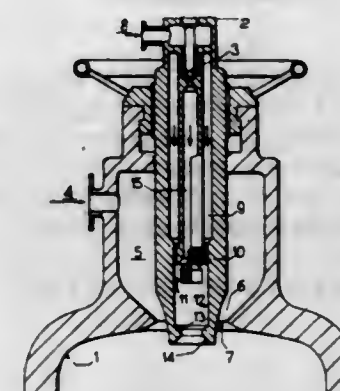
**3,462,250**  
**PROCESS AND APPARATUS FOR THE PARTIAL COMBUSTION OF LIQUID HYDROCARBONS TO GASEOUS MIXTURES CONTAINING HYDROGEN AND CARBON MONOXIDE**

Gianfranco Bedetti, Milan, Italy, assignor to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy  
Filed July 2, 1965, Ser. No. 469,183  
Claims priority, application Italy, July 7, 1964, 14,986/64

U.S. Cl. 48—95

Int. Cl. C01b 2/14

6 Claims



Process and apparatus for the production of gaseous mixtures containing hydrogen and carbon monoxide by partial combustion at high pressures of a liquid hydrocarbon with a process gas consisting essentially of an oxygen containing gaseous oxidizer with an addition of steam. The process comprises separately introducing the liquid hydrocarbon fuel and the process gas into a reaction chamber, accelerating the process gas immediately before said introduction into the reaction chamber and impinging the process gas at high velocity upon the liquid fuel immediately after introduction of the liquid into the chamber as a continuous film whereby the liquid film is atomized by the high velocity process gas stream.

**3,462,251**  
**AQUEOUS BASED LAPPING COMPOSITION**  
Thomas J. Whalen, Detroit, and Roy L. Van Alsten, Redford Township, Wayne County, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware  
No Drawing. Filed Oct. 8, 1965, Ser. No. 494,246  
Int. Cl. C08h 17/12

U.S. Cl. 51—302

2 Claims

Aqueous base lapping compositions having a viscosity of 100–1000 centipoises are made of a particulate abrasive, a xanthan gum thickener, and an emulsified oil. The compositions are useful in lapping metals including ferrous components such as automotive hypoid gearsets.

**3,462,252**  
**METHOD OF FORMING A GLASS BODY OF DEVITRIFIABLE GLASS AND DEVITRIFYING THE SAME**

Frank Veres, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio  
No Drawing. Filed Sept. 11, 1964, Ser. No. 395,902  
Int. Cl. C03b 23/20, 29/00

U.S. Cl. 65—18

10 Claims

Devitrified articles made by mixing together at least two different glasses in powdered form, one of the glasses, referred to as the first glass, being a devitrifiable glass and composing at least 10% by volume of the mixture and having a devitrification temperature at least 100° C. below the fiber softening temperature of at least 55% by volume of the total glass in the mixture, heating said mixture to at



least the devitrification temperature of the first glass, maintaining the mixture thereat to cause devitrification of the first glass and thereby form a continuous skeletal network of devitrified glass with the mixture, and then further heating the mixture to within 10° C. of the fiber softening temperature of the remaining glass in the mixture without exceeding the liquidus temperature of the devitrified glass, then permitting the mixture to cool to a temperature below the fiber softening temperature of the remaining glass in the mixture to form another continuous skeletal network interlocking in and around the skeletal network formed by the devitrification of the first glass.

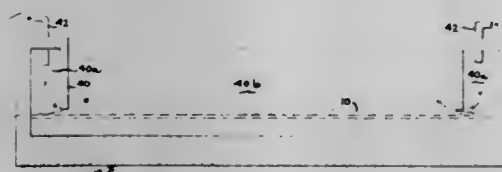
3,462,253

# MANUFACTURE OF FLOAT GLASS USING ENCLOSED BATH ZONES

John E. Sensi, Arnold, Pa., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania  
Continuation-in-part of application Ser. No. 475,949, July 30, 1965. This application Mar. 20, 1968, Ser. No. 714,508

Int. Cl. C03b 18/00, 39/00  
U.S. Cl. 65—99

4 Claims



In the float glass process, enclosed zones are maintained over the liquid of the bath which is exposed outwardly of the edges of the glass ribbon thereon and a protective atmosphere is introduced into these zones. Another zone is maintained over the glass ribbon and a different atmosphere is maintained over and in contact with the glass.

3,462,254

# METHOD OF COATING FIBERS AND FIBERS FORMED THEREFROM

Alfred Marzocchi, Cumberland, R.I., and Gerald E. Rammel, North Attleboro, Mass., assignors to Owens-Corning Fiberglass Corporation, a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 508,145, Nov. 16, 1965, which is a continuation-in-part of application Ser. No. 220,853, Aug. 31, 1962, which in turn is a division of application Ser. No. 11,956, Mar. 1, 1960. This application June 14, 1967, Ser. No. 645,865

Int. Cl. C03b 37/00

U.S. Cl. 65—3 12 Claims  
A new and improved method of forming glass fibers wherein a fluid coating is applied to the fibers as they are formed from molten glass and thereafter the fluid coating is transformed to a gel before the fibers are collected into a package as by being wound into a coiled package.

3,462,255

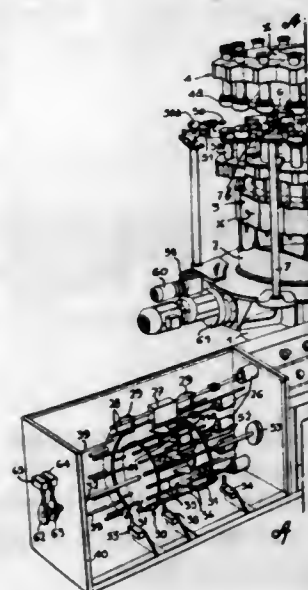
# APPARATUS FOR CONTROLLED HEAT SOFTENING OF GLASS TUBING

Dieudonné-Marie Couquelet, Esneux, Belgium, assignor to Société d'Etudes et de Participations Couquelet, en abrégé "SEPA," Société Anonyme, a corporation  
Filed Nov. 25, 1966, Ser. No. 596,997  
Claims priority, application Belgium, Dec. 24, 1965, 40,758, Patent 674,316

Int. Cl. C03b 23/12

U.S. Cl. 65—158 18 Claims  
A machine for measuring the relative diameter of the points of ampules formed from several glass tubes ar-

ranged in series about a vertical axis and adjusting the relative time of the next heating of the same glass tube



according to the measured thickness of the preceding point of the ampule formed from the same tube.

3,462,256

# PROCESS FOR PRODUCING UREA-FORMALDEHYDE AQUEOUS CONCENTRATES

Ged H. Justice, New York, N.Y., and Richard E. Formaini, Colonial Heights, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York  
No Drawing. Filed Oct. 31, 1966, Ser. No. 591,033

Int. Cl. C05c 9/02

U.S. Cl. 71—28 7 Claims  
Aqueous solutions of 80–90% partially reacted urea and formaldehyde in mol ratio of 1–2:1 is prepared by adding 0.3–6% ammonia to an aqueous mixture of the partially reacted urea and formaldehyde, heating the mixture at pH 8.5–10, then at pH 7–8.5 until 50–80% of the formaldehyde is in the form of methylene groups. The resulting clear solution is stable for at least 30 days at 20°–25° C. and for at least 7 days at 0° C.

3,462,257

# TURF MANAGEMENT WITH AZAURACILS PLUS FERTILIZER

George R. McVey, John A. Long, and Richard J. Timmons, Marysville, Ohio, assignors to The O. M. Scott & Sons Company, Marysville, Ohio, a corporation of Ohio

Filed Sept. 13, 1965, Ser. No. 486,810

Int. Cl. A01n 21/00; C05g 3/00; A01c 21/00

U.S. Cl. 71—76 16 Claims  
The production of high quality turfs having low rates of vertical growth by the co-ordinated application of fertilizers containing nitrogen in plant available form and 6-azauracil or a derivative or salt thereof to the turf.

3,462,258

# SYNERGISTIC HERBICIDAL COMPOSITIONS OF IOXYNIL AND BUTURON

Gerbert Linden, Peter Schicke, and Hermann Korner, Ingelheim am Rhein, Germany, assignors to C. H. Boehringer Sohn, Ingelheim am Rhein, Germany, a limited partnership

No Drawing. Filed Nov. 21, 1966, Ser. No. 595,581  
Claims priority, application Germany, Nov. 24, 1965, B 84,671

Int. Cl. A01n 9/20

U.S. Cl. 71—105 4 Claims  
Synergistic herbicidal compositions containing N-(4-chlorophenyl)-N'-methyl-N'-isobutynyl-urea and 3,5-di-iodo-4-hydroxybenzonitrile as active ingredients.

3,462,259

# METHOD OF CONTROLLING WEEDS

Ronald B. Ames, Naugatuck, and Allen E. Smith, Bethany, Conn., assignors to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Filed Nov. 2, 1966, Ser. No. 591,442

Int. Cl. A01n 9/20, 7/00

U.S. Cl. 71—121 10 Claims  
3,3-dialkyl-1-(nitrophenyl)triazenes are found to be good preemergent selective herbicides.

3,462,260

# METHOD OF TREATING IRON POWDER

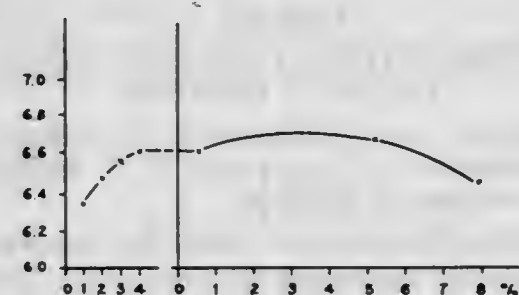
Karl Gunnar Thafvelin, Yngve Wahlberg, and Georg Heinrich Artur Gerhard Bockstiegel, Hoganas, Sweden, assignors to Hoganas-Billesholms Aktiebolag, Hoganas, Sweden, a company of Sweden

Filed Mar. 1, 1966, Ser. No. 530,896

Claims priority, application Sweden, Mar. 9, 1965, 3,079/65

Int. Cl. B22f 1/00

U.S. Cl. 75—5 2 Claims



The green strength of a reduced iron powder that has been cold-worked to improve its compressibility is increased by first oxidizing the powder to a H<sub>2</sub>-loss of 1–10% and then reducing the oxidized powder.

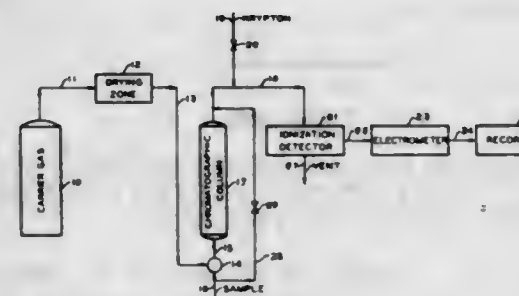
3,462,261

# ANALYSIS METHOD EMPLOYING IONIZATION POTENTIAL OF METASTABLE KRYPTON ATOMS FOR DETECTING UNSATURATED COMPOUNDS

Robert S. Silas, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed May 24, 1965, Ser. No. 458,221

Int. Cl. G01n 31/08

U.S. Cl. 73—23.1 8 Claims



A process for analyzing a vaporous mixture of saturated and unsaturated organic compounds for the presence of said unsaturated compounds comprising passing the mixture through an ionization detection zone in the presence of krypton, forming metastable krypton atoms by radiation within said zone, which atoms ionize only the unsaturated molecules having ionization potentials below 10 electron volts, and transmitting from said zone an electrical signal representative of the concentration of unsaturated compounds in said mixture. In a second modification the mixture with krypton as a carrier gas is run through a chromatographic zone before entering the

ionization detection zone, so that the different molecular weight unsaturated compounds may be spaced in time of arrival at the detection zone by their differential time of passage through the chromatographic zone and thereby further identified. A third modification of the invention differs from the second modification by using in place of krypton an inert diatomic carrier gas, such as hydrogen, nitrogen or carbon dioxide, which does not form relatively long-lived metastable atoms on being exposed to radiation (as krypton does). This diatomic carrier gas carries the hydrocarbon mixture through the chromatographic zone and then krypton is added before passing the effluent from the chromatographic zone into the ionization detection zone.

3,462,262

# PROCESS FOR THE RECOVERY OF EXCESS CARBON FROM THE PRODUCT OF AN IRON ORE DIRECT REDUCTION

Walter Koch, Muhlheim, and Ottmar Zugel, Frankfurt, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany, and The Steel Company of Canada Limited, Hamilton, Ontario, Canada

No Drawing. Filed Sept. 8, 1965, Ser. No. 485,941

Claims priority, application Germany, Sept. 19, 1964, M 62,500

Int. Cl. C21b 13/08

U.S. Cl. 75—33 12 Claims  
After the removal of reduced iron values from a charge of iron ore, fuel and lime that has been processed in a reducing furnace the carbon content of the residue is also recovered by treatment with oil followed by floatation in water.

3,462,263

# REDUCTION OF IRON ORE

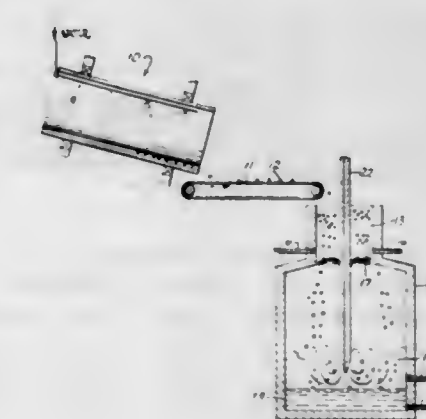
John H. Walsh, P.O. Box 233, Manotick, Ontario, Canada; and Hugh P. Hudson, 518 Piccadilly Ave.; John C. Botham, 840 Denison Crescent; and Joseph E. Landon, 1150 Meadowlands Drive, all of Ottawa, Ontario, Canada

Filed June 23, 1966, Ser. No. 559,865

Claims priority, application Canada, Aug. 11, 1965, 937,914, Patent 791,059

Int. Cl. C21b 11/00

U.S. Cl. 75—40 9 Claims



The invention relates to a process for the reduction of iron ore wherein pellets of finely divided coal and iron ore are initially subjected to a step which semi-cokes the coal in the pellets which are then immersed in a foaming body of slag to cause reduction of iron oxide in the pellets with formation of iron droplets thereon and evolution of carbon monoxide. Oxygen under pressure is injected into the slag body to cause combustion of the CO to CO<sub>2</sub> and to supply, as a result of said combustion, the thermal energy needed for reduction of the iron oxide.



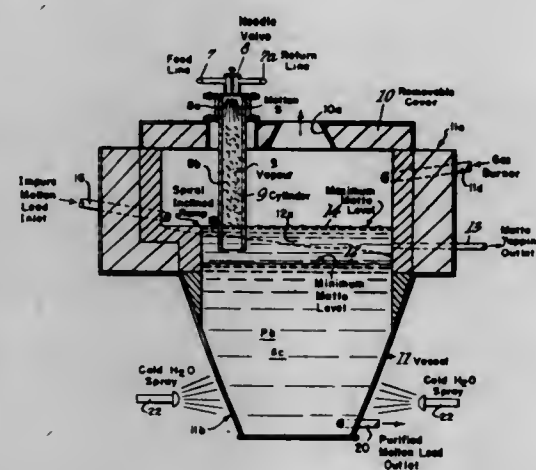
3,462,264

**SULPHUR INFUSION OF MOLTEN METAL**  
John Harvey Richards and John Frederick Castle, Avonmouth, England, assignors to Metallurgical Processes Limited, Nassau, Bahamas, a corporation of the Bahamas, and Imperial Smelting Corporation (N.S.C.) Limited, London, England, a British company  
Continuation-in-part of application Ser. No. 371,995, June 2, 1964. This application Apr. 18, 1968, Ser. No. 722,459

Claims priority, application Great Britain, June 6, 1963, 22,526/63  
Int. Cl. C22b 13/06

U.S. Cl. 75—78

12 Claims



An apparatus with a molten sulphur supplying conduit connects a treating chamber for purifying a body of impure molten metal confined therein, the molten sulphur being vaporized in the conduit and brought into contact with the molten metal to convert its metal impurities into removable sulphur compounds.

3,462,265

**PHOTOGRAPHIC PRODUCTS AND PROCESSES EMPLOYING ALUMINUM IN THE PHOTOSENSITIVE ELEMENT**

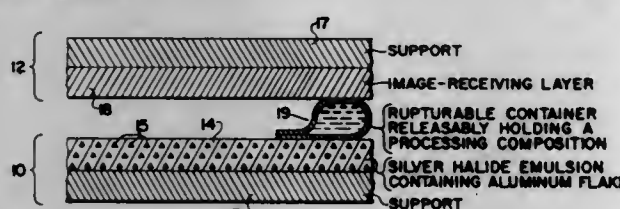
Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Mar. 30, 1966, Ser. No. 538,729

Int. Cl. G03c 5/54, 1/06

U.S. Cl. 96—29

8 Claims



The utilization of particulate aluminum in a photo-sensitive element adapted to be used in a diffusion transfer process in combination with the support for said element is sufficient to provide the requisite opacity to enable processing of said element under ambient light conditions.

3,462,266

**PHOTOGRAPHIC COLOR DIFFUSION TRANSFER PROCESSES AND ELEMENTS**

Paul H. Stewart, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 5, 1967, Ser. No. 665,296

Int. Cl. G03c 5/54, 5/30

U.S. Cl. 96—29

16 Claims

Oxazines and bisoxazines which are cleaved to hydroquinones under alkaline conditions, are useful auxiliary developer precursors in dye developer image transfer systems. Novel hydroxyalkylaminoalkylhydroquinone auxiliary developers are provided.

3,462,267

**OFFSET PRINTING PLATES**

Michael N. Giangualano, Fullerton, Irvin W. Martenson, Pacific Palisades, and Lawrence H. Ott, Pasadena, Calif., assignors to Dynachem Corporation, Downey, Calif., a corporation of Delaware

Continuation-in-part of application Ser. No. 229,605, Oct. 10, 1962. This application July 5, 1966, Ser. No. 562,691

Int. Cl. G03f 7/10; B41m 1/06

U.S. Cl. 96—33

5 Claims

An offset printing plate is produced by exposing to light a photographic element comprising a base coated with a sensitized prepolymer of an aryl allyl ester resin. The base is the type capable of holding water when treated with lithographic etch solution. The resin is hardened in the exposed areas which constitute the printing surface. Unhardened resin is dissolved from the non-image areas.

3,462,268

**LIGHT-SENSITIVE LAYERS FOR PHOTO-CHEMICAL PURPOSES**

Justus Danhauser and Willibald Pelz, Leverkusen, Germany, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a company of Belgium

No Drawing. Filed June 14, 1965, Ser. No. 463,938

Claims priority, application Germany, Mar. 3, 1965, A 48,539

Int. Cl. G03f 7/08; G03c 5/00

U.S. Cl. 96—35.1

13 Claims

Light-sensitive layers for photochemical purposes, e.g., for acid-resistant etching resists useful in making printed circuits, stencil masters, and the like, are disclosed. These light-sensitive layers contain a polymer capable of photochemical cross-linking. The polymer contains aromatic azidosulphonyl groups linked to the polymer chain by means of a urethane radical. Especially suitable polymers are the hydroxyl-containing polyesters, polyethers, polyurethanes, and polyamides wherein at least some of the hydroxyl groups have been replaced by the urethane radicals which link the aromatic azidosulphonyl groups to the polymer chain. Optionally, the light-sensitive photographic material can also contain a sensitizer such as Michler's ketone, dimethylaminobenzaldehyde, 4-H-quinolizine-4-one, a naphthothiazoline, a cyanine, and a triphenyl methane dye.

3,462,269

**STABILIZED COLOR DEVELOPING SOLUTION CONTAINING DIETHYLENETRIAMINE PENTAACETIC ACID**

Vincent Anthony Tassone, Rochester, N.Y., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware

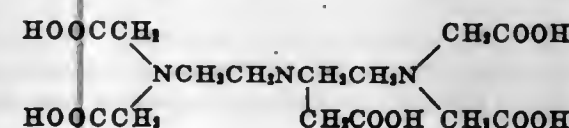
No Drawing. Filed Aug. 1, 1966, Ser. No. 569,096

Int. Cl. G03c 5/30, 7/30

U.S. Cl. 96—55

1 Claim

In a photographic developing composition comprising an alkaline solution of a phenylenediamine color developer, alkali metal sulfite and a hydroxylamine salt, the improvement which comprises from 0.1 to 3 grams per liter of diethylenetriamine pentaacetic acid having the formula



3,462,270

**COLOR PHOTOGRAPHY UTILIZING 1-FLUORO-ALKYL - 2 - PYRAZOLINE - 5 - ONE COLOUR COUPLERS**

Hector Alfons Vanden Eynde, Mortsel-Antwerp, Robert Joseph Pollet, Berchem-Antwerp, and Arthur Henri De Cat, Mortsel-Antwerp, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a company of Belgium  
No Drawing. Filed July 14, 1965, Ser. No. 472,017  
Claims priority, application Great Britain, July 24, 1964, 29,740/64

Int. Cl. G03c 7/32

U.S. Cl. 96—56.5

8 Claims

Color couplers of the 2-pyrazoline-5-one and bis(2-pyrazoline-5-one) type, which form azomethine dyestuffs when reacted with the oxidation product of aromatic primary amines, are disclosed. These color couplers contain a fluoroalkyl radical at the 1-position, and are capable of forming dyestuffs of unusually good light stability. The color couplers can be employed in photographic emulsions for use in photographic elements, particularly multi-layer photographic materials containing at least one green-sensitized silver halide emulsion layer. In such multi-layer materials, the silver halide layer and the color couplers cooperate to produce a magenta-colored photographic image upon exposure and color development.

3,462,271

**DIAZOTYPE MATERIAL**

Herbert Rauhut and Oskar Süss, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Keuffel & Esser Company, Hoboken, N.J.

No Drawing. Filed May 5, 1966, Ser. No. 547,738

Claims priority, application Germany, May 8, 1965, K 56,060

The portion of the term of the patent subsequent to Sept. 13, 1983, has been disclaimed

Int. Cl. G03c 1/54; C07c 113/00

U.S. Cl. 96—91

11 Claims

Diazotype material of improved stability and light sensitivity is provided through the use of p-phenylenediamine diazonium compounds which are meta-substituted with alkoxy substituents and which additionally bear a hydroxyalkyl substituent in the p-amino group.

3,462,272

**TETRAAZAINDENES AS ANTIFOGGANTS**

George F. Duffin, Romford, and James W. Hogg, Harlow, England, assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Jan. 15, 1965, Ser. No. 425,941

Claims priority, application Great Britain, Jan. 29, 1964, 3,850/64; Sept. 4, 1964, 36,350/64

Int. Cl. G03c 1/34; C07d 51/44

U.S. Cl. 96—109

12 Claims

Light-sensitive silver halide emulsions containing novel tetraazaindene compounds are shown. The tetraazaindene compounds serve to reduce fog without significantly reducing the sensitivity of the emulsion.

3,462,273

**2-DIOXOLANONES (CARBOXYLIC ACID ESTERS) PROTEIN HARDENERS**

Francis Jeanne Sels, Kontich, Jozef Frans Willems, Wilrijk-Antwerp, and Marcel Nicolas Vrancken, Hove, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a company of Belgium

No Drawing. Filed July 11, 1966, Ser. No. 564,037

Claims priority, application Great Britain, Oct. 8, 1965, 42,775/65

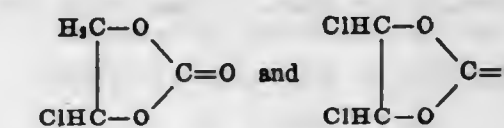
Int. Cl. G03c 1/30

U.S. Cl. 96—111

5 Claims

1. A method of hardening proteinaceous material in which this proteinaceous material is reacted with 4-chloro-

1,3-dioxolanone-2 or 4,5-dichloro-1,3-dioxolanone-2 corresponding to the respective following formulae:



3,462,274

**LIGHT-SENSITIVE LAYERS FOR GRAPHIC ARTS PURPOSES USING POLYVINYL BENZYL N-(4-VINYLPYRIDINIUM) SALTS**

Helmut Maeder, Leverkusen, and Bernhard Seidel, Cologne-Mulheim, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 6, 1966, Ser. No. 540,511

Claims priority, application Germany, Apr. 8, 1965, A 48,874

Int. Cl. G03c 1/70, 5/00

U.S. Cl. 96—115

5 Claims

Light-sensitive material having, on a support, a layer of a polymer susceptible to cross linking whereby it becomes insolubilized when exposed to light, and a photosensitizer therefor, the polymer containing in its structure at least 10 mol percent of a polymerizable vinylbenzyl-N-(4-vinyl)-pyridine quaternary salt wherein the 4-vinyl group has an aryl, thienyl or furyl group in  $\beta$ -position, or a vinylene homolog of such salt.

3,462,275

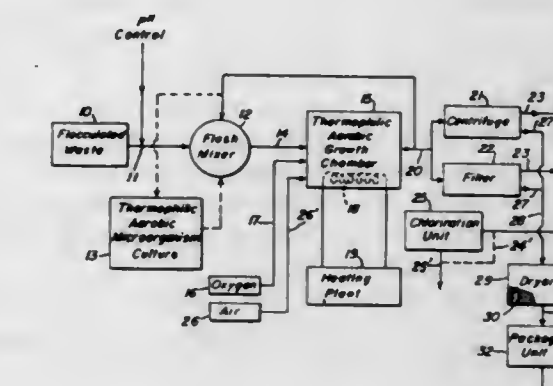
**WASTE CONVERSION PROCESS AND PRODUCT**  
Winthrop D. Bellamy, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Jan. 31, 1968, Ser. No. 702,119

Int. Cl. A23k 1/00

U.S. Cl. 99—9

12 Claims



Solid, organic, biodegradable waste materials are treated with selected thermophilic microorganisms and heated to temperatures of from 45° C. to 80° C. with agitation while introducing oxygen to the mixture. The thermophilic microorganisms multiply under these conditions and convert the organic biodegradable waste materials to cellular proteinaceous materials and other cellular compounds. Pasteurized cellular proteinaceous materials and other pasteurized cellular compounds, which find utility as animal feed supplements and as sources of extractable proteins, are produced by employing temperatures of over 55° C. The pasteurized liquid simultaneously produced can be discharged without further treatment unless the phosphorus or nitrogen content are objectionable.



3,462,276

**PROCESS FOR PRODUCING A TUBULAR, PUFFED PRODUCT**

John O. Benson, Mayer, Minn., assignor to General Mills, Inc., a corporation of Delaware

Filed Jan. 29, 1965, Ser. No. 429,171

Int. Cl. A231 1/18, 1/10

U.S. Cl. 99—81

4 Claims

Tubular puffed snack products are produced by extruding a cooked dough in a tubular configuration at a given temperature and prescribed dimensions, cutting the tube into specified lengths, drying and puffing. The puffed products may be filled with an edible filling.

3,462,277

**METHOD OF SHAPING A CEREAL PRODUCT**

Robert R. Reinhart, Des Plaines, Ill., assignor to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey

Filed Sept. 26, 1966, Ser. No. 582,002

Int. Cl. A231 1/10

U.S. Cl. 99—81

3 Claims

1. In a process in which a cooked cereal dough is extruded to form a continuous extrudate and the extrudate is divided into segments by pinching of the extrudate on a pinch line, the method for forming a canoe-shaped cereal product comprising the steps:

- extruding a gelatinized cereal dough containing 13 to 35% moisture under expanding conditions through a substantially U-shaped orifice, thereby forming a continuous, moving, expanded plastic extrudate having a bi-lateral axis of symmetry, said plastic extrudate exhibiting tackiness for a momentary period of time,
- orienting said moving extrudate to direct the direction of motion along a line which is substantially perpendicular to said pinch-line,
- orienting said moving extrudate to cause said bi-lateral axis of symmetry to be substantially parallel to said pinch-line,
- maintaining the sides of said extrudate in a spaced-apart condition, thereby maintaining a substantially U-shaped cross section,
- pinching off segments of the extrudate so oriented by intermittently pinching the extrudate at the pinch-line, thereby providing canoe-shaped cereal pieces, said maintaining and said orienting steps and said pinching-off steps taking place in the momentary period of time in which the extrudate is tacky,
- setting the shape of the resulting canoe-shaped cereal pieces by immediately drying the segment to a moisture content below about 15%.

3,462,278

**METHOD OF COOKING FOWL**

John H. Mahon, Scott Township, Allegheny County, Pa., assignor to Calgon Corporation, a corporation of Delaware.

No Drawing. Continuation-in-part of application Ser. No. 490,643, Sept. 27, 1965. This application Aug. 5, 1968, Ser. No. 749,989

Int. Cl. A22c 21/00

U.S. Cl. 99—107

3 Claims

A method of cooking fowl (poultry which is more than ten months of age) is provided to obtain reduced cooking time and greater de-boned yields by cooking said fowl in a heated solution of about 0.5% or more of a non-cyclic phosphate of an alkali metal phosphate.

3,462,279

**FUDGE PROCESS**

Bojan Vospalek, Stamford, Conn., and John D. Bornberg, Evergreen Park, Ill., assignors to Standard Brands Incorporated, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 12, 1966, Ser. No. 541,965

Int. Cl. A23g 3/00

U.S. Cl. 99—134

7 Claims

The disclosure describes a process for manufacturing fudge. A fudge mix is prepared containing sucrose and other fudge ingredients and heated with stirring to remove a portion of the moisture from the mix. The mix is cooled, beaten until there is formed between 250 and 875 sucrose crystals in a film of the mix about 0.002 inch thick ascertainable with polarized light at a magnification of 100× per 650 micron square field. The major portion of the sucrose crystals are less than 45 microns. The mix is then worked while cooling to permit uniform growth of the sucrose crystals and extruded at a temperature at which it is shape retaining.

3,462,280

**METHOD OF PREPARING A CURED MEAT PRODUCT**

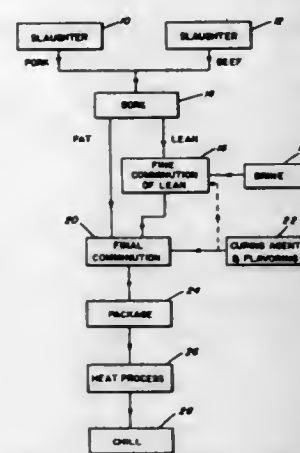
Paul W. Vogel and Leonard Yaiko, Pekin, Ill., assignors to Bird Provision Co., a corporation of Illinois

Filed May 6, 1966, Ser. No. 548,207

Int. Cl. A23b 1/03; B65b 25/06

U.S. Cl. 99—159

6 Claims



Curing time for heat processed, packaged meat is accelerated by introducing the curing agents to the meat undergoing comminution while in a fresh state shortly following slaughter of the animals from which the meat is removed. The meat is either packaged while warm in an air impermeable material for subsequent cooking to develop the cure or prechilled and packaged in a porous material for immediate cooking.

3,462,281

**DRY FOOD PRODUCTS AND PROCESS FOR SAME**

Robert L. Macy, Jr., Pennfield, Mich., assignor to Kellogg Company, Battle Creek, Mich., a corporation of Delaware

No Drawing. Filed Nov. 2, 1966, Ser. No. 591,424

Int. Cl. A23b 7/02, 1/04; B01d 1/00

U.S. Cl. 99—199

1 Claim

A method of freeze drying food in which frozen food is subjected to brief, intense heating of surfaces to slightly melt them, the food is then subjected to vacuum causing the melted surfaces to foam slightly or boil with the destruction of surface cells. The vacuum is maintained until evaporation causes refreezing of the surface, and then conventional freeze drying is conducted.

3,462,282

**PROCESS AND APPARATUS FOR PREPARING A SMOKING FLUID AND SMOKING FOODSTUFFS THEREWITH**

Gerhard Fessmann, Mozartstrasse 16, 7012

Fellbach, near Stuttgart, Germany

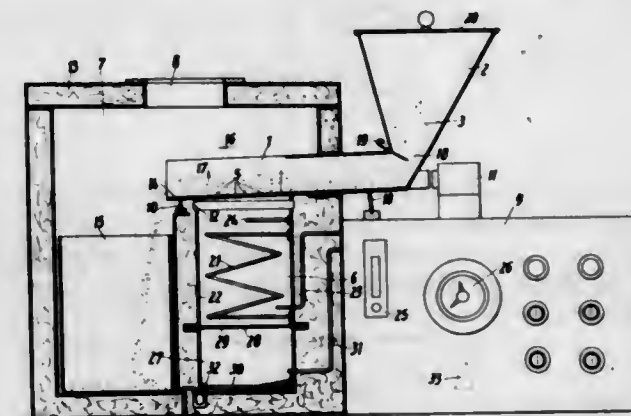
Filed Dec. 20, 1965, Ser. No. 515,126

Claims priority, application Germany, Dec. 23, 1964, F 44,795; Feb. 18, 1965, F 45,276; June 16, 1965, F 46,346; Apr. 6, 1965, F 45,739; Dec. 10, 1965, F 47,888

Int. Cl. A23b 1/04

U.S. Cl. 99—229

46 Claims



A process and apparatus for treating foodstuffs which includes a contacting finely divided wood chips or sawdust with superheated steam to effect thermal decomposition of at least a portion thereof and thereby create a smoking fluid. The smoking fluid is then brought into contact with the foodstuffs to be treated and imparts a smoke flavoring thereto in conjunction with the simultaneous cooking thereof when so desired.

3,462,283

**MONOFUNCTIONALLY SUBSTITUTED HYDROPHOBIC STARCH AND FILM-FORMING DISPERSIONS PREPARED THEREFROM**

Erling T. Hjermstad, Cedar Rapids, and Larry C. Martin, Alburnett, Iowa, and Kenneth W. Kirby, Winston-Salem, N.C., assignors to Penock &amp; Ford, Limited, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 28, 1967, Ser. No. 619,153

Int. Cl. C09j 3/06; C09d 3/20; C09k 3/00

U.S. Cl. 106—213

13 Claims

Hydrophobic starch dispersible in water as submicron sized particles to provide a film-forming dispersion is prepared by etherification of granule starch with a monofunctional etherifying agent providing the starch with ether-linked hydrophobic groups. The hydrophobic groups are alkyls of at least three carbons or aralkyls of at least seven carbons, and the starch is substituted to a level where it is essentially hydrophobic and does not gelatinize. The hydrophobic granule starch can be fragmented to subgranule particles of submicron size, which are dispersible in water to provide a film-forming dispersion.

3,462,284

**PRESSURE SENSITIVE ADHESIVE**

Leonard R. Vertnik, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Nov. 16, 1966, Ser. No. 594,687

Int. Cl. C08h 9/00

U.S. Cl. 106—219

4 Claims

This invention relates to a pressure sensitive adhesive composition including a pressure sensitive adhesive component which is the diethylene triamine polyamine of a polymeric fat acid having a dimeric fat acid content of not less than 80% by weight and an amine to carboxyl ratio being greater than 1.55:1 and less than 1.7:1.

3,462,285

**ELECTROMAGNETIC FUSION OF THERMOPLASTIC PRINTING**

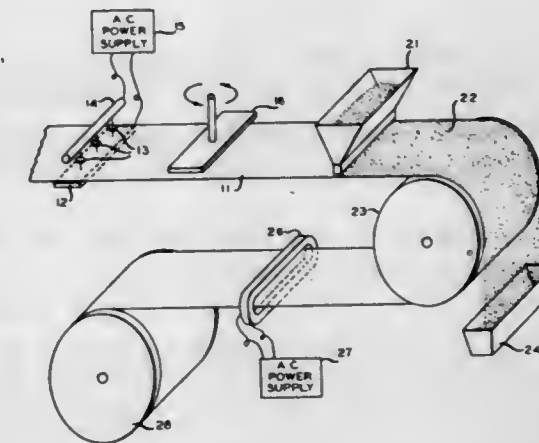
Stanley P. Thompson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 2, 1964, Ser. No. 408,297

Int. Cl. G03g 17/00, 19/00; B44d 1/094

U.S. Cl. 117—17.5

8 Claims



An image of thermoplastic ink is formed on a substrate by a suitable procedure, for example by selectively electrostatic charging the substrate and contacting the thus selectively charged substrate with the thermoplastic ink. The ink contains a component which has an absorption factor for electromagnetic energy substantially greater than the absorption factor of the substrate. The ink image is fused to the substrate by subjecting the substrate having the ink image thereon to electromagnetic energy to selectively heat the ink to fuse the ink without causing deformation of the substrate.

3,462,286

**METHOD OF COATING WEBS WITH PHOTOGRAPHIC EMULSIONS OR OTHER LIQUID COMPOSITIONS UTILIZING AN ELECTRIC FIELD**

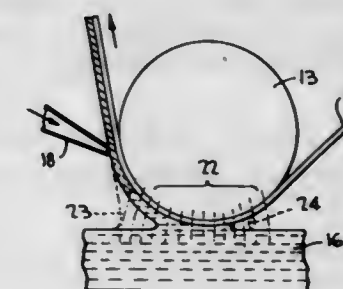
Wilfried Florent de Geest, Berchem-Antwerp, and Paul August Verkinderen, Edegem, Belgium, assignors to Gevaert Photo-Producten N.V., Nortsel-Antwerp, Belgium, a company of Belgium

Filed July 16, 1963, Ser. No. 295,549

Int. Cl. G03c 11/00; G03g; B05b 5/02

U.S. Cl. 117—34

8 Claims



1. The method of coating a flowable liquid composition having a specific conductivity of at least  $10^{-10}$  mhos/cc. onto the surface of a moving web of insulating material which comprises:

- (1) Passing said web along a path such that the back surface thereof moves in at least close proximity to an electrically conductive member extending substantially the width of the web;



- (2) Flowing said liquid composition in a continuous liquid mass onto said surface from a supply thereof maintained on the opposite surface of said web from said member in general alignment therewith; and
- (3) Establishing and maintaining an electrical field between said liquid composition and said member of a potential insufficient to cause ionization therebetween but sufficient to increase the contact area and adhesion between said liquid composition and the web surface.

3,462,287

# METHOD OF PREPARING COATED ASBESTOS CEMENT SHINGLE AND PRODUCT THEREOF

Herbert A. Marshall, Crown Point, Ind., assignor to United States Gypsum Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 15, 1966, Ser. No. 542,761

Int. Cl. C03c 17/32; B44d 1/46  
U.S. Cl. 117—37 9 Claims

A process for coating asbestos shingles with a discontinuous water-resistant coating is disclosed. This coating is applied to less than the entire area of the shingle of prevents warping. This discontinuous coating is applied to the back surface and then the shingle is predried at elevated temperatures. The shingle is then cooled and coated with a weather resistant coating on the other side. The weather resistant coating is applied to the whole shingle. The shingle is then baked to cure this coating and thereafter the moisture content is adjusted.

3,462,288

# ALUMINUM PLATING PROCESS

Donald L. Schmidt and Reinhold Hellmann, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 20, 1966, Ser. No. 558,583

Int. Cl. C23c 3/00  
U.S. Cl. 117—37 53 Claims

Aluminum is plated on a substrate by contacting the substrate with aluminum hydride and a decomposition catalyst. The decomposition catalyst is a compound of a metal of Group IVb or Vb of the Periodic Table or mixtures thereof.

3,462,289

# PROCESS FOR PRODUCING REINFORCED CARBON AND GRAPHITE BODIES

Cornelius W. Rohl, Lewiston, N.Y., and James H. Robinson, Canoga Park, Calif., assignors, by mesne assignments, to The Carborundum Company, a corporation of Delaware

No Drawing. Filed Aug. 5, 1965, Ser. No. 478,033

Int. Cl. C23c 9/06, 13/00; B44d 1/46  
U.S. Cl. 117—46 15 Claims

Carbon or graphite reinforced articles are produced by (1) forming reinforcing fibers into a shape, without any binder; (2) holding the shaped fibers under a vacuum; (3) pressure impregnating the fibers with carbonizable binder; (4) compressing the fibers to remove excess binder; (5) curing and (6) carbonizing the remaining binder; and (7) repeating at least once the vacuum, impregnation, curing and baking operations. The articles are substantially free of internal cracks and voids, therefore of high strength, even at relatively low densities. As such, the articles are particularly useful in the aerospace industry, where strong, lightweight materials are required.

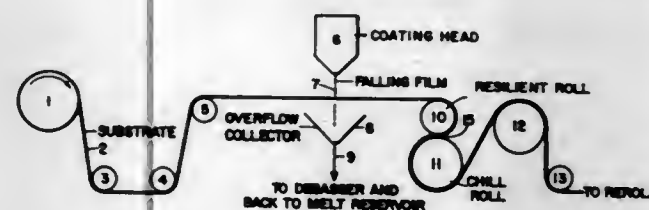
3,462,290

# CURTAIN COATING PROCESS AND APPARATUS

Herman J. Kresse, Houston, Tex., and Joe F. Alix, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Mar. 31, 1966, Ser. No. 539,046

Int. Cl. B44d 1/40, 1/44  
U.S. Cl. 117—65.2 9 Claims



In a curtain coater, a resilient roller is placed against the uncoated side of coated substrate as said substrate passes over a chill roller, which is spaced downstream from the falling curtain of coating material.

3,462,291

# STABILIZATION OF POLYPROPYLENE

Willard P. Conner, Chadds Ford, Pa., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Jan. 20, 1966, Ser. No. 521,824

Int. Cl. D06m 15/70; C08f 45/58  
U.S. Cl. 117—66 4 Claims

A process for improving the stability of a fabric containing stereoregular polypropylene yarn comprising (1) incorporating a phenolic antioxidant in the polypropylene yarn as it is made and (2) adding additional phenolic antioxidant to the yarn during subsequent laundering treatment.

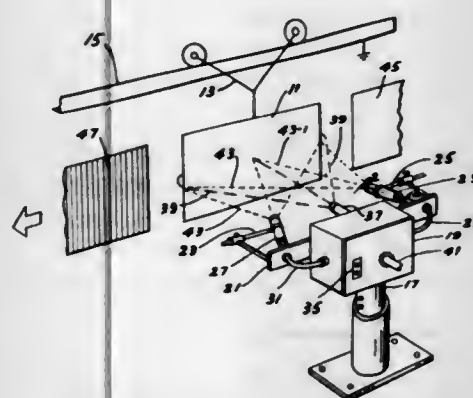
3,462,292

# ELECTRON INDUCED DEPOSITION OF ORGANIC COATINGS

Allen H. Turner, Ann Arbor, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Jan. 4, 1966, Ser. No. 518,695

Int. Cl. B05b 5/02  
U.S. Cl. 117—93.31 15 Claims



A method of electrostatically coating an object which comprises establishing an electric field between the object and a spraying device, spraying charged particles of coating material into said field toward the object and projecting an electron beam into the path of the charged particles to induce a further electrical charge on the particles. Where the coating material is polymerisable or crosslinkable, for example is vinylically unsaturated, the electron beam may also polymerise or crosslink the coating material.

3,462,293

# COATED EXPANDABLE POLYSTYRENE

William H. Voris, Mars, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed Nov. 7, 1966, Ser. No. 592,271

Int. Cl. B44d 1/48; B44c 1/06; C08d 13/24  
U.S. Cl. 117—100 4 Claims

Expandable polystyrene beads are uniformly coated with polymeric material to enhance the properties of the beads and articles made therefrom by a process comprising suspending the expandable beads in a stream of air at 100–130° F. and contacting the beads with an aqueous latex which dries in the heated air stream to form a uniform particulate or film coating.

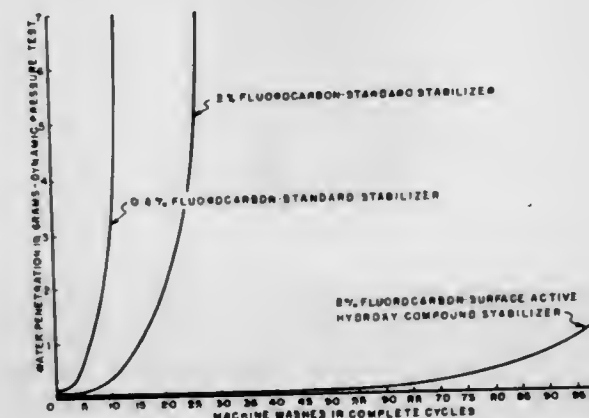
3,462,294

# COATING

Manuel A. Thomas, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of South Carolina

Continuation-in-part of application Ser. No. 430,252, Feb. 4, 1965. This application Feb. 29, 1968, Ser. No. 711,162

Int. Cl. B44d 1/00  
U.S. Cl. 117—121 9 Claims



This invention relates to a fabric coated with a fluorochemical having the ability to impart water and oil repellent properties to textile materials, wherein the fluorochemical system is stabilized against shear breakdown through the use of a water soluble, acid stable, alkyl ether of diethylene glycol. The durability of the water and oil repellency of the textile materials treated in this manner is greatly improved.

3,462,295

# PROCESS FOR RENDERING CELLULOSIC AND FIBROUS MATERIALS OIL-WATER-REPELLENT AND PRODUCT THEREFROM

Lyle F. Elmquist, North St. Paul, and Marwan R. Kamal, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Feb. 17, 1966, Ser. No. 528,065

Int. Cl. D06m 13/42; C09d 3/48  
U.S. Cl. 117—143 9 Claims

Fibrous materials are treated with a combination of treating agents including a polyisocyanate of the formula



where y is 0 or 1, x is 2 to about 4 and R is the hydrocarbon group of polymeric fat acids and a fluorocarbon oil repellent.

3,462,296

# FLUORINATED OIL- AND WATER-REPELLENT COPOLYMER AND PROCESS FOR TREATING FIBROUS MATERIALS WITH SAID COPOLYMER

Stuart Reynolds, Wilmington, and Thomas K. Tandy, Jr., Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 567,077, July 22, 1966. This application Apr. 27, 1967, Ser. No. 634,083

Int. Cl. D06m 1/02  
U.S. Cl. 117—161 21 Claims

An oil- and water-repellent polymer of



where  $R_1$  is perfluoroalkyl, 2-ethylhexylmethacrylate,  $\text{RCH}(\text{OH})\text{CH}_2\text{O}_2\text{CCR}'=\text{CH}_2$ , where R and R' are hydrogen or methyl, and, optionally, N-methylolacrylamide, all in specified proportions.

An oil- and water-repellent mixture of polymers comprising the above polymer and a polymer of a vinylidene monomer or a conjugated diene, in specified proportions.

Process of treating fabric materials with either of the above compositions by applying an aqueous emulsion of the polymer or mixture of polymers to the fabric under selected conditions.

The preparation of the polymer of the first paragraph by free radical initiation of aqueous emulsion of the monomers.

3,462,297

# ACID FUME STABILIZED SPANDEX

Bertie J. Reuben, Harold D. Kay, and Julian J. Hirshfeld, Decatur, Ala., and Earl H. Hartgrove, Jr., Parsippany, N.J., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 25, 1966, Ser. No. 574,898

Int. Cl. B44d 1/22; C08g 22/04  
U.S. Cl. 117—138.8 4 Claims

Gas fume fading of spandex fiber, a long-chain polymer comprised of at least about 85% segmented polyurethane, is stabilized against undesirable yellowing or dulling of said fiber by incorporating from about 0.25% to 15% by weight of spandex fiber of an organic acid chloride, such as acetyl chloride, lauroyl chloride, etc.

3,462,298

# OXIDE COATING FOR SEMICONDUCTOR SURFACES

Koichi Ikeda, Katsuji Minagawa, and Toru Nakagawa, Tokyo, Japan, assignors to Nippon Electric Company Limited, Minatoku, Tokyo, Japan, a corporation of Japan

Filed Sept. 8, 1965, Ser. No. 485,895  
Claims priority, application Japan, Sept. 9, 1964, 39/51,542

Int. Cl. H01b 1/08; C23c 13/02  
U.S. Cl. 117—201 1 Claim



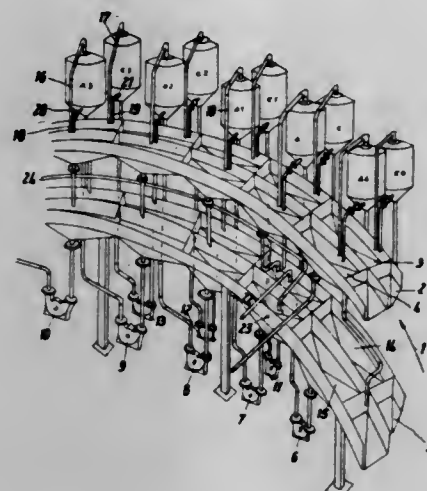
Contamination of the surfaces of semiconductor devices such as diodes, rectifiers, and transistors, is obviated by vapor depositing particularly over the junction area, a substance including a major percentage of lead oxide and a minor percentage of at least one metal oxide selected from among tungsten oxide, molybdenum oxide, chromium oxide, and germanium oxide.



**3,462,299**  
**CONTINUOUS TREATMENT OF LIQUIDS, SUCH AS SUGAR JUICE, WITH AN ADSORBENT**  
 Wilhelm Haberich and Erhard Hermann Gustav Felber, Braunschweig, Germany, assignors to Braunschweigische Maschinenbauanstalt, Braunschweig, Germany  
 Filed Jan. 11, 1966, Ser. No. 519,933  
 Claims priority, application Germany, Jan. 15, 1965, B 80,121

Int. Cl. C13d 3/14; B01j 1/04  
 U.S. Cl. 127—9

6 Claims



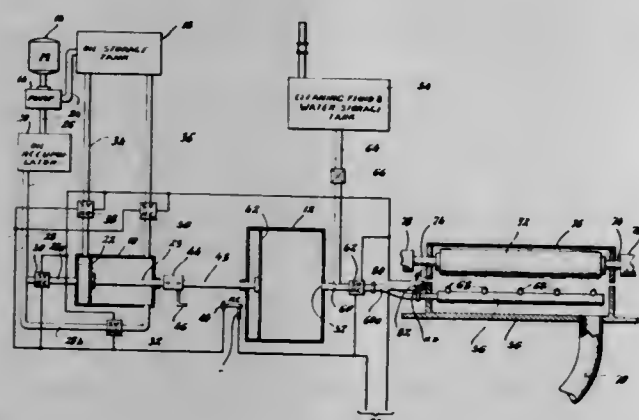
Apparatus for processes using regenerable materials includes a series of cells arranged for connection serially in groups of predetermined number, with means for sequentially changing the connections to each group so that as one cell in each group is connected, or disconnected, serially into, or out of, each group it is correspondingly disconnected from, or connected into, the adjacent group in the series.

## ERRATUM

For Class 134—21 see:  
 Patent No. 3,461,888

**3,462,300**  
**METHOD AND APPARATUS FOR SUPPLYING LIQUID UNDER CONSTANT HIGH PRESSURE AND ABRUPTLY CUTTING OFF THE SUPPLY**  
 Urey Hocutt, Baltimore, Md., assignor to The Johnson Fast Print Machine Corporation, Brooklandville, Md., a corporation of Maryland  
 Filed Nov. 18, 1966, Ser. No. 595,453  
 Int. Cl. B08b 3/02; 7/00; F17d 1/16  
 U.S. Cl. 134—33

6 Claims

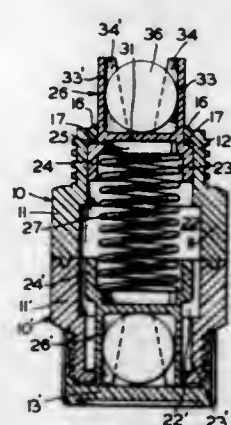


Jet streams of liquid under high pressure are directed against a rotatably mounted brush to wash it and to rotate it at high speed, and the supply of liquid is cut

off abruptly leaving the brush rotating at high speed to dry. The jet streams are supplied by forcing a predetermined volume of liquid from a single orifice container at a constant rate until the liquid is completely exhausted, using a first piston head which is tied to a second piston head which may be reciprocated in a smaller container by liquid introduced alternately on opposite sides, the tie rod between the two piston heads carrying means adjustable in position for triggering a normally closed valve thereby determining the length of stroke of the piston and the amount of liquid exhausted from the single orifice container by the first piston head.

**3,462,301**  
**CASE FOR CONTACT LENSES**  
 Irvin J. Gershen, Springfield, N.J., assignor to Opticase, Inc., Newark, N.J., a corporation of New Jersey  
 Filed June 19, 1967, Ser. No. 646,917  
 Int. Cl. B08b 3/04; A45c 11/04  
 U.S. Cl. 134—155

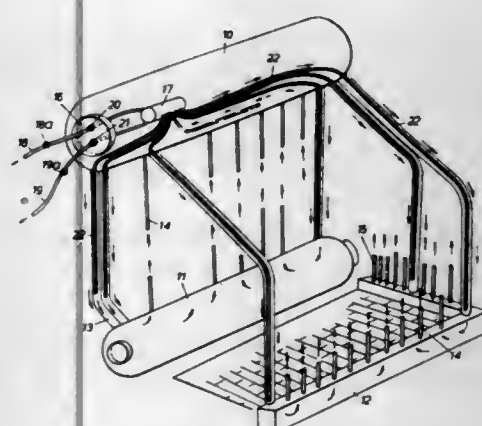
5 Claims



Spring-biased piston elements, provided with ports, terminate in lens-supporting members normally projecting from the ends of a tubular case containing a liquid. The lens-supporting members are depressed into the case by means of caps attachable to the ends of the case, whereby the supported lenses are immersed in the liquid.

**3,462,302**  
**IMMERSED PUMPS BOILER CLEANING**  
 Herbert C. Jackson, 12 Greasby Road, Upton, Wirral, England; William E. B. Havelock, 1 Fairfield Green, West Monkseaton, Northumberland, England; and Albert W. Morrison, 14 Neasdon Crescent, Tynemouth, Northumberland, England  
 Filed Mar. 2, 1965, Ser. No. 436,509  
 Int. Cl. B08b 9/06  
 U.S. Cl. 134—169

4 Claims

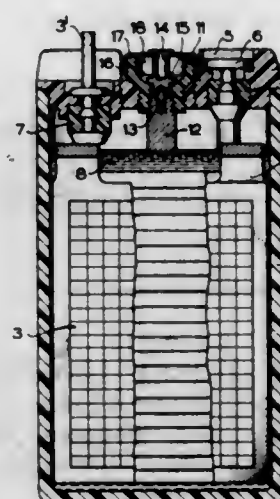


Apparatus for cleaning the internal surfaces of boilers and the like, wherein a pump is mounted on a false door

for the boiler and a manifold associated with the pump is located within the boiler. A plurality of pipes are connected between the manifold and the portions of the boiler system to be cleaned to provide circulation of the cleaning fluid through the portions of the boiler system to be cleaned during operation of the pump.

**3,462,303**  
**HERMETICALLY SEALED STORAGE BATTERY INCLUDING AN AUXILIARY ELECTRODE**  
 Harald Reber, Stuttgart-Feuerbach, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany  
 Filed Oct. 23, 1967, Ser. No. 677,178  
 Claims priority, application Germany, Oct. 28, 1966, B 89,602  
 Int. Cl. H01m 35/00, 13/00  
 U.S. Cl. 136—3

15 Claims



A hermetically sealed storage battery, preferably a lead-acid battery, in which oxygen gas is developed upon supercharging which oxygen gas collects in a gas space within the sealed housing of the storage battery, and including an auxiliary electrode at least partially located in the gas space and in contact with the liquid electrolyte, the auxiliary electrode forming with the negative electrode of the battery a voltage differential, the value of which changes with changes in the partial oxygen gas pressure in the gas space; and a control device for terminating a charging current when the partial oxygen gas pressure and thus the voltage differential reaches a predetermined value; the auxiliary electrode including as active constituent the combination of an organic redox system with an electrically conductive material which is inert with respect to the liquid electrolyte, such as graphite.

**3,462,304**  
**STORAGE BATTERY**  
 Karl Scholzel, Bad Soden, Germany, assignor to Werner Greutert, Baden, Switzerland  
 Filed Oct. 23, 1964, Ser. No. 406,057  
 Claims priority, application Switzerland, Oct. 25, 1963, 13,158/63  
 Int. Cl. H01m 27/04; B01k 3/12  
 U.S. Cl. 136—6

10 Claims

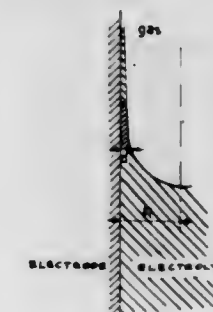
1. A rechargeable galvanic cell having charged and discharged states, said cell comprising a liquid electrolyte, a positive and a negative electrode in contact with said electrolyte, and wherein in the charged state of the cell the positive electrode contains mercury oxide, the negative electrode contains an amalgam of mercury and at least one metal of the group consisting of alkali and the alkaline earth metals, and the electrolyte contains at least one hydroxide selected from the group consisting of alkali and the alkaline earth metals.

**3,462,305**  
**MANUFACTURE OF TUBE ELECTRODES**  
 Erich Fahrbach, Weinheim, Bergstrasse, Germany, assignor to Carl Freudenberg, Weinheim, Bergstrasse, Germany, a corporation of Germany  
 Filed Oct. 10, 1966, Ser. No. 585,540  
 Claims priority, application Germany, Jan. 7, 1966, F 48,108  
 Int. Cl. H01m 1/04, 39/02

U.S. Cl. 136—38  
 Process for manufacturing tube electrodes which comprises forming a non-woven fabric of acid and/or alkali resistant fibers; impregnating such fabric with a relatively small amount of binder material; providing two of said fabrics superimposed one upon the other; sewing the two fabrics together along relatively parallel spaced paths; forming a series of tubes of said sewn-together fabrics, each of which tubes is bound by both the said fabrics and two adjacent stitch rows; and then reimpregnating the as formed row of tubes with additional binder and hardening such binder to provide a structure having significant dimensional stability.

**3,462,306**  
**HIGH TEMPERATURE FUEL CELL**  
 Friedrich August Schneider, Nuenen, Netherlands, assignor to Technische Hogeschool Eindhoven (Technical University Eindhoven), Eindhoven, Netherlands  
 Filed Oct. 29, 1965, Ser. No. 505,677  
 Claims priority, application Netherlands, Nov. 6, 1964, 6412977; May 11, 1965, 6505984  
 Int. Cl. H01m 27/04, 27/22  
 U.S. Cl. 136—86

14 Claims



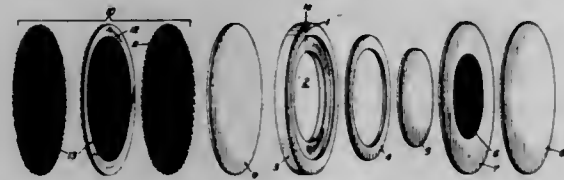
There is provided a novel high temperature fuel cell comprising a liquid electrolyte and electrodes of novel form. The portion of the electrodes which is inserted in the electrolyte comprises a finely porous layer and a coarsely porous layer on top of said finely porous layer. The electrodes are so disposed in the electrolyte and the diameter of the pores of the fine and porous layers are controlled so that the electrolyte rises partially into the coarsely porous layer thus providing contact in the coarsely porous layer between the electrolyte and the gaseous fuel or oxidant without the need for provision of excess pressure in the gaseous medium to obtain such contact within the electrode.

**3,462,307**  
**METAL-AIR BATTERY INCLUDING FIBRILLATED CATHODE**  
 John Davidson Voorhies, New Canaan, Conn., and Henry Patrick Landi, Yorktown Heights, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
 Filed Apr. 28, 1966, Ser. No. 546,012  
 Int. Cl. H01m 27/06  
 U.S. Cl. 136—86

1. A metal-air battery of the bi-polar type having positioned therein terminal electrical connectors comprising in combination: a plurality of electrically linked compressed cells, each of said compressed cells consisting



essentially of: (a) a metallized air spacer, (b) a graphite-filled, highly porous, extensively fibrillated polytetrafluoroethylene cathode structure which is gas permeable but aqueous electrolyte impermeable, (c) an insulated container adapted to be filled with an aqueous electrolyte,



(d) a metal anode, said graphite-filled cathode and metal anode directly contacting electrolyte in said container, and (e) means for electrically connecting said metal anode of one cell with said metallized air spacer of an abutting cell.

3,462,308

### METHOD AND MEANS FOR FLOWING A GAS IN A FUEL CELL SYSTEM

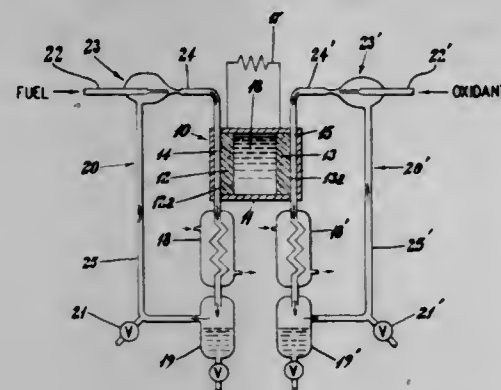
Charles E. Winters, Middleburg Heights, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Continuation-in-part of application Ser. No. 339,158, Jan. 21, 1964. This application Nov. 7, 1967, Ser. No. 691,085

Int. Cl. H01m 27/12

U.S. Cl. 136—86

11 Claims



Relates to apparatus, including an aspirator type pump, for flowing gas in a closed fuel cell electrode system at a flow rate which varies with the power output of the fuel cell.

3,462,309

### MAGNESIUM ANODE PRIMARY CELL

Burton J. Wilson, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Mar. 31, 1967, Ser. No. 628,250

Int. Cl. H01m 13/06, 17/02

U.S. Cl. 136—100

4 Claims

A primary cell having a magnesium anode and an inert metal cathode which is a metal wire screen of from about 8 to 40 mesh having an outer surface of granular palladium plating which may be deposited on an intervening electroless nickel plating.

3,462,310

### APPARATUS FOR THE CONVERSION OF SOLAR ENERGY TO ELECTRICAL ENERGY

Albert M. Rubenstein, 2709 Navarre Drive, Chevy Chase, Md. 20015

Filed Aug. 20, 1959, Ser. No. 835,150

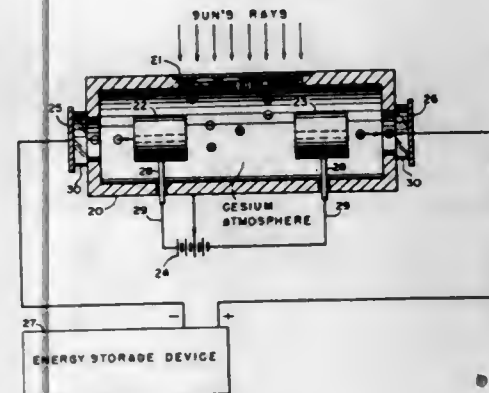
Int. Cl. H01m 15/02

U.S. Cl. 136—89

3 Claims

1. Apparatus for producing electrical energy from ionizing radiation comprising, an enclosed chamber, said cham-

ber containing cesium which will provide positively charged cesium ions and negative charged electrons in response to the ionizing radiation, said chamber having a portion thereof which will admit the ionizing radiation



and retain the cesium, means for separating the negative charged particles from the positive charged particles, and additional means for separately collecting the positive and negative charged particles.

3,462,311

### SEMICONDUCTOR DEVICE HAVING IMPROVED RESISTANCE TO RADIATION DAMAGE

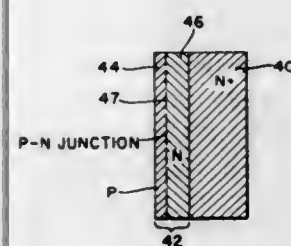
Bernd Ross, Arcadia, Calif., assignor, by mesne assignments, to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

Continuation of application Ser. No. 189,509, Apr. 23, 1962. This application May 20, 1966, Ser. No. 551,805

Int. Cl. H01l 15/02

U.S. Cl. 136—89

3 Claims



A semiconductor device having a drift field therein for increasing minority carrier diffusion length. The drift field is established either in an epitaxially grown region or in the bulk by diffusion of lithium. This presence of the drift field and/or the lithium makes a photovoltaic solar cell especially resistant to radiation damage.

3,462,312

### ELECTRICAL ENERGY STORAGE DEVICE COMPRISING FUSED SALT ELECTROLYTE, TANTALUM CONTAINING ELECTRODE AND METHOD FOR STORING ELECTRICAL ENERGY

Robert A. Rightmire, Twinsburg, and Edward S. Buzzelli, Cleveland, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 3, 1966, Ser. No. 518,050

Int. Cl. H01m 27/20

U.S. Cl. 136—100

8 Claims

An electrical energy storage device operable above the melting point of the electrolyte. The storage device comprises a fused salt electrolyte and a pair of spaced elec-

trodes immersed in the electrolyte, at least one of the electrodes comprising tantalum.

3,462,313

### ELECTRICAL ENERGY STORAGE DEVICE COMPRISING MOLTEN METAL HALIDE ELECTROLYTE AND TUNGSTEN-CONTAINING ELECTRODE

Robert A. Rightmire, Twinsburg, and Edward S. Buzzelli, Cleveland, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 3, 1966, Ser. No. 518,093

Int. Cl. H01m 27/04

U.S. Cl. 136—100

8 Claims

An electrical energy storage device is disclosed which comprises molten metal halide as electrolyte, one electrode of tungsten, tungsten halide or a mixture thereof, with or without carbon or other conductive material. The other electrode may be of aluminum-lithium alloy.

3,462,314

### PRODUCTION OF ION EXCHANGE MEMBRANE

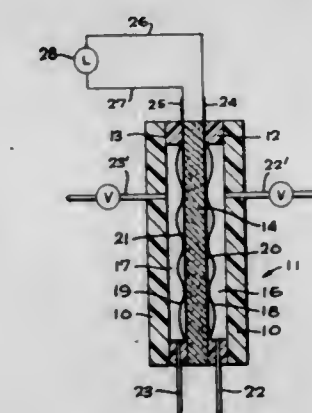
Carl Berger, Santa Ana, and Frank C. Arrance, Costa Mesa, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

Filed May 26, 1965, Ser. No. 458,855

Int. Cl. H01m 3/02

U.S. Cl. 136—153

12 Claims



Method of forming an ion conducting membrane, particularly adapted as a fuel cell membrane, by sintering a mixture of a substance selected from the group consisting of water insoluble hydrous metal oxides and water insoluble acid salts, such as hydrous zirconium dioxide, and an inorganic acid, e.g., phosphoric acid when such substance is a hydrous metal oxide, and a water balancing agent such as an aluminosilicate, treating the sintered mixture with an inorganic acid such as phosphoric acid, and resintering the so-treated sintered material, to provide an ion conducting membrane having low electrical resistance and substantially increased transverse strength.

3,462,315

### SWING MOUNTED THERMOCOUPLE ASSEMBLY

Marcel G. Verrando and Jay R. Kelchner, Cortland, N.Y., assignors to Pall Corporation, Glen Cove, N.Y., a corporation of New York

Filed Aug. 26, 1965, Ser. No. 482,716

Int. Cl. H01v 1/02

U.S. Cl. 136—230

11 Claims

A swinging link thermocouple assembly capable of being quickly into or out of contact with a surface whose temperature is to be measured is provided. The temperature sensing portion of the thermocouple assembly is mounted on a swinging link, one end of which is mounted on a guide member. The guide member is removably

mounted in a thermowell in a fixed position relative to the surface whose temperature is to be measured. Means, such as a handle, are provided for moving the tempera-



ture sensing element relative to the guide member thereby swinging the temperature sensing portion either into or out of contact with the surface whose temperature is to be measured.

3,462,316

### TERMINAL CONSTRUCTION

Harold A. McIntosh, South Pasadena, and Edmond M. Wagner, Sierra Madre, Calif.; said McIntosh assignor, by mesne assignments, to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Sept. 20, 1965, Ser. No. 488,472

Int. Cl. H01v 1/02, 1/00

U.S. Cl. 136—230

4 Claims



A thermocouple terminal including a terminal member having a longitudinal passageway and a radially extending recess opening at one end of said passageway. A conductor received by said terminal member in locking engagement within said passageway and recess to prevent rotational and longitudinal movement of said conductor relative to said terminal member.

3,462,317

### THERMOCOUPLE ASSEMBLY

James R. Baum, Scottsdale, and Raymond J. Jimenez, Phoenix, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Oct. 12, 1965, Ser. No. 495,158

Int. Cl. H01v 1/02

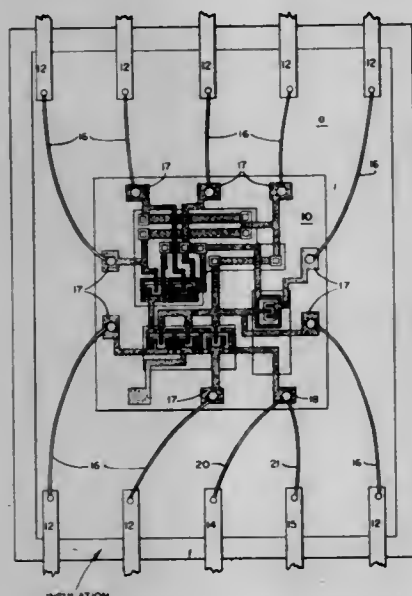
U.S. Cl. 136—230

3 Claims

1. A thermocouple for measurement of the temperature of a semiconductor device including in combination,



a semiconductor unit mounted in a package having leads connected to said package, a thermocouple having a joined end and two free ends and coupled with said joined

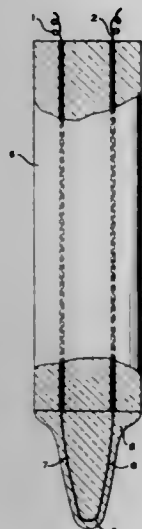


end to said semiconductor unit and with said two free ends to said corresponding leads, said package being sealed providing said thermocouple within said package.

### 3,462,318 HIGH TEMPERATURE ZIRCONIA COATED THERMOCOUPLE

Geir Bjornson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
Filed Apr. 5, 1965, Ser. No. 445,641

U.S. Cl. 136—233 Int. Cl. H01v 1/14 3 Claims



A thermocouple that accurately senses temperatures up to at least 3900° F. comprising a thermocouple element and a coating thereon which consists essentially of zirconia and which was applied thereto by plasma spraying.

**3,462,319  
PROCESS FOR COATING METAL SURFACES**  
Donald Harvey Campbell, Niagara-on-the-Lake, Ontario, Canada, assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York  
No Drawing. Filed June 13, 1966, Ser. No. 556,890  
Int. Cl. C23f 7/26, 7/14

U.S. Cl. 148—6.16 7 Claims  
A process for treating zinc, aluminum, or ferrous metal surfaces in which a layer of an aqueous mixture of chromic acid and phosphoric acid is applied to the surface to be treated. The water content of the layer is adjusted to within the range of about 4 to 20% by weight and an

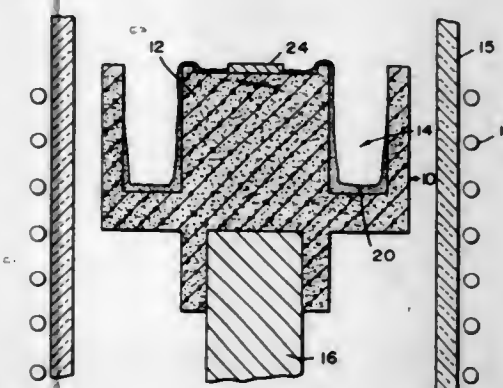
organic film forming resin is then applied to the water-containing surface. The aqueous chromic acid-phosphoric acid coating material desirably also contains a filler, such as titanium dioxide.

**3,462,320  
SOLUTION GROWTH OF NITROGEN DOPED GALLIUM PHOSPHIDE**  
Robert T. Lynch, Berkeley Heights, and David G. Thomas, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York  
Filed Nov. 21, 1966, Ser. No. 595,672  
Int. Cl. H01 7/00

U.S. Cl. 148—171 4 Claims  
Nitrogen doping of III-V compounds creates isoelectronic traps which function as radiative centers in junction devices. A method of making such devices is directed toward eliminating extraneous nitrogen and then preventing nitrogen contamination during crystal growth. Polycrystalline GaP is first deposited by passing phosphine gas over molten gallium. Thereafter a melt of said deposited GaP, and also GaN and Ga is formed. The melt is slowly cooled to deposit nitrogen doped single crystals.

**3,462,321  
PROCESS OF EPITAXIAL GROWTH OF SILICON CARBIDE**  
Paul L. Vitkus, Bedford, Mass., assignor to National Research Corporation, Newton Highlands, Mass., a corporation of Massachusetts  
Continuation-in-part of application Ser. No. 545,751, Apr. 27, 1966. This application Oct. 25, 1966, Ser. No. 589,363  
Int. Cl. H01l 7/38

U.S. Cl. 148—172 5 Claims



Method of growing a silicon carbide epitaxial layer on a silicon carbide seed which comprises; providing in a temperature gradient a silicon carbide seed and a source of carbon separated by a layer of molten silicon. Carbon from the carbon source, which is at the higher temperature, is dissolved in the silicon, and epitaxial deposition of silicon carbide takes place on the cooler surface of the seed. An impurity such as boron or aluminum may be included in the silicon layer to provide a doped epitaxial layer.

**3,462,322  
METHOD OF FABRICATING ELECTRICAL DEVICES**  
Klaus Hennings and Hans-Jürgen Schütze, Ulm (Danube), Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany  
Filed Nov. 30, 1965, Ser. No. 510,547  
Claims priority, application Germany, Dec. 19, 1964, T 27,666  
Int. Cl. H01l 7/36

U.S. Cl. 148—175 9 Claims  
A method for producing a multilayer semiconductor body composed of an epitaxial layer disposed on an extremely low-resistivity substrate by forming the epitaxial

layer in one side of a substrate of moderately low resistivity, depositing an insulating layer and then a temporary supporting layer on the one side of the substrate, removing a layer of the substrate from the other side thereof, depositing a layer of heavily doped semiconductor material on such other side of the substrate, and removing the temporary supporting layer to produce a body having an extremely low-resistivity substrate carrying an epitaxial layer, which body is to be used as a starting material for the production of transistors having extremely short switching times.

**3,462,323  
PROCESS FOR THE PREPARATION OF COMPOUND SEMICONDUCTORS**  
Warren O. Groves, Des Peres, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware  
No Drawing. Filed Dec. 5, 1966, Ser. No. 598,971  
Int. Cl. H01l 7/36

U.S. Cl. 148—175 14 Claims  
Compound semiconductor materials either as compounds per se or as epitaxial films on suitable substrates are prepared and deposited from vapor mixtures thereof with a halogenated hydrocarbon, e.g., trichloroethylene, as the transfer agent therefor. Compound semiconductor materials prepared according to the invention include the nitrides, phosphides, arsenides and antimonides of boron, aluminum, gallium and indium and mixed crystal alloys thereof and the sulfides, selenides and tellurides of beryllium, zinc, cadmium, mercury and mixed crystal alloys thereof. The semiconductor materials may be doped or undoped to control electrical properties.

**3,462,324  
EXPLOSIVE COMPOSITION COMPRISING A SALT COMPONENT CONTIGUOUS TO AN OVER-FUELED SALT COMPONENT**  
Charles H. Grant and Thomas E. Slykhouse, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
Continuation-in-part of application Ser. No. 671,616, Sept. 29, 1967. This application Apr. 24, 1968, Ser. No. 723,672  
Int. Cl. C06b 1/04, 15/00

U.S. Cl. 149—2 25 Claims  
A two component explosive composition system containing at least two distinct masses comprising: Component (1), an inorganic oxidizing salt mass contiguous to, Component (2), an over-fueled explosive mass, i.e., one having a paucity of oxygen as compared to the oxidizable fuel it contains; more particularly the invention pertains to a two component explosive system comprising an inorganic oxidizing salt mass adjacent to or surrounding an explosive composition mass comprising a mixture of an excess of a fuel with an inorganic oxidizing salt, and to methods for preparing the explosive and loading boreholes therewith.

**3,462,325  
FLARE COMPOSITION COMPRISING MAGNESIUM, SODIUM PERCHLORATE, AND A TERNARY ORGANIC BINDER**  
Yoshiyuki Arikawa, Destin, and Hal R. Waite, Walton Beach, Fla., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy  
No Drawing. Filed Oct. 24, 1968, Ser. No. 770,380  
Int. Cl. C06d 1/10; C06b 11/00

U.S. Cl. 149—19 3 Claims  
A castable illuminating flare composition producing high luminous efficiencies comprised, by weight, of between 40 and 48 percent of magnesium, between 40 and 44 percent of sodium perchlorate, and between 12 and 16 percent of a binder which is a mixture of a methacrylate monomer and a polyester resin.

### 3,462,326 METHOD OF MAKING A LEATHER-LIKE MICROPOROUS SHEET MATERIAL

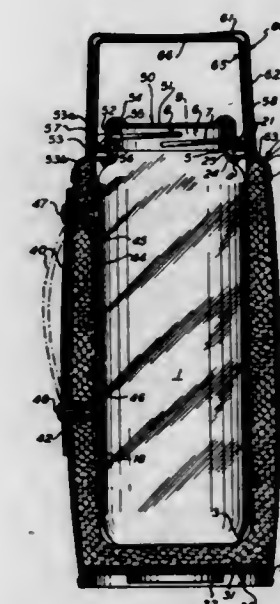
Robert N. Steel and Paul V. Butsch, South Bend, and Richard T. Nofiri, Mishawaka, Ind., assignors to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey  
Filed May 31, 1966, Ser. No. 554,162  
Int. Cl. B32b 27/40, 31/12

U.S. Cl. 156—72 8 Claims  
1. A method of making a microporous leather-like sheet material comprising in combination the steps of  
(a) providing a fibrous base which is permeable to water vapor;  
(b) applying an elastomeric adhesive composition in the form of tacky discrete particles deposited on a surface of the said base to form on said surface a permeably tie coat of discrete solid elastomeric particles which adhere to each other and to the said base;  
(c) spraying a solution of a polyurethane elastomer to form tacky fibers, depositing the resulting tacky fibers on the assembly resulting from (b) to form a permeable adherent batt of polyurethane fibers thereon; and  
(d) compacting the resulting assembly to about 50–85% of its original thickness by pressing the assembly at elevated temperature.

### 3,462,327 METHOD OF MAKING HEAT-INSULATED BOTTLE

Jack Sandler, Florham Park, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York  
Original application Aug. 13, 1963, Ser. No. 301,750, now Patent No. 3,341,045, dated Sept. 12, 1967. Divided and this application Feb. 6, 1967, Ser. No. 614,222  
Int. Cl. C09j 5/00; B32b 31/04

U.S. Cl. 156—86 7 Claims



A heat-insulated bottle is formed by shrinking on to a rigid expanded-plastic receptacle member a pre-stretch partially open-ended sock of flexible vinyl with its partially open-end at the top extremity of the receptacle member and with its other end open and over-hanging the bottom extremity of the receptacle member, inserting a flexible plastic base within the over-hanging portion of the sock, and securing the periphery of the base to the sock.



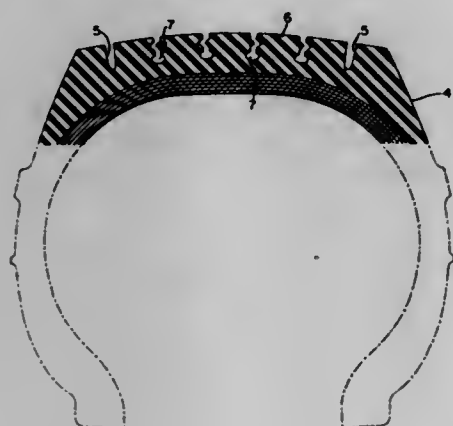
3,462,328

**METHOD OF MAKING VEHICLE TIRE TREAD**  
Paul S. Buckland, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed June 7, 1965, Ser. No. 461,806  
Int. Cl. B60c 11/14; B32b 27/40

U.S. Cl. 156—114

11 Claims



A method of making a vehicle tire tread comprising applying a coating of a liquid polyurethane reaction mixture to the surface of the recessed portion of an elastomeric tire tread and curing the said polyurethane reaction mixture to form an integral composite structure.

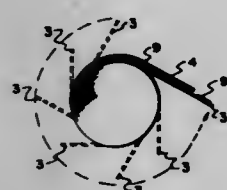
3,462,329

**PRODUCTION OF POLYETHYLENE FILM LAMINATE PACKAGES**

Myron S. Beyer, Danville, Ill., assignor to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois  
Filed Dec. 23, 1965, Ser. No. 516,027  
Int. Cl. B65h 81/00; B32b 31/12, 7/14

U.S. Cl. 156—190

3 Claims



A polyethylene film laminate is prepared by feeding separate polyethylene films from storage rolls, at least one of said films being transparent so that printed matter thereon may be viewed and each of said films having one surface oxidized or irradiated to provide greater adhesion for printing inks and adhesives, bringing said films together with their untreated surfaces in contact, printing an adhesive legend on one of the oxidized or irradiated surfaces of the film plies, rolling the film plies tightly onto a storage roll to form a permanent film lamination, and separating the outermost film lamina on the roll and then unwinding the outermost lamina so that the remaining film lamina are positioned with the printing between the films.

3,462,330

**METHOD FOR MAKING A HOLLOW PLASTIC CORE STRUCTURE**

James W. Greig, Grosse Pointe Park, and David P. Anderson, Lathrup Village, Mich., assignors to Woodall Industries, Incorporated, Detroit, Mich., a corporation of Michigan

Filed Dec. 9, 1965, Ser. No. 512,639  
Int. Cl. B31d 3/02; B29c 17/04

U.S. Cl. 156—197

3 Claims

A method of forming a hollow plastic structure having a plastic core member fused to the plastic skin, or outer

plastic sheets. The method includes heating a pair of plastic sheets to their fusion temperature, supporting the heated plastic sheets in spaced relation, forming the sheets against a pair of die faces, disposing a plastic core between the sheets, and closing the die faces to bring pre-



determined portions of the sheets thus formed into fusion contact with portions of the plastic core, cooling the sheets and separating the dies. The core member may be preformed, or formed simultaneously with the outer sheets.

3,462,331

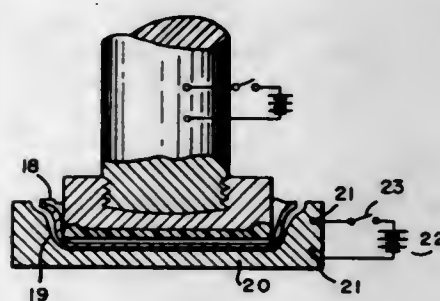
**METHOD FOR MOLDING SEALING GASKETS**  
Charles W. Simons, Bedford, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed Apr. 6, 1966, Ser. No. 540,606  
Int. Cl. B29c 1/14

U.S. Cl. 156—231

Int. Cl. B29c 1/14

4 Claims



Sealing gaskets are formed in closures by immersing a heated die face in a mass of a thermoplastic gasket-forming composition (such as a plastisol or a dry blend of a plasticizer and resin) and transferring the shaped composition which adheres to the die to a closure shell. The method permits formation of gaskets in odd shaped closures, such as square, rectangular and triangular elements.

3,462,332

**METHOD OF CONTINUOUSLY PROVIDING A FASTENER ON A THERMOPLASTIC FILM**

Kanehiko Goto, Neyagawa-shi, Osaka-fu, Japan, assignor to High Polymer Chemical Industries, Ltd., Osaka, Japan

Filed Oct. 20, 1965, Ser. No. 498,558  
Claims priority, application Japan, Mar. 5, 1965, 40/12,424

Int. Cl. B29c 19/04

U.S. Cl. 156—244

7 Claims

A method of continuously forming a film having fastener members thereon. Concurrently with the extrusion of the film, there is extruded from separate die openings spaced from each other and from the film a pair of fastener members of thermoplastic synthetic resin. The film and the fastener members are brought together against the upper half of a rotating cooling roll while the film and fastening members are still in a fusible state, as well as effecting the forced cooling of the film and fastener mem-

3,462,335

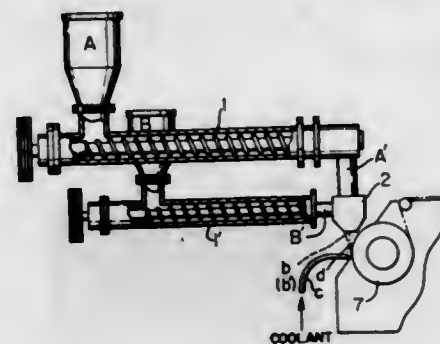
**BONDING OF THERMOPLASTIC COMPOSITION WITH ADHESIVES**

Ralph H. Hansen, Short Hills, and Harold Schonhorn, New Providence, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York  
Continuation-in-part of application Ser. No. 486,779, Sept. 13, 1965. This application Aug. 4, 1966, Ser. No. 570,220

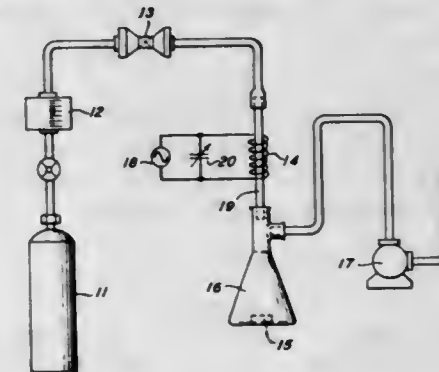
Int. Cl. B29c 27/10; C09j

U.S. Cl. 156—272

13 Claims



angles between the film and fastening members, the extrusion dies and the members extruded therefrom and distance between the extrusion openings of the roll.



3,462,333

**METHOD OF MAKING SEAL**

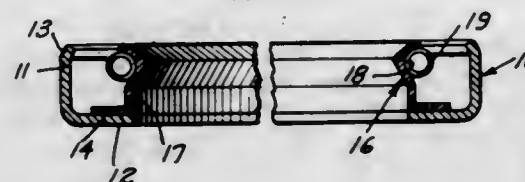
Harold E. McCormick and Robert E. Schmitt, Brentwood, Mo., assignors to Ramsey Corporation, St. Louis, Mo., a corporation of Ohio

Filed Feb. 25, 1965, Ser. No. 435,267

Int. Cl. B29c 27/16

U.S. Cl. 156—245

11 Claims



The method of forming a seal of polytetrafluoroethylene applied to a metal case by positioning the polytetrafluoroethylene seal within the case, interposing a thin continuous film of unsintered polytetrafluoroethylene between the seal and the case, and heating the assembly under applied pressure.

3,462,334

**METHOD OF FORMING AN OPENING DEVICE COMPRISING A SLOT AND A STRIP PASSING THROUGH IT**

Sven Olof Soren Stark, Hans-Georg Wilhelm Melle, and Thorsten Lennartson Lindh, Lund, Sweden, assignors to AB Tetra Pak, Lund, Sweden, a Swedish company  
Original application July 1, 1966, Ser. No. 562,300, now Patent No. 3,416,716, dated Dec. 17, 1968. Divided and this application Jan. 8, 1968, Ser. No. 713,554

Int. Cl. B32b 31/18

U.S. Cl. 156—256

1 Claim



Method to provide sheet material with an opening device therein by punching a substantially U-shaped opening therein and lifting the tongue formed and heating an additional strip of material to both the tongue and the sheet material.

3,462,336

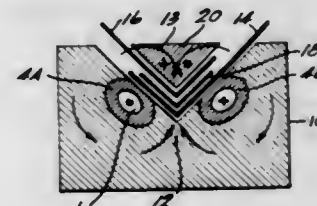
**INDUCTION HEATING PROCESS**

Alfred F. Leatherman, Columbus, Ohio, assignor, by mesne assignments, to William C. Heller, Jr.  
Original application Oct. 21, 1965, Ser. No. 499,150, now Patent No. 3,396,258, dated Aug. 6, 1968. Divided and this application May 17, 1968, Ser. No. 730,185

Int. Cl. B29c 27/04

U.S. Cl. 156—272

21 Claims



A process for inductively heating non-metallic material includes the step of applying a susceptor to the material. An induction heater is provided by forming a coil for producing a magnetic field when energized and spacedly positioning a non-magnetic, metallic member from the coil in the magnetic field. The material is placed between the coil and the metallic member and the heater energized to produce a high frequency high intensity magnetic field to inductively heat the susceptor and heat the material by conduction.

3,462,337

**POLYAMIDE-POLYEPOXIDE CROSS-LINKED REACTION PRODUCT ADHESIVE COMPOSITION AND METHOD OF UNITING METAL SURFACES USING SAME**

Bert Sorelle Gorton, Kennett Square, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 440,276, Mar. 16, 1965. This application Feb. 1, 1968, Ser. No. 702,481

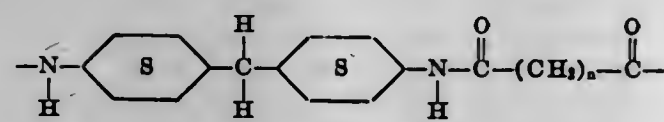
Int. Cl. C09j 3/16; C08g 45/12

U.S. Cl. 156—330

5. A method of uniting surfaces of metallic elements which comprises applying to at least one of said surfaces



a composition comprising about 75-95 parts by weight of a polyamide having the recurring group of the formula:



wherein  $n$  is an integer of from 6 to 10, inclusive, and about 5-25 parts by weight of a polyepoxide having at least two epoxy groups per molecule, holding said surfaces contiguous to one another with said composition disposed therebetween, heating said surfaces and said composition to a temperature in the range of from about 400° F. to about 600° F. for from about 5 minutes to about 60 minutes and thereafter cooling.

### 3,462,338 TRANSPARENCY OR THE LIKE WITH CONTROLLED BODY, AND A METHOD OF PRODUCING THE PRODUCT

Elmer L. Stein, 6555 N. Green Bay Ave., Milwaukee, Wis. 53209  
Continuation-in-part of application Ser. No. 297,557, July 25, 1963. This application Aug. 24, 1966, Ser. No. 574,667  
Int. Cl. B44f 1/06, 1/02  
U.S. Cl. 161—3

5 Claims

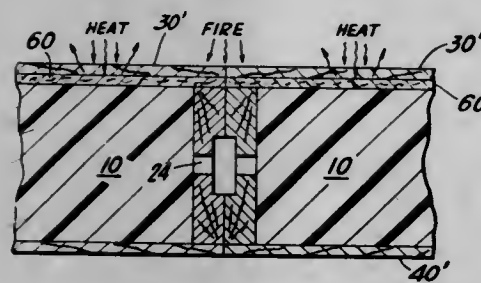


A multi-color press product, viewable by reflected and transmitted light comprising a first series of color impressions, a transparent material, and a second series of identical impressions respectively of colors identical with the impressions of the first series.

### 3,462,339 FIRE-RETARDANT PANEL CONSTRUCTION

Allan I. Poms, Detroit, Mich., assignor to Koppers Company, Inc., a corporation of Delaware  
Filed Mar. 15, 1966, Ser. No. 534,465  
Int. Cl. B32b 3/02, 5/18, 21/04  
U.S. Cl. 161—44

4 Claims

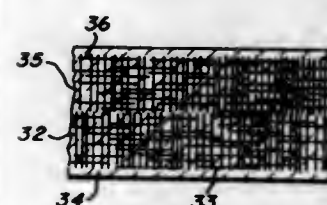


A sandwich panel is provided having a foamed polymeric core and a face of denser material such as wood or metal and having a thermal capacitance disposed between the face and the polymeric core. The thermal capacitance is a material capable of dehydrating upon exposure to heat, preferably calcium dihydrate (gypsum).

### 3,462,340 FIBER-CONTAINING PYROLYTIC COMPOSITE MATERIAL

Ralph L. Hough, Springfield, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force  
Filed July 28, 1965, Ser. No. 475,613  
Int. Cl. B32b 5/12, 9/04  
U.S. Cl. 161—59

3 Claims

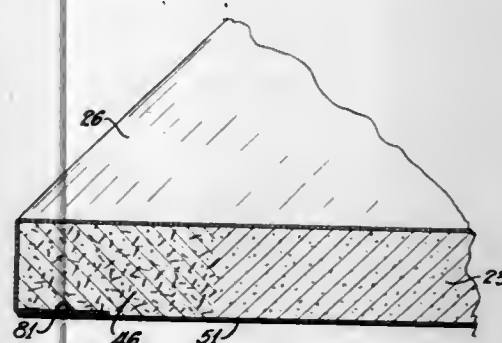


This invention discloses novel compositions of matter in the form of composites. The composites are made up of pyrolytic fibers such as graphite, borides, nitrides or carbides imbedded in a pyrolytic matrix selected from the group comprising graphite, borides, nitrides and carbides. The fibers are arranged in parallel relation and/or at an angle to each other and/or to at least one of the matrix surfaces so as to derive the maximum beneficial properties from their incorporation into the matrix. The composites of the present invention find many uses where extreme high resistance to heat is necessary.

### 3,462,341 GYPSUM WALLBOARD

Robert J. Littin, Toledo, Ohio, assignor to Owens-Corning Fiberglass Corporation, a corporation of Delaware  
Continuation of application Ser. No. 557,781, June 15, 1966. This application July 16, 1968, Ser. No. 747,012  
Int. Cl. B32b 3/02; E04c 2/04; E04b 5/04  
U.S. Cl. 161—149

3 Claims



A gypsum wallboard having a fully integrated main body of uniform density with a continuous gypsum content throughout its full area, the longitudinal center section of the body being free of glass fibers and glass fibers derived from cut strands being sparsely dispersed through the longitudinal edge portions of the board, said edge portions being two to five inches wide and having greater rigidity than the center section.

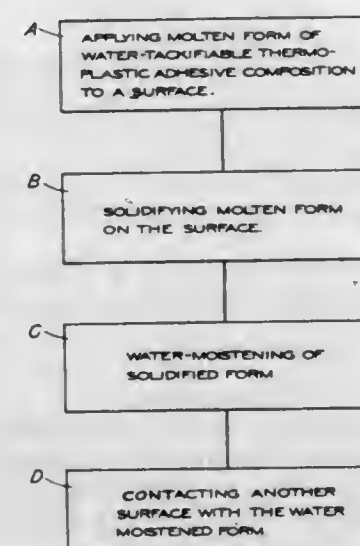
### 3,462,342 ADHESIVE BONDING

Charles W. Cooper and Gerald A. Grode, Columbus, Ohio, assignors, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware  
Filed Jan. 18, 1965, Ser. No. 426,217  
Int. Cl. C09j 3/04  
U.S. Cl. 161—216

6 Claims

Adhesive bonding with a hot-metal applied composition

which upon cooling provides a nontacky solid form sub- the valve, may be manually or automatically energized to normally open the valve. With the valve open, some of the coolant flows through the guide into a bypass chamber and, in so flowing, entrains the control rod for motion



sequently made a tacky adhesive mass merely by moistening with water.

### 3,462,343 METHOD FOR RECOVERY OF CHEMICALS FROM MAGNESIUM BASE SULPHITE DIGESTION PROCESS

Norman D. Phillips, Lancaster, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey  
Filed May 16, 1966, Ser. No. 550,300  
Int. Cl. D21c 3/06; C01b 17/58  
U.S. Cl. 162—36

5 Claims

A system for stripping loosely combined SO<sub>2</sub> for a sulphur containing residual liquor by spray contact with an inert gas such as steam or flue gases. The stripped SO<sub>2</sub> is subsequently combined with cooking liquor to increase the SO<sub>2</sub> content prior to the digestion of cellulosic materials.

### 3,462,344 SUPERBLEACHING OF WOOD PULPS

Robert R. Kindron, Pennington, and George W. Hong, Princeton, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware  
No Drawing. Filed May 31, 1966, Ser. No. 553,667  
Int. Cl. D21c 9/16, 9/10  
U.S. Cl. 162—72

12 Claims

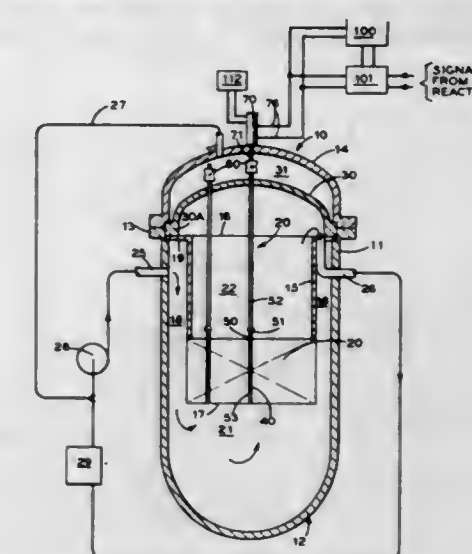
An improved hydrogen peroxide superbleach process for primary-bleached chemical or semichemical wood pulp is provided by adding N-benzoyl succinimide to the aqueous bleaching system. This allows operation at a much lower pH than is normally necessary and reduces the amount of hydrogen peroxide necessary to achieve the desired final brightness.

### 3,462,345 NUCLEAR REACTOR ROD CONTROLLER

Felix S. Jabsen, Lynchburg, Va., assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey  
Filed May 10, 1967, Ser. No. 637,527  
Int. Cl. G21c 7/08  
U.S. Cl. 176—36

10 Claims

An improved control arrangement for moving a nuclear reactor control rod in and out of a nuclear reactor core. The arrangement includes a guide tube partially disposed in the core and within which the control rod is axially movable. A removably mounted, spring loaded-closed, valve is associated with the guide for regulating the flow of primary cooling fluid therethrough. A removably mounted electromagnet, adapted to carry a push rod for actuating

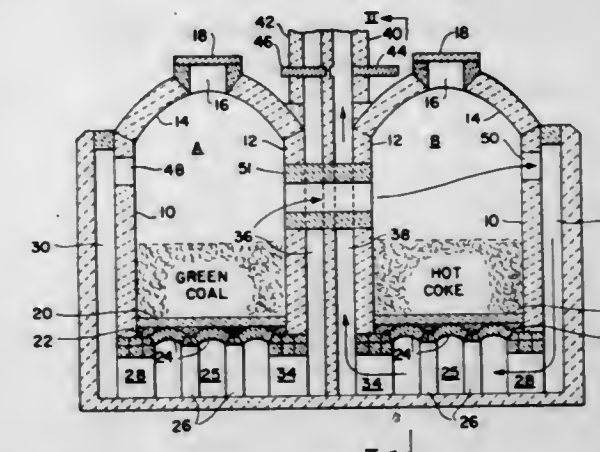


thereof out of the core. Deenergizing the electromagnet releases the valve for closing off the flow of fluid through the guide tube to allow the control rod to move into the core under the influence of gravity.

### 3,462,346 SMOKELESS COKE OVENS

John J. Kernan, 201 Hazel Drive, Pittsburgh, Pa. 15228  
Filed Sept. 14, 1965, Ser. No. 487,127  
Int. Cl. C10b 47/08  
U.S. Cl. 201—15

6 Claims



Disclosed is a non-recovery coke oven that not only gives off a minimum of smoke but also, for its size, gives enhanced production rates with a minimum of maintenance. Green coal and hot coke are coked in adjacent chambers, and smoky off-gas from the green coal is led to the hot-coke chamber, where it is burned and heated, and then to the bottom of the hot-coke chamber, speeding the finishing of the coking of the hot coke. Preferably, a silicon carbide bottom is used in each chamber to improve heat transfer and increase production.

### 3,462,347 SOLVENT PURIFICATION AND RECOVERY BY STRIPPING AND DISTILLATION

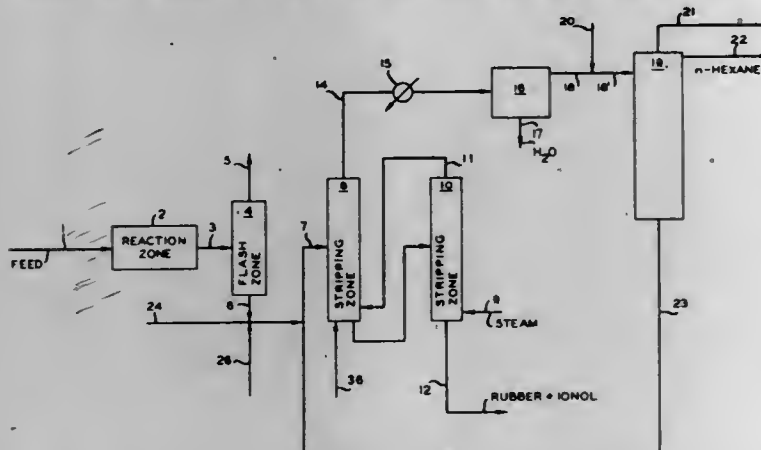
Weldin G. Chapman and Rollin N. Carlson, Borger, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware  
Filed Dec. 16, 1966, Ser. No. 602,211  
Int. Cl. B01d 3/34; C23f 14/00  
U.S. Cl. 203—6

6 Claims

In recovery of solvents employed in a chemical process, for example, in the production of synthetic rubber from butadiene and styrene employing a solvent, for example,



normal hexane and a catalyst such as n-butyl lithium, in the distillation of the solvent, there is formed a bottom containing heavies, especially heavies which tend to foul the equipment. An increase in bottoms take-off to avoid such fouling is accomplished following which these bottoms are passed to a point in the rubber production op-



eration which is beyond the reaction zone so as to avoid contamination in the reaction zone, yet to treat effectively the increased take-off bottoms in existing equipment while maintaining design capacity. The bottoms from the solvent distillation zone are introduced into the stripping zone wherein water and solvent are stripped from the reaction effluent.

3,462,348

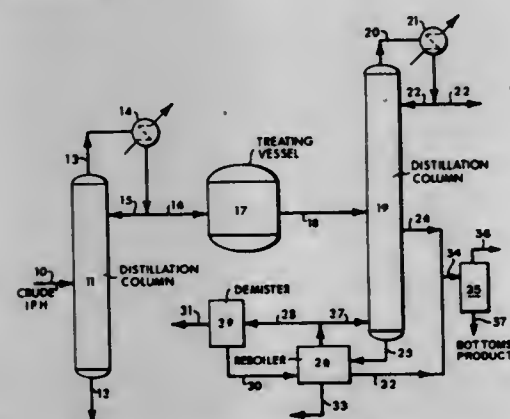
#### PURIFICATION OF ISOPHORONE BY PLURAL STAGE DISTILLATION

William E. Wellman, Edison, Paul E. Burton, Westfield, and William D. Diana, Somerville, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Mar. 25, 1968, Ser. No. 715,858  
Int. Cl. B01d 3/34, 3/06

U.S. Cl. 203—28

14 Claims



Isophorone is normally contaminated with various impurities that are difficult to remove. Substantially pure isophorone may be recovered by the distillation of a crude isophorone stream and withdrawal of the pure product at a point below the feed. Isophorone is useful as a solvent for coatings and lacquer.

3,462,349

#### METHOD OF FORMING METAL CONTACTS ON ELECTRICAL COMPONENTS

Geza E. Gorgenyi, Santa Ana, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

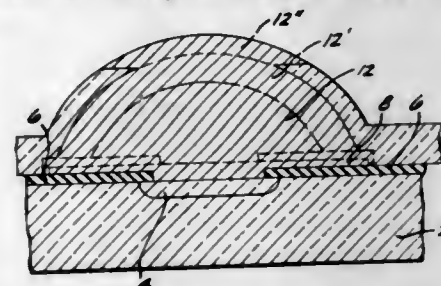
Filed Sept. 19, 1966, Ser. No. 580,272  
Int. Cl. C23b 5/50, 5/66

U.S. Cl. 204—15

9 Claims

The method for forming electrical contacts in the form of metallic bumps by electroplating such bumps through an opening in an electrically insulating film such as the photoresist, the electroplating action being discontinued

and portions of the photoresist being removed around the bump formed at this point, after which the electro-



plating is continued which results in closing or filling in the gap which normally would occur under the bump.

3,462,350

#### LOCALIZED FLOW PLATING

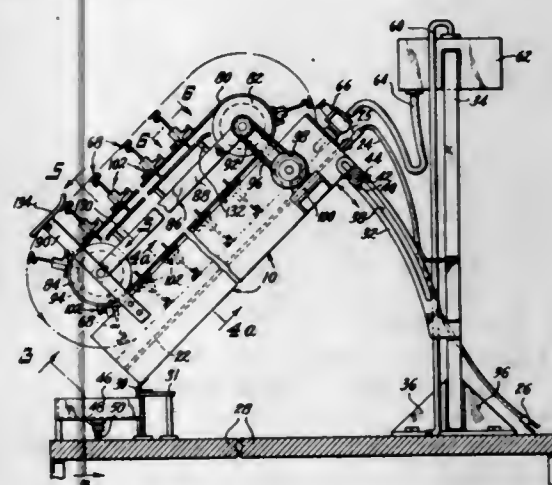
Thomas Earl Gannoe, Warren, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 1, 1966, Ser. No. 598,511

Int. Cl. C23b 5/68

U.S. Cl. 204—15

11 Claims



There is described an accelerated electroplating procedure and an apparatus for accomplishing the same whereby metal plating is disposed on a discrete surface area of a moving metal article. An inclined channel having an anode conductor in the bottom thereof has electrolyte flowing therein of a constant and optimized depth. The article to be plated is made electrically negative and positionally moved relative to the flowing electrolyte in a plane parallel therewith in a manner whereby the desired article surface makes contact with the moving surface of the electrolyte.

3,462,351

#### PROCESS FOR ALKALINE PEROXIDE SOLUTION PRODUCTION INCLUDING ALKALI CONCENTRATION CONTROL

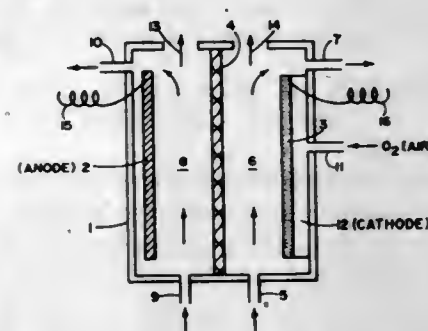
Donald H. Grangaard, Appleton, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed Jan. 30, 1967, Ser. No. 612,699

Int. Cl. B01k 3/10, 3/00

U.S. Cl. 204—83

5 Claims



The manufacture of a peroxide containing solution at a controlled and usually low alkalinity by an electrolytic

procedure in which the anolyte is provided at a higher alkali concentration than the catholyte.

3,462,352

#### PROCESS FOR OBTAINING INDIUM AND TIN FROM RAW LEAD

Tudor Segarceanu, str. Clurea 7, Andrei Cornea, strada Alecea Tibles 56, and Viorica Mercea, strada Elena Clucereasa 46, all of Bucharest, Rumania

No Drawing. Filed Feb. 27, 1967, Ser. No. 619,065

Int. Cl. C22d 1/20

U.S. Cl. 204—105

A process for separating indium and tin from impure lead containing them which comprises the steps of concentrating the electrolyte solution used for the electrolytic refining of raw lead in fluosilicic acid medium by recycling the solution to obtain a minimum ratio of lead to tin of 10, liquid-liquid extracting the electrolytic solution with a solution of di(2-ethyl-hexyl) phosphoric acid in kerosene at room temperature, separating the phases, thereafter washing the organic phase with fluosilicic acid to remove lead, re-extracting the indium from the organic phase with 9 N HCl, re-extracting the tin with 8 N HCl, recycling the organic phase for extraction, recycling the aqueous phase as an electrolyte, and recovering indium and tin.

3,462,353

#### REFERENCE ELECTRODES OF PARTICULAR UTILITY IN ANODIC CORROSION PROTECTION SYSTEMS

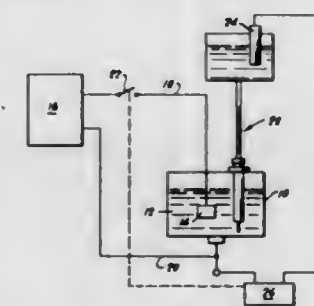
Richard L. Every and William P. Banks, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Continuation-in-part of application Ser. No. 368,956, May 20, 1964. This application Mar. 2, 1966, Ser. No. 541,875

Int. Cl. C23f 13/00; B01k 3/02

U.S. Cl. 204—147

2 Claims



This invention comprises an anodic polarization system wherein a reference electrode, preferably a metal-metal oxide electrode, is immersed in a corrosive electrolytic solution and is in direct electrical communication with said electrolytic solution.

3,462,354

#### ION-MOLECULE REACTIONS

Boris Levy, Crosswicks, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed June 16, 1964, Ser. No. 375,631

Int. Cl. C07c 3/24; B01j 1/10

U.S. Cl. 204—158

13 Claims

A method for carrying out an ion-molecule reaction in a gaseous system comprising a molecule reactant, an ion reactant precursor, and a rare gas, said molecular reactant having an ionization potential greater than that of said ion reactant precursor, said rare gas having an ionization potential intermediate those of said molecule reactant and said precursor and above that of the precursor, said rare gas being present in a major amount and said molecule reactant being present in an amount greater than that of said precursor, and irradiating said mixture with ionizing radiation.

3,462,355

#### POLYMERIZATION PROCESS

Russell K. Griffith, Chagrin Falls, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 7, 1967, Ser. No. 658,615

Int. Cl. C08f 1/16, 27/02

U.S. Cl. 204—159.23

2 Claims

Resinous high polymers which may contain halogen are prepared by the polymerization of at least one polymerizable vinyl monomer using a combination of a halogen and light as the polymerization initiator.

3,462,356

#### CONTROL OF CURRENT IN ELECTROLYTIC APPARATUS

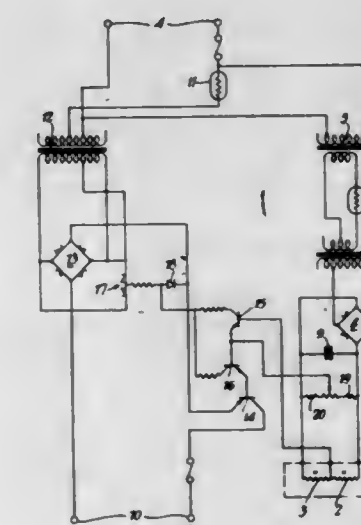
John Arne Wallinder, Ilford, England, assignor to Catylators Limited, Ilford, England, a corporation of Great Britain

Filed Oct. 14, 1964, Ser. No. 403,761

Int. Cl. H02j 7/04; B01k 3/00

U.S. Cl. 204—228

3 Claims



The present invention relates to means for controlling electric current in electrolytic apparatus. The apparatus is provided with a current-controlling means having a device connected with the electrolytic apparatus, which current-controlling device is in position to be contacted by gas evolved by the electrolysis in said apparatus; said device being responsive to hydrogen concentration in said gas by reason of the high thermal conductivity of hydrogen, the said device comprising an electrically resistive element having an appreciable coefficient of resistance and is connected with said current controlling means, so that when said device is contacted by hydrogen in concentration, the resistance of said element will change due to the high thermal conductivity of the hydrogen, said change of resistance being operative to control the current in said electrolytic apparatus.

3,462,357

#### PLATING FIXTURE

Fred B. Karlquist, Union, N.J., assignor to Pamarco, Inc., Roselle, N.J., a corporation of Maryland

Filed Mar. 13, 1967, Ser. No. 622,549

Int. Cl. C23b 5/70

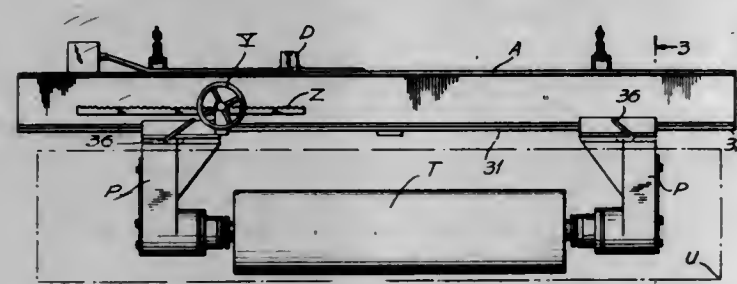
U.S. Cl. 204—297

3 Claims

A plating arrangement to suspend and rotate pressure rollers in a plating bath. A top support frame carries a conductor bar, depending laterally adjustable housings and a rack. A pinion associated with a bearing structure mounted on one of the housings is rotated by a hand wheel



and meshes with the rack to adjust the distance between housings. The housings may be locked in position and also



contain means to drive the rollers and establish electrical connection from the conductor to the roller.

### 3,462,358 CLAY TREATMENT OF HYDROREFINED CABLE OILS

Ivor W. Mills, Glenolden, and Glenn R. Dimeler, West Chester, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey  
No Drawing. Filed Mar. 13, 1967, Ser. No. 622,398  
Int. Cl. C10g 25/00

U.S. Cl. 208—14 16 Claims  
Cable oils having ASTM D-1934 aged dissipation factors (ADF) below 0.010 are produced from severely hydrorefined 500-2000 SUS (100° F.) naphthenic oil having an ADF greater than 0.015 by contacting the hydrorefined oil at from 100-400° F. with activated adsorbent clay in an amount per barrel of oil such that from 10-90 grams of KOH would be required to neutralize the acidity of the clay.

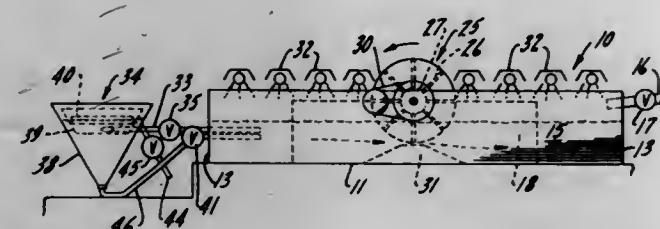
3,462,359  
AIR BLOWN ASPHALT PITCH COMPOSITION  
Eugene M. Fauber, Hammond, Ind., assignor to Sinclair Oil Corporation, New York, N.Y., a corporation of New York  
No Drawing. Continuation-in-part of application Ser. No. 675,992, Oct. 17, 1967, which is a continuation of application Ser. No. 482,610, Aug. 25, 1965. This application Oct. 10, 1968, Ser. No. 766,642  
Int. Cl. C10c 3/08, 1/18

U.S. Cl. 208—23 6 Claims  
A composition useful as a binder is prepared by air blowing a blend of an asphalt and a propane-insoluble pitch which can be prepared by extracting with a paraffinic solvent a petroleum bottoms produced by the catalytic cracking of gas oil. The weight ratio of pitch to asphalt in the blend is from about 1/2 to 2/1. Properties of the pitch, asphalt and air blown product are given.

3,462,360  
WASTE TREATMENT  
Ross E. McKinney, Lawrence, Kans., assignor, by mesne assignments, to Union Tank Car Company, a corporation of Delaware  
Filed Mar. 16, 1966, Ser. No. 534,772  
Int. Cl. C02c 5/02

U.S. Cl. 210—11

15 Claims



Algae is removable from a liquid by means of biological self-flocculation that occurs when the average solids concentration is above 1000 mg./l. dry weight with at least

50% of such solids being algae and when the quantity of inorganic minerals metabolizable by the algae in such liquid are below the minimum amount needed to cause log growth of the algae in such liquid.

### 3,462,361 METHOD AND APPARATUS FOR TREATING BLOOD

Tibor J. Greenwalt, Milwaukee, Wis., and Mieczyslaw Gajewski, Pittsburgh, Pa., assignors to Milwaukee Blood Center, Inc., Milwaukee, Wis., a corporation of Wisconsin  
Continuation-in-part of application Ser. No. 129,737, Aug. 7, 1961. This application May 14, 1965, Ser. No. 456,903

U.S. Cl. 210—23 Int. Cl. B01d 13/00

16 Claims

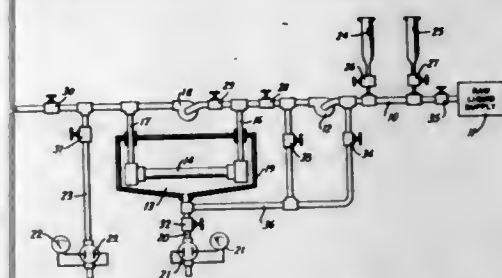


A method and apparatus for treating blood in which the leukocytes are removed from the whole blood by adsorption on a column of fibers. The whole blood having a pH in the range of 7.3 to 7.5 is passed through a column of haphazardly arranged, loosely compacted synthetic fibers having a bulk density of 2.5 to 7.5 grams per cubic inch to remove the leukocytes from the blood by both mechanical filtering and polar attraction.

3,462,362  
METHOD OF REVERSE OSMOSIS  
Paul Kollman, 100 E. 50th St., New York, N.Y. 10022  
Filed July 26, 1966, Ser. No. 567,879  
Int. Cl. B01d 13/00; C02c 1/00

U.S. Cl. 210—23

5 Claims



The present improvements deal with the practice of treating an ionic feed solution by reverse osmosis employing a membrane structure comprising a porous substrate and a continuous and precipitated salt rejecting layer formed on the feed solution contacted surface

side of the substrate by exposure of this surface, in succession, to a solution of polyelectrolyte containing fixed charges of predominantly one polarity, and then to another solution containing fixed charges of the opposite polarity. The membrane structure can be disintegrated by appropriate changes in ion concentration and pH of a flushing solution and can be redeposited in the aforesaid manner. The formed-in-place membrane is particularly suited for treatment of liquids of high organic content causing rapid fouling, such as sewage effluent.

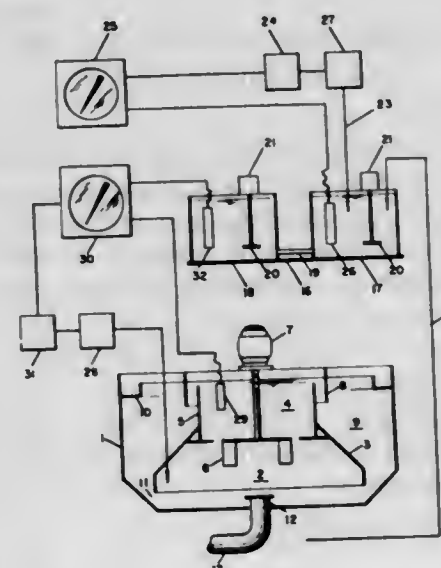
3,462,363  
CONTROL OF MICROORGANISMS WITH  
POLYHALIDE RESINS  
Jack F. Mills, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed July 14, 1967, Ser. No. 653,326  
Int. Cl. C02b 1/58

U.S. Cl. 210—37 7 Claims  
Water is rapidly sterilized by contact with a tandem resin system containing a strong base quaternary ammonium anion-exchange resin in polyhalide form to provide rapid in situ kill of contaminating microorganisms and a second strong base quaternary ammonium anion-exchange resin to control the residual halogen level in the treated water at a physiologically acceptable level.

3,462,364  
METHOD AND APPARATUS FOR OPTIMIZING  
CHEMICAL TREATMENT  
Herbert Gustaf Carlson, 6334 W. Berenice, Chicago, Ill. 60634  
Filed Jan. 17, 1966, Ser. No. 521,216  
Int. Cl. C02b 1/22; B01d 21/24

U.S. Cl. 210—42

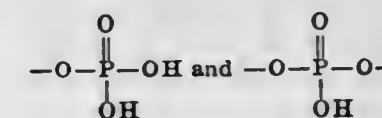
11 Claims



An apparatus and process for optimizing the addition of lime to water in a water treating system including a pacer unit for receiving a continuous sample of the raw water, an optimizing control device for adding a controlled amount of lime to the water in the pacer unit to maintain the optimum treatment of the water and a conductivity cell in the pacer unit sensing the conductivity of the water at its optimum treatment. A treating unit for treating the raw water including an automatic lime feeder and a conductivity cell in the treating unit sensing the conductivity of the treated water, the conductivity cells being connected to a conductivity ratio controller which compares the conductivity of the pacer unit with the treating unit and operates the lime feeder in accordance with the conductivity comparison to maintain a predetermined ratio between the conductivities.

3,462,365  
SCALE INHIBITING COMPOUNDS  
Paul G. Vogelsang, Jr., Houston, Tex., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware  
No Drawing. Filed June 23, 1966, Ser. No. 559,723  
Int. Cl. C02b 5/06

U.S. Cl. 210—58 9 Claims  
Certain phosphate esters of polyols containing one or more 2-hydroxyethyl groups and one or both of the groups



and salts thereof, are used to inhibit scale deposits by adding them to water containing scale-forming chemicals.

3,462,366  
CARIOSTATIC BUFFER COMPOSITION  
Heikki Luoma, Fabianinkatu 24, Helsinki 10, Finland  
Filed July 20, 1966, Ser. No. 566,569  
Int. Cl. C09k 3/00

U.S. Cl. 252—1 4 Claims  
A composition comprising sucrose or a carbohydrate, about 2-5% by weight of a buffer mixture comprising about 7-11 mol percent of sodium bicarbonate and about 0.5-2.0 mol percent of monosodium, monopotassium or monoammonium orthophosphate.

3,462,367  
LUBRICATING OILS CONTAINING AN ANTIOXI-  
DANT MIXTURE OF ZINC AND ANTIMONY DI-  
ALKYL DITHIOCARBAMATES  
Russell L. Booher, Edwardsville, Ill., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware  
No Drawing. Filed Oct. 31, 1966, Ser. No. 590,498  
Int. Cl. C10m 1/40

U.S. Cl. 252—33.2 8 Claims  
Lubricating oil compositions containing zinc diamyl dithiocarbamate and antimony amyl dithiocarbamate exhibit good anti-oxidation properties. The lubricating oil may also contain a pro-oxidant material selected from the group consisting of copolymers of lauryl methacrylate and N-vinyl pyrrolidone, copolymers of lauryl methacrylate, stearyl methacrylate and 2-methyl-5-vinyl pyridine, an imide of mono C<sub>20-300</sub> polymeric hydrocarbyl succinic anhydride, a calcium salt of a high molecular weight sulfonic acid and mixtures thereof.

3,462,368  
HYDROCARBYL-HYDROXYPHENYL DITHIO-  
CARBAMATES AND THEIR USE AS ANTI-  
OXIDANTS  
John C. Wollensak and Edward F. Zawieski, Royal Oak, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia  
No Drawing. Filed Feb. 27, 1967, Ser. No. 619,004  
Int. Cl. C10m 1/38; C10l 1/24; C07c 155/08

U.S. Cl. 252—46.7 10 Claims  
Hydrocarbyl - hydroxyphenyl - dihydrocarbyldithiocarbamates are prepared by the reaction of dihydrocarbyl halophenols with a metal salt of a dihydrocarbyldithiocarbamate. For example, the reaction of 2,6-di-tert-butyl-4-bromophenol with the sodium salt of dimethyldithiocarbamate yields 3,5-di-tert-butyl-4-hydroxyphenyl dimethyldithiocarbamate. The compounds are useful as antioxidants. Effectiveness is enhanced by dihydrocarbyl thiodialkanoates and organic phosphites or phosphonates.



### 3,462,369 COMPOSITION AND METHOD FOR DETERGENCY OF ASPHALT SOIL

Abraham Mankowich, Bel Air, Md., assignor to the United States of America as represented by the Secretary of the Army  
No Drawing. Filed Oct. 24, 1966, Ser. No. 589,121  
Int. Cl. C11d 1/83

U.S. Cl. 252—138

9 Claims

A detergent composition for removing asphalt soil comprising a powder mixture of from about 88 to about 92 percent by weights of alkaline salts to provide a pH of about 12 in solution and from about 8 to about 12 percent by weight of a surfactant combination consisting of from about 1:1 to about 1:10 ratios by weight of a nonionic silicone surfactant selected from the group consisting of silanes and siloxanes, and an anionic surfactant selected from the group consisting of sodium lauryl sulphate and sodium dodecylbenzene sulphonate.

### 3,462,370 DRY SOLID ORGANIC PEROXIDE COMPOUNDS

Heinz Winter, Pullach, near Munich, and Gottfried Brossmann, Holriegelskreuth, near Munich, Germany, assignors to Elektrochemische Werke, Munchen, A.G., Holriegelskreuth, near Munich, Germany, a corporation of Germany  
No Drawing. Filed Aug. 10, 1966, Ser. No. 571,404  
Claims priority, application Germany, Aug. 17, 1965, E 29,912  
Int. Cl. C11d 7/54, 7/38, 7/18

U.S. Cl. 252—186

12 Claims

Substantially dry organic peroxides are produced by forming an aqueous suspension of a selected peroxide and a plasticiser maintaining the suspension for a period of time from 5 to 10 minutes and recovering the intended substantially dry peroxide.

### 3,462,371 NUCLEAR REACTOR FUEL

John A. L. Robertson, Deep River, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a company of Canada  
No Drawing. Continuation-in-part of application Ser. No. 419,226, Dec. 17, 1964. This application Mar. 9, 1967, Ser. No. 621,787  
Int. Cl. G21c 19/42

U.S. Cl. 252—301.1

3 Claims

The present invention describes a technique for converting a shaped ceramic nuclear fuel mass comprising a hyperstoichiometric dioxide of a metal selected from the group consisting of uranium, plutonium, thorium and mixtures thereof to a hypostoichiometric state. The shaped mass is coated with a thin layer of carbon, then annealed at above about 1,500° C. in vacuo or an inert gas atmosphere until the carbon coating has been substantially removed by reaction with the substrate, thereby producing the desired hypostoichiometric state.

### 3,462,372 METHOD FOR PRODUCING ELECTROLUMINESCENT ZINC-CADMIUM SULFIDE-OXIDE PHOSPHORS

Ivie L. Smith, Cleveland, Ohio, assignor to General Electric Company, a corporation of New York  
Filed July 25, 1966, Ser. No. 567,518  
Int. Cl. C09k 1/12

U.S. Cl. 252—301.6

6 Claims

Zinc-cadmium sulfide-oxide phosphors activated by copper and halides can be most effectively produced by firing a batch of zinc sulfide containing the activators and mixed with copper sulfide and cadmium oxide, and then removing the excess reactants.

### 3,462,373 ALKALINE TIN OXIDE SOLS AND PROCESS FOR THEIR PREPARATION

Jan C. Jongkind, Roseville, Mich., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application May 8, 1964, Ser. No. 366,146, now Patent No. 3,346,468, dated Oct. 10, 1967. Divided and this application May 4, 1967, Ser. No. 645,088

Int. Cl. B01j 13/00

U.S. Cl. 252—313

13 Claims

A new product is provided and the process for making the product which is particularly useful for replenishing the tin content of a tin-plating bath, and characterized by its substantially complete convertibility to stannate when in contact with solutions containing between about 5–100 g./l. of potassium hydroxide at temperatures of between about 50° C.–100° C. Further, the process for making the product includes the steps of reacting at less than about 75° C. an alkali metal stannate in an aqueous solution with acid to a final pH of less than about 6 thereby precipitating hydrous stannic oxide, separating said hydrous stannic oxide from said aqueous medium, washing said hydrous stannic oxide thereby removing water-soluble ions, peptizing said hydrous stannic oxide with a peptizing agent selected from the group consisting of potassium hydroxide and potassium stannate, maintaining the molar ratio of potassium to tin in the final solution at 0.1–1.5, and maintaining said hydrous stannic oxide at a temperature below about 75° C. prior to said peptizing.

### 3,462,374 METHOD OF PREPARING CONCENTRATED SILICA SOLS

Eugene J. Klosak, Chicago, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 4, 1966, Ser. No. 539,730

Int. Cl. B01j 13/00

U.S. Cl. 252—313

5 Claims

A process for producing concentrated and stable silica sols in which a silicic acid sol is added to an aqueous alkaline solution while heating said solution. The pH of the reaction mixture should be maintained within a range of from 8 to about 12 throughout the process. The heat evaporation under a pressure of 5–100 p.s.i.g. and silicic acid sol addition are continued until the alkaline solution comprises a silicic sol containing from 45 to 55% by weight of colloiddally suspended silica particles. The process provides a simplified means for directly producing concentrated silica sols.

### 3,462,375 STABILIZING COMPOSITION FOR OLEFIN POLYMERS CONTAINING A HYDROCARBON-MERCAPTO-HYDROCARBON PHOSPHITE, CARBON BLACK, AND A HINDERED PHENOL

Harry Braus, Springdale, Ohio, and Jerome E. Hager, Decatur, and Lester A. Hill, Jr., Tuscola, Ill., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 519,415, Jan. 10, 1966. This application Oct. 20, 1966, Ser. No. 587,988

Int. Cl. B01j 1/18; C09k 3/00

U.S. Cl. 252—400

18 Claims

An olefin polymer stabilizer composition comprising in combination a hydrocarbon-mercapto-hydrocarbon phosphite, carbon black and optionally a hindered phenol.

### 3,462,376 CATALYST AND PREPARATION THEREOF

James C. Kirk, Ponca City, Okla., assignor, by mesne assignments, to Columbian Carbon Company, a corporation of Delaware

No Drawing. Application June 14, 1962, Ser. No. 202,385, now Patent No. 3,247,270, dated Apr. 19, 1966, which is a continuation-in-part of application Ser. No. 32,528, May 31, 1960. Divided and this application June 14, 1965, Ser. No. 477,995

Int. Cl. B01j 11/06

U.S. Cl. 252—428

12 Claims

A catalyst, useful for producing cycloolefinic compounds such as cyclooctadiene from conjugated diolefinic compounds such as butadiene is provided by interacting nickel carbonyl with a compound, such as a trialkyl aluminum, of the formula  $[(R)_3M(X)]_n$ , wherein M is a nontransition metal from periodic groups I–A, II–A, II–B, III–A, and IV–A, R is a hydrocarbon or hydrogen radical, X is a halide radical, and a and b are numbers the sum of which is equal to the valence of the metal, with the proviso that a and c are always 1 or more. Where a is more than one and b equals zero, R may include hydrocarbon and hydrogen radicals, as in the organometallic hydrides. When R is exclusively hydrogen, b equals zero. The formula includes metal hydrides, organometallics, and organometallic halides and hydrides all of which is more particularly described in the specification which follows.

### 3,462,377 CATALYST PREPARED BY STEAMING PARTIALLY BASE-EXCHANGED ZEOLITE X IN A MATRIX

Charles J. Plank, Woodbury, and Edward J. Rosinski, Deptford, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Continuation-in-part of applications Ser. No. 621,138 and Ser. No. 621,144, Mar. 7, 1967. This application May 8, 1967, Ser. No. 636,588

The portion of the term of the patent subsequent to July 2, 1985, has been disclaimed

Int. Cl. B01j 11/02, 11/40

U.S. Cl. 252—455

6 Claims

Active catalyst for cracking and other hydrocarbon conversions results from steaming a reaction mixture of partially base-exchanged alkali metal aluminosilicates of the X type in a refractory porous oxide matrix. A suitable mixture is sodium zeolite X partially base exchanged with rare earth ions and dispersed in kaolinite.

### 3,462,378 GROWTH OF a-DOMAIN BARIUM TITANATE

Joseph P. Remeika, Warren Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 19, 1966, Ser. No. 543,603  
Int. Cl. C04b 35/46; H01v 7/02; B01j 17/06

U.S. Cl. 252—62.9

5 Claims

Single crystal barium titanate containing small amounts of bismuth show the usual platelike formation which is part of the "butterfly-twin" growth. These plates are a-domain rather than the usual c-domain and are, therefore, preferred for use in certain devices such as second harmonic generators operating in the visible spectrum.

### 3,462,379 PURIFICATION OF POLY(ALKYLENE OXIDES)

Arthur E. Gurgiole and Ralph R. Langner, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 2, 1965, Ser. No. 511,244

Int. Cl. C08g 23/06

U.S. Cl. 260—2

8 Claims

Solid, elastomeric polyoxyalkylene compounds are improved in color, stability and/or tensile strength by masti-

cation with hot water, preferably acidified. If the temperature of the wash water is gradually lowered while the elastomer is being milled, the material breaks down into a desirable shredded form.

### 3,462,380 SUSPENSION POLYMERIZATION PROCESS FOR VINYL ARYL MONOMERS

Clifford P. Ronden and John Yu, Edmonton, Alberta, Canada, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 24, 1966, Ser. No. 536,959

Int. Cl. C08f 1/11, 47/10

U.S. Cl. 260—2.5

7 Claims

This is a process for making vinyl aromatic polymer beads in an aqueous suspension containing a mixture of finely divided basic zinc carbonate and zinc hydroxide prepared in situ at temperatures between 100° F. and 212° F.

### 3,462,381 POLYMERIC MATERIALS

David Crawford Eaton and Geoffrey Arthur Haggis, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

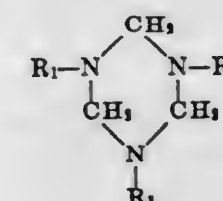
No Drawing. Filed Oct. 20, 1966, Ser. No. 587,960  
Claims priority, application Great Britain, Oct. 27, 1965, 45,502/65

Int. Cl. C08g 22/44, 22/16

U.S. Cl. 260—2.5

6 Claims

A process for the manufacture of polyurethane foams which includes reacting an aliphatic polyisocyanate with a polyether polyol in the presence of a gas-generating agent and from 1% to 30%, based on the weight of the polyether polyol, of a compound of the formula



wherein R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub>, which may be the same or different, represent alkyl, hydroxyalkyl or dihydroxyalkyl groups, each of said groups containing at most four carbon atoms.

### 3,462,382 TRIS-SUBSTITUTED RESORCINOL COMPOUND AND THE MODIFICATION OF RUBBER THEREWITH

Alfred Kolka, Pittsburgh, Wun T. Tai, Monroeville, and Roy H. Moul, Murrysville, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed July 15, 1966, Ser. No. 565,396  
Int. Cl. C08c 9/16; C08d 9/16

U.S. Cl. 260—3

2 Claims

The adhesion of rubber to tire cords is improved by the incorporation of tris(morpholinomethyl) resorcinol into the rubber.

### 3,462,383 WET STRENGTH ADDITIVES FOR CELLULOSIC PRODUCTS

Juan Longoria III, and Greene W. Strother, Jr., Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 7, 1966, Ser. No. 532,069

Int. Cl. C08g 30/14

U.S. Cl. 260—9

10 Claims

This invention concerns new alkylene polyamine resins useful as wet strength additives for paper and other fibrous



cellulosic products. More specifically these water-soluble cationic resins are prepared from an alkylene polyamine, a diglycidyl ether and epichlorohydrin.

3,462,384

## AEROSOL STARCH

John G. Kokoszka and Gerald P. Yates, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Apr. 11, 1967, Ser. No. 629,903

Int. Cl. C08b 25/02; C08g 47/10

U.S. Cl. 260—9

1 Claim

An aerosol starch composition containing a silicone lubricant which is a polydimethylsiloxane having a viscosity of 90,000 to 110,000 c.p.s. at 25° C., the silicone lubricant having been prepared by condensing a hydroxyl endblocked polydimethylsiloxane in emulsion. The lubricant makes ironing of clothes easier by providing excellent lubricity between the iron and the fabric, by conditioning the surface of the iron thus reducing starch build-up and making ironing of non-starched clothes easier, by improving the scorch resistance of the starch, and by imparting a softer hand to the starched clothes. This lubricant also alleviates the problem of spray dilation.

3,462,385

## STABLE AQUEOUS EMULSIONS

Eugene S. Barabas, Watchung, and Frederick Grosser, Midland Park, N.J., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 17, 1966, Ser. No. 595,026

Int. Cl. C08f 21/00, 43/00

U.S. Cl. 260—29.6

3 Claims

Stable aqueous emulsions of a graft terpolymer of a poly-N-vinyl lactam, such as polyvinylpyrrolidone, upon which has been grafted ethylacrylate and hydroxyethyl methacrylate as side chains.

3,462,386

## ORGANOSILICON MATERIALS AND METHOD FOR MAKING THEM

John C. Goossens, Scotia, N.Y., assignor to General Electric Company, a New York corporation

Filed May 3, 1965, Ser. No. 452,919

Int. Cl. C08g 31/10, 31/24, 31/34

U.S. Cl. 260—37

13 Claims

A substantially solvent-free polymerization method is provided for making organosilicon polymers from low molecular weight silanol containing organosilicon materials utilizing an organosilane of the formula



where R is selected from monovalent hydrocarbon radicals and halogenated monovalent hydrocarbon radicals, Y is a hydrolyzable radical, and Y' is a member selected from Y and (OSiR'<sub>2</sub>)<sub>n</sub>SiR(H)Y, R' is selected from R radicals and cyanoalkyl radicals, and n is an integer equal to 1 to 1,500, inclusive. Polymerization is achieved in the substantial absence of water. Copolymers, such as block copolymers, can be made having from 5 to 1,000 chemically combined diorganosiloxy units. The copolymer blocks, which can be derived from the lower molecular weight silanol containing organosilicon material, are joined to each other by one or more siloxy units having hydrogen attached to silicon.

3,462,387

## FRICTION MATERIAL

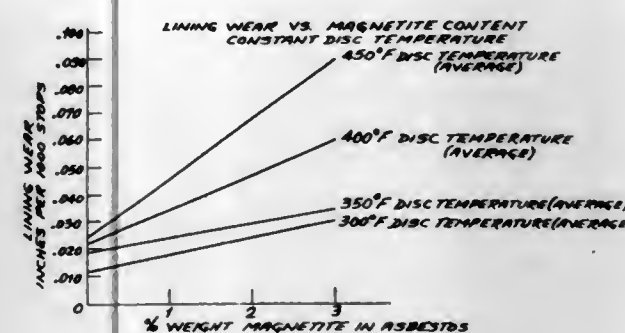
Warren R. Jensen, Stratford, and Jack F. Orzechowski, Orange, Conn., assignors to Raybestos-Manhattan, Inc., Passaic, N.J., a corporation of New Jersey

Filed Oct. 17, 1966, Ser. No. 587,272

Int. Cl. C08g 51/10

U.S. Cl. 260—38

4 Claims



Friction material comprised of fibrous asbestos and containing less than 1% by weight of magnetite particles all of which pass a 320 mesh screen, and the combination thereof with a ferrous metallic mating member.

3,462,388

## METHOD OF MAKING FLUORESCENT COMPOUND BONDED POLYMERS AND POLYMERS MADE THEREBY

Shojiro Horiguchi, 965 Shimohoya, Hoyamachi, Kitatama-gun, Tokyo, and Michiel Nakamura, 156 5-chome, Motobutocho, Urawa-shi, Saitama-ken, Japan

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,095

Claims priority, application Japan, Dec. 29, 1964, 39/74,159

Int. Cl. C08f 45/66; C09k 1/02

U.S. Cl. 260—41

13 Claims

Fluorescent compound bonded polymers produced by polymerizing at least one ethylenically unsaturated polymerizable monomer with a diazonium salt of at least one fluorescent compound wherein the fluorescent compound is a primary amino-radical containing derivative of a compound selected from the group consisting of stilbene, distyryl benzene, thiazole, oxazole, triazole, carbazole, imidazole, imidazolone, coumarin, pyridine, benzidine, carbostyryl, pyrazoline, naphthalimide, aldazine, anilino-anthracene, oxacynine, pyrimidanthrone, triphenylmethane and polycyclic quinone, and their use for coloring articles are described.

3,462,389

## POLYOLEFINIC COMPOSITIONS HAVING IMPROVED MECHANICAL PROPERTIES

Felix Schulde, Neuenhain, Taunus, and Dietrich Schleede, Frankfurt am Main, Germany, assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 71,636, Nov. 25, 1960. This application Mar. 4, 1966, Ser. No. 531,750

Claims priority, application Germany, Nov. 25, 1959, F 29,923

Int. Cl. C08f 45/04, 29/02

U.S. Cl. 260—41

7 Claims

The mechanical properties and particularly the hardness, stiffness and toughness of high density polyethylene or polypropylene are improved without adversely affecting processability or thermal stability under load by adding to the polymer from 10 to 100%, by weight of the polymer, of a zinc pigment such as zinc oxide, zinc sulfide or mixtures thereof.

3,462,390

## COLOR CONCENTRATES

Michael J. Dunn, New Milford, N.J., assignor to H. Kohnstamm & Co., Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 24, 1967, Ser. No. 611,230

Int. Cl. C08f 47/04, 47/06

U.S. Cl. 260—41

13 Claims

A color concentrate composition in powder or pellet form comprising a solid polymeric material, at least one pigment and a surfactant composition comprising a mixture of (1) a fatty quaternary ammonium chloride having at least one fatty group and at least one lower alkyl group, and (2) an alkylphenoxy poly(ethyleneoxy) ethanol and the process of manufacturing the color concentrate which comprises mixing a solid polymeric powder and the surfactant composition in a liquid vehicle at a temperature below the melting point of the polymer, adding to this mixture a pigment, mixing all the materials together while maintaining the temperature below the melting point of the polymer and subsequently drying the resulting color concentrate to remove liquid therefrom.

3,462,391

## POLYESTER RESIN STABILIZED WITH PHENYL SULFOXIDES

Mary J. Stewart, Media, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Apr. 23, 1968, Ser. No. 723,600

Int. Cl. C08g 51/58

U.S. Cl. 260—45.7

5 Claims

A thermal stabilized polyester comprising a highly polymeric linear polyester and a compound selected from the group consisting of phenyl sulfoxide and bis-p-chlorophenyl sulfoxide.

3,462,392

## SYNERGISTIC STABILIZING COMPOSITION FOR POLYOLEFINS

Earl Kaplan, Metuchen, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 8, 1964, Ser. No. 402,614

Int. Cl. C08f 45/58

U.S. Cl. 260—45.85

4 Claims

This invention relates to the stabilization of polyolefins using a combination of dinonylphenol and methylene-bis-dinonylphenol as the stabilizer. It relates further to polyolefins having improved light stability by having incorporated therein an effective amount of the above-named light stabilizer. Still further, it relates to a new composition of matter comprising 90 to 25 percent by weight of dinonylphenol and 10 to 75 percent by weight of 2,2'-methylene-bis(4,6-dinonylphenol).

3,462,393

## EPOXY RESIN WITH DIAMINE OF POLYOXYPROPYLENE GLYCOL AND METHOD OF CURE

Bobby Legler, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 108,316, May 8, 1961. This application May 5, 1967, Ser. No. 636,268

Int. Cl. C08g 30/14

U.S. Cl. 260—47

3 Claims

A method of making an improved cured epoxy resin product by admixing with a polyglycidyl ether of a

phenolic compound a polyoxyalkylenepolyamine as described and claimed in U.S. Patent 3,236,895, and the cured epoxy resin product so made. The epoxy resin product is used in preparation of glass laminates.

3,462,394

## PROCESS FOR STABILIZING POLYOXYMETHYLENE

Shin'ichi Ishida, Tokyo, Toshio Kato, Ohmiya-shi, Masakazu Kurihara, Warabi-shi, and Yasunobu Takahashi and Hiromichi Fukuda, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Kita-ku, Osaka, Japan

No Drawing. Filed Oct. 24, 1967, Ser. No. 677,753

Claims priority, application Japan, Oct. 31, 1966, 41/71,351; July 3, 1967, 42/42,297

Int. Cl. C08g 1/22

U.S. Cl. 260—67

9 Claims

The acetylation by 1-cyanovinyl acetate of the terminal hydroxy group of a polyoxymethylene having at least one terminal hydroxy group and a molecular weight of more than 10,000 affords a greater rate of acetylation than that in conventional acetylation known heretofore without being accompanied by the decomposition of polyoxymethylene at high temperatures by acetic anhydride.

3,462,395

## METHOD FOR PREPARING ESTERS USING IMIDAZOLES AS CATALYSTS

Maria V. Wiener, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Nov. 9, 1961, Ser. No. 151,182

Int. Cl. C08g 17/015

U.S. Cl. 260—75

6 Claims

4. A process for the manufacture of linear, fiber-forming polyesters by reesterification of an ester of a dicarboxylic acid selected from the group consisting of adipic acid, sebacic acid, terephthalic acid, a naphthalene dicarboxylic acid and a diphenyldicarboxylic acid and methanol with a bifunctional organic hydroxy compound having 2 to 8 carbon atoms and subsequent polycondensation of the dihydroxy ester obtained under reduced pressure at a temperature within the range of from 260° to 290° C., which comprises catalyzing the reesterification and the polycondensation by adding 0.005 to 0.08 percent by weight, calculated on the dicarboxylic acid ester, of an acid imide selected from the group consisting of imidazole and benzimidazole of a metal selected from the group consisting of calcium, magnesium, zinc, cadmium, lanthanum, lead and manganese.

3,462,396

## STABILIZATION OF SOLID POLYCAPROLACTAM

Kenneth C. Laughlin, Chester, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 24, 1966, Ser. No. 522,373

Int. Cl. C08g 20/38

U.S. Cl. 260—78

7 Claims

Polyamides formed by anionic polymerization of caprolactams are stabilized by treating the polyamides in solid particulate form with an aqueous solution of an ammonium salt of an aliphatic monocarboxylic acid having from 2 to 5 carbon atoms in the chain. Polyamides so treated can be heated to their melting points and above and molded or extruded into shaped articles without causing variations in molecular weight.



3,462,397

**PROCESS FOR THE MANUFACTURE OF POLY- $\beta$ -AMIDES IN A LIQUID TWO PHASE SYSTEM**  
Walter Rupp, Niederhofheim, Taunus, and Claus Beermann, Neu-Isenburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Feb. 3, 1967, Ser. No. 618,259  
Claims priority, application Germany, Mar. 2, 1966, F 48,563

Int. Cl. C08g 20/10, 20/18

U.S. Cl. 260—78

2 Claims

Polymerization of definite  $\beta$ -lactams to yield fiber- and film-forming poly- $\beta$ -amides of high molecular weight in a liquid, two-phase system, one phase of which essentially consists of a  $\beta$ -lactam solution in a halogenated aromatic solvent while the other phase essentially consists of a solution of the said halogenated aromatic solvent in heavy gasoline, the polymerization being carried out with the use of known basic catalysts and co-catalysts.

3,462,398

**CONTINUOUS PROCESS POLYMERIZATION OF BETA-LACTONES**

Willem M. Wagner and Arie Klootwijk, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 22, 1966, Ser. No. 573,793  
Claims priority, application Netherlands, Sept. 7, 1965, 6511629, 6511630

Int. Cl. C08g 17/017, 17/02

U.S. Cl. 260—78.3

5 Claims

Beta-lactones are polymerized in the presence of a catalyst wherein the lactone is a moving discontinuous phase in an inert aliphatic hydrocarbon diluent in which the monomer and polymer thereof are insoluble and which has a viscosity of at least 3 centistokes at a polymerization temperature of between 10 and 150° C.

3,462,399

**METHOD OF COPOLYMERIZING ETHYLENE AND PROPYLENE**

Demetrios N. Matthews, Bloomfield, N.J., assignor to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 304,692, Aug. 26, 1963. This application Mar. 19, 1965, Ser. No. 441,358

Int. Cl. C08f 1/56, 15/04, 15/40

U.S. Cl. 260—80.78

15 Claims

In the polymerization of alpha-olefins, especially copolymerization of ethylene and propylene (with a diene such as dicyclopentadiene if desired) in solution, using a coordination-type catalyst based on a vanadium salt (e.g.,  $\text{VCl}_4$ ,  $\text{VOCl}_3$ ) and an organometallic compound (particularly a soluble catalyst in which the organometallic compound is an alkylaluminum sesquihalide), the activity of the catalyst can be enhanced, and the molecular weight of the polymer can be regulated, by adding certain materials, particularly organic nitrates, organic nitrites, azoxy compounds (e.g., azoxybenzene), organic polyvalent iodine compounds, oil-soluble organic compounds of transition metals in a higher valence state, and alkyl disulfides.

3,462,400

**COPOLYMERS OF ACRYLAMIDE AND N-ARALKYL-2-AMINOALKYL ACRYLATE**

Theodore L. Ashby and Clarence R. Dick, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 16, 1966, Ser. No. 527,750  
Int. Cl. C08f 19/00; C02b 1/20

U.S. Cl. 260—86.1

5 Claims

Copolymerization of acrylamide with a minor amount of a water-soluble salt of an N-aralkyl-2-aminoalkyl acryl-

ate gives a novel water-soluble copolymer useful as a flocculant.

3,462,401

**POLYTETRAFLUOROETHYLENE MOLDING POWDER AND METHOD OF PREPARATION THEREOF**

Yutaka Kometani, Takarazuka-shi, Shun Kotzumi and Syozo Fumoto, Osaka, and Singo Tanigawa and Takeaki Nakajima, Mishima-machi, Osaka-fu, Japan, assignors to Dalkin Kogyo Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Jan. 4, 1966, Ser. No. 518,561

Claims priority, application Japan, Jan. 12, 1965, 40/1,176

Int. Cl. C08f 1/11, 3/24

U.S. Cl. 260—92.1

10 Claims

A method of preparing nearly spherical granular polytetrafluoroethylene molding powder and such molding powder so produced, such method comprising polymerizing tetrafluoroethylene at a temperature of 0–100° C. at a pressure of 1–40 atmospheres in the presence of water and an organic liquid boiling below 150° C., such organic liquid being one in which chain transfer does not readily take place and which disperses in the water in the form of drops. A water soluble catalyst is employed, the reaction system being stirred until the organic liquid is completely dispersed in the water and the polymerization being conducted until the resulting polymer ranges between 0.1 and 5 g. per ml., based on the volume of the organic liquid.

3,462,402

**THREADS, FIBERS, FABRICS, TAPES AND FILMS BASED ON POST-CHLORINATED POLYVINYL CHLORIDE, AND METHOD FOR PRODUCTION THEREOF**

Robert Büning, Oberlar, Karl-Heinz Diessel, Troisdorf, and Hans Ewald Konermann, Oberlar, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany, a corporation of Germany

No Drawing. Filed Jan. 12, 1966, Ser. No. 520,550

Claims priority, application Germany, Jan. 20, 1965, D 46,304

Int. Cl. C08f 27/02

U.S. Cl. 260—92.8

7 Claims

Thin material including threads, fibers, fabrics, tapes, and films, said material comprising post-chlorinated syndiotactic polyvinyl chloride obtained by post-chlorination of syndiotactic polyvinyl chloride containing about 55–80% of syndiotactically ordered chlorine radicals, and having a density of about 1.41–1.55 and K-value of about 50–90, said material being pre-stretched along at least one axis.

3,462,403

**POLYMERIZATION CATALYST COMPRISING (1) TRANSITION METAL AMIDE, (2)  $\text{ZnR}_2$  OR  $\text{ZnCl}_2$ , AND (3) ZIEGLER CATALYST OR ZIEGLER CATALYST REDUCING COMPONENT**

John F. Pendleton, Park Ridge, Ill., assignor, by mesne assignments, to Columbian Carbon Company, a corporation of Delaware

No Drawing. Filed May 11, 1964, Ser. No. 366,659

Int. Cl. C08f 1/56, 1/42, 1/52

U.S. Cl. 260—93.7

20 Claims

This disclosure is concerned with a novel three component catalyst system useful in the polymerization of polymerizable unsaturated monomers. This new catalyst composition is an admixture of (1) a transition metal amide (2) a material of the group consisting of (i) a Ziegler polymerization catalyst reducing component and (ii) said reducing component and a Ziegler polymerization catalyst transition metal compound other than said amide, and (3) a zinc compound.

3,462,404

**UPGRADING OF ALPHA-OLEFIN POLYMERS AND COPOLYMERS**

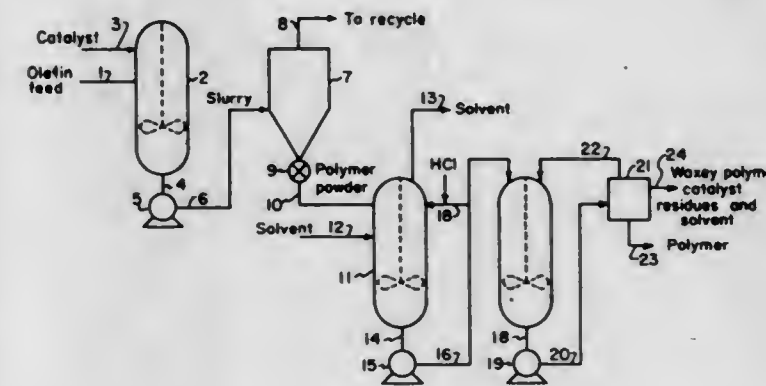
Abner B. Stryker, Jr., Paramonga, Peru, and Philip Measina, Hanover, Md., assignors by mesne assignments, to Dart Industries, Inc., a corporation of Delaware

Filed Aug. 9, 1965, Ser. No. 478,214

Int. Cl. C08f 1/94, 1/88, 1/32

U.S. Cl. 260—93.7

9 Claims



1. In a process for removing catalyst residues and low molecular weight soluble polymer fractions from an alpha-olefin polymer in solid particle form wherein said polymer is obtained by polymerizing an alpha-olefin monomer in the presence of a transition metal halide catalyst activated with an organometallic reducing agent and wherein said polymer is contacted with a composition comprising an alcohol and a normally liquid hydrocarbon to extract said catalyst residues and low molecular weight soluble polymer fractions and separating the extracted catalyst residues and soluble polymer fractions from said alpha-olefin polymer in a separation unit, the improved method of continuously purifying said polymer by substantially completely removing said catalyst residues and low molecular weight soluble fractions which comprises introducing said alpha-olefin polymer in contact with said alcohol hydrocarbon composition in a first heat treatment zone, maintaining said first zone under conditions of agitation and at a temperature of from about 135° to 250° F. for an average residence time of said polymer of from about one half hour to two hours, continuously withdrawing from said first zone a slurry of polymer, alcohol and hydrocarbon and introducing said withdrawn slurry to at least one other heat treatment zone in series with said first zone, maintaining said other zone under conditions of agitation and at a temperature of from about 100° to 200° F. for an average residence time of said polymer in said zone of from about fifteen minutes to one hour, continuously withdrawing from said other zone a slurry of polymer, alcohol and hydrocarbon and introducing said withdrawn slurry to said separation unit, and recovering from said second zone separation unit an alpha-olefin polymer which is purified with respect to catalyst residues and low molecular weight soluble polymer fractions.

3,462,405

**PREPARATION OF POLYMERIZATION CATALYST**  
Emanuel Schoenberg, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of applications, Ser. No. 214,492, Aug. 3, 1962, and Ser. No. 472,706, July 16, 1965. This application Dec. 7, 1966, Ser. No. 599,981

Int. Cl. C08d 1/14, 3/10

U.S. Cl. 260—94.3

8 Claims

1. In a process for the polymerization of 2-alkyl substituted conjugated diolefins to form high cis-1,4 addition

polymers which comprises contacting at least one 2-alkyl substituted conjugated diolefin, under polymerization conditions, with a catalyst prepared from mixtures of titanium tetrachloride and an organoaluminum compound selected from the group consisting of aluminum trialkyls and aromatic etherates of aluminum trialkyls, wherein the molar ratio of Al/Ti is within the range of from 0.6/1 to 1.2/1, the improvement comprising preforming the catalyst by bringing the said titanium tetrachloride and the said organoaluminum compound while dissolved in an inert hydrocarbon diluent in contact with each other in a manner so that at no time does the Al/Ti mole ratio of the mixture exceed 1.2/1, said catalyst having a molar concentration of titanium between 0.1 and 1.0.

3,462,406

**PROCESS FOR THE POLYMERIZATION OF BUTADIENE TO POLYBUTADIENE HAVING SUBSTANTIALLY 1,4 CIS STRUCTURE**

Giulio Natta and Antonio Carbonaro, Milan, Alberto Lionetti, Naples, and Lido Porri, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Apr. 6, 1966, Ser. No. 540,523

Claims priority, application Italy, Apr. 7, 1965, 7,662/65

Int. Cl. C08d 1/14, 3/08

U.S. Cl. 260—94.3

13 Claims

Butadiene is polymerized by means of a catalyst prepared from cobalt compounds and the reaction product between, e.g., dialkyl aluminum halide and water, using, as polymerization medium, cis butene-2 or mixtures of butenes, e.g., mixtures of cis butene-2 and butene-1 in which the cis butene-1 content is at least 20% by weight and the butene-1 content is less than 20% by weight. The mixtures may also contain butane, in which case the sum of butene-1 and butane is less than 20%. In the polybutadiene obtained at least 95% of the units derived from the monomer have cis-1,4 structure. The polymer is substantially gel-free.

3,462,407

**PROCESS FOR REACTING DIOLEFINIC POLYMER WITH POLYHALOCYCLOPENTADIENE AND PRODUCTS THEREOF**

Gilbert Witschard, Grand Island, and Claude Thomas Bean, Jr., Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed May 28, 1965, Ser. No. 459,888

Int. Cl. C08f 27/02, 27/00

U.S. Cl. 260—94.7

7 Claims

A polymer is produced by a process which comprises (1) making an emulsion by mixing polyhalocyclopentadiene with a dihydroxylic alkylene, (2) dissolving an olefinic polymer in the emulsion, (3) heating the emulsion until the desired polymer is obtained and (4) recovering the polymer.

The polymers of this invention find use in coating compositions and as a fire retardant additive.

3,462,408

**MONOAZO DYESTUFFS CONTAINING A 6-HYDROXYNAPHTHOSTYRILE GROUP**

Albrecht Hoffmann, Cologne-Stammheim, and Gerhard Wolfrum, Opladen, Germany, assignors to Farbfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 17, 1966, Ser. No. 520,843

Claims priority, application Germany, Feb. 5, 1965, F 45,155

Int. Cl. C09b 45/16, 45/20, 29/36

U.S. Cl. 260—146

15 Claims

Metal complex dyestuffs, useful for dyeing fibres such as wool and polyamides, are prepared by complex-





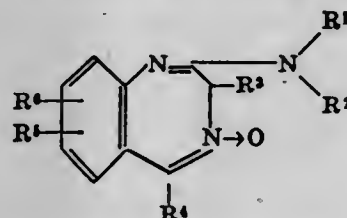


### 3,462,419 PREPARATION OF 1,4-BENZODIAZEPINE COMPOUNDS

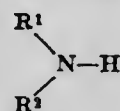
John L. Spencer, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Mar. 23, 1962, Ser. No. 182,106

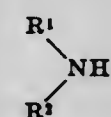
Int. Cl. C07d 53/06  
U.S. Cl. 260—239 2 Claims  
1. A method for preparing a compound of the formula



wherein R<sup>1</sup> and R<sup>2</sup>, taken separately, are alkyl containing from one to three carbon atoms, and R<sup>1</sup> and R<sup>2</sup>, when taken together with the nitrogen atom to which they are attached, represent a pyrrolidine ring, R<sup>3</sup> is selected from the class consisting of hydrogen and lower alkyl containing from one to five carbon atoms, R<sup>4</sup> is selected from the class consisting of phenyl, lower alkylphenyl, halophenyl, nitrophenyl, and lower alkoxyphenyl, and R<sup>5</sup> and R<sup>6</sup> are selected from the class consisting of hydrogen and halogen, which comprises reacting a 2- $\alpha$ -haloalkyl-4-arylquinazoline-3-oxide with a secondary amine of the formula



wherein R<sup>1</sup> and R<sup>2</sup> have the above-assigned meanings, in a solvent selected from the class consisting of water, water-miscible organic hydroxylic solvents, and amine solvents of the formula



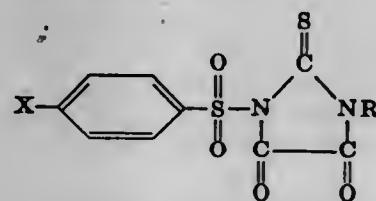
at a temperature between about minus 80° C. and ice-bath temperature in the presence of a base selected from the group consisting of the alkali metal hydroxides, the alkaline earth metal hydroxides, the quaternary ammonium hydroxides, and the alkali metal alcoholates.

### 3,462,420 PARABANIC ACID DERIVATIVES

Paul J. Stoffel, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 488,743, Sept. 20, 1965. This application Dec. 8, 1966, Ser. No. 600,018

Int. Cl. C07d 49/30; A01n 9/16; C07c 157/12  
U.S. Cl. 260—239.9 8 Claims  
Compound of the formula



wherein X is selected from the class consisting of amino, nitro and alkyl of not more than 4 carbon atoms, and R is selected from the class consisting of hydrogen, alkyl and alkenyl of not more than 12 carbon atoms are useful as phytotoxicants.

### 3,462,421 3-CARBALKKOXY-METHYLENE-STERIODS AND PROCESS FOR PREPARING THEM

Ulrich Stache, Hofheim, Taunus, Werner Fritsch, Neuenhain, Taunus, and Werner Haede and Gerhard Vogel, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Aug. 22, 1966, Ser. No. 573,838  
Claims priority, application Germany, Aug. 21, 1965, F 46,951, F 46,952  
Int. Cl. C07c 169/12, 169/24, 169/36

U.S. Cl. 260—239.55 23 Claims  
3-carbalkoxy-methylene- $\Delta^4$ - and - $\Delta^5$ -steroids of the pregnane, androstane, and oestrane series, having gestogenic activity. Method of making such steroids from corresponding 3-oxo- $\Delta^4$ - or - $\Delta^5$ -steroids and a carbalkoxy-methyl dialkyl phosphonate.

### 3,462,422 17-OXYGENATED ANDROSTA/ESTRA-4,6,8(14)-TRIEN-3-ONES, DIHYDRO CONGENERS, AND INTERMEDIATES

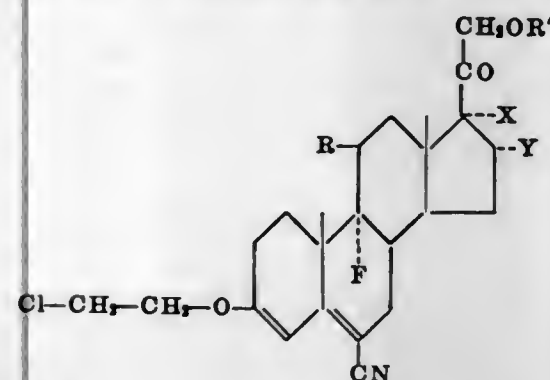
William F. Johns, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Sept. 26, 1966, Ser. No. 581,701  
Int. Cl. C07c 169/10, 169/22, 173/00  
U.S. Cl. 260—239.55 12 Claims  
Preparation of 17-oxygenated androsta/estra-4,6,8(14)-trien-3-ones such as 17 $\beta$ -hydroxyestra-4,6,8(14)-trien-3-one, dihydro congeners thereof, and intermediates thereto having valuable biological properties including anti-DCA and anti-protozoal activity is disclosed.

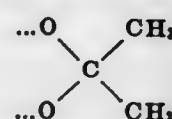
### 3,462,423 CYANO-DERIVATIVES OF STEROIDS

Alberto Consonni, Bianca Patelli, and Roberto Sciaky, Milan, Italy, assignors to Societa Farmaceutica Italiana, Milan, Italy, a corporation of Italy

No Drawing. Filed Dec. 28, 1966, Ser. No. 605,223  
Claims priority, application Italy, Dec. 29, 1965, 28,893/65  
Int. Cl. C07c 169/34, 169/36, 169/26  
U.S. Cl. 260—239.55 4 Claims  
Disclosed are 6-cyano-steroids having the formula:



wherein  
R is selected from the group consisting of O and ( $\alpha$ H) $\beta$ OR';  
R' is selected from the group consisting of hydrogen and the acyl of a mono- or di-carboxylic acid having to and including 9 carbon atoms;  
X is OH;  
Y is selected from the group consisting of H and OH or X and Y are together the group



A process of preparing these compounds is also disclosed. The compounds display therapeutic utility.

### 3,462,424 PROCESS FOR PREPARING ESTRONE AND THE INTERMEDIATES OBTAINED THEREFROM

Gunther Kruger, St. Laurent, Montreal, Quebec, and David J. Marshall, Hampstead, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 20, 1967, Ser. No. 624,240  
Int. Cl. C07c 169/24  
U.S. Cl. 260—239.55 7 Claims

There is disclosed herein a process for preparing estrone from 6,19-oxido-4-androstene-3,17-dione via the novel intermediate 3-acetoxy-6,19-oxidoandrost-2,4-dien-17-one, 3,19-diacetoxyandrost-2,4,6-trien-17-one and 3,17,19-triacetoxyandrost-2,4,6,16-tetraene, 19-acetoxyandrost-1,4,6-triene-3,17-dione and the known compound 6-dehydroestrone.

### 3,462,425 6-HALOGENO-6-DEHYDRO-3-KETO-STERIODS

Klaus Brückner, Darmstadt, Germany, assignor to E. Merck Aktiengesellschaft, Darmstadt, Germany, a corporation of Germany

No Drawing. Filed Apr. 27, 1959, Ser. No. 808,936  
Claims priority, application Germany, Apr. 29, 1958, M 37,504  
Int. Cl. C07c 169/30, 169/18, 173/00  
U.S. Cl. 260—239.55 6 Claims

4. 6 $\alpha$ ,7 $\alpha$ -epoxy-17 $\alpha$ -acetoxyprogesterone.

### 3,462,426 3-(3-OXO-11 $\beta$ ,13 $\beta$ -DIALKYL-17 $\beta$ -HYDROXY-GONEN-17 $\alpha$ -YL) PROPIONIC ACID $\gamma$ -LACTONES AND INTERMEDIATES

John S. Baran, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Oct. 30, 1967, Ser. No. 679,223  
Int. Cl. C07c 173/00, 169/10; A61k 17/00  
U.S. Cl. 260—239.57 3 Claims

3-(3-oxo-11 $\beta$ ,13 $\beta$ -dialkyl-17 $\beta$ -hydroxygonen-17 $\alpha$ -yl) propionic acid  $\gamma$ -lactones useful as potent progestational agents lacking sodium-excreting side-effects and preparable from the corresponding 11 $\beta$ ,13 $\beta$ -dialkyl-17 $\alpha$ -ethynylgon-1,3,5(10)-triene-3,17 $\beta$ -diols by reaction of the latter materials with carbon dioxide followed by reduction of the acetylenic linkage, Birch reduction of the A-ring and hydrolysis of the resulting enol function.

### 3,462,427 NOVEL 1-(CYCLOALKYLIDENE-ETHYL-4-PHENYL-PIPERIDINES

Herbert Merz, Hans-Detlef Schroeder, Adolf Langbein, and Karl Zelle, Ingelheim am Rhein, Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany, a corporation of Germany

No Drawing. Filed June 8, 1966, Ser. No. 555,957  
Claims priority, application Germany, June 16, 1965, B 82,430  
Int. Cl. C07d 31/32; A61k 27/00  
U.S. Cl. 260—240 9 Claims

The compounds are 1-(cycloalkylidene-ethyl)-4-(hydroxy- or methoxy-phenyl)-4-(lower alkanoyl or lower alkanoyl or lower alkoxy-carbonyl)-piperidines and non-toxic acid addition salts thereof, useful as morphine-antagonists and analgesics in warm-blooded animals.

### 3,462,428 6,7-DISUBSTITUTED-3-CYCLOPENTYL-2H-1,2,4-BENZOTHIADIAZINE-1,1-DIOXIDES

John G. Topliss, West Caldwell, and Arnold J. Wohl, Caldwell, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 11, 1966, Ser. No. 526,725  
Int. Cl. C07d 93/30; A61k 27/00  
U.S. Cl. 260—243 4 Claims

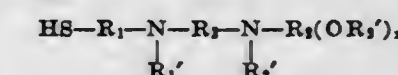
Disclosed herein are certain 6,7-disubstituted 3-cyclopentyl-2H-1,2,4-benzothiadiazine-1,1-dioxides which exhibit potent anti-hypertensive activity.

### 3,462,429 2-[3-(MORPHOLINOPROPYL)AMINO]ETHANE-THIOL OR ITS ACID ADDITION SALTS

John C. James, Melrose, Robert J. Wineman, Concord, and Morton H. Golis, Brookline, Mass., assignors, by mesne assignments to the United States of America as represented by the Secretary of the Army

No Drawing. Application Nov. 25, 1964, Ser. No. 413,953, now Patent No. 3,352,918, dated Nov. 14, 1967, which is a continuation-in-part of application Ser. No. 176,409, Feb. 28, 1962. Divided and this application May 19, 1966, Ser. No. 600,279  
Int. Cl. C07d 87/46; A61k 27/00  
U.S. Cl. 260—247.1 1 Claim

Novel mercaptoalkyl oxyalkyl diamines of the formula



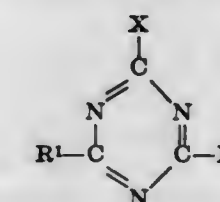
where each R is a saturated aliphatic hydrocarbon, each R' is hydrogen or saturated aliphatic hydrocarbon, x is an integer of from 1 to 3, at least one of the oxy O and amino N atoms is exocyclic and N is separated from other hetero atoms by at least two C atoms; and acid addition salts of said amines with protonic acids. The novel compounds are useful for a wide variety of industrial, pharmaceutical and agricultural applications.

### 3,462,430 2-CHLOROMETHYL-4-ALKANOLAMINO-6-TERTIARY AMINO TRIAZINES

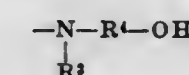
Werner Heimberger, Hanau am Main, Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Mar. 18, 1966, Ser. No. 535,314  
Claims priority, application Germany, Mar. 23, 1965, D 46,866  
Int. Cl. C07d 55/50, 99/04; A61k 27/00  
U.S. Cl. 260—247.5 9 Claims

Novel substituted triazines of the formula



in which X represents  $-\text{CCl}_3$ ,  $-\text{CHCl}_2$  or  $-\text{CH}_2\text{Cl}$ , R<sup>1</sup> represents piperazino, N'-lower alkyl piperazino or morpholino, and R<sup>2</sup> represents



in which R<sup>3</sup> represents lower alkyl with 1-6 C atoms or preferably hydrogen and R<sup>4</sup> is a lower alkylene with 1-6 C atoms. The triazines are antiplogistics.



3,462,431

**METHOD FOR THE PRODUCTION OF 1,4,5,6-TETRAHYDRO-AS-TRIAZINES**

Eugene R. Wagner, Zionsville, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 5, 1966, Ser. No. 598,940

Int. Cl. C07d 55/10

U.S. Cl. 260—248

4 Claims

1,4,5,6-tetrahydro-as-triazines, such as 1-methyl-3,5-diphenyl-1,4,5,6-tetrahydro-as-triazine and 3-β-dimethylaminoethyl-1-methyl-5-phenyl-1,4,5,6-tetrahydro-as-triazine, are prepared by the reaction of a nitrile with a hydrazino alcohol in the presence of sulfuric acid in an improved procedure in which a dispersion of the hydrazino alcohol in an inert organic solvent is added slowly portionwise to a cold mixture of the nitrile and sulfuric acid. The 1,4,5,6-tetrahydro-as-triazine products have pharmacological activity. For example, 1-methyl-5-phenyl-3-vinyl-1,4,5,6-tetrahydro-as-triazine has analgesic activity as indicated by its antagonism of hydrochloric acid-induced writhing in mice.

3,462,432

**6-HYDRAZINO-PYRIDAZINE DERIVATIVES**

Rudi Gall, Mannheim-Feudenheim, Erich Haack, Heidelberg, Kurt Stach, Mannheim, Wolfgang Schaumann, Mannheim-Waldhof, and Klaus Ritter, Mannheim, Germany, assignors to C. F. Boehringer & Soehne G.m.b.H., Mannheim-Waldhof, Germany, a corporation of Germany

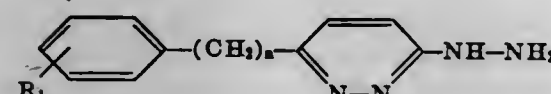
No Drawing. Filed June 29, 1966, Ser. No. 561,335

Claims priority, application Germany, July 9, 1965, B 82,760

Int. Cl. C07d 51/04; A61k 27/00  
U.S. Cl. 260—250

7 Claims

Chemotherapeutic agents characterized by blood pressure reducing activity having the formula:



and including their non-toxic acid addition salts wherein R<sub>1</sub> is hydrogen, halogen, lower alkyl, alkoxy, alkylmercapto, halogen substituted lower alkyl, alkoxy or alkylmercapto and n is 1 or 2.

3,462,433

**DERIVATIVES OF 2-(2'-HALO-ANILINO)1,3-DIAZACYCLO-PENTENE(2)**

Helmuth Stahle, Herbert Koppe, Karl Zelle, and Martin Wolf, Ingelheim am Rhein, and Wolfgang Hoefke, Budenheim (Rhine), Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany, a corporation of Germany

No Drawing. Filed Sept. 30, 1966, Ser. No. 583,421

Claims priority, application Germany, Oct. 1, 1965, B 83,965

Int. Cl. C07d 49/30; A61k 25/00  
U.S. Cl. 260—253

8 Claims

The compounds are 2-(2'-halo-anilino)-1,3-diazacyclopentenes-(2) and acid addition salts thereof, useful as hypotensives and sedatives in warm-blooded animals.

3,462,434

**2-ISOPROPYL-3-(p-AMINO-PHENYL)-3H-4-QUINAZOLONE**

Alex Heusner, Karl Zelle, and Peter Danneberg, Ingelheim am Rhein, Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany, a corporation of Germany

No Drawing. Filed Apr. 29, 1966, Ser. No. 546,164

Claims priority, application Germany, May 5, 1965, B 81,761

Int. Cl. C07d 51/46; A61k 27/00  
U.S. Cl. 260—256.4

2 Claims

The compounds are 2-isopropyl-3-(p-amino-phenyl)-3H-4-quinazoline and its non-toxic acid addition salts, useful as sedatives and anticonvulsives in warm-blooded animals.

3,462,435

**ALKYLENEIMINOQUINAZOLINE-2,4-DIONES**

Richard H. Fish, Anaheim, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Nov. 15, 1966, Ser. No. 594,407

Int. Cl. C07d 51/48, 57/00; A01n 9/22  
U.S. Cl. 260—256.4

5 Claims

The invention comprises novel 3-alkyleneiminoquinazoline-2,4-dione compounds in which the alkylene group has 4 to 7 carbon atoms. The compounds which are especially useful as herbicides, can be prepared by cyclization of the corresponding uramidobenzoate.

3,462,436

**11-PIPERAZINO-DIBENZOCYCLOHEPTADIENE DERIVATIVES**

Jean Clement Louis Fouche, Bourg-la-Reine, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed Jan. 24, 1966, Ser. No. 522,399

Claims priority, application France, Jan. 27, 1965, 3,483; Nov. 30, 1965, 40,313

Int. Cl. C07d 51/76; A61k 27/00  
U.S. Cl. 260—268

20 Claims

The invention provides new 11-piperazino-2-substituted-dibenzo[a,d]cycloheptadienes in which the piperazine nucleus may be N-substituted and their salts which are useful as neuroleptics, sedatives, antidepressants, antihistaminics, antiserotonins, analgesics, spasmolytics, and antiemetics.

3,462,437

**N-DODECYL SULFATE OF 5-METHYL-8-HYDROXY QUINOLINE**

Eugene Lerol, Albert Beaufour, and Gerald Beaufour, Paris, France, assignors to Societe d'Etudes de Produits Chimiques, Issy-les-Moulineaux, Haute-de-Seine, France, a French society

Application Aug. 11, 1967, Ser. No. 660,064, which is a continuation-in-part of application Ser. No. 342,776, Feb. 5, 1964, Divided and this application May 6, 1968, Ser. No. 732,797

Claims priority, application Great Britain, Feb. 11, 1963, 5,448/63

Int. Cl. C07d 33/60; A61k 13/00; A01n 9/22  
U.S. Cl. 260—286

1 Claim

The n-dodecyl sulfate of 5-methyl-8-hydroxy quinoline, useful as a bactericide and a fungicide is described.

3,462,438

**1,2,2a,8β-TETRAHYDROCyclobuta[c]QUINOLINES**

Bernard Loev, Broomall, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 545,254, Apr. 26, 1966. This application Oct. 16, 1967, Ser. No. 675,310

Int. Cl. C07d 33/30, 39/00, 57/00

U.S. Cl. 260—287

7 Claims

1,2,2a,8β-tetrahydrocyclobuta[c]quinolines which are prepared by the photochemical reaction of a carbostyryl (or thiocarbostyryl) with an unsaturated compound have pharmacodynamic activity, more particularly analgesic, central nervous system depressant, hypotensive and diuretic activity.

3,462,439

**ESTERS OF HETEROCYCLIC-VINYL-PHOSPHONATES**

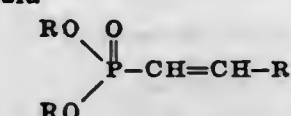
Ivan C. Popoff, Ambler, Pa., and James Louis Dever, Lewiston, N.Y., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed June 16, 1966, Ser. No. 557,889

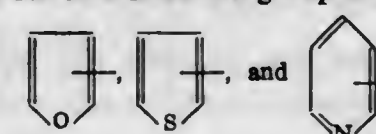
Int. Cl. C07f 9/58, 9/32  
U.S. Cl. 260—290

8 Claims

Esters of heterocyclic vinyl phosphonates useful as plant growth control agents and pesticides are provided having the formula



where R is a hydrocarbon or substituted hydrocarbon radical, and R' is an unsubstituted or substituted heterocyclic radical selected from the group consisting of



3,462,440

**1,4-BIS(2-INDOL-3-YLETHYL)PIPERIDINES**

Scott J. Childress, Philadelphia, and John L. Archibald, Malvern, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 3, 1965, Ser. No. 511,311

Int. Cl. C07d 57/00; A61k 27/00  
U.S. Cl. 260—293

14 Claims

The compounds are 1,4-bis(2-indol-3-ylethyl)piperidines which are useful as tranquilizers and cardiovascular agents.

3,462,441

**BIS(PYRIDYLETHYL)- AND BIS(PIPERIDYLETHYL)-INDOLES**

Meier E. Freed, Philadelphia, and John L. Archibald, Malvern, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 3, 1966, Ser. No. 518,007

Int. Cl. C07d 57/00; A61k 27/00  
U.S. Cl. 260—293

10 Claims

The compounds are bis(pyridylethyl)- and (piperidylethyl) indoles which are useful as anticonvulsants.

865 O.G.—34

3,462,442

**2-SUBSTITUTED-3-QUINUCLIDINONES**

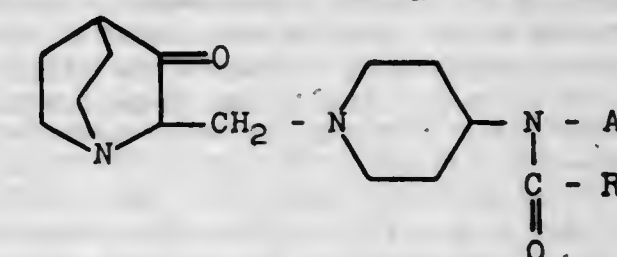
John H. Biel and Harvey B. Hopps, Milwaukee, Wis., assignors to Aldrich Chemical Company, Inc., Milwaukee, Wis., a corporation of Wisconsin

No Drawing. Filed Dec. 20, 1965, Ser. No. 515,183  
Int. Cl. C07d 57/00, 29/30, 39/06

U.S. Cl. 260—294

12 Claims

2-substituted-3-quinuclidinones of the formula



wherein R and Ar are as described below possess antidepressant activity and are useful for treating depression in mammals.

3,462,443

**INDENO[1,2-c]PYRIDINE DERIVATIVES**

Vasken Paragiamian, Dresher, Pa., assignor to McNeil Laboratories, Inc., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 407,915, Oct. 30, 1964. This application Apr. 19, 1967, Ser. No. 631,878

Int. Cl. C07d 39/00; A61k 27/00

U.S. Cl. 260—294

7 Claims

The compounds are of the class of 1,2,3,4,4a,9b-hexahydro-5H-indeno[1,2-c]-pyridines and 1,2,3,4,4a,9b-hexahydro-5H-indeno[1,2-c]pyridin-5-ones which are useful as hypotensive agents.

3,462,444

**NOVEL 4-BENZYLPIPERIDINE DERIVATIVES**

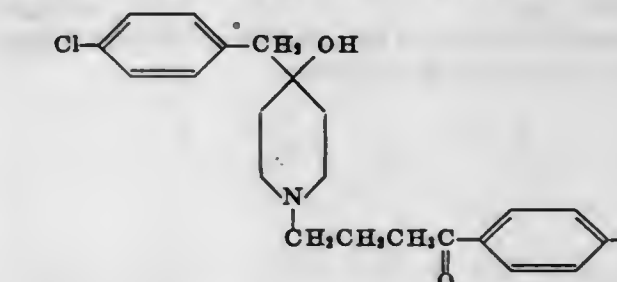
Arnold Heyworth Beckett, Bromley, Norman James Harper, Harrow, and Alma Beryl Simmonds, London, England, assignors to Arnold Heyworth Beckett, Bromley, Kent, England

No Drawing. Filed Oct. 9, 1961, Ser. No. 143,572  
Claims priority, application Great Britain, Oct. 20, 1960, 36,080/60

Int. Cl. C07d 29/12, 29/20; A61k 27/00  
U.S. Cl. 260—294.7

7 Claims

1. A chemical compound of the formula:



3,462,445

**CERTAIN ACYCLIC, AROMATIC AND HETERO-AROMATIC UREA DERIVATIVES OF TRICYCLO[2,2,1,0<sup>2,6</sup>]HEPTANES AND INTERMEDIATES THEREFOR**

Gerhard Muller, Leverkusen, and Wolfgang Behrenz, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 3, 1966, Ser. No. 524,851  
Claims priority, application Germany, Feb. 5, 1965, F 45,158

Int. Cl. C07d 27/00, 87/28; C07c 127/12  
U.S. Cl. 260—295

9 Claims

Nortricyclyl-3-amides, i.e., N-[tricyclo(2,2,1,0<sup>2,6</sup>)heptyl-3]amides or 3-amido-tricyclo(2,2,1,0<sup>2,6</sup>)heptanes, which possess insect-repelling and mite-repelling properties, and which may be produced by conventional methods.



### 3,462,446 SUBSTITUTED $\beta$ -AMINO-2-STILBAZOLE COMPOUNDS

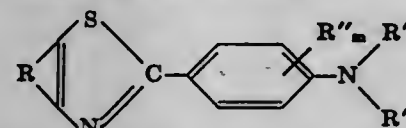
Horace A. De Wald, Ann Arbor, Mich., assignor to Parke Davis & Company, Detroit, Mich., a corporation of Michigan  
No Drawing. Filed Nov. 25, 1966, Ser. No. 596,807  
Int. Cl. C07d 31/42, 31/44, 57/00

U.S. Cl. 260—295 5 Claims  
 $\beta$ -Amino- $\alpha$ -[p-(tertiary aminoalkyl)phenoxy]-2-stilbazoles substituted at the 2'-position and optionally substituted elsewhere; trifluoroacetyl derivatives; and acid-addition salts. The compounds have pharmacological properties, specifically as anti-estrogenic, anti-progestational, hypocholesteremic, and anti-fertility agents. They can be produced by (a) reacting a benzonitrile with a reactive metal derivative of an aryloxymethylpyridine compound and hydrolyzing the product, or (b) reacting a primary amine with a reactive derivative of trifluoroacetic acid.

3,462,447  
CERTAIN AZADIBENZOCYCLOHEPTENE-5-OLS  
AND ETHERS DERIVATIVES THEREOF  
Cornelis van der Stelt and Petrus S. Hofman, Haarlem, Netherlands, assignors to N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades-Scheeman & Pharmacia, Amsterdam, Netherlands  
No Drawing. Filed Jan. 25, 1967, Ser. No. 611,544  
Claims priority, application Great Britain, Jan. 27, 1966, 3,785/66

Int. Cl. C07d 39/06, 39/00; A61k 27/00  
U.S. Cl. 260—296 6 Claims  
The present invention relates to amino alkyl ethers of azadibenzocyclohepten-5-ols. These ethers are prepared from the corresponding 5-ol and 5-halo compounds which are also novel compounds forming a feature of this invention. The ethers of this invention as well as the acid addition and quaternary ammonium salts thereof are therapeutically active compounds possessing antihistaminic properties.

3,462,448  
SUBSTITUTED PHENYL THIAZOLE COMPOUNDS  
Jacqueline S. Kelyman, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed Oct. 27, 1966, Ser. No. 589,858  
Int. Cl. C07d 91/42, 91/44; A61k 27/00  
U.S. Cl. 260—302 3 Claims  
The present disclosure is directed to substituted phenyl thiazole compounds of the formula



wherein R represents straight chain alkylene being of from 3 to 6, both inclusive, carbon atoms; each R' independently represents hydrogen or loweralkyl; each R'' independently represents bromo, chloro, methoxy or methyl; and m represents an integer of from 0 to 2, both inclusive. The preparation of the compounds as well as the use of these compounds as agents for lowering the concentration of cholesterol in blood is also taught.

3,462,449  
SUBSTITUTED 4,5,6,7-TETRAHYDRO- $\Delta^2$ -BENZO-  
THIAZOLINEACETIC ACID ESTERS  
Real Laliberte, Laval, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware  
No Drawing. Filed June 13, 1967, Ser. No. 645,630  
Int. Cl. C07d 91/24  
U.S. Cl. 260—306.7 5 Claims  
There are disclosed herein 3-substituted-4,5,6,7-tetrahydro- $\Delta^2$ -benzothiazolineacetic acid methyl and ethyl

esters in which the substituent in position 3 may be the phenyl, the 3-nitrophenyl, 4-chlorophenyl or 3,4-dichlorophenyl group. The compounds may be further substituted in the  $\alpha$ -position by cyano or carbamoyl groups. The intermediate 3-phenyl-, 3-(3'-nitrophenylamino)-, 3-(4'-chlorophenylamino) and 3-(3',4'-dichlorophenylamino)-2-cyano-3-(2'-oxocyclohexyl)-thioacrylic acid methyl and ethyl esters are also disclosed.

The compounds are useful as trichomonocidal agents and methods for their preparation and use are also given.

### 3,462,450 CHEMICAL COMPOUNDS

Tsung-Ying Shen, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed June 29, 1966, Ser. No. 565,339

Int. Cl. C07d 27/56; A61k 27/00  
U.S. Cl. 260—326.12 10 Claims

There are described new anti-inflammatory compounds comprising 1-aryl-2-hydroxy or mercaptoindolyl-3-alkanoic acids and the corresponding 2-ethers and thioethers and their esters and amides. The hydroxy compounds are prepared by ring closing chloracetylanilines to 2-oxyindoles, introducing the 3-sidechain by reaction with an oxalate and reducing the keto acid formed, followed by acylation of the indole nitrogen. The mercapto compounds are formed by introduction of a thioacetyl group through a Grignard reagent formed on the 2-position of an indole-3-alkanol ether. This can then be acylated in the 1-position and oxidized to the 3-alkanoic acid.

### 3,462,451

#### 2,3-BIS(ALKOXYPHENYL)PYRROLES

Jacob Szmuszkovicz, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 25, 1966, Ser. No. 544,847

Int. Cl. C07d 27/22, 27/14; A61k 23/00  
U.S. Cl. 260—326.5 2 Claims

Bis(alkoxyphenyl)pyrroles and pyrrolines are disclosed. These compounds are useful as central nervous system depressants in animals.

### 3,462,452

#### 1-PHENETHYL OR p-AMINOPHENETHYL-3-(m-HYDROXY- OR ALKANOYLOXY-PHENYL)-3-PROPYLPYRROLIDINES AND SALTS THEREOF

John Frederick Cavalla, Isleworth, England, assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed May 17, 1966, Ser. No. 550,615

Int. Cl. C07d 27/04; A61k 27/00  
U.S. Cl. 260—326.5 5 Claims

1-phenethyl and 1-(p-aminophenethyl)-3-(m-hydroxyphenyl)-3-propylpyrrolidines; lower alkanolic acid esters thereof; and salts of the foregoing compounds. These compounds have pharmacological properties, especially as analgesic agents. The phenols can be prepared by cleaving or hydrolyzing the corresponding ethers and esters. The esters can be prepared by introducing a phenethyl group on the pyrrolidino nitrogen atom or by esterifying a phenol. The p-aminophenethyl compounds of both the phenol and ester series can also be prepared by reducing the corresponding p-nitrophenethyl compounds.

3,462,453  
HALOGENATED ORGANIC COMPOUNDS  
Ivan C. Popoff, Ambler, and Bernard Loev, Philadelphia, Pa., assignors to Pennsalt Chemical Corporation, Philadelphia, Pa., a corporation of Pennsylvania  
No Drawing. Original application Mar. 28, 1958, Ser. No. 724,527. Divided and this application July 26, 1966, Ser. No. 694,078

Int. Cl. C07d 27/22, 5/16, 63/12  
U.S. Cl. 260—332.5 4 Claims  
Heterocyclic compounds selected from the group of furan, pyrrole, and thiophene containing the dichlorocyclopropyl group attached directly to a carbon atom in the heterocyclic ring. These compounds have utility as agricultural chemicals, lubricants, oil additives and pharmaceuticals.

### 3,462,454 PREPARATION OF 3,3-BIS-(CHLORO- METHYL)-OXETANE

Jürgen Gartner, Düsseldorf, Germany, assignor to Henkel & Cie G.m.b.H., Düsseldorf, Germany, a corporation of Germany  
No Drawing. Filed Oct. 18, 1966, Ser. No. 587,411  
Claims priority, application Germany, July 9, 1966, H 59,909, H 59,911  
Int. Cl. C07d 5/32

U.S. Cl. 260—333 8 Claims  
An improved process for the preparation of 3,3-bis-(chloromethyl)-oxetane from the cyclic sulfurous acid ester of pentaerythritol dichlorohydrin in the presence of an acid scavenger.

3,462,455  
SUBSTITUTED FLAVANE DERIVATIVES  
Josef Krümer, Darmstadt, Karl-Otto Freisberg, Speyer, and Herbert Halpaap, Jugenheim, Germany, assignors to E. Merck A.G., Darmstadt, Germany  
No Drawing. Filed Apr. 19, 1966, Ser. No. 543,558  
Claims priority, application Germany, Apr. 23, 1965, M 64,983; Aug. 19, 1965, M 66,372  
Int. Cl. C07d 7/30

U.S. Cl. 260—340.5 19 Claims  
Certain flavanoid derivatives substituted at the 3-position by alkyl of 4-6 carbon atoms useful for lowering the cholesterol level.

3,462,456  
METHYLENEDIOXY PHENYL ACETAMIDES  
Heinrich Leditschke, Frankfurt am Main, Gustav Ehrhart and Heinrich Ruschig, Bad Soden, Taunus, and Willi Meixner, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany  
No Drawing. Filed Aug. 7, 1967, Ser. No. 658,643  
Claims priority, application Germany, Aug. 13, 1966, F 49,938  
Int. Cl. C07d 13/00

U.S. Cl. 260—340.5 8 Claims  
Substituted phenyl acetic acid amides having sedative properties.

3,462,457  
CARBAMATES AND CARBANILATES OF 11-HYDROXY-10,5(EPOXYMETHANO)DIBENZOCYCLOHEPTEN-13-ONE  
Martin A. Davis, Montreal, Quebec, and Thomas A. Dobson, St. Laurent, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware  
No Drawing. Filed Dec. 28, 1966, Ser. No. 606,519  
Int. Cl. C07d 9/00, 29/12, 27/02  
U.S. Cl. 260—343.2 4 Claims  
There are disclosed herein the compounds 11-carbamoyloxy-, 11-N-methyl-carbamoyloxy-, 11-N,N-di-

methyl-carbamoyloxy-, 11-N-ethyl-carbamoyloxy-, 11-N-propyl-carbamoyloxy-, 11-N-butyl-carbamoyloxy-, 11-N-phenyl-carbamoyloxy-, 11-N-benzyl-carbamoyloxy-, 11-N-phenethyl-carbamoyloxy-, 11-(N-p-chlorobenzyl)-carbamoyloxy-, 11-N-(1-naphthyl)-carbamoyloxy-, 11-pyrrolidino-carbamoyloxy-, 11-piperidino-carbamoyloxy-, 11-morpholino-carbamoyloxy-, and 11-N'-ethylpiperazino-carbamoyloxy-10,5(epoxymethano)10,11-dihydro-5H-dibenzo[a,d]cyclohepten-13-one. The compounds are useful as trichomonocidal agents and are prepared by reacting 11-hydroxy-10,5(epoxymethano)-10,11-dihydro-5H-dibenzo[a,d]cyclohepten-13-one with either an appropriate hydrocarbon isocyanate or an aryl chloroformate and, in the latter case, reacting the product obtained with an appropriate amine. There is also disclosed the intermediate compound 11-phenoxy-carbamoyloxy-10,5(epoxymethano)-10,11-dihydro-5H-dibenzo[a,d]cyclohepten-13-one.

### 3,462,458

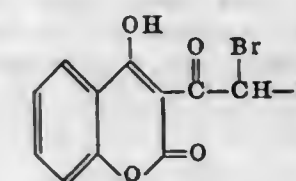
#### 3-( $\alpha$ -BROMOACYL)-4-HYDROXYCOUMARIN PRODUCTS AND CORRESPONDING CONDENSATION PRODUCTS

John S. McIntyre, Sarnia, Ontario, Canada, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

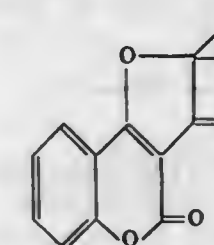
No Drawing. Filed Apr. 24, 1967, Ser. No. 632,892

Int. Cl. C07d 7/30, 99/00; A01n 9/22  
U.S. Cl. 260—343.2 8 Claims

The present invention is concerned with 3-( $\alpha$ -bromoacyl)-4-hydroxycoumarin products of the formula



and with their corresponding base condensation products of the formula



In the above and succeeding formulae in the present specification and claims, R represents hydrogen, alkyl being of from 1 to 8, both inclusive, carbon atoms, pyridyl, furyl, thienyl, pyrrolyl, phenyl, or phenyl substituted by from 1 to 2 substituents, each of which is independently bromo, chloro, methyl, or methoxy.

Both the 3-( $\alpha$ -bromoacyl)-4-hydroxycoumarin products and the corresponding condensation products, the latter being designated as 4H-furo(3,2-c)(1)-benzopyran-3(2H), 4-diones, are useful as agents to control, in the sense of suppressing, inhibiting, and/or killing, plants, such as, for example, pigweeds, bindweeds, barnyard grass, and the like. The compounds can also be employed for the control of bacterial and fungal organisms, such as, for example, tomato late blight. In addition, the 3-( $\alpha$ -bromoacyl)-4-hydroxycoumarin products are useful as agents to control insects and arachnids.



3,462,459

**3-ALKANOYL-7-ALKYL-5-HYDROXYCOUMARINS**  
Timothy Y. Jen, Havertown, Gordon A. Hughes, Havertown, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware  
No Drawing. Filed May 12, 1967, Ser. No. 637,896  
Int. Cl. C07d 7/28

U.S. Cl. 260—343.2 2 Claims  
3-alkanoyl-7-alkyl-5-hydroxycoumarins, alkali metal salts and esterified derivatives thereof (I) are prepared by condensing a novel 4-alkyl-2,6-dihydroxybenzaldehyde (II) with an alkyl alkanoylacetate (III) and, if required, esterifying or forming a salt with an alkali metal base. Compounds (I) are pharmacologically active, especially as central nervous system depressants.

3,462,460

**$\alpha$ -AMINO ACID ANHYDRIDES**  
Janos Kollonitsch, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey  
No Drawing. Continuation-in-part of application Ser. No. 361,235, Apr. 20, 1964. This application June 14, 1967, Ser. No. 645,866  
Int. Cl. C07d 5/06, 7/06; C07c 101/22

U.S. Cl. 260—345.9 8 Claims  
Strong acid salts of aliphatic dicarboxylic amino acids are converted to the cyclic amino acid anhydride salts by treating said salts with a dehydrating agent. The salts of glutamic acid anhydride are novel compounds useful as chemical intermediates.

3,462,461

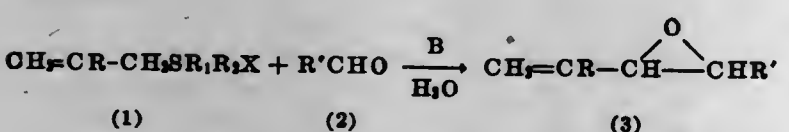
**PURIFICATION OF PHTHALIC ANHYDRIDE**  
Thomas A. Bloom, Park Forest, and Vernon W. Blue, Calumet City, Ill., assignors to The Sherwin-Williams Company, Cleveland, Ohio, a corporation of Ohio  
No Drawing. Filed Oct. 6, 1966, Ser. No. 584,671  
Int. Cl. C07c 63/18, 51/44

U.S. Cl. 260—346.7 10 Claims  
Crude phthalic anhydride containing naphthoquinone-type impurities is purified by heating it in a molten state with a polyunsaturated fatty animal or vegetable oil or a polyunsaturated fatty acid or hydrocarbon obtained from such oil for a period of time sufficient to reduce color forming impurities when the phthalic anhydride is subsequently distilled. Thereafter the phthalic anhydride is distilled from the resultant mixture.

3,462,462

**SYNTHESIS OF VINYLIDENE EPOXIDES FROM ALLYLIC SULFONIUM SALTS**  
Melvin J. Hatch, Socorro, N. Mex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 502,365, Oct. 22, 1965. This application Dec. 19, 1967, Ser. No. 691,711  
Int. Cl. C07d 1/02, 5/22

U.S. Cl. 260—348 7 Claims  
Reaction of an allylic sulfonium salt (1) with an aldehyde free of  $\alpha$ -hydrogen (2) in the presence of a strong aqueous base provides a novel synthesis of vinylidene epoxides (3), e.g.:



The vinyl epoxides, such as butadienemonoxide, are useful polyfunctional monomers such as scavengers for hydrohalide.

3,462,463

**1-ALKYLAMINO-4-ARYLAMINO-ANTHRAQUINONE SULFONIC ACID REACTIVE DYES**

Hans Rudolf Schwander and Jean-Pierre Jung, Riehen, and Peter Hindermann, Bottmingen, Basel-Land, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland  
No Drawing. Continuation-in-part of applications Ser. No. 462,073, June 7, 1965, and Ser. No. 530,351, Feb. 28, 1966. This application Dec. 1, 1966, Ser. No. 598,207  
Int. Cl. C09b 67/72, 1/34

U.S. Cl. 260—372 5 Claims  
Novel fiber-reactive acid anthraquinone dyestuffs are provided. Such novel dyestuffs are produced by converting amino anthraquinone dyestuffs into the valuable novel dyestuffs by the introduction of halogen, acylamino methyl groups. The novel dyestuffs are especially useful for the batch dyeing and printing of fiber material containing polyamide, especially wool. The invention also provides, as industrial products, the materials dyed and printed with the novel dyestuff.

3,462,464

**2-OXIMINO-3-KETO STEROIDS OF THE ANDROSTANE SERIES**

Ralph F. Hirschmann, Scotch Plains, and Helmut Mrozik, Matawan, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey  
No Drawing. Filed June 28, 1963, Ser. No. 291,308  
Int. Cl. C07c 169/10, 169/22

U.S. Cl. 260—397.4 14 Claims  
The invention disclosed herein is concerned generally with novel steroid compounds and processes for preparing them. More particularly, it relates to novel 2-oximino-3-keto-17-oxygenated steroids of the androstane series having an anabolic activity, and with processes of preparing these new compounds by reacting the corresponding 2-hydroxyalkylidene-3-keto-17-oxygenated steroids with nitrous acid. These 2-oximino-3-keto-17-oxygenated steroids, and in particular 2-oximino-17 $\beta$ -hydroxy androsta-3-one and 2-oximino-17 $\beta$ -hydroxy-17 $\alpha$ -methyl androsta-3-one, are valuable as anabolic agents. Moreover, the ratio of anabolic to androgen activity in these 2-oximino-3-keto-17-oxygenated steroid compounds is equal to or greater than that of the corresponding 2-hydroxymethylene-3-keto steroids.

3,462,465

**6,7-METHYLENE STEROIDS**

Kenneth G. Holden, Stratford, N.J., and James F. Kerwon, Broomall, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania  
No Drawing. Continuation-in-part of application Ser. No. 482,277, Aug. 24, 1965. This application May 22, 1967, Ser. No. 640,404  
Int. Cl. C07c 169/22, 169/10; A61k 17/06

U.S. Cl. 260—397.4 7 Claims  
The  $\alpha$ - and  $\beta$ -forms of 6,7-methyleneandrosta-4-en-3-ones and 19-nor compounds are prepared by treating  $\Delta^{4,6}$  compounds with dimethyl sulfoxonium methylide. The products have anabolic and androgenic activity.

3,462,466

**11,17-DIOXYGENATED 4-METHYLESTRA-1,3,5(10)-TRIENES**

Leland J. Chinn, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware  
No Drawing. Filed Dec. 4, 1967, Ser. No. 696,667  
Int. Cl. C07c 169/08, 169/12; A61k 17/06

U.S. Cl. 260—397.45 5 Claims  
Preparation of the captioned compounds and their valuable and unexpected pharmacological properties, includ-

ing fertility-inhibiting, anti-hypercholesterolemic, and anti-inflammatory activity, are disclosed.

3,462,467

**17 $\alpha$ -PHENYLALKYL/PHENYLETHYNYL/PHENYL-VINYL-13 $\beta$ -ALKYLGONA-1,3,5(10)-TRIENE-3,17 $\beta$ -DIOLS AND ESTERS THEREOF**

Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., a corporation of Delaware  
No Drawing. Filed May 1, 1967, Ser. No. 634,820  
Int. Cl. C07c 169/08, 167/20; A61k 17/06

U.S. Cl. 260—397.5 12 Claims  
Novel steroidal derivatives characterized by a phenyl-containing hydrocarbon substituent at the 17-position and a 13 $\beta$ -alkyl group of at least two carbon atoms and useful as estrogenic agents with corresponding lack of antiestrogenic side effects. They are, furthermore, hypocholesterolemic, pepsin-inhibitory and antifertility agents. These novel compounds are prepared by addition of the appropriate organometallic reagent to the corresponding 17-keto starting materials or, alternatively, in the case of the 17-phenylvinyl or 17 $\alpha$ -phenylethyl derivatives, by partial or complete reduction of the acetylenic linkage of the instant 17-phenylethynyl substances. Acylation with a suitable alkanolic acid anhydride or halide provides the corresponding esters.

3,462,468

**RESORCINOL ESTERS OF  $\alpha,\alpha$ -DIMETHYL ALIPHATIC ACIDS**

Wallace Edmondson Taylor and Enrique Roberto Witt, Corpus Christi, Tex., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 174,378, Feb. 20, 1962. This application Oct. 22, 1964, Ser. No. 405,821  
Int. Cl. C07c 69/00, 69/30

U.S. Cl. 260—410.5 7 Claims  
This invention relates to novel esters of various hydroxy aromatic compounds, e.g. dihydric and trihydric phenols, and various monocarboxylic and dicarboxylic acids useful as high temperature lubricants.

3,462,469

**REACTION PRODUCTS OF CHLORIDES OF Mo(V), Nb(V), Ta(V) AND W(VI) WITH BORATE ESTERS**  
Robert C. Wade, Ipswich, Mass., assignor to Vestro Corporation, Beverly, Mass., a corporation of Massachusetts  
No Drawing. Original application Sept. 25, 1967, Ser. No. 670,419. Divided and this application Sept. 25, 1967, Ser. No. 670,449  
Int. Cl. C07f 11/00, 9/00, 5/02

U.S. Cl. 260—429 14 Claims  
Products made by reacting chlorides of metals selected from Mo(V), Nb(V), Ta(V), and W(VI) with borate esters such as trimethyl borate, triethyl borate, tripropyl borate, tributyl borate, trihexyl borate, trihexylene glycol diborate, and tri(m,p)cresyl borate in a molar ratio of at least about 0.33 mole of the selected borate ester for each mole of the chloride of the selected metal in a diluent, such as the selected borate ester, methylene chloride, chloroform, and carbon tetrachloride, at a temperature between room temperature and about 200° C. until the reaction mixture ceases to give off organic chloride thereby forming a liquor comprising the diluent and a compound of complex chemical structure comprising the selected metal, boron, carbon, hydrogen, chlorine, and oxygen. The complex compound is isolated by removing volatile material from the reaction mixture by evaporation. The complex compounds are useful for coating glass surfaces, as polymerization catalysts and as chemical intermediates.

3,462,470

**LIQUID POLYISOCYANATE COMPOSITIONS AND PROCESS FOR THE MANUFACTURE THEREOF**  
Ernest W. Emery, Eggertsville, and Voldemar Kirss, Buffalo, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York  
No Drawing. Filed June 21, 1965, Ser. No. 465,751  
Int. Cl. C07c 119/04; C08g 22/28, 22/48

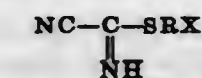
U.S. Cl. 260—453 11 Claims  
Liquid polyisocyanate compositions which do not undergo a rapid increase in viscosity and do not deposit solids on storage derived from organic polyisocyanates and aromatic diamines.

3,462,471

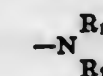
**CYANOFORMIMIDE THIOESTERS**

Wilhelm Gruber, Darmstadt, and Peter Quis, Gross-Zimmern, Germany, assignors to Rohm & Haas G.m.b.H., Darmstadt, Germany  
No Drawing. Filed Mar. 22, 1966, Ser. No. 536,279  
Claims priority, application Germany, Apr. 3, 1965, R 40,308  
Int. Cl. C07c 123/00, 154/00, 155/00

U.S. Cl. 260—453 11 Claims  
Cyanoformimide thioesters useful as contact, ingestive and respiratory insecticides of the formula



in which R is alkylene or alkenylene of 1 to 8 carbon atoms, or carbocyclic arylene or aralkylene containing one or two rings, X is hydrogen, halogen, hydroxy, —OR<sub>1</sub>, —COOH, —COOR<sub>1</sub>, —CONH<sub>2</sub>, —CONHR<sub>1</sub>,



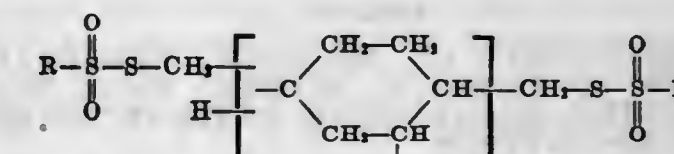
—SR<sub>1</sub>, R<sub>1</sub> and R<sub>2</sub> being alkyl of 1 to 8 carbon atoms and together being alkylene to form a mononuclear heterocyclic ring with the nitrogen atom.

3,462,472

**1,4- AND 1,2-BIS(SUBSTITUTED SULFONYLTHIO-METHYL)CYCLOHEXANE**

Joseph E. Dunbar and Joan H. Rogers, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed June 1, 1967, Ser. No. 642,715  
Int. Cl. C07c 143/24, 143/68, 149/44

U.S. Cl. 260—453 5 Claims  
Cis- and trans- isomers of 1,2- and 1,4-bis-(substituted sulfonylthiomethyl)cyclohexanes corresponding to the formula



wherein R represents alkyl containing from 1 to 6 carbon atoms, phenyl, halophenyl, tolyl, and nitrophenyl. The compounds are useful as pesticides for the control of various bacteria, fungi and aquatic plants.

3,462,473

**PHENOXYPHENYL ALKANESULFONATES**

Norman A. Nelson, Galesburg, and Gary E. Vanden Berg, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware  
No Drawing. Filed Mar. 6, 1967, Ser. No. 620,632  
Int. Cl. C07c 143/68, 139/00

U.S. Cl. 260—456 4 Claims  
This invention is directed to phenoxyphenyl alkanesul-



fonates which are useful as hypocholesterolemic and hypotriglyceridemic agents.

3,462,474

## SULFONATION PROCESS

Aubrey Westlake Michener, Jr., Rockaway, and Benjamin Veldhuis, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Oct. 11, 1966, Ser. No. 585,935

Int. Cl. C07c 139/16, 139/14, 139/00

U.S. Cl. 260—458

6 Claims

Improved method for removing residual sulfur trioxide and entrained organics from diluent gas stream exiting a sulfonation or sulfation reactor and recycling the scrubbed diluent gas stream; preferably the used scrubbing liquid is recycled to the reaction zone for use as at least part of the organic liquid reactant.

3,462,475

 $\alpha$ -CYANO- $\beta$ -ALKYL SUBSTITUTED CINNAMIC ACID AMIDES

Albert F. Strobel, Delmar, and Sigmund C. Catino, Castleton, N.Y., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware

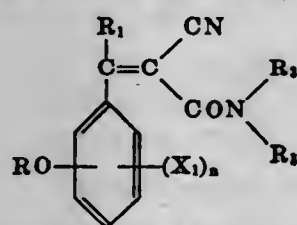
No Drawing. Continuation-in-part of application Ser. No. 99,030, Mar. 29, 1961. This application Oct. 23, 1965, Ser. No. 504,220

Int. Cl. C07c 121/40, 103/58

U.S. Cl. 260—465

9 Claims

1. An essentially colorless compound of the formula:



wherein R is selected from the group consisting of hydrogen, alkyl of 1 to 30 carbon atoms, alkenyl of 3 to 30 carbon atoms, and aryl radicals containing not more than three rings, R<sub>1</sub> is selected from the group consisting of alkyl radicals of 1 to 30 carbon atoms and alkenyl radicals of 3 to 30 carbon atoms, X<sub>1</sub> is a nonauxochromic group having a bathochromism of less than 250 Å, n is an integer from 0 to 4 and the R<sub>2</sub> is selected similarly as R.

3,462,476

## AMMOXIDATION OF AROMATIC HYDROCARBONS TO AROMATIC NITRILES USING SUBSTANTIAL QUANTITIES OF WATER IN THE REACTION MIXTURE

Joseph P. O'Donnell, Roger M. Butler, and Leander Burton Simpson, Sarnia, Ontario, Canada, assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Mar. 21, 1966, Ser. No. 535,821

Int. Cl. C07c 121/02, 121/52

U.S. Cl. 260—465

9 Claims

In a process for the preparation of aromatic nitriles, e.g., terephthalonitriles, from substituted aromatics, e.g., xylenes, by passing the substituted aromatic in admixture with ammonia and oxygen over a suitable catalyst, e.g., chromia-alumina, a significant increase in aromatic nitrile yield and ammonia selectivity can be realized by adding relatively large quantities of water to the reaction mixture.

3,462,477

## PROCESS FOR THE PURIFICATION OF ACRYLONITRILE

Giorgio Caporali, Giuseppe Barberis, Natale Feriasso, and Vittorio Penzo, Milan, Italy, assignors to Montecatini Edison, S.p.A., Milan, Italy

Filed Apr. 27, 1966, Ser. No. 545,618

Claims priority application Italy, May 4, 1965, 10,029/65

Int. Cl. C07c 121/32, 121/02

U.S. Cl. 260—465.3

5 Claims

Crude acrylonitrile fractions resulting from the vapor phase catalytic reaction of propylene, oxygen and ammonia and contaminated with acrolein and unreacted ammonia are purified by washing the reaction gases to rid the same of unreacted ammonia. The washed gases are then dissolved in water and the pH of the solution is adjusted to a value between about 7.5 and 11 and said adjusted aqueous solution is heated to a temperature from between about 70° C. and 150° C. for from 1 to 60 minutes and an acrylonitrile fraction substantially free of acrolein is thence recovered therefrom.

3,462,478

## AMALGAM REDUCTION PROCESS FOR THE PRODUCTION OF ADIPONITRILE

Ralph Santorre Fanshawe, Runcorn, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed Dec. 2, 1965, Ser. No. 511,211

Claims priority, application Great Britain, Feb. 25, 1965, 8,165/65

Int. Cl. C07c 121/26; B01k 3/00

U.S. Cl. 260—465.8

10 Claims

In the reduction of an organic compound with alkali metal or alkaline earth metal amalgam in aqueous medium in which the rise in pH is controlled by the addition of hydrochloric acid, especially the hydromerization of acrylonitrile to adiponitrile, the residual aqueous liquor, after removing the reduced organic compound, is electrolyzed using a mercury cathode so as to reduce the concentration of alkali or alkaline earth metal ions, to generate chlorine and to form alkali or alkaline earth metal amalgam with the mercury, and the so treated aqueous liquor is used as the aqueous medium in the further reduction of the organic compound. Optionally the spent amalgam is used as the cathode in the electrolysis step, and the reformed amalgam from the electrolysis step is used in the further reduction.

3,462,479

## HYDRAZONE SUN-SCREENING COMPOUNDS

Albert F. Strobel, Delmar, and Sigmund C. Catino, Castleton, N.Y., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware

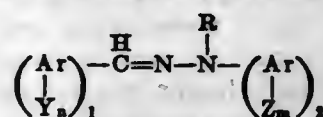
No Drawing. Filed Dec. 29, 1965, Ser. No. 517,443

Int. Cl. A61I 23/00; C07c 101/66, 143/58

U.S. Cl. 260—501.11

13 Claims

An essentially colorless compound useful as a sun-screening agent, such compound having the formula:



wherein in the free acid form (Ar)<sub>1</sub> and (Ar)<sub>2</sub> represent benzene rings; Y and Z are salt-forming groups selected from —SO<sub>3</sub>H and —COOH; R is an aliphatic radical, e.g., alkyl, hydroxyalkyl, cyclohexyl; and n and m are integers from 1 to 3. Such compound has an absorption maxima within the range 2900 Å. to about 3500 Å.

3,462,480

## METHOD OF PRODUCING ORGANIC PEROXY ACIDS

Donald G. MacKellar, Trenton, John H. Blumberg, Highland Park, and Rainer von Falkenstein, Princeton Junction, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 4, 1967, Ser. No. 607,140

Int. Cl. C07c 73/10, 73/12

U.S. Cl. 260—502

4 Claims

Organic peroxycarboxylic acids were produced by reaction of their precursor acyl halide and an alkali metal peroxide solution, having an active oxygen content of at least 1% by weight, in a reaction medium containing water, a tertiary alcohol having a water solubility of above about 5% by weight, and nitrilotriacetic acid (NTA).

3,462,481

## METHOD OF PRODUCTION OF UNSATURATED ACIDS

David Moiseevich Rudkovsky and Naum Solomonovich Imjanitov, Leningrad, U.S.S.R., assignors to Vsesojuzny Nauchno-Issledovatel'skiy Institut Neftekhimicheskikh Protessov, Leningrad, U.S.S.R.

No Drawing. Filed Feb. 1, 1965, Ser. No. 429,608

Int. Cl. C07c 51/14; C07d 31/04, 33/16

U.S. Cl. 260—514

4 Claims

A method for the production of unsaturated carboxylic acids from diolefins in which a cobalt carbonyl and a Lewis base are used to catalyze the reaction. The reaction is effected at temperatures of 100–300° C. and pressures above 20 atm.

3,462,482

## FLUOROPERHALOISOPROPYL BENZENE CARBOXYLIC ACIDS

Basil S. Farah, Elms, N.Y., and Everett E. Gilbert and Benjamin Veldhuis, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 29, 1966, Ser. No. 583,069

Int. Cl. C07c 63/14

U.S. Cl. 260—515

8 Claims

Mono and bis(fluoroperhaloisopropyl)benzene carboxylic acids useful as biocidally active agents.

3,462,483

## NOVEL DERIVATIVES OF 3-HYDROXY-4-PHENYL-BUTYRIC ACID

Vladimir Petrow, Oliver Stephenson, and Anthony Musgrave Wild, London, England, assignors to The British Drug Houses Limited

No Drawing. Filed July 2, 1965, Ser. No. 469,311

Claims priority, application Great Britain, July 23, 1964, 29,654/64

Int. Cl. C07c 63/44, 69/76, 103/20

U.S. Cl. 260—520

14 Claims

A group of novel derivatives of 3-hydroxy-4-phenylbutyric acid having anti-inflammatory properties are provided by this invention. The novel derivatives are substituted in the phenyl group and the substituted acids may be converted to esters, amides and salts which also possess anti-inflammatory properties. The compounds are produced by reacting a selected aryl Grignard reagent or aryl lithium reagent, wherein the aryl group includes the desired substituent, with a 2,3-epoxypropyl halide to give the corresponding 3-aryl-2-hydroxy propyl halide, reacting this compound with an alkali metal cyanide to provide the corresponding nitrile, and reacting the nitrile with the appropriate reagent to provide the selected 4-aryl-3-hydroxy butyric acid, ester or amide. The known acid can also be produced by this new process.

3,462,484

## CONDENSATION OF ACRYLIC ACID

Arthur W. Schnitzer and Edward N. Wheeler, Corpus Christi, Tex., assignors to Celanese Corporation, a corporation of Delaware

No Drawing. Original application Oct. 20, 1959, Ser. No. 847,471, now Patent No. 3,176,042, dated Mar. 30, 1965. Divided and this application Mar. 13, 1964, Ser. No. 357,852

Int. Cl. C07c 51/42, 57/04

U.S. Cl. 260—526

5 Claims

A process for obtaining liquid acrylic acid from vapors thereof without undue polymer formation by maintaining the vapors in a superheated condition and adding a polymerization inhibitor to the superheated vapors before allowing them to condense. The inhibitor and conditions are such that the inhibitor volatilizes at the temperature of the superheated vapors.

3,462,485

## PROCESS FOR THE PREPARATION OF L- AND D-CARNITINE CHLORIDES

Fernand Binon, Herbert Ziegler, and Claude Marr, Brussels, Belgium, assignors to Societe Belge de l'Azote et des Produits Chimiques du Marly, Societe Anonyme, Liege, Belgium

No Drawing. Filed Mar. 7, 1966, Ser. No. 532,117

Claims priority, application Belgium, Mar. 12, 1965, 661,015

Int. Cl. C07c 101/10, 99/00, 103/10

U.S. Cl. 260—534

3 Claims

A method of producing L- and D-carnitine chlorides by converting L- and D-carnitinamide chlorides to the corresponding desired carnitine chlorides by hydrolyzing the starting amides in hot aqueous oxalic acid.

3,462,486

## METHOD FOR PREPARING 3,4'-DICHLORO-CYCLOPROPANECARBOXYANILIDE

Richard J. De Feo, Overland Park, Kans., assignor, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Continuation of application Ser. No. 265,372, Mar. 15, 1963. This application Dec. 28, 1966, Ser. No. 605,505

Int. Cl. C07c 103/06, 103/20

U.S. Cl. 260—557

4 Claims

Anilides and substituted anilides of lower cycloalkanoic acids are prepared by reacting a lower alkyl ester of the cycloalkanoic acid with a primary aromatic amine in solution in a mutual organic solvent and a molar equivalent amount of an undissolved alkali metal alcoholate, preferably sodium methoxide, ethoxide or propoxide, distilling off the alcohol liberated in the reaction as it is formed, neutralizing the reaction mixture with aqueous acid and recovering the product. Preferred organic solvents include hydrocarbons which form azeotropes with the liberated alcohol. Nitro substituents apparently inhibit the reaction but phenolic hydroxy groups and aliphatic halides do not, merely consuming part of the metal alcoholate reagent.

3,462,487

## CHEMICAL COMPOUNDS AND METHODS FOR PREPARING THE SAME

Roland Walter Kinney, Trenton, Saul Lewis Neideman, Highland Park, and Frank Lee Weisenborn and John Samuel Paul Schwarz, Somerset, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 9, 1964, Ser. No. 373,850

Int. Cl. C07c 103/19

U.S. Cl. 260—559

7 Claims

Tetracycline derivatives are prepared by subjecting tetracycline, 6-demethyltetracycline or 5-hydroxytetra-



cycline under aerobic conditions to the action of peroxidase in the presence of dihydroxyfumaric acid.

### 3,462,488 AMINO OXIMINO POLYHALOCYCLOALKENES AND PROCESS

Earl T. McBee, 420 Forest Hills Drive, West Lafayette, Ind. 47906, and John J. Turner, 2219 Brookline Road, Wilmington, Del. 19803  
No Drawing. Filed Nov. 3, 1966, Ser. No. 591,672  
Int. Cl. C07c 119/00, 87/34; A01n 9/20

U.S. Cl. 260—566 8 Claims  
1-methylamino-2-chloro or fluoro-3-methyliminotetrafluorocyclopentene is reacted with alcoholic hydroxylamine to produce 1-methylamine-2-chloro or fluoro-3-oximino tetrafluorocyclopentene or its tautomer with utility as a chelating agent for metals such as nickel.

### 3,462,489 N-ALKYL- AND N-CYCLOALKYL-BIS(TRIFLUOROMETHYL)-KETENIMINES AND THE PREPARATION THEREOF

Maynard S. Raasch, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware  
No Drawing. Filed Aug. 28, 1967, Ser. No. 663,523  
Int. Cl. C07c 87/26, 87/32

U.S. Cl. 260—566 8 Claims  
N-alkyl- and N-cycloalkyl-bis(trifluoromethyl)ketenimines useful as antistatic agents for wool which are prepared by reacting bis(trifluoromethyl)thio ketene with a dialkylsulfur diimide are claimed.

### 3,462,490 2-NITRO-2-METHYL CYCLOPENTANONE N-METHYL CARBAMOYLOXIME

Linwood K. Payne, Jr., Charleston, W. Va., and Mathias H. J. Weiden, Raleigh, N.C., assignors to Union Carbide Corporation, a corporation of New York  
No Drawing. Original application Sept. 23, 1964, Ser. No. 398,744, now Patent No. 3,400,153, dated Sept. 3, 1968. Divided and this application May 31, 1968, Ser. No. 733,238

Int. Cl. C07c 119/12  
U.S. Cl. 260—566 1 Claim  
2-nitro- or cyano-alkanoloxime and cycloalkanone ketoxime carbamates are disclosed as novel compounds useful as pesticides, especially as broad spectrum insecticides and miticides.

### 3,462,491 BENZHYDRYLOXYCYCLOPROPYLAMINES AND THE SALTS THEREOF

Carl Kaiser, Haddon Heights, N.J., and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania  
No Drawing. Filed Jan. 6, 1966, Ser. No. 519,012  
Int. Cl. C07c 93/12

U.S. Cl. 260—570 7 Claims  
Benzhydryloxypropylamines wherein the amino moiety may be primary, secondary or tertiary and the benzhydryl moiety may be halogen, lower alkyl, lower alkoxy, lower alkylthio, lower alkylsulfonyl or trifluoromethyl substituted have mild tranquilizing and antidepressant activity.

### 3,462,492 CONDENSATION PRODUCTS OF PHENYLENE DIAMINES AND ALKYLENE OXIDES

Ehrenfried H. Kober, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia  
No Drawing. Filed Apr. 5, 1965, Ser. No. 445,783  
Int. Cl. C07c 93/14

U.S. Cl. 260—573 5 Claims  
Oxyalkylated products particularly valuable for fire-resistant water base hydraulic fluids are prepared by the

oxyalkylation of a phenylene diamine compound with a hydroxyalkylene oxide or with an alkylene oxide followed by a hydroxy alkylene oxide.

### 3,462,493 PROCESS FOR MAKING TRIETHYLENE- TETRAMINE

William P. Coker and George E. Ham, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed Jan. 16, 1967, Ser. No. 609,348  
Int. Cl. C07c 87/20, 85/04

U.S. Cl. 260—583 7 Claims  
Ethylene halides react with excess ethylenediamine at 0–150° C. to produce triethylenetetramine.

### 3,462,494 HYDROCARBON OXIDATION

William D. Blackley, Wappingers Falls, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Filed Nov. 21, 1966, Ser. No. 595,592  
Int. Cl. C07c 49/30, 29/00, 27/12

U.S. Cl. 260—586 5 Claims  
Method of preparing hydrocarbon oxidate comprising contacting alkane or cycloalkane of from 1 to 30 carbons with an oxygen containing gas in the presence of a paramagnetic nitroxide of the formula:



where R is perfluoroalkyl, perchloroalkyl and perfluorochloroalkyl of from 1 to 20 carbons.

### 3,462,495 METHOD FOR PREPARING ETHER KETONES AND ETHER ALDEHYDES

Hans R. Friedli, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed Oct. 31, 1966, Ser. No. 590,479  
Int. Cl. C07c 49/82, 45/10

U.S. Cl. 260—590 5 Claims  
1. A process for dehydrogenating glycol monoethers to prepare their corresponding ketones and aldehydes which comprises dehydrogenating and as necessary, cracking an alkoxy propanol having the formula:



wherein R represents an alkyl group having from 1 to 6 carbon atoms, cyclohexyl, cyclopentyl, phenyl group, or alkyl phenyl group, n represents an integer from 1 to 3 and alkylenoxy represents an alkylenoxy radical having from 2 to 4 carbon atoms, by passing said glycol ether into and through a calcium nickel phosphate catalyst while simultaneously passing water in the form of vapor along with the glycol ether, said water and glycol ether being supplied in a mole ratio of from 4 to 1 to 25 to 1 respectively and at a space velocity of glycol ether of from 100 to 800 volumes per volume of catalyst per hour at a temperature of from 350° C. to 450° C., said catalyst being a co-precipitated calcium nickel phosphate containing an average of 7.5 to 9.2 atoms of calcium per atom of nickel, the total amount of calcium and nickel being sufficient to satisfy the valences of the phosphate ion prepared by reacting under neutral or alkaline conditions a soluble phosphate or an aqueous solution of phosphoric acid with a solution of calcium and nickel salts wherein the said co-precipitated calcium-nickel phosphate is washed and dried at temperatures between 60° and 150° C.

### 3,462,496 METHOD OF MAKING MERCAPTO ALCOHOLS

Jon E. Fletcher and Rodney A. Nelson, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 10, 1967, Ser. No. 609,714

Int. Cl. C07c 149/18 13 Claims  
U.S. Cl. 260—609

A method of making mercapto alcohols by reacting an excess of H<sub>2</sub>S under pressure with an epoxide, with or without an inert diluent, in the presence of an alkali or alkaline earth metal hydroxide, a trialkylamine, a quaternary ammonium hydroxide or chromium salts of fatty acids of 1 to 4 carbon atoms. The mercapto alkanols can be used for preparing polyesters, thiiranes or disulfides. They are also known to be useful as corrosion inhibitors and as components of textile sizing mixtures.

### 3,462,497 RESORCINOL MANUFACTURE

Nicholas P. Greco, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed Nov. 14, 1966, Ser. No. 593,711

Int. Cl. C07c 37/10 3 Claims  
U.S. Cl. 260—621

Resorcinol is prepared in high yields and high purity in a one-step process involving the phosphoric acid hydrolysis of meta-phenylenediamine in aqueous solution. The hydrolysis is carried out at temperatures of 170–250° C. and under superatmospheric pressure. After the reaction is completed, the reaction mixture is cooled and the resorcinol is separated therefrom.

### 3,462,498 PROCESS FOR ISOLATION OF 2,5-DICHLORO- PHENOL FROM AN ISOMERIC MIXTURE OF DICHLOROPHENOLS

Wilfrid Lowe, Ingelheim am Rhein, Germany, assignor to C. H. Boehringer Sohn, Ingelheim am Rhein, Germany, a limited-partnership of Germany

No Drawing. Filed Aug. 31, 1966, Ser. No. 576,245  
Claims priority, application Germany, Sept. 10, 1965, B 83,681

Int. Cl. C07c 39/30 3 Claims  
U.S. Cl. 260—623

A process for isolating 2,5-dichlorophenol from a mixture consisting essentially of 2,4- and 2,5- or 2,4-, 2,5- and 3,4-dichlorophenol is disclosed, which comprises heating said mixture to a temperature above 85° C. and below the decomposition temperature of urea, together with an amount of urea corresponding to at least one mol-equivalent based on the 2,5- and 3,4-dichlorophenol content of said mixture and no more than two mol-equivalents based on the total number of mols of dichlorophenol isomers contained in said mixture, to form a 2,5-dichlorophenol-urea adduct or a mixture of 2,5- and 3,4-dichlorophenol-urea adducts, respectively, cooling the reaction mixture to the temperature at which the crystallization of the 2,5-dichlorophenol-urea adduct begins, adding an inert organic solvent having a boiling point substantially above 85° C. to prevent the 2,4-dichlorophenol-urea adduct from precipitating out and allowing the mixture to cool to room temperature, separating the precipitated dichlorophenol-urea adducts and hydrolyzing them by heating them with water to a temperature of about 70 to 80° C., and recovering 2,5-dichlorophenol from the hydrolyzate.

### 3,462,499 PREPARATION OF ACETYLENIC GLYCOLS

Robert J. Tedeschi, Whitehouse Station, N.J., and George S. Clark, Jr., Orono, Maine, assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 30, 1966, Ser. No. 605,981

Int. Cl. C07c 33/02 10 Claims  
U.S. Cl. 260—635

Secondary acetylenic glycols are prepared by reacting in a first stage in ether solvent at 5–20° C., an acetylenic hydrocarbon, an alkali metal hydroxide and one half of the aldehyde normally stoichiometrically required to prepare the glycol and thereafter adding the second half of the aldehyde required at a temperature of 25–35° C. Alternately the glycols are prepared by reacting in a first stage in ether solvent at 5–20° C., an acetylenic alcohol and an alkali metal hydroxide and thereafter adding at a temperature of 25–35° C., the aldehyde required.

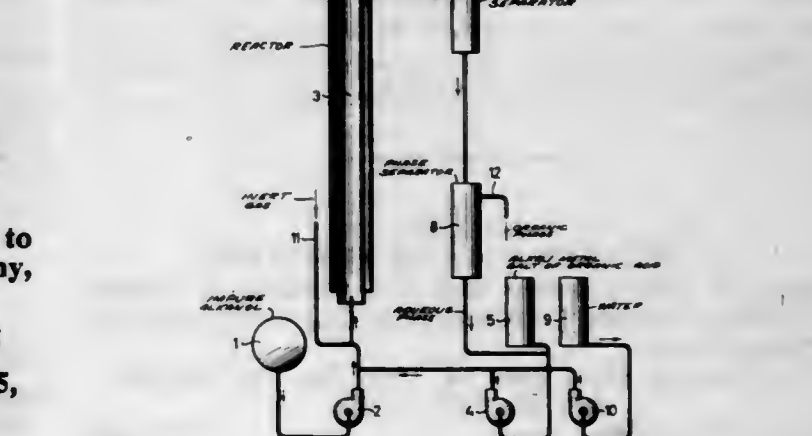
### 3,462,500 PROCESS FOR THE PURIFICATION OF ALCOHOLS CONTAINING FORMIC ACID ESTERS

Hans Tummes, Oberhausen-Sterkrade-Nord, and Josef Meis, Oberhausen-Osterfeld, Germany, assignors to Ruhrchemie Aktiengesellschaft, Oberhausen-Holten, Germany, a corporation of Germany

Filed Oct. 12, 1966, Ser. No. 591,074  
Claims priority, application Germany, Oct. 16, 1965, R 41,771

Int. Cl. C07c 29/24 7 Claims  
U.S. Cl. 260—643

Process for purifying alkanols prepared by the oxo reaction and containing formic acid esters by eliminating such esters comprising heating such a mixture with an aqueous solution of an alkali metal formate, acetate or oxalate at a temperature of from 200 to 260° C.



### 3,462,501 PROCESS FOR PREPARING ALLYL CHLORIDE AND ITS MONOMETHYL-SUBSTITUTION PRODUCTS

Lothar Hörnig and Günter Mau, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed June 6, 1966, Ser. No. 555,274  
Claims priority, application Germany, June 19, 1965, F 46,384

Int. Cl. C07c 17/10; B01j 11/78 11 Claims  
U.S. Cl. 260—654

The oxidation of olefins and monochloroparaffins to allyl chloride and methallyl chloride in the presence of a tellurium compound as a catalyst is improved by addi-



tion to the catalyst of an alkali metal chloride, phosphate, sulfate, nitrate, oxide or hydroxide and/or ammonium chloride, an alkyl ammonium chloride, and aryl ammonium chloride, a piperidinium chloride, a pyridinium chloride or an alkanolamine.

3,462,502

# PROCESS FOR PREPARING ALLYL CHLORIDE AND ITS MONOMETHYL-SUBSTITUTION PRODUCTS

Lothar Hörnig, Horst Grosspietsch, and Günter Mau, Frankfurt am Main, and Lothar Hirsch, Kelheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 12, 1966, Ser. No. 564,535  
Claims priority, application Germany, July 23, 1965, F 46,702

Int. Cl. C07c 21/04

U.S. Cl. 260—654 4 Claims

An improved process has been provided for preparing allyl chloride or its monomethyl substitution products by reacting oxygen and (a) a mixture of hydrogen chloride and an olefin having 3 to 4 carbon atoms, respectively, (b) a monochloro paraffin having 3 or 4 carbon atoms, respectively, and (c) a mixture of (a) and (b) in the presence of a catalyst, said catalyst being selected from at least one member of the group consisting of tellurium and tellurium compounds and being supported on a carrier the amount of catalyst in said carrier system being from 0.5 to 20% by weight on basis of tellurium, the improvement of which comprises recycling said catalyst through a reaction zone at a temperature of from 20° to 350° C. and at a pressure from 0.2 to 20 atmospheres, removing a part of said catalyst at the bottom of the reaction zone and introducing it on the top of the reaction zone or fluidizing said catalyst by means of gas stream in the reaction zone by introducing said gas at the bottom of said reaction zone.

3,462,503

# TELOMERIZATION OF ETHYLENE

Robert W. Rieve, Drexel Hill, Pa., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed June 14, 1965, Ser. No. 463,902  
Int. Cl. C07c 17/26

U.S. Cl. 260—658 17 Claims

Method for telomerization of ethylene by heating at super atmospheric pressures ethylene with carbon tetrachloride or a mixture of carbon tetrachloride and a chloromethane derivative in the presence of a catalyst consisting of an unsubstituted saturated organic acid anhydride of 4 to 20 carbon atoms, or an unsubstituted aliphatic saturated dicarboxylic acid having from 2 to 10 carbon atoms or an unsubstituted aliphatic saturated ketone having from 3 to 6 carbon atoms.

3,462,504

# TRANSADDITION REACTIONS OF VINYL COMPOUNDS

Alexander F. MacLean and Adin L. Stautzenberger, Corpus Christi, Tex., assignors to Celanese Corporation, a corporation of Delaware

No Drawing. Filed July 21, 1965, Ser. No. 473,839  
Int. Cl. C07c 19/00, 17/02

U.S. Cl. 260—659 9 Claims

Preparation of  $\alpha$ - $\omega$  dihaloalkanes by reacting a vinyl compound such as ethylene together with a compound yielding halide ions in the presence of a metallic oxidizing agent such as Ce(IV), Pb(IV), Mn(IV) and Ni(IV).

## 3,462,505 PROCESS FOR CATALYTICALLY DEHYDROCYCLIZING ALIPHATIC HYDROCARBONS

John Mool, Homewood, and Glenn O. Michaels, South Holland, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 608,221, Jan. 9, 1967. This application May 8, 1967, Ser. No. 636,682

Int. Cl. C07c 5/18, 15/08

U.S. Cl. 260—673.5 13 Claims

A process for the dehydrocyclization of an aliphatic hydrocarbon of 6 to 20 carbon atoms which comprises contacting the hydrocarbon under vapor phase dehydrocyclization conditions including a temperature of about 900 to 1250° F. with a catalyst consisting essentially of about 1 to 40 percent by weight Cr<sub>2</sub>O<sub>3</sub>, about 1 to 40 percent by weight MgO, about 0.1 to 4 percent by weight alkali metal present as the alkali metal oxide, and activated alumina.

3,462,506

# SEPARATION OF p-XYLENE FROM A C<sub>8</sub> AROMATIC HYDROCARBON MIXTURE BY CRYSTALLIZATION

Stanley Ohlswager, Matteson, and Robert Edison, Olympia Fields, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 22, 1967, Ser. No. 640,399

Int. Cl. C07c 15/08, 7/14

U.S. Cl. 260—674 10 Claims

Paraxylene of at least 99 mol percent purity is separated from a C<sub>8</sub> aromatic hydrocarbon mixture in two crystallization stages by cooling the mixture (e.g. to below about -60 to -100° F.) to crystallize substantially only paraxylene which is separated as a cake and washed with toluene (e.g. in an amount of about 0.5 to about 10 moles of toluene per mole of liquid occluded in the separated cake); melting the washed cake containing toluene and cooling the resulting slurry (e.g. at a temperature of about 0 to 40° F.) to recrystallize substantially only the paraxylene which is separated as a cake of less than 99 mol percent purity. The separated cake is then melted and the toluene removed.

3,462,507

# PREPARATION OF ALKALI METAL ACETYLIDES

Samuel Kahn, Rutherford, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Nov. 16, 1966, Ser. No. 594,671

Int. Cl. C07f 1/06

U.S. Cl. 260—665 3 Claims

Alkali metal acetylides can be prepared by the reaction of an alkali metal hydroxide, such as potassium hydroxide, with an acetylenic compound, such as acetylene, in an inert reaction diluent of the dibutyl ether of diethylene glycol. The alkali metal acetylides are useful in preparing acetylenic alcohols.

3,462,508

# SEPARATION OF p-XYLENE FROM A C<sub>8</sub> AROMATIC HYDROCARBON MIXTURE BY CRYSTALLIZATION

Thorpe Dresser, Markham, and Stanley Ohlswager, Matteson, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 22, 1967, Ser. No. 640,412

Int. Cl. C07c 15/08, 7/14

U.S. Cl. 260—674 11 Claims

A two-stage crystallization process for the separation of paraxylene of at least 99 mol percent purity from a C<sub>8</sub>

aromatic hydrocarbon mixture wherein in a first stage the C<sub>8</sub> mixture is cooled (e.g. to below about -60 to -100° F.) to crystallize substantially only the paraxylene which is separated as a cake and melted; and in a second stage the melted cake is cooled (e.g. at a temperature of about 0 to 40° F.) to recrystallize substantially only the paraxylene which is separated as a cake of less than 99 mol percent purity, the separated cake washed with toluene (e.g. in an amount of about 0.25 to about 3 parts toluene per part of liquid occluded in the cake) and the washed cake melted and toluene removed therefrom.

3,462,509

# SEPARATION OF p-XYLENE FROM A C<sub>8</sub> AROMATIC HYDROCARBON MIXTURE BY CRYSTALLIZATION

Thorpe Dresser, Markham, Stanley Ohlswager, Matteson, and Robert Edison, Olympia Fields, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 22, 1967, Ser. No. 640,413

Int. Cl. C07c 15/08, 7/14

U.S. Cl. 260—674 14 Claims

Paraxylene of at least 99 mol percent purity is separated from a C<sub>8</sub> aromatic hydrocarbon mixture in two crystallization stages by cooling the mixture (e.g. to below about -60 to -100° F.) to crystallize substantially only paraxylene which is separated as a cake and washed with toluene (e.g. in an amount of about 0.5 to about 3 parts of toluene per part of liquid occluded in the separated cake), melting the washed cake and removing toluene to provide a paraxylene product of about 90 to 98 mol percent purity; cooling the paraxylene product (e.g. at a temperature of about 0 to 40° F.) to recrystallize substantially only the paraxylene which is separated as a cake of less than 99 mol percent purity and washed with toluene (e.g. in an amount of about 0.25 to about 3 parts toluene per part of liquid occluded in the separated cake), melting the washed cake and removing toluene.

3,462,510

# SEPARATION OF p-XYLENE FROM A C<sub>8</sub> AROMATIC HYDROCARBON MIXTURE BY CRYSTALLIZATION

Stanley Ohlswager, Matteson, and Robert R. Edison, Olympia Fields, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 22, 1967, Ser. No. 640,416

Int. Cl. C07c 15/08, 7/14

U.S. Cl. 260—674 8 Claims

Paraxylene of at least 99 mol percent purity is separated from a C<sub>8</sub> aromatic hydrocarbon mixture by cooling the mixture (e.g., to below about -60 to -100° F.) in a first crystallization zone to crystallize substantially only paraxylene which is separated as a cake and washed with toluene (e.g., in an amount of about 0.5 to about 10 moles of toluene per mole of liquid occluded in the separated cake), recycling toluene-containing effluent from the wash operation to the first crystallization zone, melting the washed cake and cooling the resulting slurry (e.g., at a temperature of about 0 to 40° F.) in a second crystallization zone to recrystallize substantially only the paraxylene which is separated as a cake from a toluene-containing filtrate, recycling the filtrate to the first crystallization zone, and melting the separated cake and removing toluene.

3,462,511

# SEPARATION OF p-XYLENE FROM A C<sub>8</sub> AROMATIC HYDROCARBON MIXTURE BY CRYSTALLIZATION

Robert R. Edison, Olympia Fields, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 22, 1967, Ser. No. 640,417

Int. Cl. C07c 15/08, 7/14

U.S. Cl. 260—674 8 Claims

Paraxylene of at least 94 mol percent purity is separated from a C<sub>8</sub> aromatic hydrocarbon mixture by cooling the mixture (e.g., to a temperature of below about -60 to -100° F.) in a crystallization zone to crystallize substantially only paraxylene, separating the paraxylene crystals as a cake and washing the separated cake with toluene (e.g., in an amount of about 0.5 to about 10 parts of toluene per part of liquid occluded in the separated cake), recycling toluene-containing effluent from the wash operation to the crystallization zone, melting the washed cake and removing toluene.

3,462,512

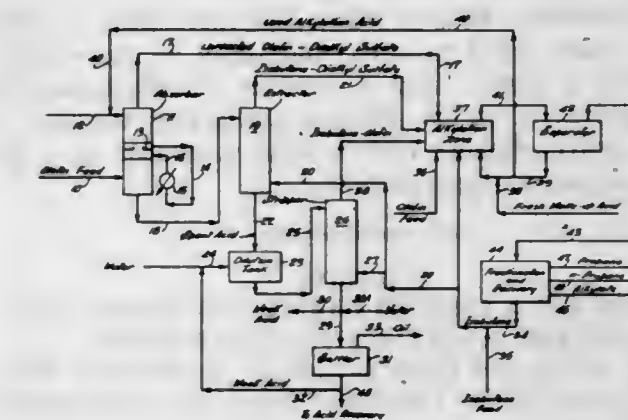
# RECOVERY OF OLEFINS FROM SPENT ALKYLATION ACID

Arthur E. Goldsby, Chappaqua, N.Y., assignor to Texaco Development Corporation, New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 516,448, Dec. 27, 1965. This application Feb. 12, 1968, Ser. No. 704,933

Int. Cl. C07c 3/54, 7/00

U.S. Cl. 260—683.62 13 Claims



Spent sulfuric acid alkylation catalyst in which olefins have been absorbed to form dialkyl sulfates and the dialkyl sulfates extracted therefrom is diluted with water to an equivalent acid concentration of from about 50% to 85%, and additional olefin is recovered from the diluted acid, either by heating or by extraction with isobutane. The recovered olefin may be charged to an alkylation process.

3,462,513

# WIRE ENAMELS CONTAINING POLYVINYL ACETAL, PHENOLFORMALDEHYDE CONDENSATE, BLOCKED POLYISOCYANATE, MELAMINE-ALDEHYDE RESIN AND A POLYSILOXANE RESIN

Andrew F. Fitzhugh, Wilbraham, Charles F. Hunt, Springfield, and Edward Lavin, Longmeadow, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Feb. 1, 1966, Ser. No. 523,894

Int. Cl. C08f 29/32; C08g 37/18

U.S. Cl. 260—826 10 Claims

Wire enamel compositions are prepared from 100 pts., poly vinyl acetal, 40-70 parts phenol formaldehyde condensate, 2-15 parts of a blocked polyisocyanate, 2-15



parts of a polysiloxane and 2-15 parts of a melamine formaldehyde resin. In an example, 100 parts of polyvinyl formal was mixed with 58 pts. phenol formaldehyde resin, 9 pts. of a blocked isocyanate prepared from the reaction of trimethylol propane with toluene diisocyanate, 8 pts. of melamine resin and 5.5 pts. of phenylhexylmethoxy polysiloxane.

### 3,462,514 GRANULAR UNSATURATED POLYESTER MOLDING COMPOSITION

Albert Robert Kurkowski, Dover, N.J., and Robert Edward Carpenter, Minnetonka, Minn., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York  
No Drawing. Filed May 23, 1966, Ser. No. 551,959  
Int. Cl. C08g 53/02

U.S. Cl. 260—861 2 Claims  
This invention relates to a process for preparing granular unsaturated polyester molding compounds by subjecting feed materials including unsaturated polyester resin, unsaturated monomers capable of cross-linking the polyester resin, filler, catalyst and inhibitor, to vortical mixing under such conditions that a granular product is produced.

### 3,462,515 VINYL POLYMER GRAFTS ON POLYCARBONATES

James E. Cantrill, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York  
No Drawing. Filed Jan. 17, 1967, Ser. No. 609,737  
Int. Cl. C08g 17/14, 39/10

U.S. Cl. 260—873 9 Claims  
A graft copolymer consisting of an aromatic polycarbonate backbone having vinyl polymer units pendant thereon, which vinyl polymer units may be for example polystyrene polymer, and a process for preparing the graft copolymer, which process comprises reacting an aromatic polycarbonate with a vinyl monomer by a free radical polymerization reaction.

### 3,462,516 BLENDS OF A LIQUID DIENE POLYMER AND MALEIC ANHYDRIDE COPOLYMER

Robert L. Smith and Jerry T. Gruver, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware  
No Drawing. Filed Aug. 31, 1964, Ser. No. 393,382  
Int. Cl. C08f 33/08, 45/72

U.S. Cl. 260—887 14 Claims  
Cured polymers of conjugated dienes, having an increased tensile product, are made by first mixing the polymer, having either carboxy or hydroxy terminal groups, with a copolymer of maleic anhydride and a vinyl monomer, and then curing the resulting blend.

### 3,462,517 STABILIZED POLYMERIC COMPOSITION

Ralph H. Hansen, Millburn, and Charles A. Russell, Fair Haven, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
No Drawing. Continuation of application Ser. No. 349,784, Oct. 1, 1963, now abandoned, which is a division of application Ser. No. 77,012, Dec. 20, 1960. This application May 1, 1967, Ser. No. 635,271  
Int. Cl. C08f 45/60, 29/18

U.S. Cl. 260—897 5 Claims  
The specification describes stabilizers for polymers, particularly polypropylene, that are subject to copper-catalyzed oxidation. The adverse effects due to the presence of copper in the polymer are reduced by adding to the polymer a small amount of oxamide or a derivative thereof. Standard antioxidants are included also.

### 3,462,518 OXYALKYLATED CYCLIC POLYMERIC BIS(HYDROXYPHENOXY)PHOSPHONITRILES

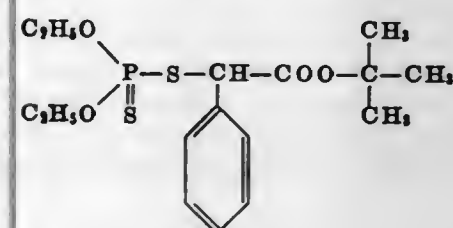
Ehrenfried H. Kober, Hamden, Henry F. Lederle, North Haven, and Gerhard F. Ottmann, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia  
No Drawing. Filed Nov. 15, 1965, Ser. No. 507,679  
Int. Cl. C07d 105/02; C07f 9/08; C10m 3/40  
U.S. Cl. 260—927 5 Claims

Cyclic polymeric bis(hydroxyphenoxy) phosphonitriles are reacted with an alkylene oxide or a hydroxy alkylene oxide in a suitable solvent at a temperature of from about 80° to about 200° C. and in the presence of an alkaline catalyst to yield oxyalkylated products useful as base stock fluids for the preparation of valuable water-base hydraulic fluids.

### 3,462,519 TERT. BUTYLESTER OF O,O-DIETHYLDITHIOPHOSPHORYL-ALPHA-PHENYLACETIC ACID

Raffaello Fusco, Giuseppe Losco, and Mario Perini, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy  
No Drawing. Continuation of application Ser. No. 458,783, May 25, 1965. This application Dec. 29, 1967, Ser. No. 694,755  
Claims priority, application Italy, May 26, 1964, 11,663/64

U.S. Cl. 260—941 1 Claim  
Described is tert. butylester of O,O-diethyldithiophosphoryl-alpha-phenylacetic acid with the formula:



which is used in fighting parasites.

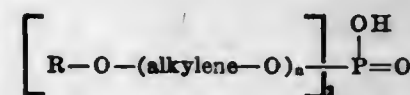
### 3,462,520 PHOSPHATE ESTERS OF ALKOXYLATED STRAIGHT-CHAIN PRIMARY ALCOHOLS

Louis J. Nehmsmann, Metuchen, and Leslie M. Schenck, Mountainside, N.J., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware  
No Drawing. Filed Oct. 14, 1966, Ser. No. 586,627  
Int. Cl. C11d 1/34; C07f 9/08  
U.S. Cl. 260—950 7 Claims

A surface active phosphate ester composition selected from the class consisting of esters having the following formulae:



and

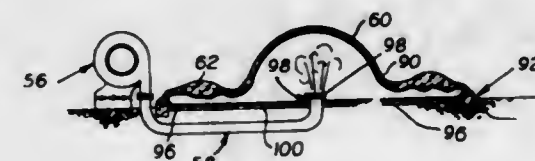


wherein R represents a straight chain alkyl of from 8 to 20 carbon atoms and wherein the alkyleneoxy grouping, —(alkylene—O)<sub>n</sub>, represents a random distribution of

oxyethylene and oxypropylene groups in the nonionic molecule R—O(alkylene—O)<sub>n</sub> in the ratio of from 5% to 25% by weight of oxypropylene to 75%–95% by weight of oxyethylene, and wherein the said oxypropylene and oxyethylene groups comprise about 40% to 75% by weight of said non-ionic molecule. These compositions are biodegradable in addition to having desirable pour point and other properties.

### 3,462,521 METHOD FOR ERECTING STRUCTURES

Dante Bini, Bologna, Italy, assignor to Binisells S.p.A., Milan, Italy, a corporation of Italy  
Continuation-in-part of application Ser. No. 498,272, Oct. 20, 1965. This application Dec. 12, 1966, Ser. No. 601,176  
Int. Cl. E04b 1/32; B32b 13/06; B28b 23/02  
U.S. Cl. 264—32 32 Claims



Method for erecting domelike and other structures. Employs a sheetlike expandable member which is inflatable to substantially the desired shape of the structure. Includes the steps of positioning expandable reinforcing means, preferably of metal, over the member, distributing a hardenable building material such as concrete over the member and reinforcing means to form a layer, and then inflating the member whereby to raise the member, the expandable reinforcing means and the hardenable building material to the desired shape.

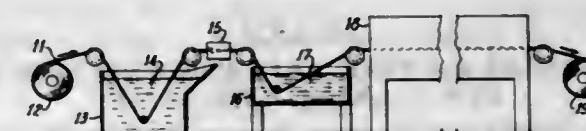
### 3,462,522 DEPOSITION OF PYROLYTIC MATERIAL

Thomas J. Clark, Troy, and Bruce L. Ettlinger, Washington, Mich., assignors to General Electric Company, a corporation of New York  
No Drawing. Filed Dec. 2, 1966, Ser. No. 598,633  
Int. Cl. B29c 13/04; B28d 7/38; C01b 31/00  
U.S. Cl. 264—39 10 Claims  
Pyrolytic articles are deposited on a mandrel surface by initially oxidizing the surface with an oxidizing gas, heating the mandrel and depositing by vapor deposition a very thin pre-coat of pyrolytic material over the oxidized surface, interrupting the deposition and finally depositing by vapor deposition the desired pyrolytic article.

### 3,462,523 CELLULAR COMPOSITIONS AND FIBROUS GLASS COATED THEREWITH

Alfred Marzocchi, Cumberland, R.I., and James M. O'Flahavan, deceased, late of Manville, R.I., by Lorraine C. O'Flahavan, administratrix, Cumberland, R.I., assignors to Owens-Corning Fiberglass Corporation, Toledo, Ohio, a corporation of Delaware  
Continuation of application Ser. No. 410,808, Nov. 12, 1964, which is a continuation-in-part of application Ser. No. 109,106, May 10, 1961. This application Dec. 10, 1965, Ser. No. 513,034  
Int. Cl. C08f 47/08; C08g 22/44; C08b 29/10  
U.S. Cl. 264—45 14 Claims  
A method of forming a plastic material into a fibrous cellular structure which has good hand and which is warm to the touch. The process is carried out by forming a dilute solution of a plastic material in a primary solvent which has a boiling point above the softening point of the

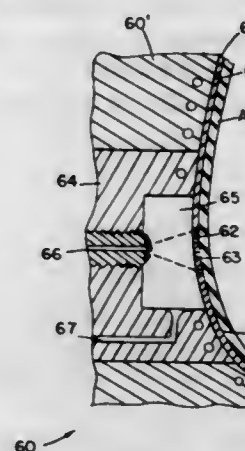
plastic, followed by immersion of this material, at a temperature above its softening point, into a second



solvent bath in which the primary solvent is miscible, and in which the plastic material is immiscible.

### 3,462,524 MOLDING TECHNIQUES AND APPARATUS

Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840  
Filed Dec. 29, 1964, Ser. No. 421,817  
Int. Cl. B29c 9/00 4 Claims  
U.S. Cl. 264—255



An apparatus and method are provided for decorating molded articles in the mold or die in which they are formed, thereby eliminating the need to rehandle and reposition the article to effect such decoration. The mold or die is provided with a sub-cavity containing means such as a spray nozzle for flowing decorating material to the surface of the article disposed against the mold or die cavity through an opening such as provided by a mask secured to the mold wall.

### 3,462,525 DENTAL COMPOSITIONS COMPRISING LONG-CHAIN OLEFIN SULFONATES

Henry Leon Levinsky and Joseph Rubinfeld, Brooklyn, N.Y., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware  
No Drawing. Filed Sept. 15, 1966, Ser. No. 579,524  
Int. Cl. A61k 27/00 11 Claims  
U.S. Cl. 424—56

1. A dental mouth wash preparation comprising about 0.05–10% by weight of a water-soluble long-chain olefin



sulfonate detergent material and a mixture of water and ethanol dispersing agent compatible with said detergent material, the ratio of water to alcohol being about 1-20.1 by weight.

3,462,526

# ANTIVIRAL CANINE VACCINE AND PROCESS FOR MAKING THE SAME

Yves de Ratuld and Georges Werner, Sceaux, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed Nov. 14, 1966, Ser. No. 593,692  
Claims priority, application France, Nov. 17, 1965, 38,768

Int. Cl. A61k 23/00; C12k 5/00

U.S. Cl. 424-90

10 Claims

A vaccine for immunizing young dogs against rhinitis and bronchopneumonia is prepared by inoculating a cellular culture of fibroblastic lung cells of a dog foetus in a suitable medium with a virus cultivated in vitro and isolated from renal cells of a dog infected by rhinitis and bronchopneumonia and which is capable of causing in the young dog lesions of pneumonia, hepatitis, nephritis and encephalitis. This inoculated culture is incubated until a cytopathogenic effect is produced, liberating the virus from the cells, after which the cellular debris is removed and the resulting viral suspension is inactivated with propiolactone or ultraviolet irradiation to produce the vaccine.

3,462,527

# FUNGICIDAL COMPOSITIONS OF BASIC COPPER SULFATE

Hideo Tanabe, Nishinomiya, and Yasuo Sano, Kawanishi, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

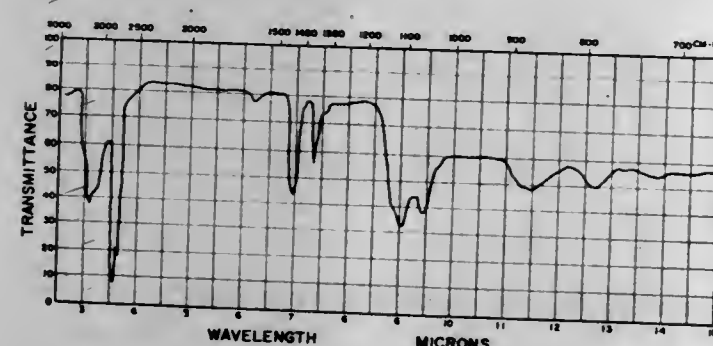
Continuation of application Ser. No. 390,786, Aug. 18, 1964. This application Nov. 7, 1966, Ser. No. 596,044

Claims priority, application Japan, Aug. 20, 1963, 38/44,402

Int. Cl. A01n 11/04; C01g 3/10, 1/10

U.S. Cl. 424-128

4 Claims



Fungicidal compositions comprising as their essential ingredient a new basic copper sulfate are disclosed that have a broad spectrum of antifungal activity. Said basic copper sulfate is characterized by having the following lattice spacing:

Angstrom:		
6.95	-----	Very strong
3.47	-----	Middle
2.70	-----	Middle
2.62	-----	Middle
2.42	-----	Middle
2.33	-----	Middle
2.26	-----	Middle
2.02	-----	Middle
1.99	-----	Middle
1.54	-----	Weak

3,462,528

# DIETHERS OF HELVETICOSIDE AND HELVETICOSOL

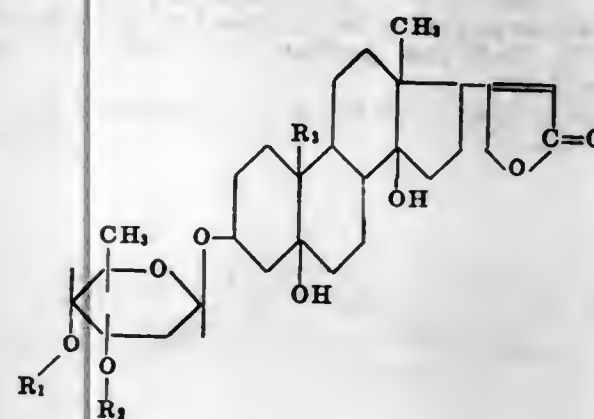
Wolfgang Voigtlander, Viersheim, Hesse, Fritz Kaiser, Lampertheim, Hesse, and Wolfgang Schumann and Kurt Stach, Mannheim-Waldhof, Germany, assignors to C. F. Boehringer & Soehne GmbH, Mannheim-Waldhof, Germany, a corporation of Germany  
No Drawing. Filed Dec. 18, 1967, Ser. No. 691,177  
Claims priority, application Germany, Dec. 22, 1966, B 90,418

Int. Cl. A61k 27/00; C07c 173/02

U.S. Cl. 424-182

11 Claims

Diethers of helveticoside and helveticosol having the formula:



wherein  $R_1$  and  $R_2$  are each an alkyl, alkenyl or alkynyl group containing up to 4 carbon atoms or such group substituted by an alkoxy group containing up to 3 carbon atoms and  $R_3$  is an aldehyde or methylol group or an acylated methylol group.

The above diethers of helveticoside and helveticosol are useful chemotherapeutic agents because of their effectiveness in treating cardiac disturbances. The compounds are easily absorbed from the alimentary tract and are preferably formulated in a form suitable for oral administration.

3,462,529

# COMPOSITIONS CONTAINING SALTS OF 5'-PHOSPHO-N'-PYRIDOXYLIDENE-LYSINE

Edmond Forget, Sierne, Geneva, Switzerland, assignor to Etablissement Kogerim, Vaduz, Liechtenstein

No Drawing. Filed June 8, 1966, Ser. No. 555,991  
Claims priority, application Switzerland, June 9, 1965, 8,025/65

Int. Cl. A61k 19/02; C07f 9/68

U.S. Cl. 424-200

4 Claims

As a pharmaceutical composition for the treatment of a deficiency of pyridoxal phosphate, the sodium or potassium salt of 5'-phospho-N'-pyridoxylidene-lysine in an inert carrier. The composition is administered at a dosage rate from 25 to 500 mg. of the alkali salt in 24 hours.

3,462,530

# S-CHLOROPHENOXY-METHYL, THIO, DITHIO PHOSPHONATES OR PHOSPHATES AS INSECTICIDES AND ACARICIDES

Karoly Szabo, Orinda, Calif., and John Gary Brady, West Chester, Pa., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

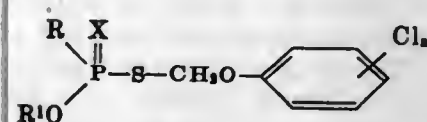
No Drawing. Original application June 12, 1964, Ser. No. 374,823, now Patent No. 3,368,002, dated Feb. 6, 1968. Divided and this application Dec. 13, 1967, Ser. No. 719,803

Int. Cl. A01m 9/36

U.S. Cl. 424-217

8 Claims

This invention relates to a method of killing insects and acarids with



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wherein R is selected from the group consisting of lower alkyl, lower alkoxy, chloro lower alkyl and phenyl,  $R^1$  is a lower alkyl, X is selected from the group consisting of oxygen and sulfur, and n is an integer from 1 to 3, inclusive.

3,462,531

# USE OF SUBSTITUTED HYDROQUINONES FOR THE MEDICINAL TREATMENT OF INFLAMMATIONS

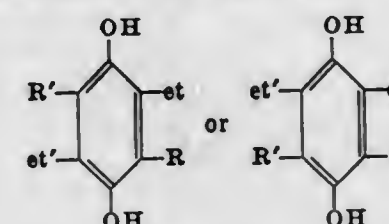
Roland Jaques, Allschwil, and Pierre-Antoine Dessalles, Muttetz, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware  
No Drawing. Filed Feb. 9, 1967, Ser. No. 614,795  
Claims priority, application Switzerland, Feb. 25, 1966, 2,788/66

Int. Cl. A61k 27/00

U.S. Cl. 424-244

5 Claims

Use of compounds of the formula



et and et' = ethyleneimino radicals, optionally substituted, e.g. by lower alkyl,

R and R' = hydrogen or substituents, such as lower alkoxy, lower alkylmercapto, halogen,

and their salts, for the medicinal treatment of inflammations. For example: Use of 2,5-bis-ethyleneimino-hydroquinone.

3,462,532

# CONTROLLING GASTROPODS WITH NICOTIN-ANILIDE OR ALKYLARYL NICOTINAMIDE GASTROPODICIDES

John L. Hardy, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 563,032, July 6, 1966. This application Aug. 28, 1967, Ser. No. 663,528

Int. Cl. A01n 9/22, 17/00

U.S. Cl. 424-266

7 Claims

Gastropods and their ova are controlled by the application of a gastropodicidal amount of nicotinilide or an alkylaryl nicotinamide to the gastropods, their ova and their habitats.

3,462,533

# METHOD FOR PROTECTING AGAINST LIVER DAMAGE USING AMINOACETONITRILE DERIVATIVES

Tsutomu Irikura, Keigo Nishino, and Seigo Suzue, Tokyo, Kellchi Ushiyama, Saitama-ken, Hirotaka Shinoda, Kawaguchi-shi, and Yoshinori Hasegawa, Tokyo, Japan, assignors to Kyorin Selyaku Kabushiki Kaisha, Tokyo, Japan

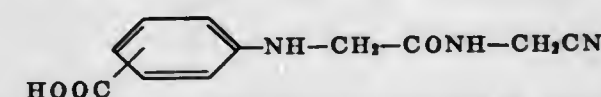
No Drawing. Filed June 17, 1966, Ser. No. 558,281

Int. Cl. A61k 27/00

U.S. Cl. 424-304

4 Claims

A method of protecting the liver against the liver damaging action of carbon tetrachloride by administering to the exposed individual a member selected from the group consisting of compounds of the formula



and the sodium salt, potassium salt, lithium salt, calcium salt, magnesium salt, amine salt, and pyridinium salt thereof.

3,462,534

# PRODUCTION OF AN ANTIDEPRESSANT EFFECT WITH ESTERS OF GALLIC ACID

Paul Greengard, New York, and Barbara Petrack, Briarcliff Manor, N.Y., assignors to Gelgy Chemical Corporation, Ardsley, N.Y., a corporation of New York  
No Drawing. Filed June 6, 1967, Ser. No. 643,836

Int. Cl. A61k 27/00

U.S. Cl. 424-308

4 Claims

Method for alleviating depression and anti-depressant agents containing as active compound a gallic acid ester. An illustrative embodiment of the active compound is butyl gallate.

3,462,535

# COMPOSITIONS AND METHODS FOR PRODUCING SEDATIVE-TRANQUILIZING ACTIVITY WITH MALONAMIDIC ACID ESTERS

Bernard Loev, Broomall, and Edward Macko, Philadelphia, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania  
No Drawing. Filed Feb. 11, 1966, Ser. No. 526,712

Int. Cl. A61k 27/00; C07c 103/20

U.S. Cl. 424-309

10 Claims

Sedative-tranquilizer compositions and methods employing malonamidic acid esters.

3,462,536

# METHOD OF INHIBITING DECARBOXYLASE

John M. Chmerda, Metuchen, Meyer Slettinger, North Plainfield, and Frederick W. Bollinger, Westfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 45,789, July 28, 1960. This application June 29, 1961, Ser. No. 120,493

Int. Cl. A61k 27/00

U.S. Cl. 424-309

17 Claims

The invention relates to a method for inhibiting mammalian decarboxylase by administering  $\alpha$ -hydrazino- optionally substituted  $\beta$ -phenyl propionic acids, their lower alkyl esters and non-toxic salts thereof to a mammal.

3,462,537

# METHOD FOR COMBATING MITES AND TICKS

Wilhelm Merk, Reinach, Basel-Land, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Oct. 25, 1966, Ser. No. 589,224

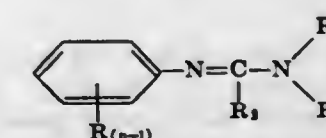
Claims priority, application Switzerland, July 5, 1966, 9,749/66

Int. Cl. A01n 9/20

U.S. Cl. 424-326

4 Claims

Novel preparations and methods are provided for combating ectoparasites, especially mites and ticks. The preparations contain as active principle the compound of the formula

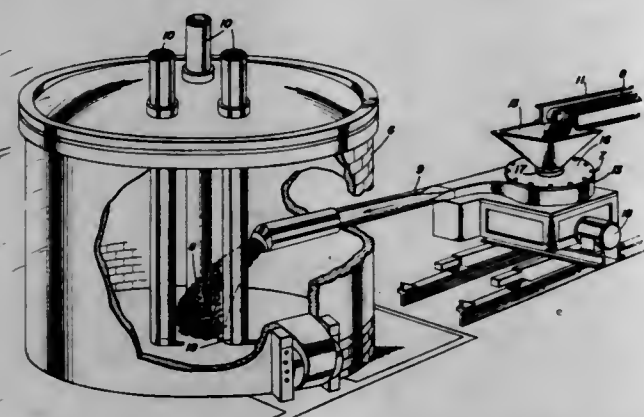


in which R represents halogen, lower alkyl, alkoxy, halo-alkyl or phenoxy which may be substituted by halogen, lower alkyl, alkoxy, or halo-alkyl, or the group  $-\text{CF}_3$ ,  $-\text{NO}_2$ ,  $-\text{CN}$ ,  $-\text{SCN}$ , n represents an integer from 1 to 4,  $R_1$  represents alkyl and  $R_2$  and  $R_3$  are hydrogen or alkyl. The compositions are applied to the area to be protected in a parasitically effective amount.



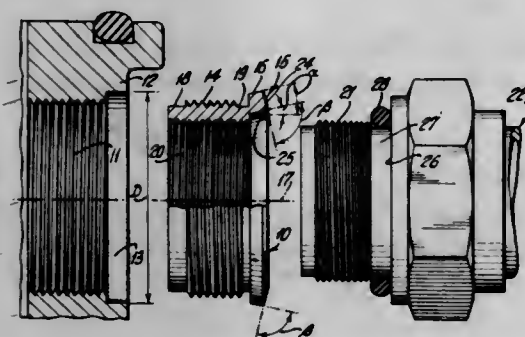
## ELECTRICAL

**3,462,538**  
**METHOD AND APPARATUS FOR THE CONTINUOUS CHARGING OF SPONGE IRON GRANULES INTO AN ELECTRIC FURNACE**  
 Roberto Einaudi Pellegrini, Ugo Keller Lanzoni, Italo Camera Pinelli, Luigi Battista Ugnani, and Franco Coluatti Marini, Milan, Italy, and Francisco Indaco Vianelli and Abraham Chavez Vigil, Paris, Mexico, assignors to Tubos de Acero de Mexico, S.A., Paris, Mexico, and Techint Engineering Company, Inc., Milan, Italy  
 Filed Apr. 8, 1968, Ser. No. 719,582  
 Claims priority, application Mexico, May 19, 1967, 95,975  
 Int. Cl. H05b 7/18, 11/00  
 U.S. Cl. 13—9 6 Claims



A method and apparatus for continuously charging sponge iron granules into an electric arc furnace wherein said sponge iron granules are injected into the furnace through the wall thereof and substantially midway between the ends into the vicinity of the furnace electrodes.

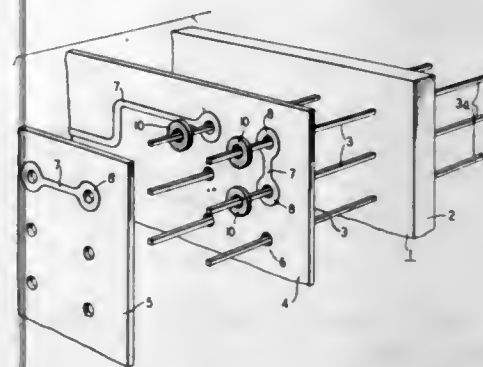
**3,462,539**  
**GROUND BUSHING**  
 Eric Winston, Melrose Park, Pa., assignor to Jerrold Electronics Corporation, Philadelphia, Pa., a corporation of Delaware  
 Filed July 15, 1966, Ser. No. 565,534  
 Int. Cl. H02g 3/18; F16l 41/00, 5/00  
 U.S. Cl. 174—65 9 Claims



The invention contemplates a flanged insert of relatively hard metal threaded into tight permanent metal-displacing engagement with a wall opening in an electrical-equipment case of relatively soft metal. The metal-displacing binding electrically-grounding engagement occurs between a narrowly tapering or wedging outer surface on the flange, as it interferes with a right-cylindrical counterbore of the case opening. The axially outer end of the insert is also so formed as to define an axially projecting circumferential ridge for tight electrically conducting line-contact with the radial flange of a connector element fitted to the insert.

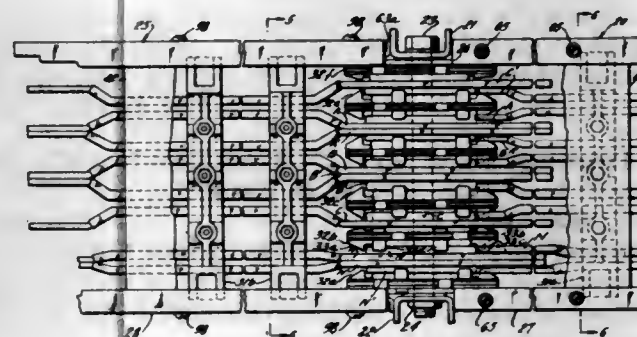
946

**3,462,540**  
**METHOD AND APPARATUS FOR MOUNTING, CONNECTING AND REPAIRING STACKED CIRCUIT BOARDS**  
 Richard L. Harris, Jr., Clarendon Hills, and William L. Harrod, Downers Grove, Ill., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York  
 Filed Dec. 21, 1967, Ser. No. 692,595  
 Int. Cl. H05k 1/02  
 U.S. Cl. 174—68.5 5 Claims



A matrix of wire wrap pins set in epoxy or the like provide a basic mounting module upon which printed circuit boards are mounted in high densities. Connections to each board in turn are made by dropping solder plated washers over each pin. These can be severed where necessary by a hollow end-cutting tool that fits over the pin and cuts down through all boards to a faulty or undesired connection. Any reconnections that can be made by wire wraps to the pin's exposed ends.

**3,462,541**  
**ADJUSTABLE LENGTH STRAIGHT SECTION FOR BUS DUCT**  
 Russell S. Davis, Detroit, and Alexander J. Westcott, Grosse Pointe, Mich., assignors, by mesne assignments, to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware  
 Filed Aug. 3, 1967, Ser. No. 658,210  
 Int. Cl. H02g 5/04  
 U.S. Cl. 174—88 10 Claims



In order to facilitate installation of a bus duct run an adjustable length duct section is provided by utilizing telescoping housing portions with bus bars in sliding engagement. Pressure for good electrical contact between engaged bus bars is provided by a clamping collar so that

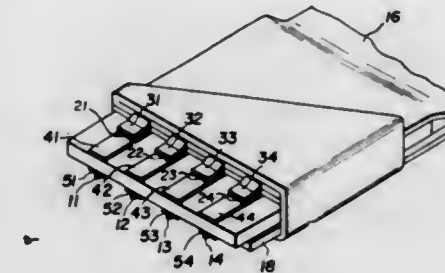
AUGUST 19, 1969

## ELECTRICAL

947

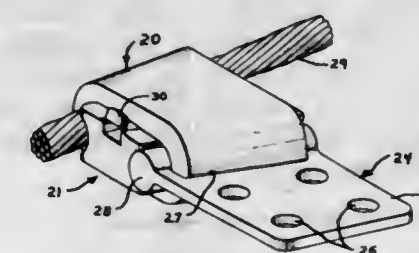
clamping forces are not transmitted to either housing portion. The bus bars of the adjustable section are arranged in a so-called pair phase low impedance configuration.

**3,462,542**  
**FLAT SHIELDED CABLE TERMINATION METHOD AND STRUCTURE**  
 Herman W. Richter, Victor, N.Y., assignor, by mesne assignments, to Burndy Corporation, a corporation of New York  
 Filed Oct. 9, 1967, Ser. No. 673,703  
 Int. Cl. H02g 15/08, 15/02  
 U.S. Cl. 174—88 21 Claims



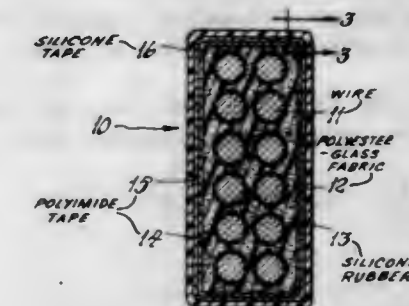
The shielding conductor laminae at the terminal ends of a flat shielded cable are separated from the signal conductor lamina, and one of the shielding conductor laminae is folded around the edge of the signal conductor lamina and into alignment with the other shielding conductor lamina. The terminal ends of the laminae are trimmed and stripped of insulation to bare extending ends of conductors which are soldered to a terminal board. Preferably, the folding is arranged to bring the extending ends of normally registering shielding conductors into contact at one side of the terminal board for soldering, and the signal conductors into contact with conductors on the opposite side of the terminal board for soldering. Also, the laminae are preferably mechanically bonded to the terminal board for strain relief.

**3,462,543**  
**ELECTRICAL TERMINALS TO TERMINATE CONDUCTOR MEMBERS**  
 Frederick William Wahl, Middletown, and Ernest Lloyd Beinhaus, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.  
 Continuation of application Ser. No. 595,244, Nov. 17, 1966. This application June 12, 1968, Ser. No. 740,768  
 Int. Cl. H02g 15/08; H01r 13/24, 7/00  
 U.S. Cl. 174—94 4 Claims



A connector assembly comprises a connecting member connectable to a member to effect an electrical connection and including a substantially round section extending outwardly therefrom, a body member having an inner inclined surface, and a wedge member provided with arcuate recesses to engage a conductor member and the round section when driven within the body member to terminate the conductor member.

**3,462,544**  
**ELECTRICAL CONDUCTORS WITH A HEAT RESISTANT ELECTRICAL INSULATION SYSTEM**  
 George E. S. King, East Elmhurst, N.Y., assignor to the United States of America as represented by the Secretary of the Navy  
 Filed Aug. 29, 1967, Ser. No. 664,223  
 Int. Cl. H01b 7/02, 11/02, 3/08  
 U.S. Cl. 174—113 6 Claims



Individual conductors covered with a polyester glass fabric are formed into a multiple wound loop. The loop is then covered with a silicon rubber paste and two thin polyimide films. The final product is cured for about eight hours at an elevated temperature of at least 175° C.

**3,462,545**  
**CONDENSER BUSHING**  
 Elmer J. Grimmer, Sharpville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
 Filed Jan. 13, 1967, Ser. No. 609,185  
 Int. Cl. H01b 17/28  
 U.S. Cl. 174—143 5 Claims



A condenser bushing has a member concentric layers of dielectric material interposed between a conductor stud passing through the bushing and a mounting flange which is usually at ground potential, with layers of conductive material such as foil alternating with the layers of dielectric material. The thickness of all layers of dielectric material are equal. The layers of foil (except in some cases the outermost layer) are not continuous from end to end. They are individually adjusted in length by a graduated discontinuity approximately in the center of each layer of foil to provide that the capacity between

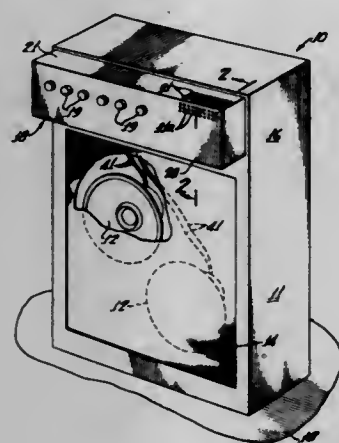






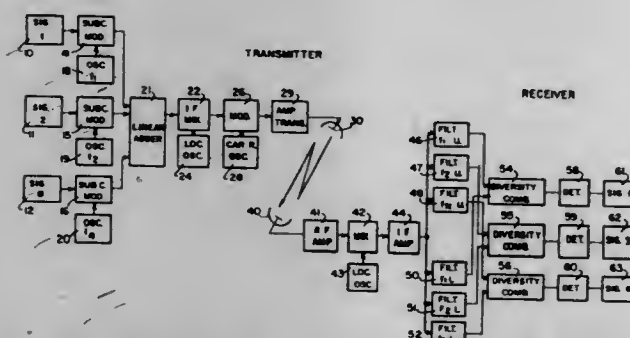
transmitted to release the repeater from the transmitting station and thereby make it available for use by associated exchange substations or distant stations.

**3,462,553**  
**SOLID-STATE AMPLIFIER, AND CONTROL PANEL ASSEMBLY INCORPORATED THEREIN**  
Paul B. Spranger, Fullerton, Calif., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York  
Filed June 2, 1966, Ser. No. 554,764  
Int. Cl. H04v 1/02; H03f 3/04  
U.S. Cl. 179—1 **5 Claims**



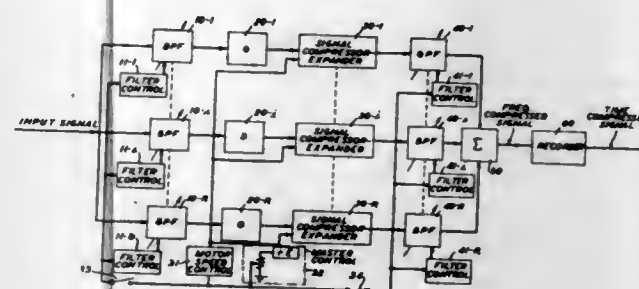
A solid-state amplifier and loudspeaker combination, in which the control panel for the amplifier cooperates in defining a chamber in which are disposed various components of the amplifier. A heat sink is mounted in such chamber and in heat-transfer relationship with the power transistor of the amplifier. Upper and lower port means are provided in the control panel and are disposed for convective flow of cooling air past the heat sink.

**3,462,554**  
**TRANSMISSION SYSTEM UTILIZING INDEPENDENT DIVERSITY RECEPTION ON PLURAL SIDEBAND COMPONENTS**  
Francis R. Steel, Jr., Northbrook, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois  
Filed Jan. 14, 1966, Ser. No. 520,710  
Int. Cl. H04b 1/02, 1/16  
U.S. Cl. 179—15 **5 Claims**



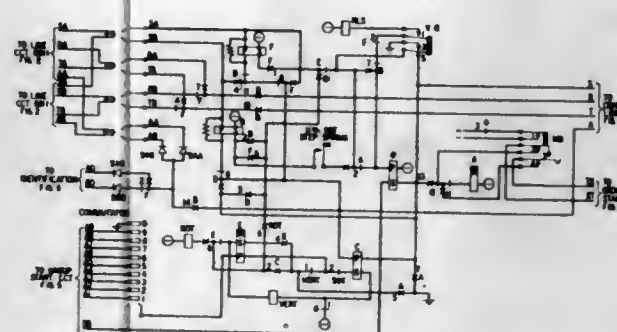
A radio transmission system utilizing multiplexed signal modulation on plural subcarriers wherein the carrier and both sidebands are transmitted. A receiver separates the plural sideband subcarrier components of both the upper and lower sidebands and diversity combines each of the subcarriers independent of the others. Detection of the modulation is then effected.

**3,462,555**  
**REDUCTION OF DISTORTION IN SPEECH SIGNAL TIME COMPRESSION SYSTEMS**  
Anthony J. Presti, Warren Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Mar. 23, 1966, Ser. No. 536,761  
Int. Cl. H04j 3/18  
U.S. Cl. 179—15.55 **8 Claims**



One attractive way of time-compressing speech or other message signals is to discard speech segments periodically and join the remaining ones to form a continuous signal. Unfortunately, this form of "chopping" gives rise to distortion in the audible frequency range because of amplitude and frequency discontinuities at each splice. Commonly, an attempt is made to remove this distortion by filtering the chopped signal to remove components outside of a desired band. Superior temporal processing is achieved, however, by dividing a speech signal into a number of contiguous sub-bands before chopping and by passing each chopped sub-band signal through a filter identical to that used originally to generate the sub-band signal before recombination. Distortion energy outside of each filter pass-band, including that within audible frequencies passed by other filters, is thus removed.

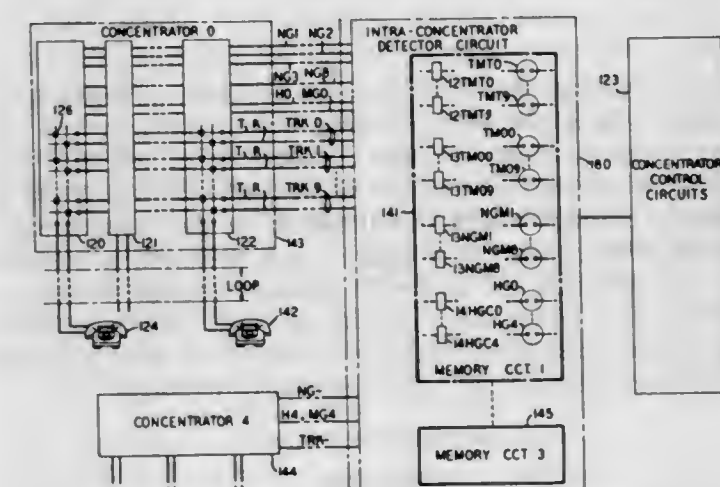
**3,462,556**  
**CALLING LINE TERMINAL IDENTIFIER**  
Karol S. Sikorski, Old Bridge, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Apr. 26, 1966, Ser. No. 545,497  
Int. Cl. H04m 3/18  
U.S. Cl. 179—18 **16 Claims**



A modified 200-point, four-wire, step-by-step telephone system line finder is disclosed with circuitry whereby a three-wire line circuit is identifiable as to its four digit number by virtue of its location in the terminal bank by using the pair of wipers usually employed for line meter control. Two line circuits having the same tens and units digits terminate at the same bank location. The particular finder used identifies the hundreds and thousands digits. An identification signal is applied through two diodes to the pair of meter lead brushes and thence to the pair of meter lead bank contacts. The diodes prevent

undesirable multiple signal paths which would otherwise be present due to the usual finder bank line multiple. The upper meter bank contact of each line having the same tens digit is connected to the appropriate one of ten tens leads. The lower meter lead bank contact of each line having the same units digit is connected to the appropriate one of ten units leads. The tens and units digits are identified by detecting which tens and units leads are carrying the signal.

**3,462,557**  
**INTRA-CONCENTRATOR CALL DETECTING CIRCUIT**  
Chester E. Brooks, Montvale, and James L. Henry, Madison, N.J., Peter B. Linhart and Grace E. Markthaler, New York, and Donald R. Massoni, East Rockaway, N.Y., and John A. Meyerle, Manasquan, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Dec. 27, 1965, Ser. No. 516,314  
Int. Cl. H04m 3/02  
U.S. Cl. 179—18 **24 Claims**

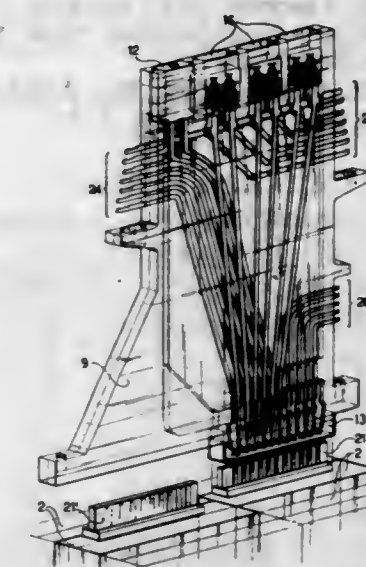


Equipment is disclosed for controlling the establishment of intra-concentrator call connections over a single trunk connected between a central office and a remote switching facility. A detection circuit including a memory is activated each time central office equipment completes a call connection between two remote substations (1) for determining whether those substations are connected to trunks serving a common remote switching facility and (2) for verifying that an intra-concentrator call connection is in progress. When both conditions are satisfied, one of two trunks employed initially to establish such connection is released and an intra-concentrator connection is completed over a single trunk between the substations.

**3,462,558**  
**TELECOMMUNICATIONS AMPLIFICATION CENTER**  
Jacques Selz, Viroflay, France, assignor to CIT—Compagnie Industrielle des Telecommunications, Paris, France  
Filed Aug. 5, 1966, Ser. No. 570,537  
Claims priority, application France, Aug. 5, 1965, 27,399  
Int. Cl. H04q 1/04 **7 Claims**

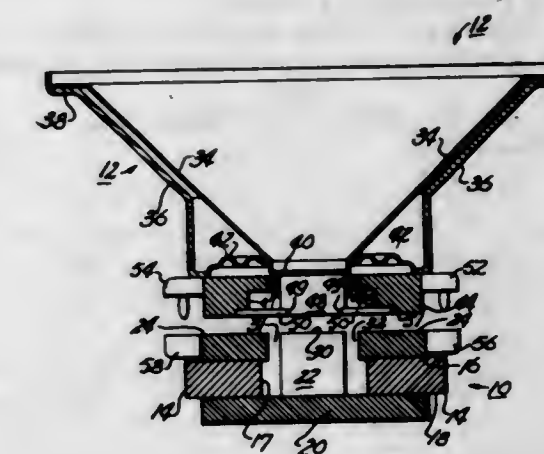
A telecommunication amplification system wherein line members, terminating members and operating members are organized in such a way to save considerable space and reduce installation expenses, wherein the line mem-

bers and operating members are respectively situated in portions of a vertical frame forming a column with dis-



tributors and connecting moduli positioned at the rear of the frame.

**3,462,559**  
**TWO-PIECE LOUDSPEAKER**  
Dallas Richard Wilder, 6731 N. Ionia, Chicago, Ill. 60646  
Filed Aug. 3, 1964, Ser. No. 386,894  
Int. Cl. H04r 9/06  
U.S. Cl. 179—115.5 **15 Claims**



This disclosure concerns a loudspeaker composed of two readily separable sections, one of which incorporates a bracket supporting the cone of the loudspeaker, and the other incorporating a permanent magnet. The voice coil of the cone is disposed in an air gap formed between two ferromagnetic members rigidly mounted on the bracket of the cone section, and air gap and voice coil are enclosed by a nonferromagnetic shield. A complete magnetic flux path including the voice coil and the permanent magnet is formed when the two sections are juxtaposed, the magnet section being provided with ferromagnetic members for this purpose, which contact the ferromagnetic members of the cone section when the loudspeaker is assembled. The design of the magnet section is such as to provide for a minimum flux level for the permanent magnet when the sections are separated, and to lessen the effect of misalignment of the sections on the flux density at the voice coil when the sections are assembled.



3,462,560

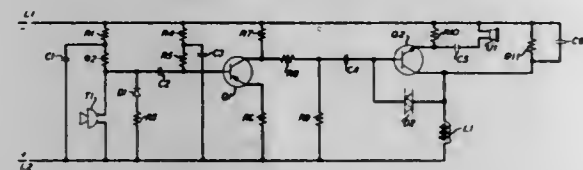
**SUBSCRIBER TELEPHONE CIRCUIT WITH RESISTANCE HYBRID SIDETONE BALANCING NETWORK**

Louis N. Holzman, Lincroft, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 6, 1966, Ser. No. 540,643  
Int. Cl. H04b 3/38, 3/58

U.S. Cl. 179—170

8 Claims



A telephone station set speech network employs a resistive hybrid transmission circuit with a first transistor amplifier in the receiving circuit and a second transistor amplifier in the transmitting circuit. The set impedance is made essentially resistive at normal telephone voice channel frequencies by utilizing the amplifier of the receiving circuit to isolate the impedance of the receiver from the resistive hybrid circuit.

3,462,561

**BILATERAL SIGNAL TRANSMISSION SYSTEM HAVING A COMBINED DYNAMIC RANGE CONTROL AND ECHO SUPPRESSOR ARRANGEMENT**

Pierre J. F. Deman, Paris, France, assignor to Compagnie Francaise Thomson Houston-Hotchkiss-Brandt, Paris, France, a corporation of France

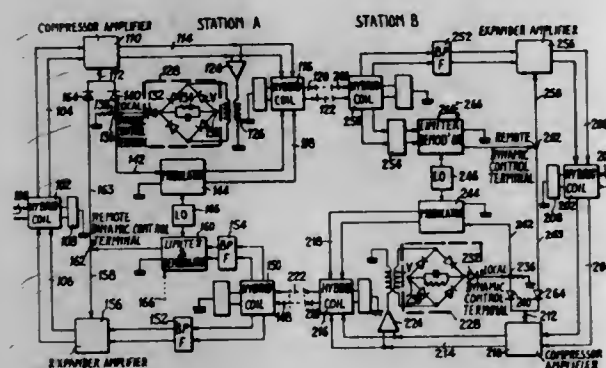
Filed Feb. 7, 1966, Ser. No. 525,526

Claims priority, application France, Feb. 17, 1965, 5,889

Int. Cl. H04b 3/20; H04m 9/08

U.S. Cl. 179—170.4

9 Claims



An adjustable-gain device is connected in each of two one-way transmission paths. A local dynamic-control signal is derived from the amplitude of, and transmitted jointly with, an information signal in the outgoing path. A remote dynamic-control signal is derived from the amplitude level of the information signal on said incoming path. The received remote dynamic-control signal is applied to the adjustable-gain device in the incoming path so that the gain of the adjustable-gain device is proportional to the amplitude of the remote control signal. Further, the local control signal is compared with the remote control signal and the stronger of the two is applied to the out-going-path adjustable-gain device so that the gain of the adjustable-gain device is inversely proportional to the stronger of the two control signals.

3,462,562

**TAP CHANGER FOR TRANSFORMERS WITH ELONGATED SWITCH-OVER CONTACT**

Sivert Norman, Ludvika, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

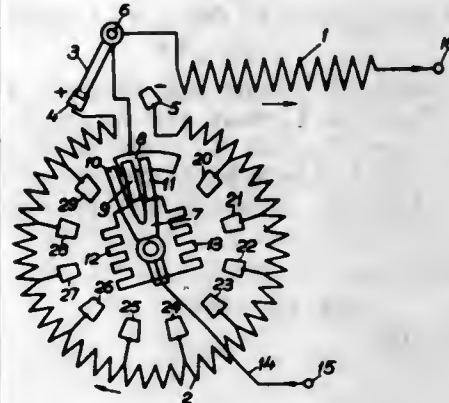
Filed Nov. 20, 1967, Ser. No. 684,459

Claims priority, application Sweden, Nov. 21, 1966, 15,880/66

Int. Cl. H01h 19/58, 21/78

U.S. Cl. 200—11

7 Claims



A tap changer for transformers includes a regulating winding with a plurality of fixed contacts connected to different points thereof, these contacts being engaged by a movable contact. One of the fixed contacts constitutes a switching contact which is connected to the transformer winding. This contact is elongated and its length is greater than the distance the movable contact moves during a complete switching step. A change-over switch is also provided for changing over the connection between the transformer winding and the regulating winding.

3,462,563

**TAP CHANGING MECHANISM WITH SCOTCH YOKE ACTUATOR**

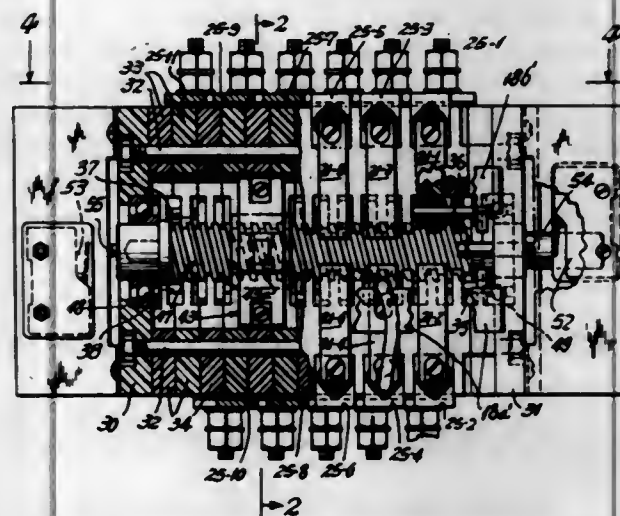
Paul D. Henderson, Avon, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut

Filed Jan. 8, 1968, Ser. No. 696,363

Int. Cl. H01h 19/58, 21/78

U.S. Cl. 200—11

9 Claims



A switching mechanism for normally connecting at a time only one pair of a plurality of pairs of inputs to output terminals and which upon actuation sequentially connects the next pair of inputs to the output terminals while disconnecting the last pair and in which the disconnection is effected after the connection.

3,462,564

**HIGH PRECISION MULTIPOSITION ELECTRICAL SWITCH**

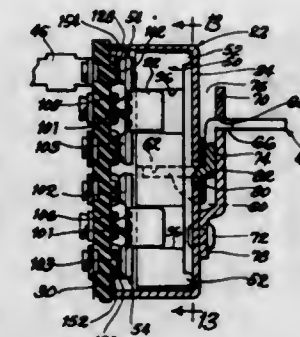
Michael F. Bedoes, Wilmette, Ill., assignor to Indak Manufacturing Corp., Northbrook, Ill., a corporation of Illinois

Filed Mar. 6, 1968, Ser. No. 710,977

Int. Cl. H01h 15/10

U.S. Cl. 200—16

17 Claims



An electrical switch having a plurality of parallel contact bars, electrical connecting means between said bars, a carriage movable along said bars, a plurality of movable contactors mounted on said carriage and corresponding to said bars, a plurality of pairs of contacts corresponding to said bars, the contacts of each pair being located on opposite sides of the corresponding bar, each contactor having a first contacting portion slidably engaging the corresponding bar, and second and third contacting portions movable into engagement with the contacts of the corresponding pair, the contacts being effectively staggered along the path of the carriage in such manner that the contacts are successively engaged as the carriage is moved to successive closely spaced positions, an operating member connected to said carriage and having an elongated guide slot therein slidably receiving said guide portion to maintain the orientation of said carriage.

3,462,565

**COIN-CONTROLLED STARTER MECHANISM FOR CYCLE TIMERS**

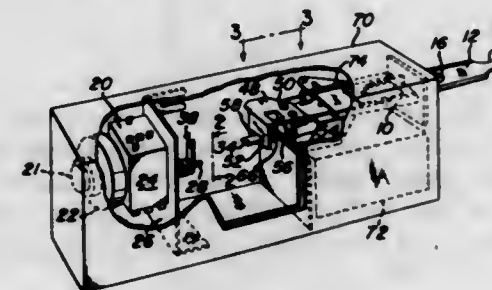
Mitchell A. Hall, 445 Rossford Ave., Fort Thomas, Ky. 41075

Filed Feb. 7, 1968, Ser. No. 703,606

Int. Cl. H01h 7/08, 43/10

U.S. Cl. 200—35

10 Claims



The starter mechanism comprises a carrier attachable to one end of a coin-controlled slide plate, which carrier mounts a plunger that is displaceable both longitudinally and laterally against the resistance of a very weak spring. Said spring normally keeps the plunger projected relative to the carrier, in position to strike a shift member carried by a cycle timer shaft to be shifted longitudinally to an operative position. During a manual advancement of the slide plate, the plunger may engage

3,462,566

**IMPACT STARTER FOR CYCLE TIMERS**

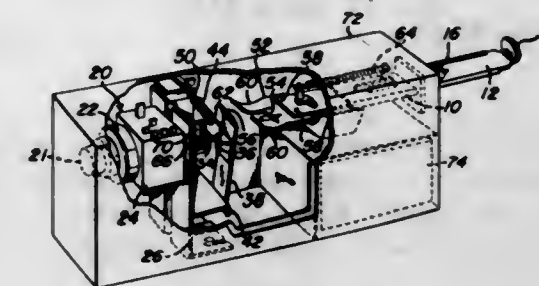
Mitchell A. Hall, 445 Rossford Ave., Fort Thomas, Ky. 41075

Filed Feb. 7, 1968, Ser. No. 703,607

Int. Cl. H01h 7/08, 43/10

U.S. Cl. 200—35

10 Claims



A cycle timer and the slide plate of a coin slide mechanism, are so arranged that the operating shaft of the cycle timer is started in motion by means activated during a retractile movement of the slide plate to normal position; that is, no movement of the slide plate in the direction of full advancement can serve to place the timer in operation. The means for initiating operation of the timer includes a spring projected hammer member which is subject to cocking and release incident to retraction of the slide plate toward the normal or retracted position, following a full advancement of the slide plate.

3,462,567

**ALL-WEATHER CARD READER**

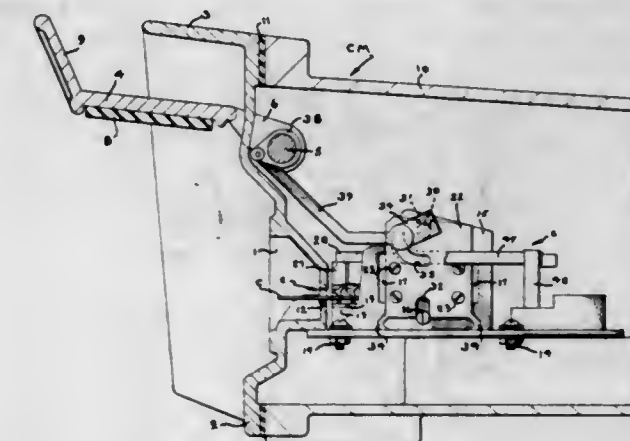
Christopher Kingsley Brown, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Mar. 17, 1966, Ser. No. 535,098

Int. Cl. H01h 43/04; G06k 7/00

U.S. Cl. 200—46

17 Claims



A card reader comprises a card-reading area provided with a movable contact means and a stationary contact means for receiving a card to be read therebetween. Operating means is provided for moving the movable contact means from a nonread position to a read position when the card is properly positioned within the card-reading area. Connecting means is provided between the



operating means and the movable contact means to connect the operating means and movable contact means together. A card-engaging means is engageable by the card when it is properly positioned in the card-reading area thereby moving the connecting means into engagement between the operating means and movable contact means so that the operating means is now capable of moving the movable contact means into a reading position.

3,462,568

## SEAM DETECTOR APPARATUS

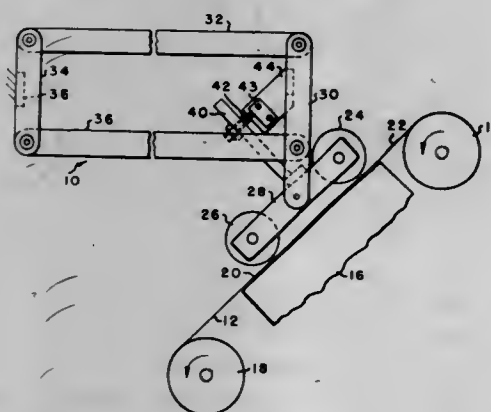
Philip N. Smith, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a Corporation of Delaware

Filed July 19, 1967, Ser. No. 654,615

Int. Cl. B65h 25/14

U.S. Cl. 200—61.13

6 Claims



The apparatus is directed to a seam detector which can be used with any thickness of fabric without readjustment for the various thicknesses. A switch means is located in a fixed position relative to an arm which supports a pair of rolls and is pivotally attached to a parallelogram linkage system.

3,462,569

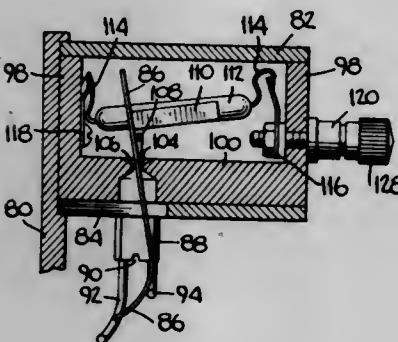
## SENSING SWITCH SYSTEMS

Robert W. Schooley, R.D. 2, Lebanon, N.J. 08833  
Continuation-in-part of application Ser. No. 589,004,  
Oct. 24, 1966. This application July 31, 1967, Ser.  
No. 657,119

Int. Cl. H01h 3/16, 35/24

U.S. Cl. 200—61.13

19 Claims



Switch systems including off pivot center switch arm mounting means and reed switch-actuating magnet arrangements wherein the magnet poles and switch iron leads are aligned along the path of relative movement to provide a more sensitive yet reliable switching action with a minimum of hysteresis; the switch system is also integrated in a fluid density measurement system.

### 3,462,570 VEHICLE DIRECTION SIGNALING AND HAZARD WARNING SWITCHING APPARATUS

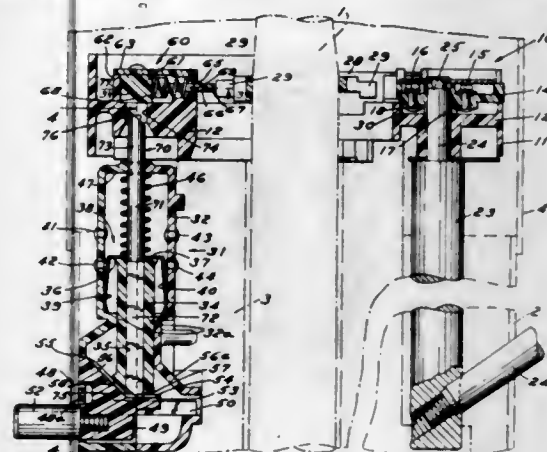
Nicholas A. Poleschuk, Farmington, Mich., assignor to Boyne Products Inc., Detroit, Mich., a corporation of Michigan

Filed Aug. 15, 1966, Ser. No. 572,540

Int. Cl. B60q 1/34, 1/48

U.S. Cl. 200—61.27

17 Claims



A switch for use in a vehicle having rotatable steering means and left-hand and right-hand signaling indicators, the switch comprising an actuator movable toward and away from the axis of rotation of the steering means to effect displacement of an operator along a path parallel to the axis of rotation of the steering means for enabling and disabling simultaneous operation of the signaling means. A second actuating member is mounted for movement toward and away from the axis of rotation of the steering means and is displaceable upon engagement with a cam rotatable with the steering means to initiate movement of the operating member to a position in which the signaling means is disabled.

3,462,571

### BRAKE EFFECTIVENESS WARNING DEVICE

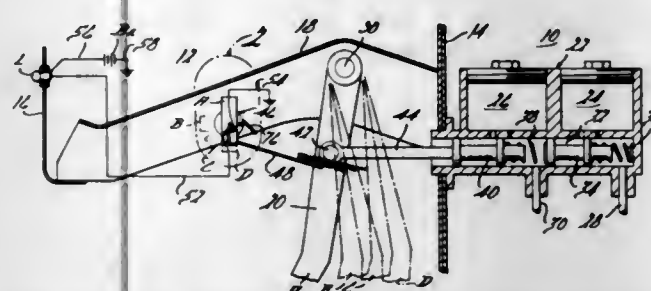
David H. Edwards, Temperance, Mich., assignor to Kaiser Jeep Corporation, Toledo, Ohio, a corporation of Nevada

Filed Feb. 9, 1967, Ser. No. 615,006

Int. Cl. H01h 3/14

U.S. Cl. 200—61.89

15 Claims



Apparatus for sensing brake pedal travel and vehicle deceleration and for providing a warning signal when the travel of the brake pedal is excessive relative to the deceleration of the vehicle obtained for that degree of travel and hence for providing a warning signal related to the effectiveness of the braking system.

3,462,572

### VACUUM TYPE CIRCUIT INTERRUPTER HAVING CONTACTS PROVIDED WITH IMPROVED ARC-PROPELLING MEANS

Joseph C. Sofianek, Broomall, Pa., assignor to General Electric Company, a corporation of New York

Filed Oct. 3, 1966, Ser. No. 583,808

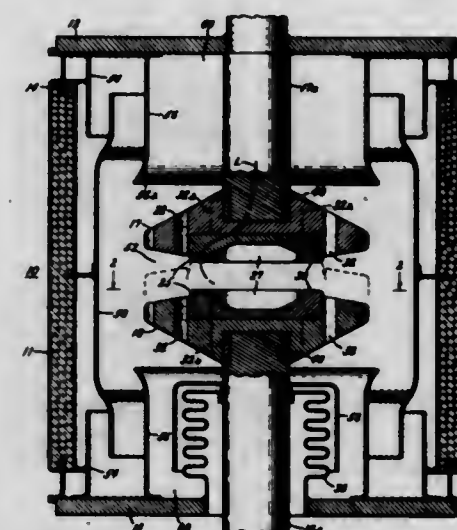
Int. Cl. H01h 9/30, 33/00, 9/44

U.S. Cl. 200—144

10 Claims

Discloses a vacuum-type circuit interrupter comprising

a pair of disc-shaped contacts, each having a face confronting the other. The usual arc is rotated on said faces by means comprising slots in the disc-shaped members extending radially and circumferentially thereof. Each



contact comprises a centrally-located contact-making button. The slots in each contact extend radially inwardly past the outer periphery of the associated button and are bridged near their inner end by said button.

3,462,573

### VACUUM-TYPE CIRCUIT INTERRUPTERS USING GALLIUM OR GALLIUM ALLOYS AS BRIDGING CONDUCTING MATERIAL

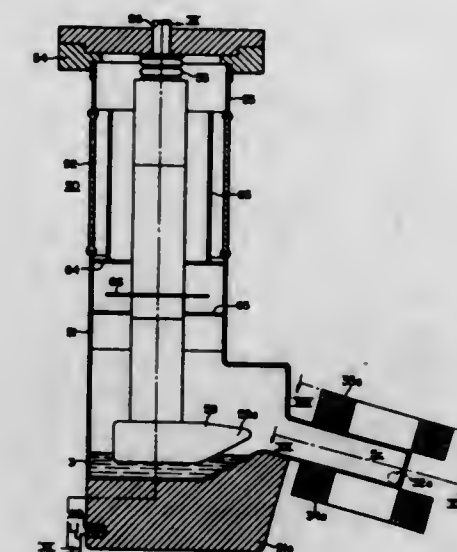
Mario Rabinowitz, Menlo Park, Calif., and Russell E. Fox, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 14, 1965, Ser. No. 496,008

Int. Cl. H01h 29/06, 33/66

U.S. Cl. 200—152

8 Claims



A vacuum-type circuit interrupter has a pair of spaced fixed contacts exposed to the interior of an evacuated envelope containing gallium, which conductively bridges the contacts. Magnetic means, creating a transverse magnetic field, uses the Lorentz force principle to expel the gallium liquid away from the spaced fixed contacts into a collecting chamber to open the circuit.

3,462,574

### CABLE SEAM SOLDERING APPARATUS

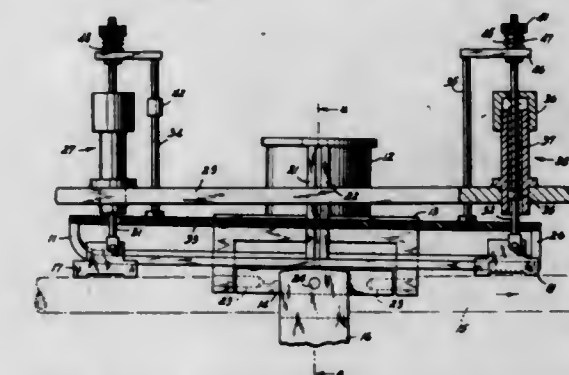
David A. Hughes, Sun City, Ariz., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 10, 1967, Ser. No. 608,444

Int. Cl. B23k 13/02

U.S. Cl. 219—9.5

11 Claims



A cable seam soldering apparatus wherein the spacing of a heating coil from the seam of an advancing cable is made independently adjustable at either end by supporting the heating coil from a gimbal mounting.

3,462,575

### MICROWAVE HEATING DEVICE

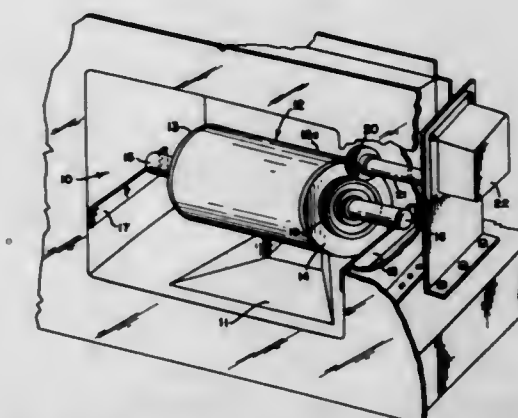
Reed E. Holaday, Minnetonka, Minn., assignor to Holiday Industries, Inc., Hopkins, Minn., a corporation of Minnesota

Filed May 31, 1967, Ser. No. 642,606

Int. Cl. H05b 9/06

U.S. Cl. 219—10.55

3 Claims



A simplified and improved microwave heating device is described. The item to be heated is positioned within a shaped microwave energy field in such a manner that substantially all of the incident microwave energy directed thereon is absorbed by the item to be heated. Said item is rotatably mounted in said position, the axis of rotation is positioned at right angles to the direction of propagation of the incident microwave energy.

3,462,576

### ELECTRODE FEED AND WEAR COMPENSATION MECHANISM FOR ELECTRICAL DISCHARGE MACHINING APPARATUS

Rollo G. Ellis, Birmingham, Mich., assignor, by mesne assignments, to Elox Inc., Troy, Mich., a corporation of Delaware

Filed June 3, 1966, Ser. No. 555,116

Int. Cl. B23k 9/16

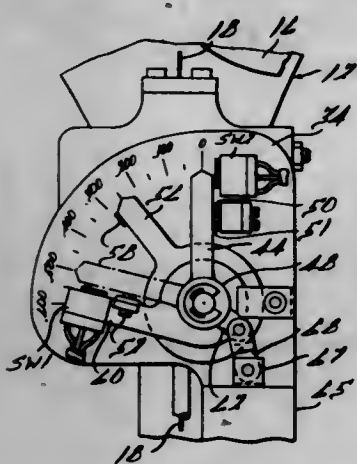
U.S. Cl. 219—69

9 Claims

A servo feed system having a reversible drive means for moving a tool electrode in a forward direction during machining, a stop arm for presetting the estimated travel distance of the electrode to compensate for its wear during machining and a first and a second control lever. The first control lever is driven from its start posi-



tion by the drive means in a forward direction with the electrode and, responsive to its engagement with the stop arm, is operable to reverse the direction of the drive means to withdraw the electrode. The second control



means is yieldably driven by the drive means in its reverse direction and is operable to stop the reverse operation of the drive means and return the first control lever to its start position.

3,462,577

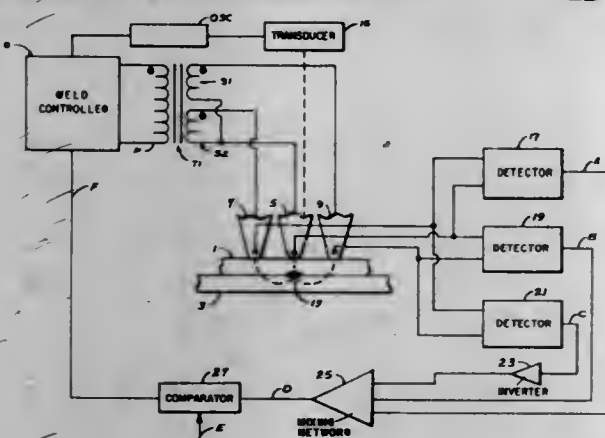
**WELDING METHOD AND APPARATUS**

John D. Helms, Farmers Branch, and Herbert L. Brown, Jr., Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware  
Filed Dec. 23, 1966, Ser. No. 604,257

Int. Cl. B23k 11/24

U.S. Cl. 219—78

12 Claims



Three electrodes are used for effecting so-called parallel-gap welding. One of the electrodes impresses a periodically varying force on the weld joint as it is being formed, thereby producing a periodically varying electrical resistance in the joint during its formation. This resistance decays as the weld is made, indicating completion of the weld. The joint resistance is monitored and, in response to the changing resistance, the weld voltage is increased, held constant for a predetermined time to effect optimum weld quality and then stopped.

3,462,578

**CONTROLLED CURRENT WELDING APPARATUS AND METHOD**

Quentin L. Schmick, Wyomissing, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 15, 1965, Ser. No. 507,897

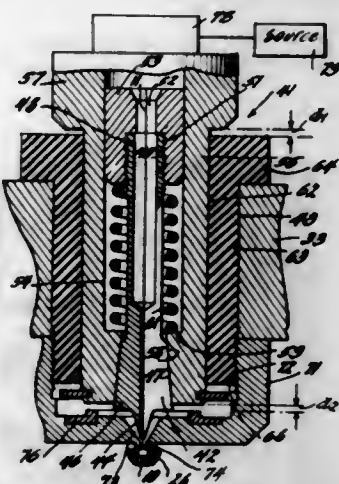
Int. Cl. B23k 11/04

U.S. Cl. 219—103

14 Claims

A wire lead is inserted in an upper electrode and extends through a central aperture of a second lower electrode concentrically disposed about the first electrode. The electrodes are moved to a weld position to support the second electrode against a base stud to which the wire lead is to be welded. The first electrode

is supported and spaced a predetermined distance above the second electrode by the wire lead engaging the base stud. Welding current is applied through the electrodes



and wire to heat and melt the wire whereupon the first electrode drops through the distance to engage the second electrode and shunt most of the current around the weld to slowly cool and anneal the weld.

3,462,579

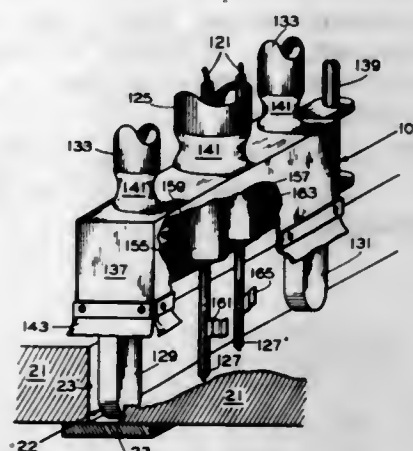
**APPARATUS FOR GUIDING ELECTRODES**

Robert P. Meister, Columbus, Ohio, and Jerome W. Nelson, Houston, Tex., assignors, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware  
Original application Oct. 20, 1965, Ser. No. 498,734, now Patent No. 3,328,556, dated June 27, 1967. Divided and this application Oct. 8, 1968, Ser. No. 765,845

Int. Cl. B23k 9/12

U.S. Cl. 219—125

6 Claims



An electrode guiding apparatus for automatic welding along a joint between metal plates comprising a welding head mounted on a moveable carriage, means biasing an electrode suspended in the welding head toward one of the joint sidewalls, and spacing means intermediate the electrode and the joint sidewall toward which the electrode is biased for maintaining the electrode at a constant predetermined lateral distance from the sidewall regardless of irregularities in the sidewall.

3,462,580

**HEATER ASSEMBLY FOR COPYING MACHINES**

Toshio Shibata and Yasuyuki Shimazu, Tokyo, Japan, assignors to Konishiroku Photo Industry Co., Ltd., Tokyo, Japan, a corporation of Japan

Filed Nov. 27, 1967, Ser. No. 685,824

Claims priority, application Japan, Nov. 29, 1966 (utility model), 41/108,845

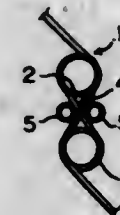
Int. Cl. H05b 3/02

U.S. Cl. 219—216

5 Claims

A heater assembly for use in copying machines. The heater assembly comprises a heater coil formed of elec-

trical resistance wire. The coil consists of a multiplicity of first helical windings, each having more than one turn and arranged around a first common axis in axially spaced relationship, and a multiplicity of second helical windings, each arranged around a second common axis in axially spaced relationship. The second common axis is parallel to and positioned at a distance from the first common



axis. Each of the second helical windings includes end portions interconnecting the ends of two adjacent helical windings in a manner such that the heater coil consisting of the first and second helical windings has an 8-shaped profile in transverse cross-section. A pair of refractory support members extends axially of the coil and engages the end portions from outside thereof.

3,462,581

**ELECTRIC CIGAR LIGHTER IGNITING UNIT**

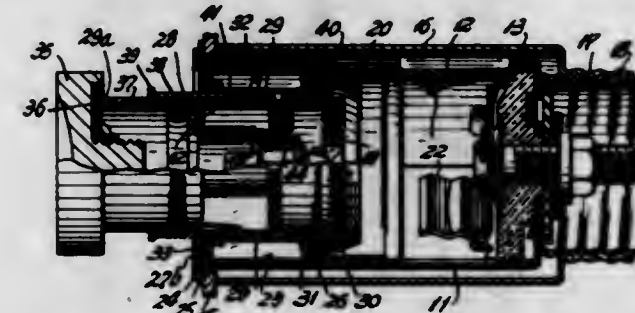
Robert E. Bristol, Orange, and John L. Boudreau, Stratford, Conn., assignors to Casco Products Corporation, Bridgeport, Conn., a corporation of Connecticut

Filed May 7, 1968, Ser. No. 727,154

Int. Cl. F23q 7/22

U.S. Cl. 219—267

6 Claims



An electric cigar lighter igniting unit which is manually removable from a receptacle for use has a knob portion telescopically connected to the heating element carrier so that in storage position and in energizing position in a standard receptacle it does not project from the receptacle sufficiently to be grasped for removal and use, but which, when the heating element is heated and returns to its normal storage position under spring pressure, the knob which is axially movable relative to the heating element carrier and frictionally engaged therewith is moved by its inertia sufficiently beyond the receptacle to be easily grasped for the manual removal and use of the igniting unit.

3,462,582

**PARISON HEATING**

Martin R. Cines, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Feb. 7, 1967, Ser. No. 614,440

Int. Cl. F27b 9/14, 9/06, 9/24

U.S. Cl. 219—388

8 Claims



Tubular thermoplastic parisons rotated under radiant heat while passing through a heating zone wherein the edges of the parison are protected from overheating.

3,462,583

**MOUNTING ARRANGEMENT FOR SMOKE ELIMINATOR HEATER FOR HEAT-CLEANING COOKING OVEN**

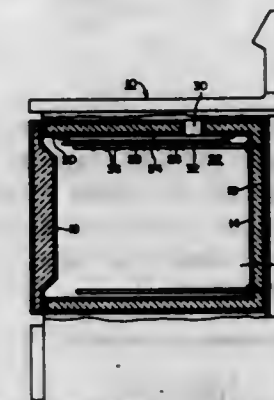
Calvin J. Holtkamp, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 19, 1967, Ser. No. 676,447

Int. Cl. F27d 11/02

U.S. Cl. 219—402

3 Claims



Mounting arrangement for a heater in a heat-cleaning oven of the type in which the heater is located closely below an apertured plenum into which combustion products from the oven pass, the heater being supported from the lower wall of the plenum by wire stitching or staples, the heater being spaced from the lower wall of the plenum by a wire mesh sandwiched between the heater and the wall.

3,462,584

**RANGE OVEN DOOR LATCHING DEVICE**

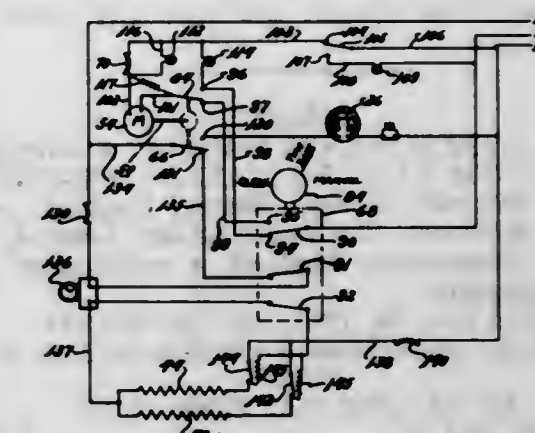
William R. Guy, Detroit, Mich., assignor, by mesne assignments, to Kelvinator, Inc., Cleveland, Ohio, a corporation of Delaware

Filed Aug. 9, 1967, Ser. No. 659,348

Int. Cl. F27d 11/02

U.S. Cl. 219—412

8 Claims



A latching device for a range oven door operated by an electric motor which also actuates circuit control switches of which one controls the motor and another the circuit to the oven heating elements for elevating the temperature in the range oven to effect a self cleaning thereof by the principle of pyrolysis.

3,462,585

**ELECTRICALLY HEATED BEDCOVER CONTROL**

William P. Somers, Prospect Heights, Ill., assignor to General Electric Company, a corporation of New York

Filed May 3, 1966, Ser. No. 547,295

Int. Cl. H05b 1/02

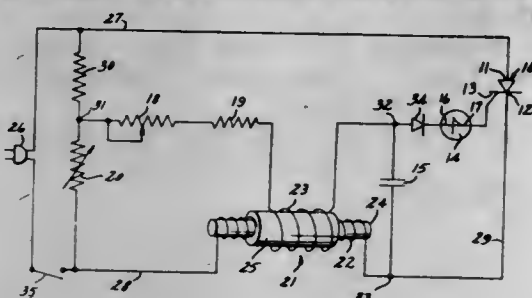
U.S. Cl. 219—501

8 Claims

This disclosure concerns controlling an electrically heated bedcover that has distributed through it both an electrical heater and a temperature sensing material having the characteristics of an insulator at normal operating



temperatures and an electrical conductor at elevated temperatures. The electrical heater of the bedcover is regulated by a semiconductor control device which will, upon



an applied signal, permit alternating current to flow to the heater. The temperature sensing material is connected to the signal applying means in shunt relationship so that when an overtemperature condition exists, the signal is not applied to the semiconductor control device and no current can flow to the heater.

3,462,586

**DOPPLER NAVIGATION SYSTEM**

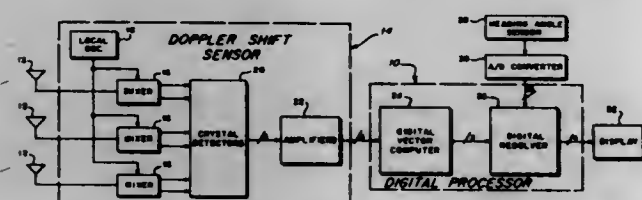
Francis E. J. Tholey and Robert D. Marek, Hatboro, Pa., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed June 27, 1966, Ser. No. 561,661

Int. Cl. G06g 7/78

U.S. Cl. 235—150.27

16 Claims



This invention relates generally to Doppler pulse navigation systems and more particularly to a more simplified digital Doppler pulse data processor for use in navigation systems of all aircraft and especially those of the rotary wing type.

3,462,587

**DIGITAL INSTRUMENTS HAVING A CONTROL UNIT WITH VARIOUS PLUG-IN SUB-UNITS**

Reginald Cathall, Woking, Surrey, England, assignor to The Solartron Electronic Group Limited, Farnborough, Hampshire, England, a corporation of the United Kingdom

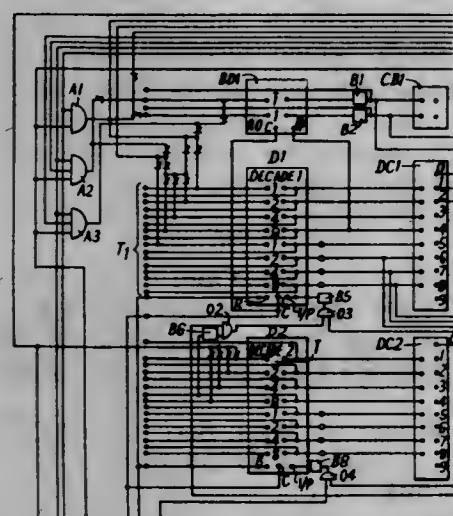
Filed Dec. 30, 1965, Ser. No. 526,931

Claims priority, application Great Britain, Jan. 4, 1965, 307/65

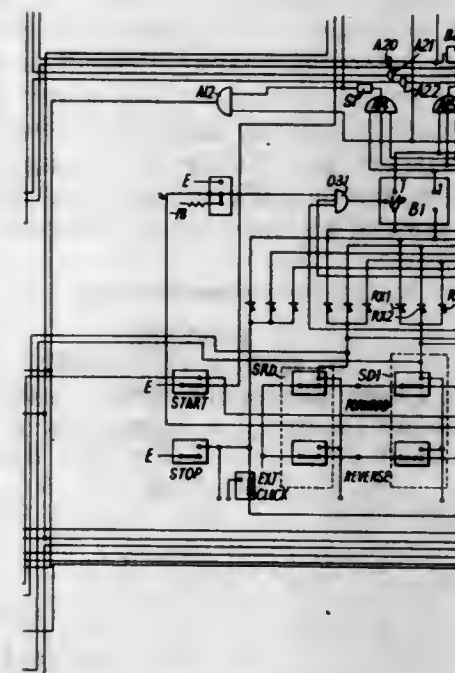
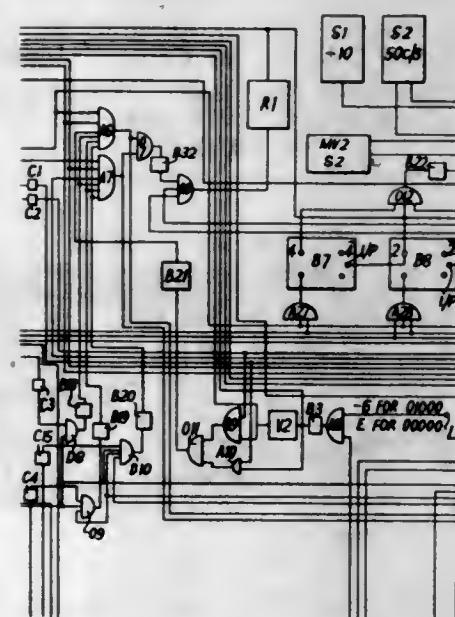
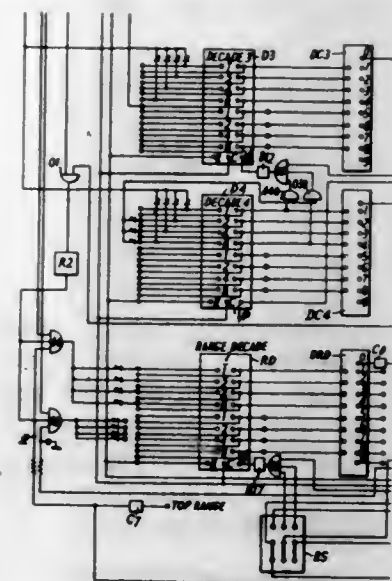
Int. Cl. G06f 7/38; G06k 15/18

U.S. Cl. 235—151.31

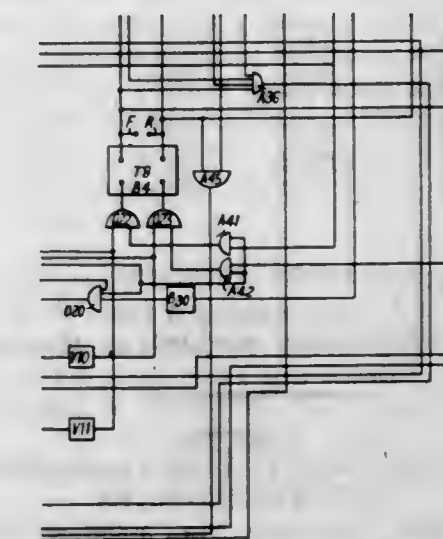
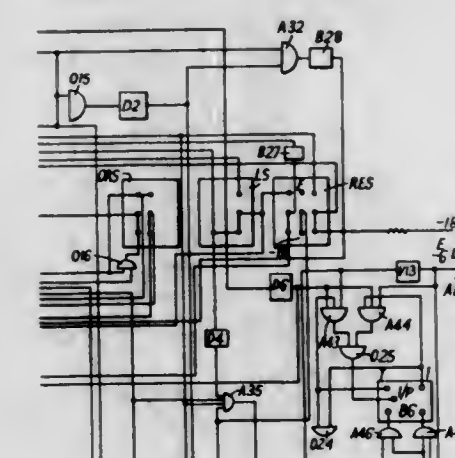
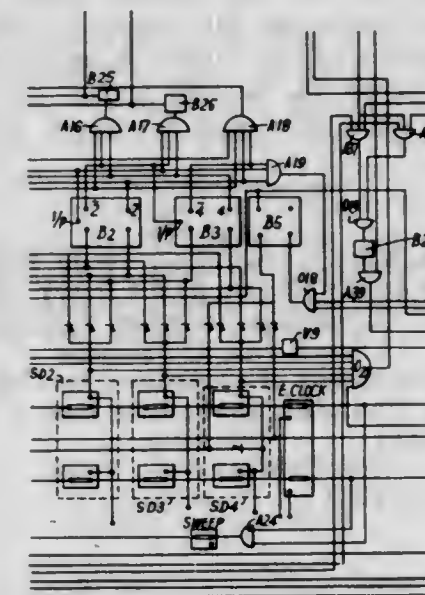
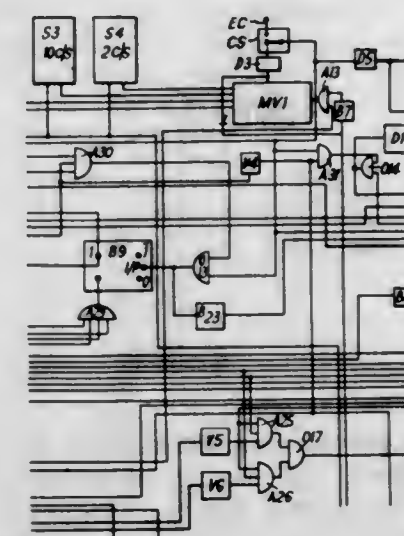
9 Claims



A digital instrument comprising a control unit and various plug-in sub-units wherein the sub-units can se-



lectively be combined with the central unit for making a desired output or measurement is obtained. The apparatus is arranged so that a substantial part of the digital



control apparatus and the display apparatus is centralized in the control unit.

3,462,588

**DIGITAL ATTENUATOR WHICH CONTROLS A VARIABLE CONDUCTANCE**

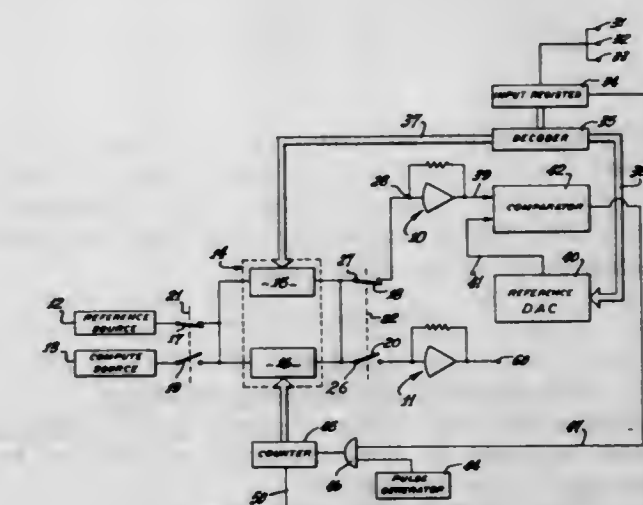
Joseph L. Hussey, Tustin, Calif., assignor to Astrodata, Inc., Anaheim, Calif., a corporation of California

Filed Feb. 17, 1966, Ser. No. 528,293

Int. Cl. G06g 7/26

U.S. Cl. 235—150.53

5 Claims



The disclosure concerns a precision digital attenuator wherein a variable conductance is controlled in two sections. One section, associated with the most significant value is switched open loop; the other section is in a closed loop and is used to provide the conductance of the least significant value and to correct for any errors in the total conductance value.

3,462,589

**PARALLEL DIGITAL ARITHMETIC UNIT UTILIZING A SIGNED-DIGIT FORMAT**

James E. Robertson, Champaign, Ill., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 22, 1965, Ser. No. 515,577

Int. Cl. G06f 5/02, 7/38

U.S. Cl. 235—175

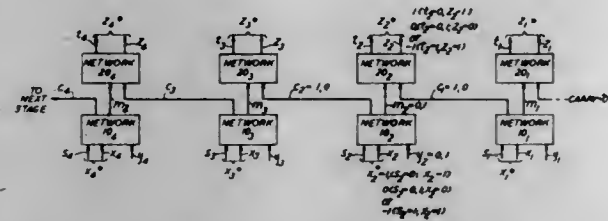
15 Claims

the like. The central control unit contains counters, clock sources, dividers, and logic elements for accepting and appropriately interacting with the selected sub-unit to produce a device which, through successive counting and checking operations, approaches a balance point at which

A digital arithmetic unit that performs parallel addition or subtraction with minimal carry or borrow propagation between adjacent stages comprises a plurality of

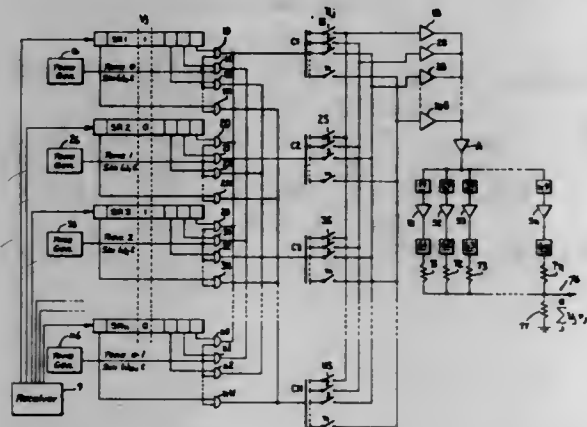


cascaded adder stages. Each stage generates a binary sum in a signed-digit format responsive to a signed-digit augend, an addend in conventional binary form and a



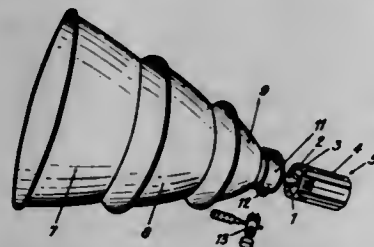
carry digit supplied by the previous stage. The carry digit generated by each stage is solely a function of the augend and addend information supplied to that stage.

**3,462,590**  
**CORRELATOR FOR TWO-LEVEL QUANTIZED DIGITAL SIGNALS**  
James L. Jenkins, Baltimore, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy  
Filed Jan. 10, 1967, Ser. No. 608,450  
Int. Cl. G06f 15/34  
U.S. Cl. 235—181  
6 Claims



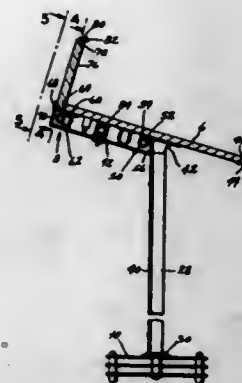
A correlator circuit for two-level quantized digital signals using tones as an input to "and" gates to which are also applied shift register digital outputs produced by receiver signals and channeled by tone filters and summed to quantize the received target signals.

**3,462,591**  
**MULTIUSE LIGHTING DEVICE**  
Marc Roger Pichard, Sainte Gemme par Feucherolles, France, assignor to Societe anonyme: Balcar, Paris, France, a French company  
Filed Mar. 2, 1966, Ser. No. 531,224  
Claims priority, application France, Mar. 6, 1965, 8,222  
Int. Cl. G03b 15/02; F21v 19/02  
U.S. Cl. 240—1.3  
6 Claims



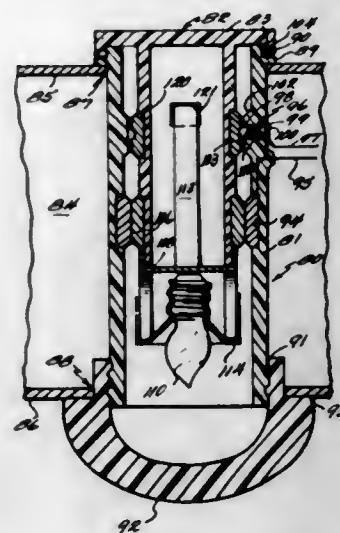
A lighting device comprises a light source in unitary assembly with a small reflector and a housing that slides axially within a collar on a larger reflector. The larger reflector is at the rear of a frame in which are disposed a pair of carriers. Each carrier has a plurality of upwardly opening grooves for detachably receiving a plurality of light-transmitting devices, and the distance between the carriers may be changed by rotation of a helix.

**3,462,592**  
**SUPPORT STAND**  
Henry L. Schwelch, Clayton, Mo., assignor to Royal Bond, Inc., St. Louis, Mo., a corporation of Missouri  
Filed May 3, 1967, Ser. No. 635,773  
Int. Cl. F21v 33/00  
U.S. Cl. 240—2  
10 Claims



A stand for supporting and illuminating a book, manuscript, or other item, and having an inclined board beneath which a fluorescent lamp is mounted. A rectangular piece of light-conducting plastic extends upwardly from the vicinity of the bulb and terminates at a beveled upper surface so that the plastic forms a prism for reflecting and casting the light from the lamp down onto the upper surface of the board. A metal reflecting surface extends across the beveled surface of the plastic to intensify the light cast upon the upper surface of the board.

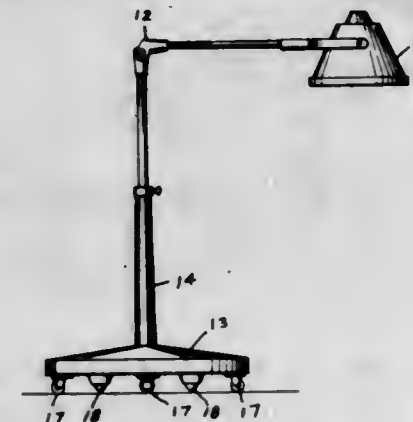
**3,462,593**  
**SLEEVE SOCKET CONSTRUCTION FOR RECEIVING UNITARY SEPARABLE LIGHT ASSEMBLY**  
Roberto L. Bustamante, 4a Calle Poniente No. 40, Santa Ana, El Salvador  
Continuation-in-part of application Ser. No. 404,324, Oct. 16, 1964. This application June 2, 1967, Ser. No. 643,111  
Int. Cl. F21l 7/00, 15/00  
U.S. Cl. 240—11.2  
11 Claims



A sleeve socket having two electrical contacts and a separable light assembly having two electrical contacts. The separable light assembly is contained within the sleeve socket in such a way that electrical contact is made between the respective electrical contact elements. The electrical contacts in the sleeve socket are in the shape of interior rings which have conducting wires leading from the rings to an electrical energy source. The electrical contacts on the separable light assembly are in the shape of two external conducting rings. The separable light assembly has a cross-sectional shape com-

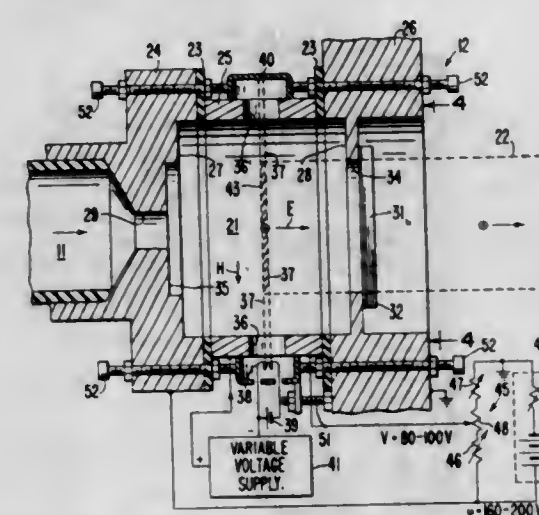
plementary to the interior of the sleeve socket and can be readily inserted into and removed from the sleeve socket. A switch is provided for selectively actuating the separable light assembly when it is within the sleeve socket.

**3,462,594**  
**PORTABLE LIGHT AND BASE COMBINATION**  
Gilbert G. Brown, Erie, Pa., assignor to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania  
Filed Sept. 6, 1966, Ser. No. 577,520  
Int. Cl. F21s 1/12  
U.S. Cl. 240—81  
11 Claims



A lamp and base therefor, the lamp being supported on an upwardly extending column attached to the base and having a laterally extending arm attached to the lamp. The base has at least three spaced floor-engaging casters attached to it and a roller is spaced from the supporting surface a distance such that it does not touch the supporting surface during normal moving operation. At least one other roller supported on the bottom and located to engage the supporting surface when the lamp base is rocked about a line passing through two of the casters.

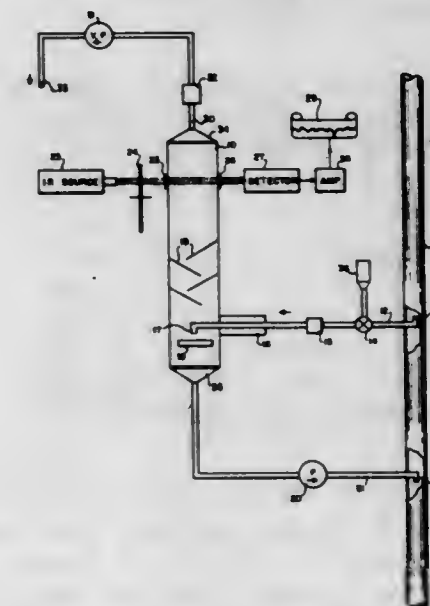
**3,462,595**  
**ION SOURCE FOR MASS SPECTROMETERS EMPLOYING MEANS FOR FLATTENING EQUIPOTENTIALS WITHIN THE ION PRODUCTION REGION**  
Harmon W. Brown, Los Altos Hills, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California  
Filed Nov. 30, 1966, Ser. No. 597,913  
Int. Cl. B01d 59/44; H01j 39/36  
U.S. Cl. 250—41.9  
5 Claims



The present invention relates in general to ion sources for mass spectrometers and, more particularly, to an improved ion source employing method and apparatus for adjusting the flatness of the ion accelerating field equipotentials within the ionizing beam path, whereby, when adjusted for optimum flatness, all the ions of the beam have a uniform beam potential.

Such an improved ion source lessens the energy spread of ions of like kind within the beam and thereby lessens the requirements of homogeneity of the analyzing fields in the mass analyzer section of the mass spectrometer for a given resolution of the output mass spectral data. Moreover, the more uniform ionizing potential, obtained by the improved ion source, permits useful mass spectral data to be obtained at ionizing electron beam energies low enough to avoid fragmentation of the molecules under analysis, thereby greatly facilitating interpretation of the output mass spectral data.

**3,462,596**  
**MEASURING WATER CONTENT OF HEAVY PETROLEUM FUEL OILS BY INFRARED ANALYSIS**  
Raymond A. Saunders, 5113 72nd Ave., Hyattsville, Md. 20784  
Filed Dec. 1, 1967, Ser. No. 687,334  
Int. Cl. G01n 21/26  
U.S. Cl. 250—43.5  
7 Claims



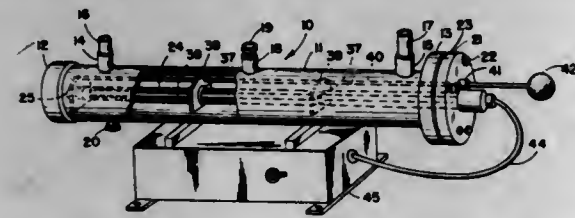
A method and apparatus for measuring the water content of heavy petroleum fuel oils using infrared analysis. Heavy fuel oil, in transit in a supply line, is sampled and delivered in continuous manner into a confined low pressure zone in which the water content of the sample fuel oil is flash vaporized and the water vapor drawn across a beam of periodically interrupted infrared radiation containing wavelengths of radiation at which water vapor characteristically absorbs. The absorption of the radiation is measured and related to the water content of the fuel oil. The apparatus includes a light beam chopper, a tubular low pressure sample cell, an infrared radiation detector, an amplifier and a recorder. The sample cell has filter windows mounted in the upper end for transmission of a beam of periodically interrupted infrared radiation and a heater element in the lower end for raising the temperature of the incoming sample fuel oil. A feed line and a return line connect the sample cell to the fuel oil supply line, with the feed line arranged to deposit the fuel oil sample on the heater element.

**3,462,597**  
**ULTRAVIOLET FLUID PURIFIER HAVING MANUALLY OPERABLE WIPER MEANS**  
Albert Young, Sands Point, N.Y., assignor to Ultra Dynamics Corporation, a corporation of Delaware  
Filed July 29, 1966, Ser. No. 572,644  
Int. Cl. G01n 21/26; H01j 37/16  
U.S. Cl. 250—43  
5 Claims

A fluid purifier with a tubular body, and an ultraviolet rays emitting lamp enclosed in a quartz tube in the tubu-



lar body. A plurality of wiper rings with inserts which are unaffected by the ultraviolet rays, are arranged on



the quartz tube and means for operating the rings by hand for cleaning of the outside of the tube.

3,462,598

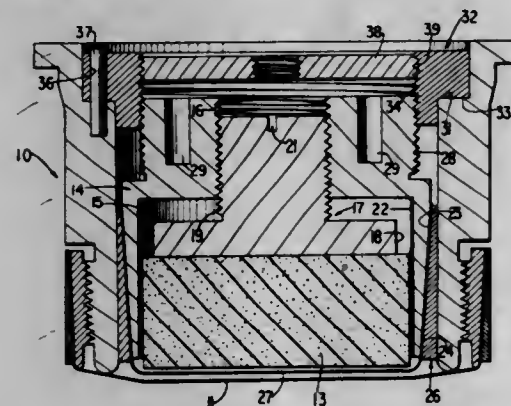
### X-RAY SPECTROGRAPHY SAMPLE HOLDER CONTAINING AN ADJUSTABLY MOUNTED INTERNAL REFERENCE STANDARD

Walter E. Burke, Colts Neck, and Lennox S. Hinds, Franklin Township, N.J., assignors to Cities Service Oil Company, Bartlesville, Okla., a corporation of Delaware  
Filed Nov. 15, 1965, Ser. No. 507,918

Int. Cl. G01n 23/20

U.S. Cl. 250—51.5

1 Claim



An internal reference standard and sample holder for use in analysis by X-ray spectrography is disclosed herein. The holder comprises a sample cup having in its top portion an internally threaded supporting ring in which is adjustably mounted an externally threaded reference standard holding means. The reference standard holder has a pellet or reference standard mounted in a support which is threadably adjustable and lockable within the holding means, and a plastic film fitted over the lower portion of the holding means by a locking ring so as to seal the reference standard from the sample cup for use in X-ray spectrography. The reference standard is vertically adjusted in the holding means, locked in a position and then the holding means is threadably mounted on the sample cup to set the desired distance between the cup and the standard and locked in place.

3,462,599

### RADIOGRAPHIC APPARATUS FOR INSERTING AN INTENSIFYING SCREEN INTO A SELF-PROCESSING PHOTOGRAPHIC FILM PACK

Herman E. Erikson, Winchester, Robert D. Brackett, Wakefield, and Phillip E. Young, Scituate, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware  
Filed Aug. 11, 1966, Ser. No. 571,844

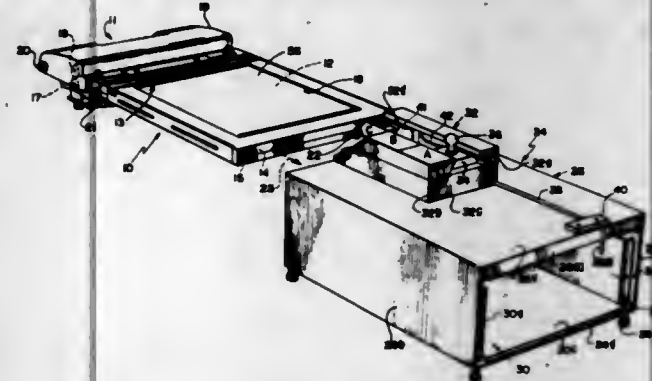
Int. Cl. G01n 21/34

U.S. Cl. 250—66

7 Claims

1. Radiographic apparatus for use with a film-holder of a type including exposure and processing means and a film assembly mounted therein including a photosensitive component and a retractable opaque covering envelope, said apparatus, during slidable movement of said envelope, being adapted to selectively insert a radiographic element into said envelope for exposure purposes and remove it after said exposure, and comprising a thin, resilient, magnetically-attractable plate-like element bearing a layer of

a radiation-emissive substance, said element being releasably attachable at one end of said film assembly to said photosensitive component thereof and so biased toward said envelope and contained film assembly that, at one position of said envelope, it is adapted to bear against an external surface of said envelope in slidable contact therewith and, at another position of said envelope, it is adapted to bear directly against said photosensitive component, a box-like element forming therewithin a chamber for receiving and firmly mounting said film-holder while shielding said film assembly carried therein from actinic light,



guide means so mounted on a wall of said box-like element as to overlie and be contiguous with said magnetically-attractable element when said film assembly is positioned in said chamber, a manually-actuable control element including a permanent magnet mounted in said guide means for slidable movement to a plurality of functional positions, neutralizing means rendering said magnet ineffective at one position whereby said magnetically-attractable element carrying said radiation-emissive substance, by reason of its inherent resilience and bias, is caused to enter said envelope, said magnet at other of said functional positions of said control element providing a magnetic attraction of said magnetically-attractable element in an angular direction away from said film assembly and envelope so as to facilitate its removal from said envelope.

3,462,600

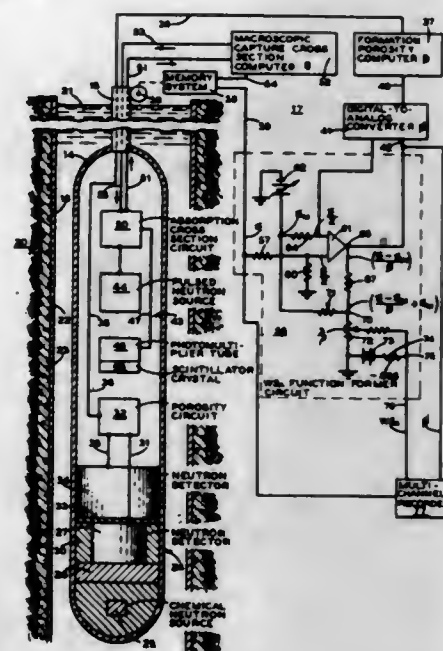
### PULSED AND CONTINUOUS NEUTRON WELL LOGGING TECHNIQUE

John T. Dewan, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas  
Filed Jan. 31, 1967, Ser. No. 613,024

Int. Cl. G01t 3/00, 1/18

U.S. Cl. 250—83.1

3 Claims



The invention measures the porosity of an earth formation and the chlorine concentration of the water within the formation to identify oil producing horizons that are

concealed by borehole casing. Porosity is measured through two axially spaced neutron detector tubes that observe neutron diffusion within the formation. Chlorine concentration is measured through another detector that observes the decay time of the thermal neutron population within the formation.

3,462,601

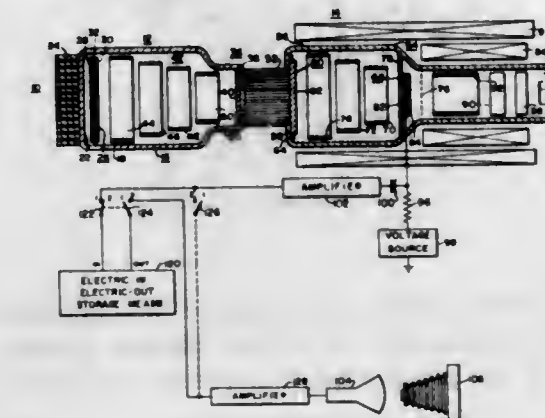
### GAMMA RAY, X-RAY IMAGE CONVERTER UTILIZING A SCINTILLATION CAMERA SYSTEM

Ernest J. Sternglass, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania  
Filed Oct. 14, 1965, Ser. No. 496,076

Int. Cl. G01t 1/20

U.S. Cl. 250—83.3

20 Claims



This invention relates to radiation systems and includes in one illustrative embodiment an element for converting radiation images of such types as gamma rays and X-rays into corresponding electron images, suitable electrodes for accelerating and intensifying the electron image, an element for converting the intensified electron image into a radiation image, a television camera device including a suitable photo-cathode element for converting the radiation image into an electron image which is directed onto a suitable storage electrode having the properties of storing in excess of  $10^4$  electrons per element, and a suitable electron gun for scanning the storage electrode to derive an output signal. In one illustrative system, a pulse height discriminator is used to reject that portion of the signal derived from the television camera device corresponding to spurious radiation. In another embodiment, signals at varying potentials may be derived from the target electrode to provide an equidensity representation of the radiation image.

3,462,602

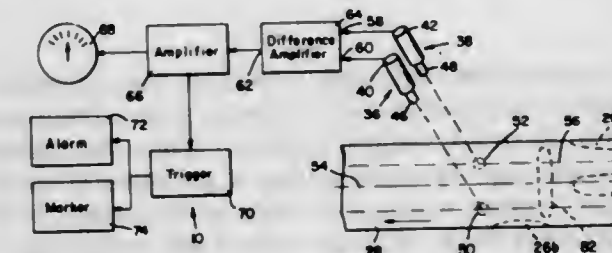
### INFRA-RED FLAW DETECTOR

Wayne R. Apple, Boulder, Colo., assignor to Automation Industries, Inc., El Segundo, Calif., a corporation of California  
Filed Aug. 16, 1967, Ser. No. 661,022

Int. Cl. G01t 1/16; G01k 1/08; H01j 39/00

U.S. Cl. 250—83.3

7 Claims



The present invention relates to the manufacture of rolled steel stock, such as sheets and plates, and to means for insuring that the rolled stock is free from any internal

defects. This is accomplished by providing an infrared inspection system which is effective to scan the stock while it is being rolled and/or it is still at an elevated temperature. The inspection system is effective to locate and identify discontinuities or defects, such as pipe inclusions and/or edge laminations by detecting variations in the surface temperature of the rolled hot stock.

3,462,603

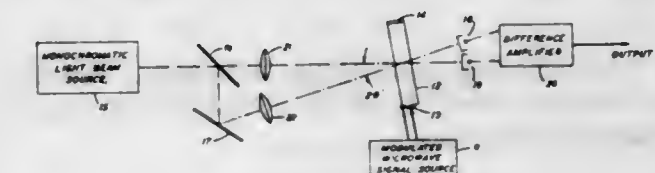
### ACOUSTIC LIGHT MODULATOR AND VARIABLE DELAY DEVICE

Eugene I. Gordon, Convent Station, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed May 2, 1966, Ser. No. 546,796

Int. Cl. H04b 9/00; G02f 1/26, 1/28

U.S. Cl. 250—199

8 Claims



An acoustic light modulator employing two input beams that intersect in the active medium so that the scattered light, resulting from the interaction between one of the beams and an acoustic wave in the active medium is substantially aligned with unscattered light from the other beam. A suitably disposed photo-detector will thus receive both scattered light, which is shifted in frequency, and unscattered, unshifted light. The advantage of this device is that the center frequency of the modulating acoustic wave is retained as the beat frequency between the scattered and unscattered beams and that a greater degree of amplitude modulation is obtained. A time-multiplexed multiple channel communication system is also disclosed.

3,462,604

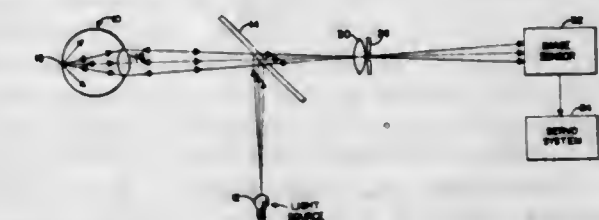
### CONTROL APPARATUS SENSITIVE TO EYE MOVEMENT

Kenneth A. Mason, Boston, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware  
Filed Aug. 23, 1967, Ser. No. 662,816

Int. Cl. H01j 39/12

U.S. Cl. 250—206

3 Claims



An oculometer for determining the orientation of an eyeball by measuring the position of the image of light reflected from the retina of the eye relative to the position of the image reflected from the front surface of the eye.

3,462,605

### SEMICONDUCTOR LIGHT-EMITTER AND COMBINATION LIGHT-EMITTER-PHOTOCELL WHEREIN THE REFLECTOR OF THE LIGHT-EMITTER IS COMPRISED OF A MATERIAL DIFFERENT FROM THAT OF THE LIGHT-EMITTER

William E. Engeler, Scotia, N.Y., assignor to General Electric Company, a corporation of New York  
Filed Sept. 22, 1965, Ser. No. 489,341

Int. Cl. H01j 39/12

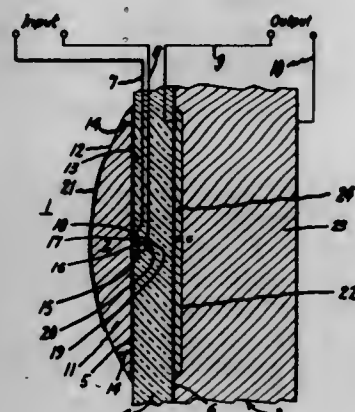
U.S. Cl. 250—211

13 Claims

A unitary electro-optic device operable as a highly efficient isolation amplifier utilizes a semiconductive-light



source having a parabolic reflecting portion to produce parallel light rays directed toward a light detector portion thereof. Anti-reflecting coatings are included at interfaces between different materials of the device in order to improve operating efficiency.



thereof. Anti-reflecting coatings are included at interfaces between different materials of the device in order to improve operating efficiency.

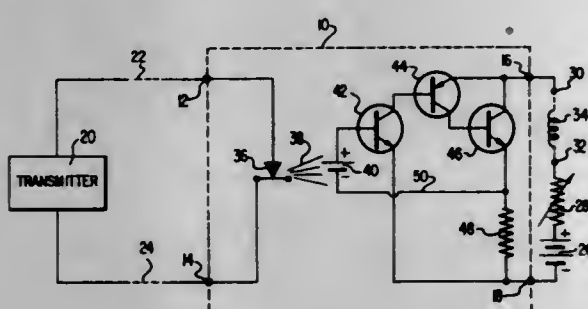
### 3,462,606 PHOTOELECTRIC RELAY USING POSITIVE FEEDBACK

Alfred L. Case, Riverdale, Md., assignor to Versitron, Inc., Washington, D.C., a corporation of the District of Columbia

Filed Jan. 27, 1965, Ser. No. 428,347  
Int. Cl. H04I 25/24, 25/26

U.S. Cl. 250-214

17 Claims



Disclosed is a solid state relay which provides improved electrical isolation between input and output coupled with a rapid response which relay may be employed as a direct substitute for present electromagnetic relays in Teletype and similar circuits. An electroluminescent diode radiates energy to a light radiation sensor connected in a novel bistable transistor circuit which rapidly switches between conducting and substantially nonconducting states. Positive feedback is employed from the output of the transistor switch through the light sensor to the switch input from a voltage dropping resistor or diode connected in series with a leakage current path across the switch output terminals. Switch conduction may represent either mark or space conditions in a Teletype loop.

### 3,462,607 METHOD AND APPARATUS FOR DYNAMICALLY CHECKING ROTATIONAL COUPLINGS USING PATTERN COMPARISON

Alfred Heinz, Flemington, N.J., assignor to Western Electric Company Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 24, 1967, Ser. No. 625,668  
Int. Cl. H01J 39/12

U.S. Cl. 250-215

8 Claims

A pair of visual patterns indicative of the input and output motions, respectively, of a rotatable coupling such as a gear train or clutch are developed and compared to

determine the overall angular accuracy of the coupling. One pattern is developed in synchronism with successive predetermined angular increments of the input motion,

while the other pattern is developed in synchronism with successive increments of output motion exactly corresponding to the predetermined increments of input motion.

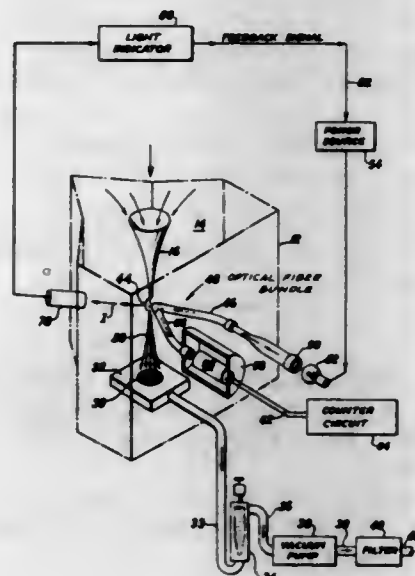
### 3,462,608 METHOD AND APPARATUS FOR DETECTING SUSPENDED PARTICLES

Charles D. Weston, Sugar Hill, N.H., and William J. Gagnon, Jr., Falmouth, and Dwight W. Reynolds, Pownal, Maine, assignors to Dynac Corporation, Portland, Maine, a corporation of Maine

Filed Dec. 19, 1966, Ser. No. 602,684  
Int. Cl. G01n 21/26

U.S. Cl. 250-218

19 Claims



This application describes a method and apparatus for detecting particles of matter suspended in a compressible fluid such as air. A sample is drawn from the outlet of a sampling passage by maintaining a pressure at or below the critical value. A beam of light is projected upon the emerging fluid at or near the outlet and reflections from moving particles are photoelectrically detected. In a space through which the fluid to be sampled is moving, the passage withdraws the sample from the space at or near the prevailing mass rate of flow per unit of area in a plane transverse to the flow direction.

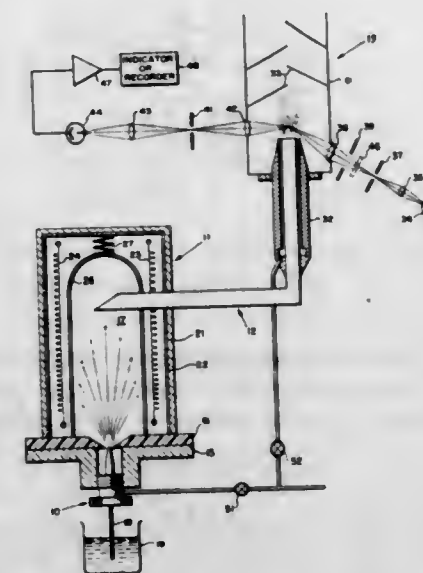
### 3,462,609 RADIATION SENSITIVE NUCLEI DETECTOR FOR SOLUTIONS

Willard H. Beattie, Los Alamos, N. Mex., assignor to Beckman Instruments, Inc., a corporation of California

Filed Dec. 22, 1966, Ser. No. 603,800  
Int. Cl. G01n 21/26

U.S. Cl. 250-218

2 Claims



A nonspecific, high sensitivity detector capable of measuring concentration of dilute solutions in the part per million range is disclosed which takes advantage of the condensation nuclei principle by condensation of solvent vapor upon an aerosol of solute nuclei. The apparatus consists of an evaporator into which a solution is atomized and the solvent evaporated, a condenser for condensing the solvent vapor upon the solute nuclei and an aerosol nephelometer for detecting the enlarged particles.

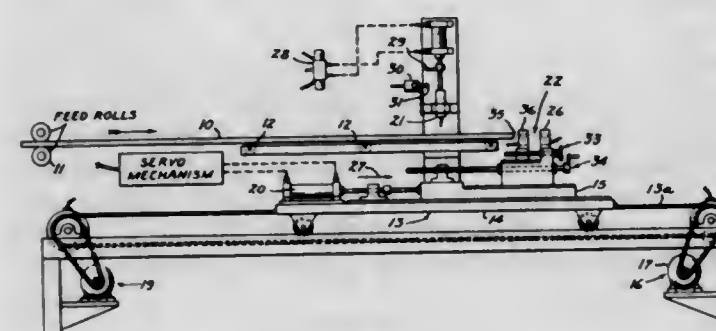
### 3,462,610 PHOTOELECTRIC METHOD AND APPARATUS FOR LOCATING A WORKPIECE

Edmund C. Frost, 30650 Pine Tree Road, Cleveland, Ohio 44124

Continuation of application Ser. No. 355,867, Mar. 30, 1964. This application Dec. 29, 1966, Ser. No. 622,835  
Int. Cl. G01d 5/34

U.S. Cl. 250-219

28 Claims



Methods and apparatus for operating on a particular portion of a workpiece, such as a continuous metal strip, moving continually relative to the apparatus, comprising a workpiece operator, such as a metal strip cutter, a carriage for supporting the workpiece operator so that the carriage moves back and forth along the path of the continuously moving strip, the workpiece operator supported on the carriage to move back and forth on the carriage along the path of the strip; first and second monitoring means, such as a photoelectric sensors mounted on the workpiece operator, the first of such monitoring means

set to trigger a first drive mechanism imparting motion to first carriage in the direction of and roughly corresponding to the velocity of workpiece movement upon sensing passage of the lead edge of said workpiece past said first monitoring means, and the second of such monitoring means set to trigger a second drive mechanism imparting motion to the workpiece operator back and forth along the first carriage at a rate of speed roughly equivalent to the differential between the speed of the first carriage and the workpiece, such second monitoring means providing a signal which varies continuously in response to the position of the lead edge of the workpiece from such second monitoring means, so that the mechanism driving the workpiece operator along the carriage causes the workpiece operator to advance and retreat along the path of the workpiece at varying rates of speed tending to center the workpiece operator at a preselected position relative to the workpiece and at a speed which substantially exactly equals the differential between the speeds of the carriage and the workpiece so that precision operations may be performed without halting the workpiece.

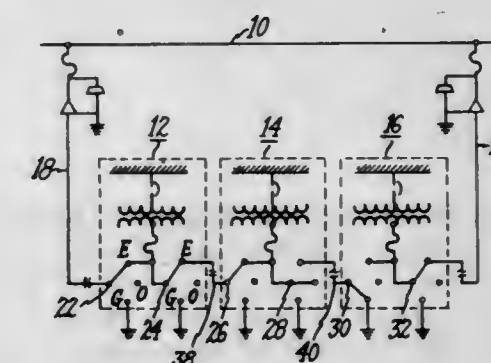
### 3,462,611 TRANSFORMER SWITCHING USING A PAIR OF THREE-POSITION SWITCHES

William A. McMorris, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

Filed Dec. 28, 1966, Ser. No. 605,278  
Int. Cl. H02J 3/38

U.S. Cl. 307-17

2 Claims



A transformer switching means for use in primary loop-feed circuits in which a pair of switching devices are provided, one switching device being connected to the transformer primary and another switching device being connected to an incoming energizable cable. Each switching device has three positions such that the transformer primary may be connected to an energized line or open circuit or ground, while the cable connection may be connected to the transformer primary or open circuit or ground.

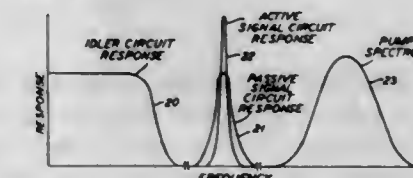
### 3,462,612 PARAMETRIC FILTER

Harold Seidel, Fanwood, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Aug. 19, 1966, Ser. No. 573,589  
Int. Cl. H03k 3/47; H03f 7/00

U.S. Cl. 307-88.3

4 Claims



1. A parametric filter comprising:  
a source of electromagnetic wave energy having significant frequency components extending over a broad band of frequencies;



a parametric oscillator including a signal circuit and an idler circuit;  
said signal circuit having a bandpass characteristic that is narrower than said band of frequencies;  
said idler circuit having a bandpass characteristics that is comparable to or broader than said band of frequencies;  
means for coupling said source to said oscillator thereby providing pumping energy for said oscillator; and  
means for extracting wave energy from said signal circuit.

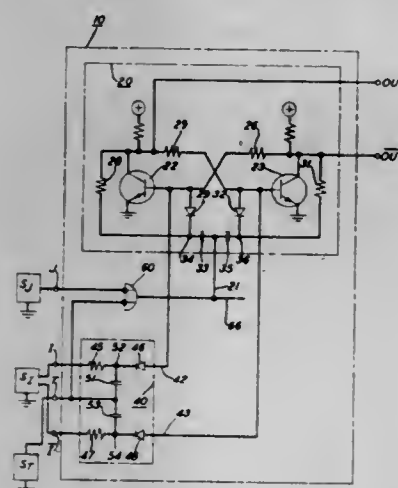
3,462,613

## ANTICOINCIDENCE CIRCUIT

William J. Wolf, Jr., New Shrewsbury, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York  
Filed Dec. 19, 1966, Ser. No. 602,947  
Int. Cl. H03k 19/20

U.S. Cl. 307—216

6 Claims



A logic circuit is developed from a combination of a complementing toggle flip-flop and a gate arranged to produce drive signals for complementing the flip-flop under prescribed conditions so that the flip-flop stores the EXCLUSIVE OR function of two separate input variables. A feedback shift register including an EXCLUSIVE OR operation is also described.

3,462,614

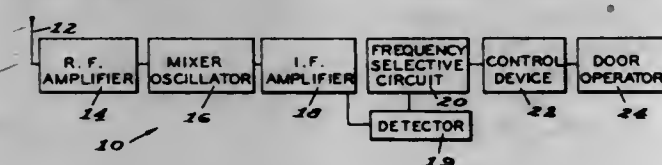
FREQUENCY SELECTIVE CIRCUIT WITH OUTPUT ACCORDING TO A RATIO OF ALTERNATING CURRENT SIGNALS-TO-DIRECT CURRENT SIGNALS WHICH VARIES WITH FREQUENCY  
Edson L. Barlow, Jr., Rochester, Mich., assignor to Berry Industries, Inc., Birmingham, Mich., a corporation of Michigan

Filed Oct. 24, 1965, Ser. No. 504,811

Int. Cl. H03k 17/60, 17/70

U.S. Cl. 307—233

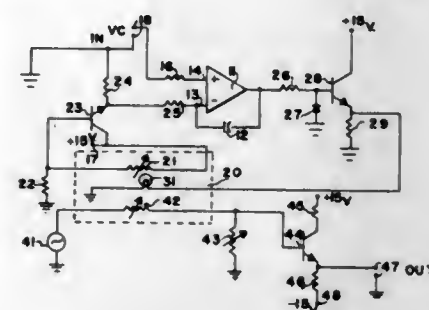
2 Claims



Frequency selective circuit for a garage door operator responsive to a code frequency wherein input signals are impressed on a voltage divider comprising a parallel tuned circuit and a series resistor coupled in the gate circuit of a controlled rectifier. A rectifier and a capacitor connected in series across the resistor develop a reverse DC bias for the controlled rectifier at frequencies other than the code frequency but when the code frequency predominates the reverse bias is overcome by the AC signal developed across the tuned circuit.

3,462,615  
PROPORTIONAL CONTROL SYSTEM  
Frank H. Bernstein, East Riverdale, Md., assignor to Singer-General Precision Inc., Binghamton, N.Y., a corporation of Delaware  
Filed Mar. 10, 1967, Ser. No. 622,153  
Int. Cl. H03k 17/78, 1/12, 3/42  
U.S. Cl. 307—243

2 Claims



In many electrical operations it is desirable to have a system for controlling the current or potential output from one source in proportion to an electrical signal from another source. This invention relates to a proportional control system for achieving this result. The control system includes a first attenuator which is varied by the control signal to control a device which determines the impedance of a second attenuator. As the first attenuator is varied, so should the second attenuator also vary. In the embodiments disclosed, the two attenuators are light-sensitive resistors whose impedances are controlled by the intensity of light from a small electric lamp. The two photo-sensitive resistors and the lamp may be enclosed in a housing as a single module. The control circuit for the electric lamp uses one of the photo-sensitive resistors in a feedback path to stabilize the current flow through the lamp. If the two resistors are substantially the same, the resistance of the second photo-sensitive resistor will vary with the lamp output and control the output current from a second source.

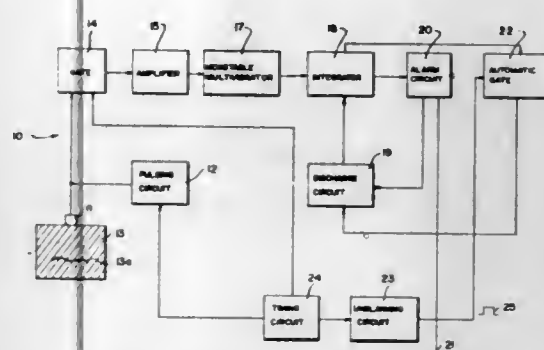
3,462,616

## INTEGRATOR ALARM SYSTEM

John A. Wendt, Park Ridge, and Ralph J. Borris, Des Plaines, Ill., assignors to Magnaflex Corporation, Chicago, Ill., a corporation of Delaware  
Filed Sept. 13, 1965, Ser. No. 486,694  
Int. Cl. H03k 17/28

U.S. Cl. 307—246

2 Claims

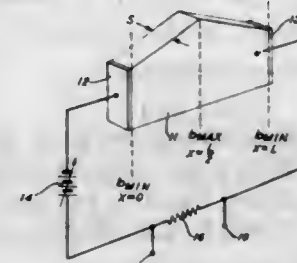


A testing system, preferably a pulse-echo ultrasonic system which develops signals in response to defects in a part, in which an integrator circuit discriminates against noise signals. The integrator circuit includes a storage capacitor which is progressively charged from an initial condition to a second condition in response to defect signals, a reset circuit which discharges the capacitor to the initial condition in response to the absence of signals and an output circuit which is triggered only when the capacitor is charged to the second condition.

3,462,617  
CURRENT FUNCTION GENERATOR  
Masakazu Shoji, Plainfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York  
Filed Jan. 20, 1967, Ser. No. 610,638  
Int. Cl. H03k 5/13

U.S. Cl. 307—260

7 Claims



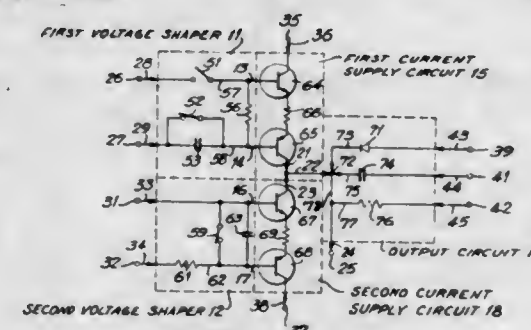
Two-valley semiconductor devices exhibiting a traveling high field domain upon application of a bias voltage have a current characteristic that varies with doping level and/or cross-sectional area. Specific current waveforms are produced by variations of these parameters along the length of the device.

3,462,618

WAVEFORM GENERATOR FOR GENERATING A FAMILY OF SINUSOIDAL CURVES  
Jiro Miyata, Kawasaki-shi, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan  
Filed May 3, 1967, Ser. No. 635,922  
Claims priority, application Japan, May 14, 1966, 41/30,513  
Int. Cl. G06g 7/12; H03k 1/02

U.S. Cl. 307—229

15 Claims



A first current supply circuit is connected to a capacitor for electrically charging the capacitor. A second current supply circuit is connected to the capacitor for decreasing the electrical charge on the capacitor. A first voltage shaper applies a first voltage of exponentially decreasing amplitude to the first current supply circuit to control such circuit. A second voltage shaper applies a second voltage of exponentially increasing amplitude to the second current supply circuit to control such circuit, whereby the variation of the electrical charge of the capacitor by the first and second current supply circuits provides at the capacitor a family of curves branching from a parent curve at different altitudes and extending for different durations.

3,462,619

## HOLDING CIRCUIT FOR AN ALTERNATING CURRENT STATIC SWITCH

Karl Lennart Grees, Irsta, and Sven Olof Karlsson, Vasteras, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed June 18, 1965, Ser. No. 465,047

Claims priority, application Sweden, July 1, 1964, 7,987/64

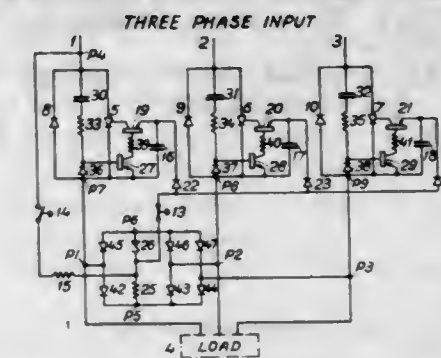
Int. Cl. H03k 17/28

U.S. Cl. 307—252

1 Claim

A three-pole AC static switch comprises in each pole two reverse-parallel-connected rectifiers, one of which is a

thyristor controlled by a firing circuit. To operate the switch, it is provided with one momentarily operated on-contact, for example a push button, and one similar off-



contact. Self-holding of the switch is provided by connecting the firing circuit so that current is supplied to the firing circuit only when the thyristors are in the on-state.

3,462,620

## AXIAL BIAS GATE FOR CONTROLLED RECTIFIERS

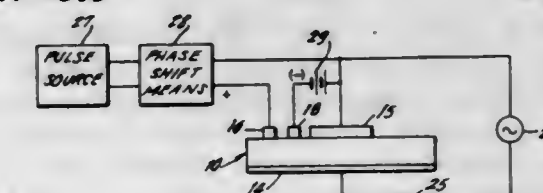
Harold Weinstein, Van Nuys, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California

Filed July 18, 1967, Ser. No. 654,143

Int. Cl. H03k 3/26

U.S. Cl. 307—305

3 Claims



An auxiliary gate electrode is positioned between the normal gate electrode and cathode electrode of a controlled rectifier, and is connected to a potential opposite to the firing potential of the normal gate. The auxiliary gate causes the initial injection of carriers for firing the controlled rectifier over a wider area, thereby permitting faster turn-on since the rate-of-rise-of-current can be increased during the turn-on interval. By keeping the control gate at the desired opposite potential throughout the operation cycle of the controlled rectifier, better temperature properties and higher blocking voltages are possible.

3,462,621

## ELECTRODES FOR MAGNETOHYDRODYNAMIC DEVICES

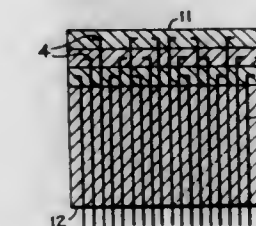
Shih-Ming Ho, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 6, 1965, Ser. No. 469,669

Int. Cl. H02k 45/00; G21d 7/02

U.S. Cl. 310—11

9 Claims



A durable electrode structure for magnetohydrodynamic devices comprising a refractory oxide body containing a plurality of high temperature, corrosive resistant electrical conductors, the ends of which are disposed at different levels in the refractory body near one surface thereof, said surface to be exposed to a thermally ionized fluid stream.



3,462,622

**PLASMA ENERGY EXTRACTION**

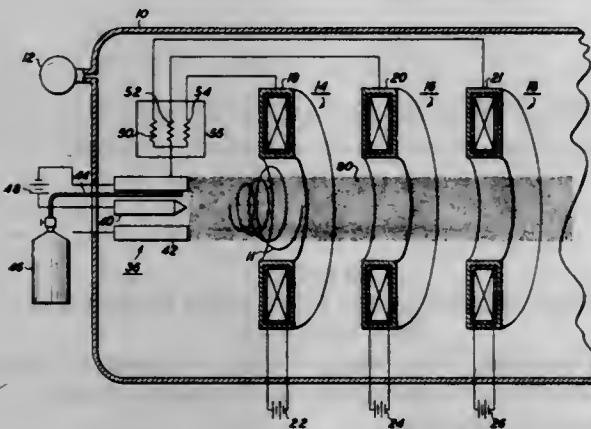
Gordon L. Cann, Laguna Beach, Robert L. Harder, Altadena, and Paul F. Jacobs, South Pasadena, Calif., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Apr. 27, 1966, Ser. No. 545,702

Int. Cl. H02k 45/00

U.S. Cl. 310—11

7 Claims



1. In a plasma containment apparatus comprising a chamber, means to evacuate said chamber, magnetic means to form a longitudinally continuous magnetic field along a line within said chamber, at least one plasma arc generator disposed within said magnetic field on said line and substantially symmetrical thereabout, said generator comprising a central cathode electrode and an anode electrode encircling said cathode, said generator including at least one passage terminating between said cathode and anode, gas supply means to introduce a plasma forming gas through said passage, and power supply means to maintain an arc discharge between said anode and said cathode, a method of extracting electrical energy from the plasma column comprising: intercepting with an electrode plasma at a potential higher than that of said anode and connecting an electrical load device between said electrode and said anode.

3,462,623

**DOUBLE INSULATED POWER TOOLS**

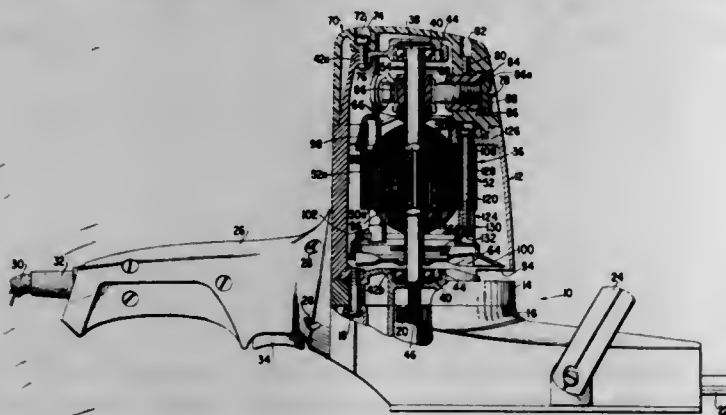
William A. Batson and Don B. Winchester, Pickens, S.C., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Apr. 16, 1968, Ser. No. 721,788

Int. Cl. H02k 7/14

U.S. Cl. 310—50

8 Claims



A double insulated power tool in which the motor has functional insulation and protecting insulation. The protecting insulation structure includes an integrally insulated

field core having a pair of insulated shrouds clamped respectively to either end thereof and forming a dielectric shell substantially enclosing the field and holding it in spaced insulated relation with respect to the housing. This structure is combined with an insulating tube between the shaft and the armature core and an insulated end-cover supporting insulated brush holders to form a power tool which does not require a ground connection to prevent electrical shock to the operator.

3,462,624

**ANTIVIBRATION SUSPENSION FOR STATOR OF LARGE TURBOGENERATOR**

Georges Darrieus, Houilles, France, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

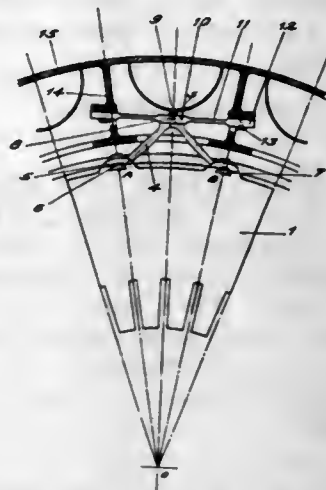
Filed Nov. 9, 1966, Ser. No. 593,067

Claims priority, application France, Nov. 19, 1965, 39,029

Int. Cl. H02k 5/24

U.S. Cl. 310—51

3 Claims



An antivibration suspension for the magnetic stator ring of a turbogenerator machine which absorbs elastic deformations of the ring attributable to magnetic and magnetostriction forces. The suspension is comprised of a circumferential arrangement of triangular like coupling units spaced around the periphery of the magnetic ring, the bases of the coupling units being secured to the periphery of the magnetic ring and the apices of the triangular coupling units being secured to the outer framework of the machine by means of elastic strips placed perpendicular to radii extending from the geometric center of the magnetic ring.

3,462,625

**ROTOR COOLING ARRANGEMENT**

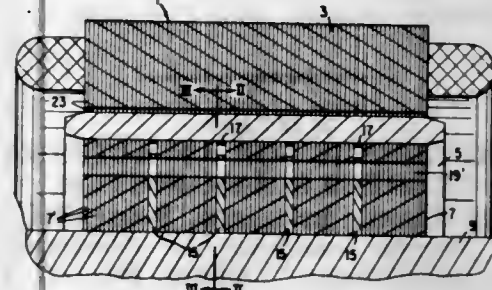
James W. Endress, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Feb. 21, 1966, Ser. No. 528,733

Int. Cl. H02k 9/02, 1/32

U.S. Cl. 310—61

1 Claim



A dynamoelectric machine employing a rotor having axial and radial passages therein for passing a cooling medium therethrough, the radial passages communicating with a selected number of axial passages to provide a balanced distribution of cooling medium throughout the rotor and around the armature bars or windings.

3,462,626

**TORQUE TRANSFERRING ARRANGEMENT**

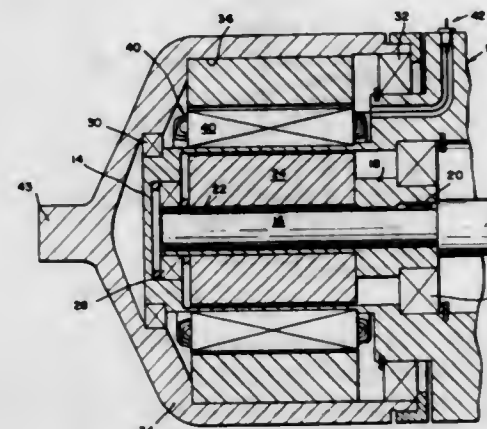
William H. Kluss, Huntington Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Dec. 30, 1966, Ser. No. 606,361

Int. Cl. H02k 21/10, 23/60

U.S. Cl. 310—114

2 Claims



A cryogenic machine has a hermetically sealed casing having a housing segment containing the rotatably journaled machine power shaft. An inner permanent magnet assembly is keyed to the shaft for rotation therewith. An external housing is bearing mounted to the hermetically sealed housing segment for rotation thereabout. The external housing is provided with a magnet assembly operatively aligned with the first-mentioned internal magnet assembly. An annular coil winding is non-rotatably carried by housing segment and physically interposed between the respective magnet assemblies. Interlocking magnetic fields provide a non-slip power driving connection between the inner rotatable shaft and the outer rotatable housing. The magnetic lines of force of the interlocking fields cut the interposed coil winding inducing an electric current therein. The coil is non-rotating and current may be conveniently tapped therefrom to provide a power source for an externally operating device. Slip rings are unnecessary and the concomitant noise generated thereby is avoided.

3,462,627

**ANNULAR ROTOR SUPPORTING STRUCTURE FOR A SYNCHRONOUS MACHINE**

Erich Schwab, Nuremberg-Elbach, and Theo Birkmann, Nuremberg, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany

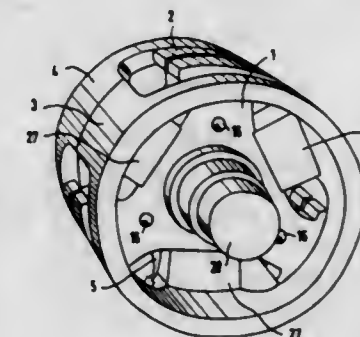
Filed Aug. 16, 1966, Ser. No. 572,704

Claims priority, application Germany, Aug. 19, 1965, S 98,915

Int. Cl. H02k 5/00, 21/00, 1/22

U.S. Cl. 310—162

12 Claims



An alternating pole, winding-free annular rotor for synchronous machine comprises a winding-free first magnetic pole system of substantially cylindrical configuration positioned around a magnetically conductive shaft and having windows formed through the cylindrical surface thereof.

3,462,628

**ROTATABLE MAGNETO-ELECTRIC ARMATURE AND METHOD OF FABRICATING SAME**

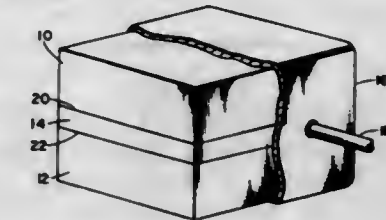
Norman Klimmek, Palos Verdes Estates, Joseph Melill, Rolling Hills Estates, Julian P. King, Jr., Los Angeles, Roy H. Lorenz, Palos Verdes Peninsula, and Frank H. Hollingsworth, San Pedro, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware

Filed Dec. 15, 1966, Ser. No. 601,996

Int. Cl. H02k 1/22

U.S. Cl. 310—264

16 Claims



A brushless generator rotor comprising a solid unitary mass made by joining two blocks of magnetic steel to an intervening layer of nonmagnetic metal, either by solid state diffusion bonding or by eutectic bonding. The solid unitary mass thus formed is thereafter trimmed by machining in a lathe to form a cylinder with the center diamagnetic layer at an angle of substantially 45 degrees with respect to the axis of rotation, and two identically configured pole pieces.

3,462,629

**SELF-ALIGNING ELECTRON GUN CONSTRUCTION**

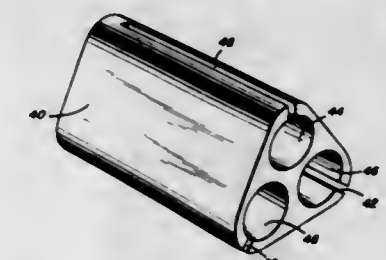
Alexander Bell, Carlsbad, Calif., assignor to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware

Original application May 9, 1966, Ser. No. 548,457, now Patent No. 3,354,339, dated Nov. 21, 1967. Divided and this application Oct. 24, 1967, Ser. No. 706,203

Int. Cl. H01j 29/48

U.S. Cl. 313—2

8 Claims



A modular support member for an electron gun assembly for color cathode ray tubes in which the electron gun electrodes are mounted in stacked relation, said support member having a plurality of longitudinally disposed holes accommodating said electrodes and a plurality of longitudinal slots extending to one end thereof for accommodating electrical leads to said electrodes.



### 3,462,630 ELECTROLUMINESCENT MATERIAL AND DEVICE

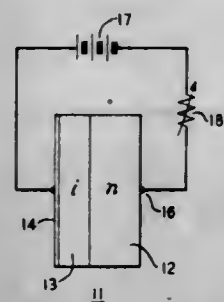
John D. Cuthbert, Kinnelon, and David G. Thomas, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York

Filed Apr. 3, 1967, Ser. No. 627,883

Int. Cl. H01j 1/62, 63/04

U.S. Cl. 313-108

6 Claims



Tellurium doped cadmium sulphide crystals produce red light at room temperatures when the tellurium concentration is  $10^{19}$  atoms or more per cubic centimeter. The color of the emitted light varies to some extent with the tellurium concentration. Both electroluminescent devices and red phosphors operable at room temperature result.

### 3,462,631 FLUORESCENT LAMPS

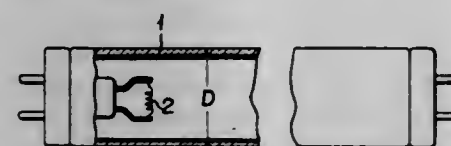
Tsunekazu Hashimoto, Tokyo, Kolchi Yamamoto, Himeji-shi, Akira Someya, Yokohama-shi, and Isunekazu Tsuda, Himeji-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Aug. 30, 1966, Ser. No. 576,034

Int. Cl. H01j 1/62, 63/04

U.S. Cl. 313-109

9 Claims



A fluorescent lamp which generates a reduced amount of high frequency noise when the lamp is turned on and which provides an increased light output, the fluorescent lamp having a tube length of from 400 mm. to 1200 mm., a tube current of 0.7 ampere or less, an external diameter ranging from 28 mm. to 35 mm. and coiled electrodes sealed in both ends of the tube having a coil internal diameter set at from 1.2 mm. to 3.5 mm.

### 3,462,632 DECORATIVE INCANDESCENT LAMP

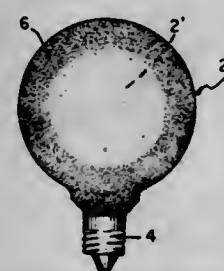
Joseph N. Russi, Lynn, Mass., assignor to Sylvania Electric Products, Inc., a corporation of Delaware

Filed Apr. 28, 1967, Ser. No. 634,542

Int. Cl. H01j 5/16, 61/40

U.S. Cl. 313-110

4 Claims



An incandescent lamp having a uniformly distributed single layer of glass beads on the outer surface of the bulb whereby a floating image of the general bulb shape is created within the bulb.

### 3,462,633 ENERGY BURST GENERATING ELEMENT

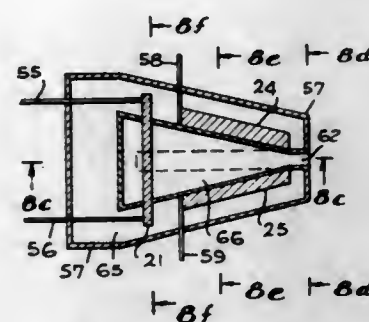
Marcus A. McCoy, Los Angeles, Calif. (19229 Keswick St., Reseda, Calif. 91335)

Filed Jan. 3, 1967, Ser. No. 606,623

Int. Cl. H01j 1/50, 23/10

U.S. Cl. 313-156

8 Claims



An energy burst generating element is disclosed which comprises a carbon element mounted with its ends attached to low resistance contacts. When subjected to a sufficiently high voltage pulse, the element emits a burst of light, acoustic and electromagnetic energy. The element is reusable.

### 3,462,634 APPARATUS AND METHOD FOR SUPPORTING FILAMENTARY HEATERS IN AN ELECTRON GUN ASSEMBLY

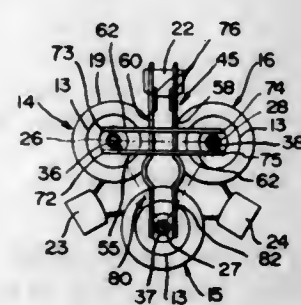
Horst H. Blumenberg, Schiller Park, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Dec. 16, 1966, Ser. No. 602,308

Int. Cl. H01j 1/88

U.S. Cl. 313-271

11 Claims



A support assembly which uses two wire assemblies for supporting the three heater filaments of a tri-gun cathode ray tube. The assembly is attached to and supported by one of the support rods used for holding the three electron guns in axial alignment. The assembly is made by welding two hairpin-shaped wires together and clipping the hairpin bend from each wire to form two parallel paths for the heater current to follow.

### 3,462,635 HOLDER FOR HIGHLY REACTIVE CATHODES OF RARE-EARTH BORIDES SUCH AS LAN- THANUM HEXABORIDE, THE HOLDER PRO- VIDED WITH A COOLING MEANS OPPOSITE TO THE EMISSIVE END OF THE CATHODE IN ORDER TO REDUCE TENDENCY OF HOLDER DETERIORATION

Alec N. Broers, Purdys Station, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 24, 1966, Ser. No. 589,104

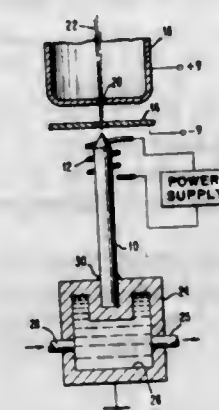
Int. Cl. H01j 1/88, 7/24, 61/52

U.S. Cl. 313-311

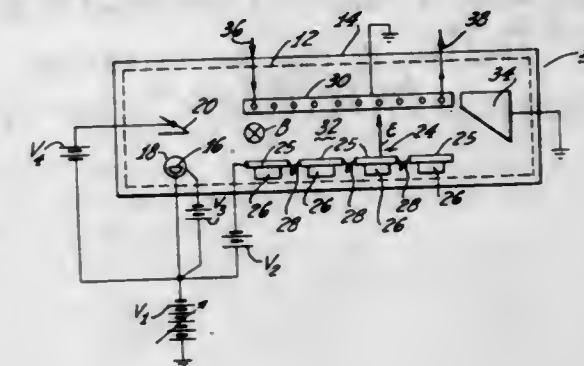
4 Claims

A cooled holder for cathode structures in electron beam apparatus. By locating the holder for cathodes constructed

of certain highly reactive rare-earth borides such as lanthanum hexaboride at a point remote from the emissive end of said cathode and by providing additional cooling



means for said holder, the tendency for said holder to be deteriorated by the lanthanum hexaboride is greatly reduced.



tween each pair of adjoining segments. This suppresses the conduction of undesirable microwave energy along the sole electrode.

### 3,462,636 SYSTEM FOR THE CONVERSION OF MICROWAVE ENERGY INTO ELECTRIC DIRECT CURRENT ENERGY UTILIZING AN ELECTRON BEAM TUBE

Horst Seunik and Werner Veith, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed Apr. 6, 1966, Ser. No. 540,581

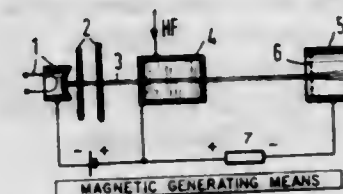
Claims priority, application Germany, Apr. 15, 1965,

S 96,634

Int. Cl. H01j 23/16, 29/96

U.S. Cl. 315-3

6 Claims



1. An arrangement for the conversion of microwave energy into electrical DC energy by means of an electron beam tube, comprising means for generating an electron beam traveling along an axis, means to which the microwave energy is to be applied, disposed to act on such electron beam for effecting a coupling therebetween by means of which such microwave energy is impressed on the electron beam, said means being so constructed that the electrons undergo, in addition to their movement in axial direction, a radial deflection out of the beam axis, without imparting to the electron beam any material velocity distribution, an electrode disposed in the path of said beam, following exit thereof from said means, for braking the electron beam carrying the microwave energy, and a catcher electrode disposed in the path of the electron beam, immediately following the exit of the electrons from said braking electrode, at which the braked electrons are collected, and which forms the output electrode at which the energy originally imparted to the beam is recovered as direct current energy.

### 3,462,637 SOLE STRUCTURE WITH R-F SUPPRESSORS

Susumu Paul Otsuka, Palo Alto, Calif., assignor to Litton Precision Products, Inc., San Carlos, Calif., a corporation of Delaware

Filed Aug. 28, 1967, Ser. No. 663,575

Int. Cl. H01j 25/34

U.S. Cl. 315-3.5

3 Claims

A crossed field amplifier is provided which possesses a sole electrode that is segmented into spaced segments al-

In a color picture tube of the single-gun, plural-beam type in which the plural beams are passed through the optical center of an electron lens by which all of the beams are focussed on the color phosphor screen with at least two of the beams being angled relative to the optical axes of the lens so as to emerge therefrom along paths divergent to the axis, and convergence deflecting plates are arranged along the divergent paths and have a voltage difference applied thereto to deflect the respective beams and cause convergence of all beams at a common point on the beam selecting grid or mask; a magnetic flux is produced parallel to the optical axis at a location along the latter where beams are angled with respect to the axis so that such beams have imparted thereto a twisting displacement about the axis to compensate for misconvergence that may result from mechanical misalignment of the beam generating cathodes or from spherical aberration of the deflection yoke which causes the beams to scan the screen. The magnetic flux may be produced by a suitably adjusted D.C. current flow in a suitably wound coil around the tube neck and/or from a modulated current flow synchronized with the scanning of the screen by the beams. Further, magnetic fluxes in planes perpendicular to the optical axis may be provided to deflect all of the beams for ensuring proper passage between the convergence deflecting plates and/or centering of the point of convergence of the beams with respect to the apertures of the grid or mask for obtaining maximum color purity.



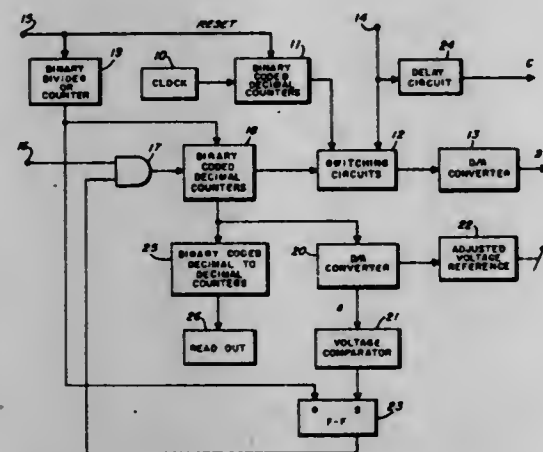
### 3,462,639 DIGITAL MARKER GENERATOR FOR CATHODE RAY TUBE

Donald M. French, Torrance, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Dec. 19, 1966, Ser. No. 603,064  
Int. Cl. H01j 29/70

U.S. Cl. 315-19

8 Claims



A circuit is provided for enabling a spot, line, or other marker to be moved to any desired location on the face of a cathode ray tube. The movement of the marker is controlled by a manually adjustable potentiometer. A sweep voltage is derived from a repetitive accumulation of pulses. A digital marker generator is inherently operative to produce a desired modulation of the cathode ray tube at a time and position during the sweep which is digitally determined from the same pulse source as the sweep voltage, causing the marker to be displayed in its proper position.

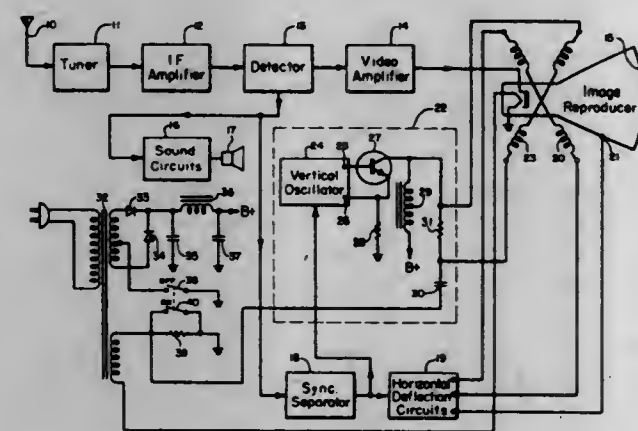
### 3,462,640 SPOT-BURN PROTECTION CIRCUIT

Matthew J. Eltgroth, Chicago, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Oct. 21, 1968, Ser. No. 769,330  
Int. Cl. H01j 29/70

U.S. Cl. 315-20

9 Claims



A spot-burn protection circuit for preventing damage to the phosphor viewing screen of a television picture tube by the residual undeflected electron beam present in the tube after the receiver is turned off. The receiver is transistorized and achieves instant-on operation by supplying the heater of the picture tube during standby operation with a reduced filament current through a series dropping resistor, which is shorted out during normal

operation. A portion of the AC voltage drop across this resistor is supplied to the receiver vertical deflection winding during standby operation to vertically oscillate the residual electron beam and thereby prevent it from falling on any one spot on the phosphor screen.

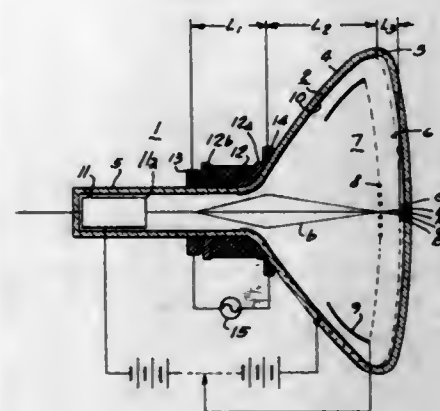
### 3,462,641 COLOR PICTURE TUBE

Akio Ohkoshi, 5-6 Akabane-kita, 1, Kita-ku; Hiromasa Machida, 16-21 Nakahara 4, Mitaka-shi; and Yuzo Fuse, 303 Kitashinagawa 3, Shinagawa-ku, all of Tokyo, Japan

Filed July 28, 1966, Ser. No. 568,625  
Claims priority, application Japan, July 30, 1965, 40/46,429; Aug. 4, 1965, 40/47,633  
Int. Cl. H01j 29/70

U.S. Cl. 315-21

4 Claims



Color picture tube of the single gun type wherein a pair of color switching coils are connected in series and disposed on opposite sides of a deflection yoke, the coils being connected in opposed phase relation and spaced with relation to each other to effect a balance between color distortion and power consumption.

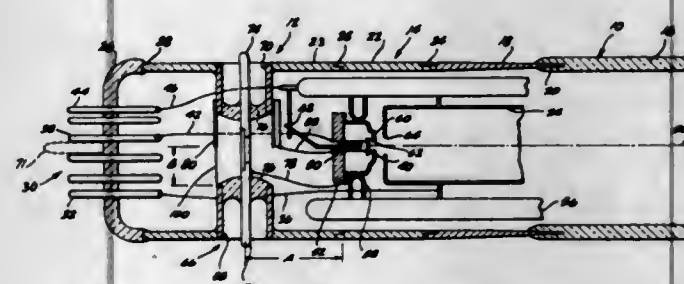
### 3,462,642 HIGH FREQUENCY MODULATION CATHODE RAY TUBE

Richard D. Ketchpel, Malibu, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Oct. 26, 1967, Ser. No. 678,294  
Int. Cl. H01j 29/52

U.S. Cl. 315-30

8 Claims



A cathode ray tube is provided having a conventional cathode with a cathode control grid positioned immediately forwardly thereof. Coaxial leads to the cathode and grid to provide electrical bias are provided and comprise coaxial cavities formed peripherally in the tube and extending transversely of the tube axis. The cavities include a central pin extending through both cavities transversely of the tube and a sleeve telescopically mounted to the external aspect of one cavity. Wire leads connect the pin and the sleeve to the grid and cathode, respectively. The coaxial line terminates in an external resistance reflecting the characteristic impedance of the line.

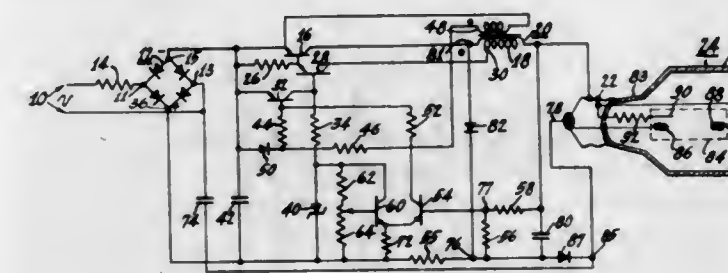
### 3,462,643 SWITCHING TYPE VOLTAGE AND CURRENT REGULATOR AND WHICH CAN INCLUDE VOLTAGE DOUBLING MEANS FOR A LOAD

Carl R. Turner, Hopatcong, and Peter Schiff, Whitehouse Station, N.J., assignors to RCA Corporation, a corporation of Delaware

Filed Mar. 31, 1967, Ser. No. 627,479  
Int. Cl. H05b 39/04, 41/14

U.S. Cl. 315-101

8 Claims



For certain types of electrical loads, the voltage must be a maximum at turn on. Current flow to the load must be limited to a maximum value during the warm-up period and, after the warm-up period is over, a regulated voltage which is less than the maximum voltage must be supplied for continued operation of the load. A regulated voltage supply of the switching type, which provides such output voltages and which limits the maximum current flow is disclosed.

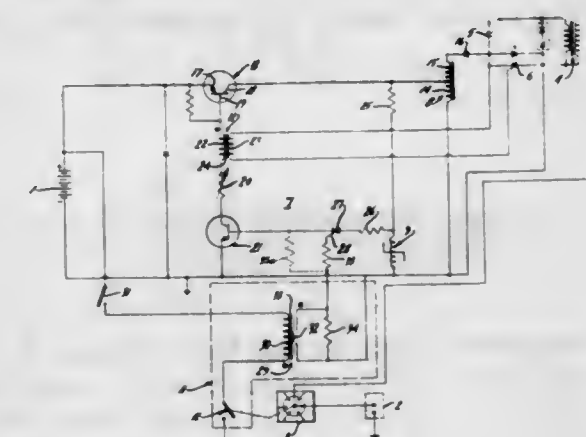
### 3,462,644 TRIGGERED IGNITION SYSTEM

Floyd M. Minks, Port Washington, Wis., assignor, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware

Continuation of application Ser. No. 492,571, Oct. 4, 1965. This application Mar. 29, 1968, Ser. No. 717,460  
Int. Cl. H05b 41/36

U.S. Cl. 315-209

7 Claims



A capacitor discharge ignition system includes a blocking oscillator having output elements of a main charging transistor connected in series with a battery and the charging winding of an inductor. The output of the inductor is connected in series with a diode to charge a capacitor which is connected to the spark plugs in series with a main silicon controlled rectifier. During the time the transistor conducts, energy is stored in the inductor. When the transistor turns off, the collapsing field in the inductor results in transfer of the stored energy to the capacitor. The transistor is controlled by an input and feedback network including a control transistor and a silicon controlled rectifier connected in the base circuit of the charging transistor. The triggering of the silicon controlled rectifier is through a switch driven in synchronism with the engine. The main controlled rectifier is triggered from a

pulse transformer having its primary winding series connected in the base of the charging transistor and the secondary winding connected across the gate to cathode circuit of the controlled rectifier.

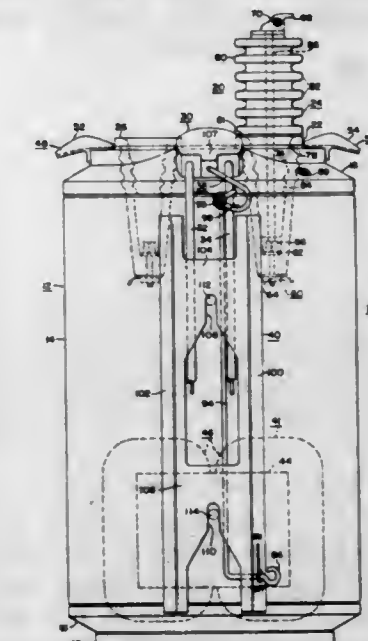
### 3,462,645 ELECTRICAL TRANSFORMER SUITABLE FOR POLE OR VAULT MOUNTING

Merrill G. Leonard, Fowler, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 9, 1967, Ser. No. 644,948  
Int. Cl. H02h 7/14

U.S. Cl. 317-15

6 Claims



An electrical distribution transformer which facilitates either pole or vault mounting. The high voltage terminals are recessed, and allow either pole type or vault type bushings to be used therewith. A channel type hanger lug for pole mounting also provides the functions of concealing and protecting the interconnections between the low voltage leads of the transformer and the secondary circuit, and conceals and protects a rod which is connected to the actuator of the transformer protective circuit breaker.

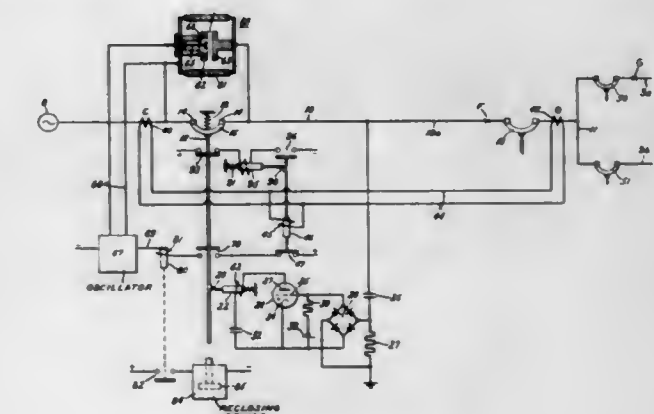
### 3,462,646 CIRCUIT BREAKER WITH HIGH SPEED CIRCUIT RESTORING MEANS

Christy W. Bell, Berwyn, Pa., assignor to General Electric Company, a corporation of New York

Filed June 23, 1967, Ser. No. 648,376  
Int. Cl. H02h 5/00, 7/26, 3/28

U.S. Cl. 317-22

14 Claims



A circuit breaker connected in a power line is tripped open at high speed in response to the traveling wave accompanying a fault on the power line. A conventional protective relay decides whether the fault is one which



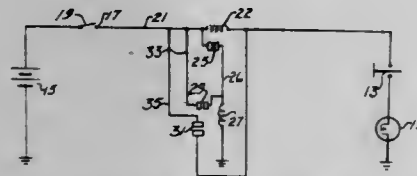
requires continued opening of the breaker to isolate the fault. If the relay decides that continued opening is not required, a triggered gap device connected across the circuit breaker contacts is immediately triggered into conduction to restore or maintain current through the power line. In one embodiment, triggering is initiated before the relay makes its decision and is continued if the decision is that continued opening is not required.

### 3,462,647 CDR SELF-ACTUATING VOLTAGE LEVEL PROTECTIVE CIRCUIT FOR VEHICULAR ELECTRICAL SYSTEMS

Carl D. Russell, Muskogee, Okla.  
(1502 S. Boulder Ave., 22G, Tulsa, Okla. 74119)  
Filed Mar. 21, 1967, Ser. No. 624,834  
Int. Cl. H02h 3/28

U.S. Cl. 317—31

7 Claims



The invention comprises a circuit and apparatus for disconnecting a source of electrical potential, such as a vehicle battery, from its load circuit when its output voltage drops to a predetermined level. The level is set to conserve sufficient energy in the battery for starting of the vehicle. A circuit is provided, preferably from the ignition switch off position, to the vehicle accessories (load) operable without the ignition key, such as the lights, which may be inadvertently left on. An initiating circuit energizes a sensing circuit in response to any load drain. The sensing circuit then energizes a sensing holding circuit for itself. The sensing holding circuit closes a load-carrying circuit until the battery voltage reaches the predetermined level, at which time, the sensing holding circuit opens the load-carrying circuit which cannot be reestablished until the battery voltage rises above the predetermined level.

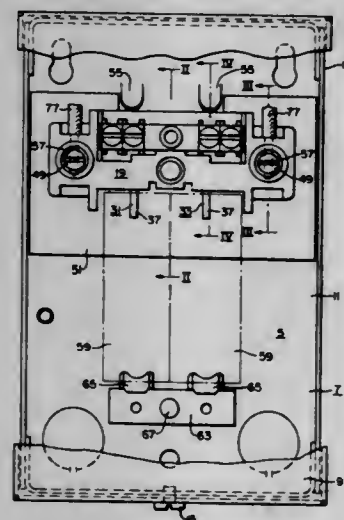
### 3,462,648 LOADCENTER

John T. Attridge, Trumbull, Conn., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 30, 1967, Ser. No. 650,482  
Int. Cl. H02b 1/04

U.S. Cl. 317—99

10 Claims



An improved loadcenter comprises an insulating support block and a bus assembly captured in place on the support block when the support block is mounted on a base plate.

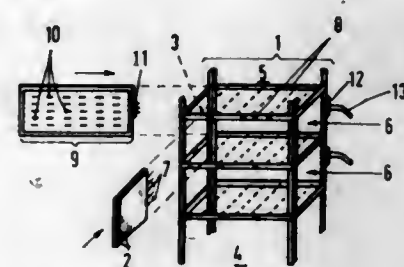
### 3,462,649 FRAMEWORK WIRING ARRANGEMENT FOR COMPONENT MODULES INSERTABLE INTO THE FRAMEWORK

Johannes Stich, Munich, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed Oct. 21, 1965, Ser. No. 499,192  
Claims priority, application Germany, Feb. 17, 1965, S 95,495  
Int. Cl. H02b 1/04

U.S. Cl. 317—101

5 Claims



Disclosed herein is a wiring arrangement for framework wiring of the type employed in telephone exchange cabinets. A plurality of component-carrying modules are operable to be inserted into the framework from the front to the rear thereof and have contact pins operable to mate with wiring panels disposed along the rear of the framework. The wiring panels are operable to interconnect a plurality of horizontally-spaced modules. In order that the wiring panels may be freely accessible for removal and insertion, vertically-spaced, horizontally-extending guide rails are provided either extending along the direction of insertion, or along the rear of the framework, to receive the wiring panels.

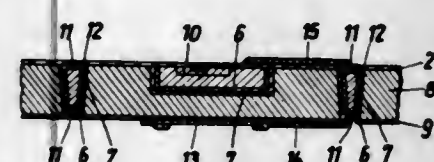
### 3,462,650 ELECTRICAL CIRCUIT MANUFACTURE

Klaus Hennings and Hans-Jürgen Schütze, Ulm (Danube), and Gerhard Ulbricht, Neu-Ulm (Danube), Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed May 6, 1966, Ser. No. 548,279  
Claims priority, application Germany, May 7, 1965, T 28,536  
Int. Cl. H01l 19/00, 11/00

U.S. Cl. 317—101

11 Claims



An integrated circuit arrangement disposed on a semiconductor body and composed of active semiconductor components, passive components and conducting paths connecting together the various components, there being at least one component on each of two opposed surfaces of the semiconductor body and the body being formed to present conductive path connections which extend there-through to permit connections to be made between the two body surfaces.

### 3,462,651 RESISTOR WITH TERMINAL MOUNTING MEANS

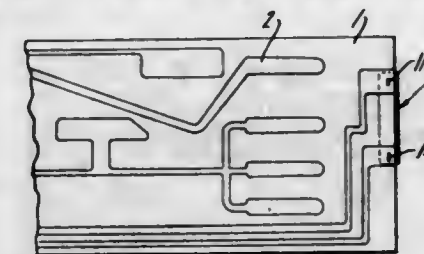
Lionel E. Weyenberg, N35 W23575 Capitol Drive, Pewaukee, Wis. 53072  
Filed Sept. 27, 1967, Ser. No. 671,004  
Int. Cl. H02b 1/04, 9/00

U.S. Cl. 317—101

7 Claims

An electrical resistance apparatus is combined with a circuit board. The resistor includes an insulating core and a resistance wire is wound around the core, with the ends of the wire being connected to terminal strips which encircle the core. One end of each terminal strip projects

through an opening in the board and is connected to an electrical circuit which is located on the opposite side of the board from the resistor. The other end of each terminal strip projects laterally from the first end and bears against the surface of the board to space the resistor from the board. The lateral legs of the terminal strips project



in opposite directions from the longitudinal centerline of the resistor and serve to support the resistor from the board and stabilize the resistor against vibration. As the resistor is spaced out of contact with the board, air can circulate around the resistor to thereby minimize heat concentration during operation.

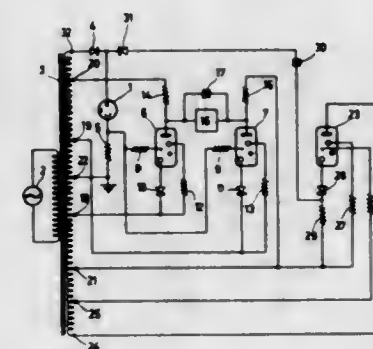
### 3,462,652 RADIATION-RESPONSIVE CIRCUIT ARRANGEMENT

Peter Southcott Smith, London, England, assignor, by mesne assignments, to U.S. Phillips Corporation, New York, N.Y., a corporation of Delaware

Filed June 24, 1965, Ser. No. 466,749  
Claims priority, application Great Britain, July 1, 1964, 27,181/64  
Int. Cl. H01h 47/24

U.S. Cl. 317—124

17 Claims



A flame monitor system that includes a gas photocell on which photons are incident at given time intervals. A control signal is periodically derived from the photocell during time intervals that are longer than said given time intervals. In order to test the photocell, the current therein is periodically sampled during different time intervals to derive a test signal that is related to the mean value of the sampled current occurring over a plurality of sampling periods. The sampling time intervals are shorter than said given time intervals.

### 3,462,653 SYSTEM OF THE KIND COMPRISING A NUMBER OF RELAY ARRANGEMENTS

Meindert Koeman and Hendrik Jan Frederik Keers, Hilversum, Netherlands, assignors, by mesne assignments, to U.S. Phillips Corporation, New York, N.Y., a corporation of Delaware

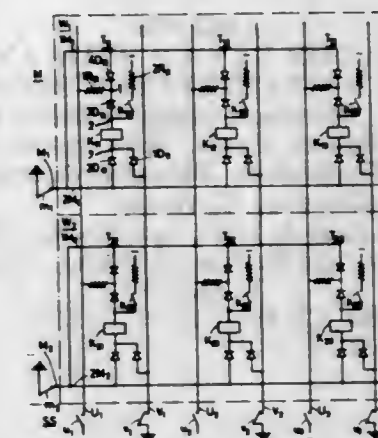
Filed May 8, 1967, Ser. No. 636,926  
Claims priority, application Netherlands, May 6, 1966, 6606166  
Int. Cl. H01h 47/22

U.S. Cl. 317—137

7 Claims

A control system is provided for energizing and de-energizing the relays in a relay matrix. The matrix consists of a plurality of groups of relays. Each relay group

has a common marking conductor. A control circuit is provided having two control conductors for each relay of a relay group, with each pair of control conductors corresponding to a separate relay from each group. Each relay is connected in control circuit that permits it to be



held by its own contact through either the corresponding marking conductor or one of the corresponding control conductors, and to be energized by marking the corresponding marking conductor and the other corresponding control conductor.

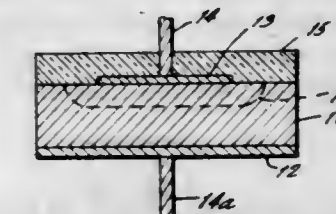
### 3,462,654 ELECTRICALLY INSULATING-HEAT CONDUCTIVE MASS FOR SEMICONDUCTOR WAFERS

Harold Weinstein, Van Nuys, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California

Filed Oct. 5, 1966, Ser. No. 584,514  
Int. Cl. H01b 3/00

U.S. Cl. 317—234

1 Claim



A mass of beryllium oxide in particle form is embedded in a bonding material, such as a varnish, and adheres over the surface of a semiconductor device which has a junction terminating upon the surface. The mass of material serves as a heat sink for localized hot spots on the junction.

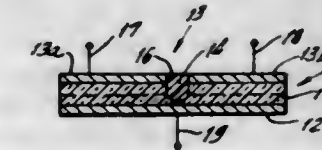
### 3,462,655 SEMICONDUCTOR WAFER FORMING A PLURALITY OF RECTIFIERS

Abraham G. Coblentz, El Segundo, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California

Filed Dec. 1, 1967, Ser. No. 687,365  
Int. Cl. H01l 5/02

U.S. Cl. 317—234

4 Claims



A single wafer of semiconductor material has a junction therein and one or more slots extending from one



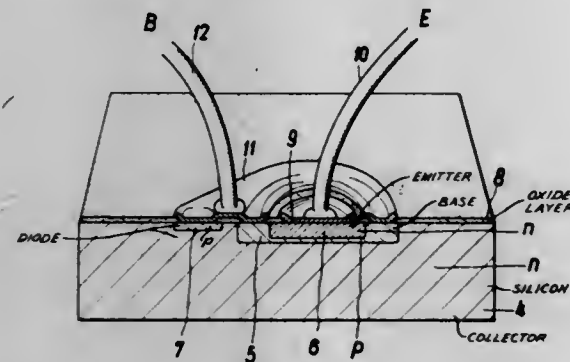
or both surfaces through the junction to divide the wafer into two or more separate and interconnected wafers. Three slots on each surface divide the wafer into six segments, two of which have the junction short circuited to form a single phase full-wave rectifier.

3,462,656

# SEMICONDUCTOR DEVICE WITH AN EMITTER, BASE AND COLLECTOR REGION

Dieter Gerstner, Willsbach, Heinz-Wilhelm Ehlbeck, Heilbronn, and Richard Eppe, Schwaigern, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany  
Filed June 5, 1967, Ser. No. 643,727  
Claims priority, application Germany, June 28, 1966, T 31,469  
Int. Cl. H01L 11/00, 15/00  
U.S. Cl. 317-235

9 Claims



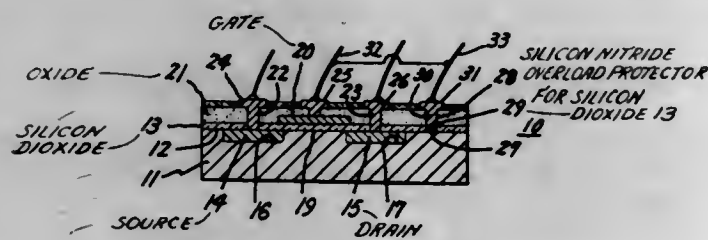
A semiconductor device having an emitter, base and collector region forming a transistor. The semiconductor device is provided with a diode, connected in parallel with the collector-to-base path of the transistor, which has a breakdown voltage of such value that an impermissibly high current density at the center of the transistor will drive the diode into the breakdown region. Breakdown of the diode causes it to inject charge carriers into the base region so that the emitter injection current will again be uniformly distributed over the boundary of the emitter-to-base barrier layer. The diode thus greatly reduces the danger of thermal destruction of the transistor.

3,462,657

# PROTECTION MEANS FOR SURFACE SEMICONDUCTOR DEVICES HAVING THIN OXIDE FILMS THEREIN

Dale M. Brown, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York  
Filed Mar. 7, 1968, Ser. No. 711,345  
Int. Cl. H01L 15/00, 11/00, 13/00  
U.S. Cl. 317-235

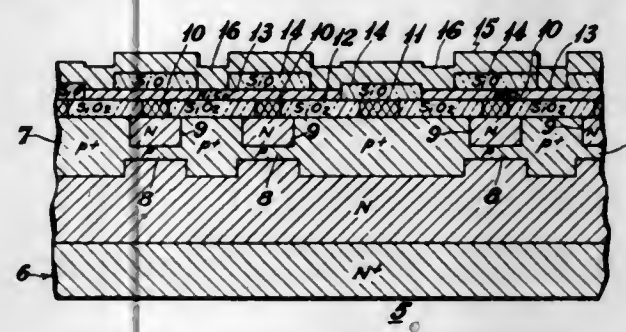
5 Claims



Protection against failure of an insulating oxide film on a semiconductor body such as the gate oxide in a silicon field effect transistor, wherein a voltage supplied between an electrical conductor overlying the oxide film and a semiconductor body which it covers, is provided by placing a discrete quantity of silicon nitride in electric parallel with the insulating oxide. Silicon nitride has a much higher leakage current before breakdown than insulating oxides as, for example, silicon dioxide.

3,462,658  
MULTI-EMITTER SEMICONDUCTOR DEVICE  
Gerald S. Worchel, Eatontown, N.J., and Robert L. Reber, Cupertino, Calif., assignors to The Bendix Corporation, Eatontown, N.J., a corporation of Delaware  
Filed Oct. 12, 1965, Ser. No. 495,079  
Int. Cl. H01L 11/02, 15/00  
U.S. Cl. 317-235

7 Claims



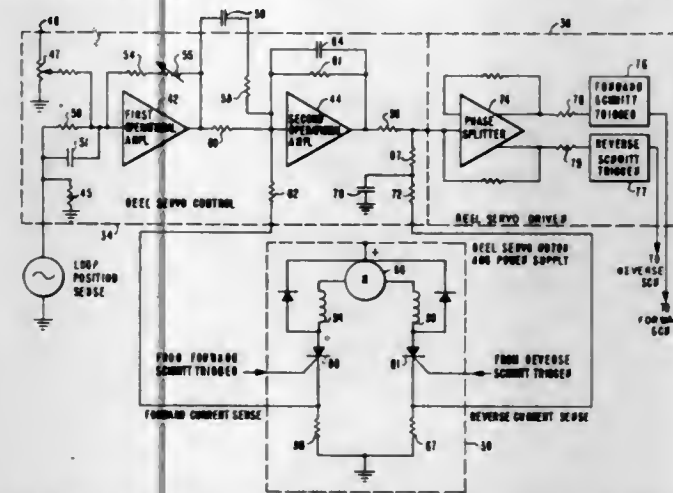
A multi-emitter transistor having a common base and collector in which each emitter is connected by a thin film resistor to a common emitter contact. The resistors are insulated by an oxide from the base and also from a portion of the common emitter contact.

3,462,659

# MOVABLE MEMBER POSITION SERVO SYSTEM

Lester H. Lee, Mountain View, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California  
Filed Oct. 27, 1966, Ser. No. 595,558  
Int. Cl. H02P 7/00; G11b 15/44  
U.S. Cl. 318-6

10 Claims



A movable member servo system adaptable as a reel drive system for magnetic tape transports using tape loop storage chambers wherein said system would include means for generating signals representative of the rate of change of the tape loop position within said storage chambers and signals representative of reel motor current. The signals representative of motor current are combined with the loop change rate signals and compensate for the lag between the motor response and actual tape position. The system generates a continuous bipolar signal that follows the tape position in either direction of operation, and stability controls the reel servomotor under a wide variety of conditions.

3,462,660

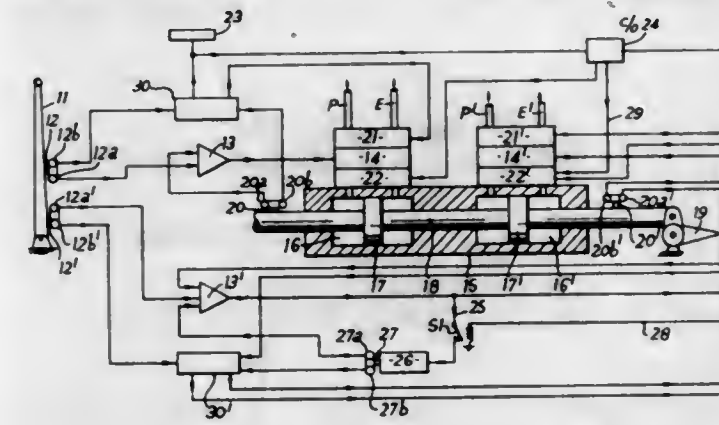
# MONITORING OF CONTROL SYSTEMS

Richard Kenneth Barltrop, London, England, assignor to Elliott Brothers (London) Limited, London, England  
Filed June 30, 1966, Ser. No. 561,968  
Claims priority, application Great Britain, June 30, 1965, 27,627/65  
Int. Cl. H02P 1/54, 5/46, 7/68  
U.S. Cl. 318-18

7 Claims

A control system such as an aircraft automatic pilot having a control channel and a standby channel, the

standby channel being switched to take over control if a fault develops in the control channel, and compensates for a hardover detection circuit responsive to a hardover condition in one servo channel for applying a test signal to all of the servo channels. The rate of response of each



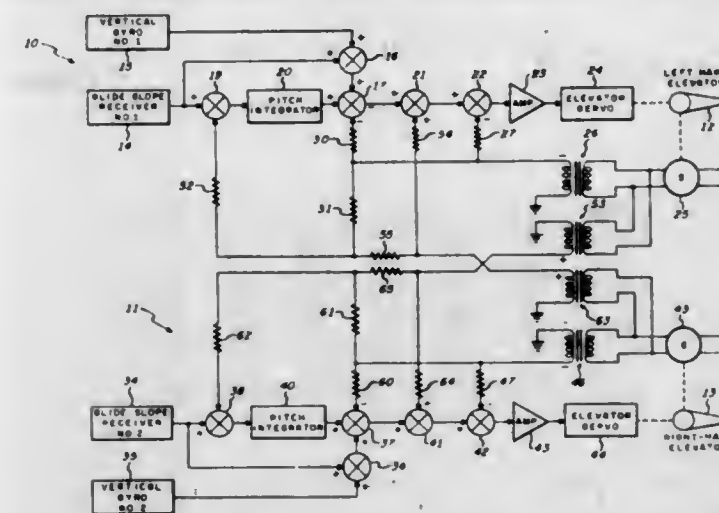
ing means in the standby channel effective to compensate, while the control channel is operative, for error signals in the standby channel.

3,462,661

# AUTOMATIC CONTROL SYSTEM EQUALIZATION FOR AIRCRAFT

Raymond A. Nelson, Phoenix, Ariz., assignor to Sperry Rand Corporation, a corporation of Delaware  
Filed Nov. 25, 1966, Ser. No. 597,060  
Int. Cl. G05b 11/01  
U.S. Cl. 318-18

5 Claims



Apparatus for compensating for the relative difference in the position of independent first and second control surfaces of an aircraft controlled by first and second substantially identical control systems respectively in which the differences in the mechanical and electrical tolerances in each of the control systems tend to cause the control surfaces to be positioned differently with respect to each other in which passive circuit means for providing regenerative and degenerative signals minimize the relative difference between the position of the independent first and second control surfaces.

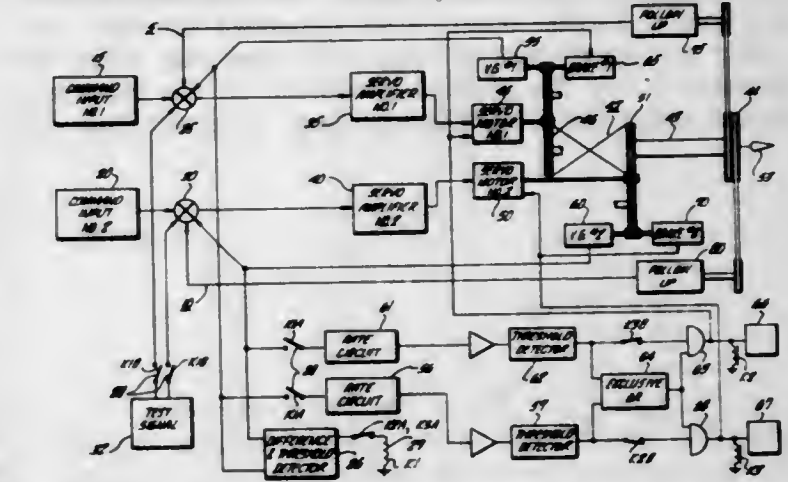
3,462,662

# MONITORING AND FAULT CORRECTION SYSTEM FOR A MULTIPLE CHANNEL SERVO ACTUATOR

Warren E. Carpenter, Malibu, Calif., assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware  
Filed April 12, 1967, Ser. No. 630,298  
Int. Cl. H02P 1/54, 5/46, 7/74  
U.S. Cl. 318-18

22 Claims

The invention of which certain representative embodiments are herein described relates to servomechanism devices for actuating the movement of a member. A multiple channel servomechanism system is described which



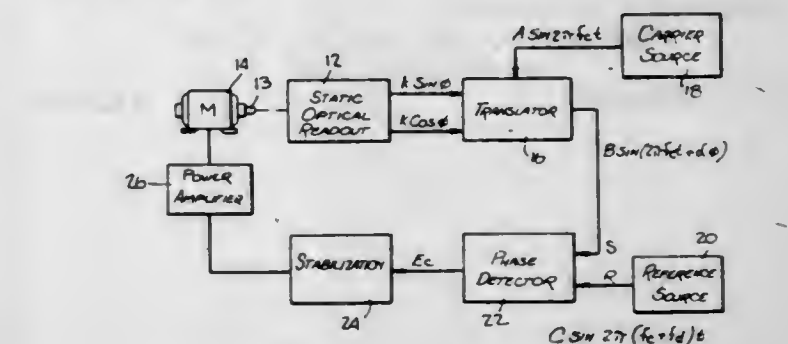
individual channel to this test signal is monitored, and logic circuitry respond to the monitoring by deactivating the channel which experienced the hardover condition.

3,462,663

# SYSTEM FOR CONTROLLING MOTOR SPEED AND POSITION

Michael S. Schiller, New York, N.Y., assignor to Sequential Information Systems, Inc., Elmsford, N.Y., a corporation of New York  
Continuation-in-part of application Ser. No. 353,685, Mar. 23, 1964. This application Feb. 29, 1968, Ser. No. 729,846  
Int. Cl. H02P 5/46, 7/68, 7/80  
U.S. Cl. 318-18

18 Claims



The control system embodiments disclosed involve the control of a parameter such as motor shaft angle position and/or rotational speed by comparing a measurement signal from the device being controlled with a reference signal. An upper side band of a measurement signal modulation of a carrier signal is compared with a reference signal derived from the same carrier signal. The reference signal may be the same upper side band of a command signal modulation of the carrier signal. These two upper side bands are compared by a device, such as a phase comparator, to provide a control signal for the motor or other device being controlled; whereby the useful range of the shaft transducer which is normally only used for speed detection is extended downwardly to also provide position information.

3,462,664

# SPEED CONTROL OF STRIP ROLLING MILLS

George E. Lemon, 286 Lora Ave., Youngstown, Ohio 44504  
Filed Apr. 26, 1967, Ser. No. 633,793  
Int. Cl. H02P 5/46

3 Claims

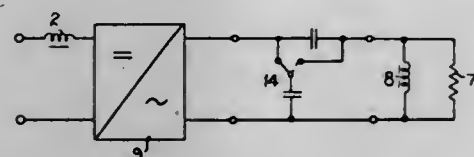
The following specification discloses a speed control system for use with, for example, the drive motors of a hot strip rolling mill. The magnetic amplifiers of the field





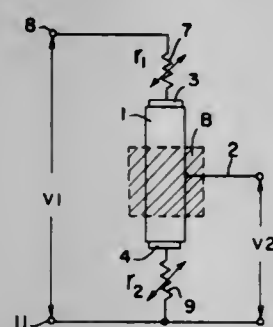


The quadripole can consist of two capacitors of which one is connected in parallel with the load and is a component of the oscillatory circuit and the other is connected in series with the oscillatory circuit. In this embodiment, the parallel capacitance can be formed of two capacitors in series and a change-over switch is provided to connect one terminal of the inverter either to the junction point of these two capacitors, or to the inverter side of the capacitor connected in series with the oscillatory circuit.



The quadripole can also consist of two capacitors of which one is connected in parallel with the inverter and the other is connected in series with the load. In this embodiment, a change-over switch is arranged to connect one pole of the parallel capacitor to either the load side or to the inverter side of the capacitor connected in series with the load.

**3,462,673**  
**TEMPERATURE-COMPENSATED MAGNETICALLY VARIABLE POTENTIOMETER**  
Hans Hieronymus, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany  
Filed Mar. 21, 1967, Ser. No. 624,753  
Claims priority, application Germany, Mar. 30, 1966, S 102,897  
Int. Cl. H01c 1/16, 7/16; G05f 1/10  
U.S. Cl. 323-69 3 Claims

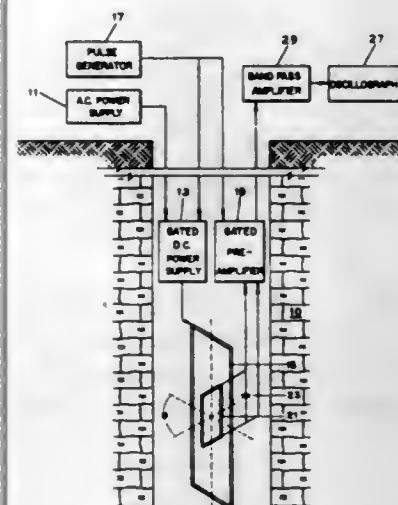


A magnetically variable potentiometer has end contacts and a center contact positioned intermediate the end contacts and equidistant therefrom. A first input terminal is connected to one of the end contacts. A second input terminal and a first output terminal are connected to the other of the end contacts. A second output terminal is connected to the center contact. A pair of substantially identical thermistors temperature-compensates the magnetically variable potentiometer. A first thermistor of the pair of thermistors is connected between the first input terminal and the one of the end contacts. The second of the pair of thermistors is connected between the second input terminal and the other of the end contacts.

**3,462,674**  
**NUCLEAR MAGNETISM WELL LOGGING METHOD**  
Paul E. Baker, Fullerton, Stanley B. Jones, Whittier, and Delmar O. Seever, Fullerton, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware  
Continuation-in-part of application Ser. No. 762,291, Sept. 22, 1958. This application Nov. 17, 1965, Ser. No. 508,342  
Int. Cl. H01s 4/00; G01n 27/78; G01r 33/08  
U.S. Cl. 324-5 4 Claims

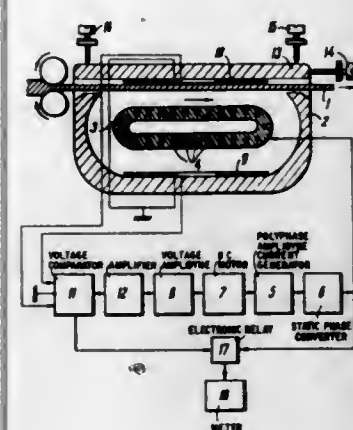
Nuclear magnetism precession signals may be detected from the proton in hydrogen atoms within and surround-

ing a well bore penetrating an earth formation. The hydrogen atoms may be found in either hydrocarbons or waters. To identify the material containing the hydrogen atoms it is proposed to introduce paramagnetic impurities



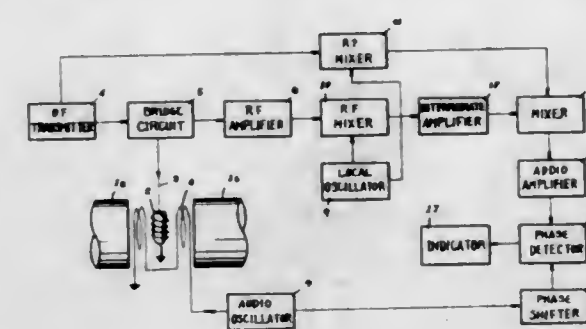
that will selectively control the precession signals from either oil or water. Detected nuclear magnetic precession signals may then be interpreted to identify the origin of the signals.

**3,462,675**  
**DEVICE FOR NONCONTACT MEASUREMENT OF SPEED OF MOVING STRIP OF ELECTRICALLY CONDUCTIVE MATERIAL**  
Lev Vladimirovich Pivovarov, ulitsa Lunacharskogo 2, kv. 13, Kramatorsk, and Leonid Vasilievich Karnjushin, ulitsa Kul'tury 9, kv. 52, Kharkov, U.S.S.R.  
Filed Oct. 26, 1966, Ser. No. 589,618  
Int. Cl. G01r 11/02  
U.S. Cl. 324-70 7 Claims



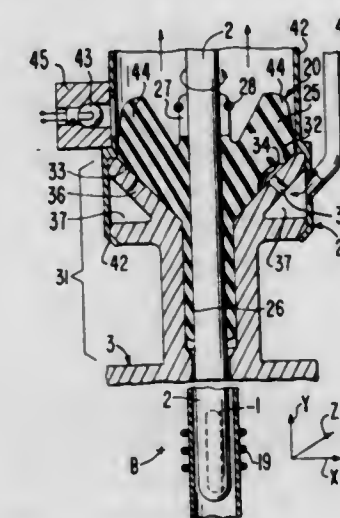
A device for noncontact measurement of the speed of electroconductive strips such as metallic strip rolled in mills of cold and heat rolling, said device comprising a linear stator fed from a current generator to produce a controlled travelling magnetic field, measuring coils being placed in the magnetic field on either side of the path of travel of the strip, one coil being directly influenced by said magnetic field, the other by said field through the intermediary of said strip. An automatic synchronization system is provided for maintaining the speed of the travelling magnetic field equal to the strip speed and an automatic measuring circuit serves to measure the excitation current frequency of the travelling field at the synchronous mode of operation, said current frequency being proportional to the speed of the strip.

**3,462,676**  
**METHOD OF PRODUCING GYROMAGNETIC RESONANCE**  
Makoto Takeuchi and Kazuo Nakagawa, Tokyo, Japan, assignors to Nihon Denshi Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan  
Filed Nov. 29, 1966, Ser. No. 597,706  
Claims priority, application Japan, Dec. 4, 1965, 40/74,546  
Int. Cl. H03b 3/12  
U.S. Cl. 324-5 12 Claims



A method of producing gyromagnetic resonance in a sample by exposing the sample to an RF magnetic field normal to a polarizing magnetic field in which the sample is positioned. The latter field is modulated using an oscillator which superimposes an audio frequency field on the polarizing field. The modulation index is less than 1. By adjusting the polarizing field, the sample is made resonant with the RF field. A signal given off by the sample is detected, processed for direct comparison with a signal from the oscillator, and compared to determine sample resonance, thereby only the single side band resonance signal is desirably obtained.

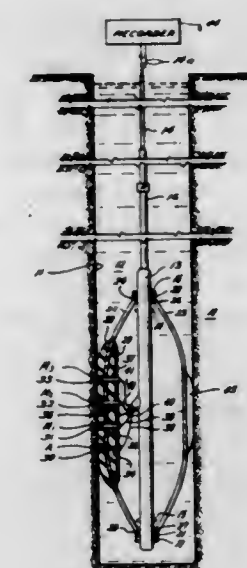
**3,462,677**  
**GYROMAGNETIC RESONANCE SPECTROMETER HAVING MEANS FOR MEASURING THE RATE OF SAMPLE ROTATION**  
Ronald M. Paltich, Los Altos, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California  
Filed June 12, 1967, Ser. No. 645,395  
Int. Cl. G01r 33/08  
U.S. Cl. 324-5 7 Claims



A gyromagnetic resonance spectrometer is disclosed which includes means for spinning the sample for line narrowing and means for measuring the rate of sample rotation. The spectrometer includes a radio frequency transmitter and receiver for exciting and detecting resonance of a sample immersed in a unidirectional polarizing magnetic field. The magnetic field is produced by a permanent magnet having an egg-shaped yoke structure which envelops its magnetic gap in which the sample is immersed as contained in a probe structure. The magnet

is enveloped by an oven structure and a plurality of thermal insulative foam jackets for holding the magnet at a constant temperature. Thus, the probe is buried inside the magnet and hidden from the view of the operator. An air turbine is provided in the probe structure for rotating the sample to average residual field gradients and, thus, to narrow the resonance lines of the sample. Light is directed onto the rotator of the air turbine. Discontinuities on the rotator modulate the light at a frequency proportional to its and, thus, the sample's rate of rotation. A photo detector picks up the modulated light and converts the light modulation into a signal which is measured to indicate the rate of sample rotation. In a preferred embodiment the measured rotation is compared with a reference signal to yield an error signal for controlling the air supply to the turbine, thereby causing the sample to rotate at a preselected speed which is variable, as desired.

**3,462,678**  
**METHODS AND APPARATUS FOR INVESTIGATING MUDCAKE THICKNESS**  
Francis M. Eaton, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas  
Filed July 18, 1966, Ser. No. 566,019  
Int. Cl. G01v 3/02; G01n 13/00  
U.S. Cl. 324-10 21 Claims

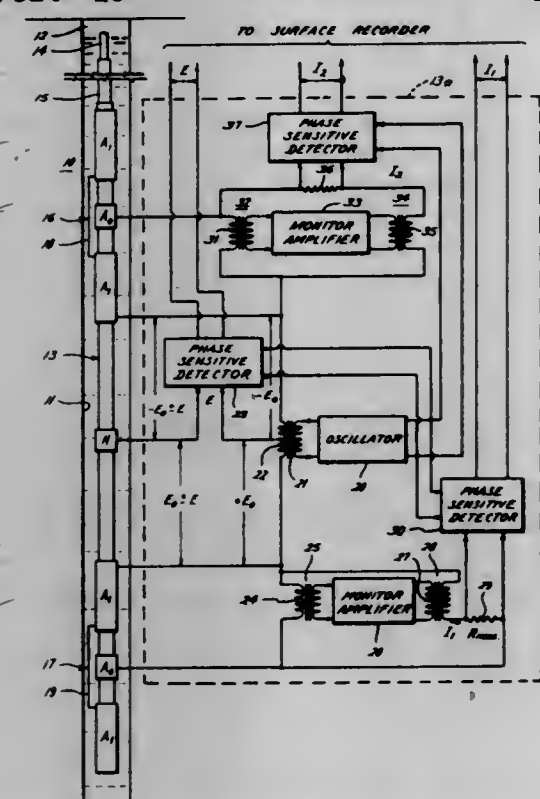


In accordance with an illustration embodiment of the invention, methods and apparatus are shown for investigating the thickness of a mudcake on the wall of a borehole. More particularly, survey current is emitted from a current-emitting electrode and a plurality of monitoring electrodes monitor the potential distribution set up by the emitted survey current. The resistivities of two zones of the formations are obtained by measuring the potential differences between two pairs of the monitoring electrodes. These two potential difference signals are combined in accordance with a given relationship to produce a signal whose amplitude is monitored. When the monitored amplitude exceeds a given amplitude level, a gate is energized to generate a signal indicative of the fact that the mudcake thickness is greater than a predetermined thickness. In another embodiment, the potential of the current-emitting electrode is measured and used to adjust the given amplitude level at which the signal indicative of mudcake is generated.



**3,462,679**  
**WELL LOGGING METHODS AND APPARATUS**  
 HAVING PLURAL ELECTRODE ARRAYS  
 Georges Attali, Ridgefield, Conn., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Sept. 1, 1966, Ser. No. 576,621  
 Int. Cl. G01v 3/02  
 U.S. Cl. 324-10 28 Claims

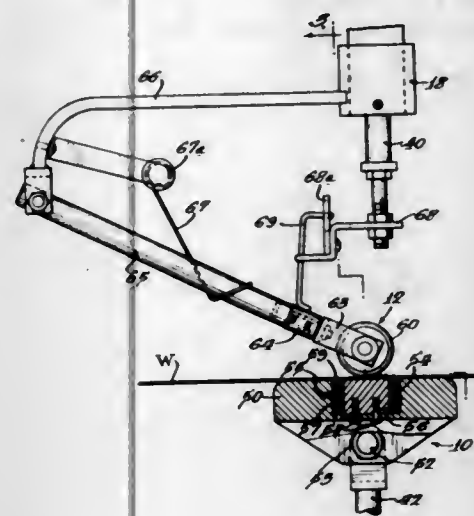


In accordance with illustrative embodiments of the present invention, a current supply means supplies current to a pair of focused electrode arrays, each having focusing electrodes on either side of a central survey electrode, for emission into formations surrounding the electrode arrays. The potential difference between the potential on a potential reference electrode located intermediate of the two electrode arrays and a reference potential supplied by the current supply means is measured and combined with measurements of the survey current emitted by each electrode array to produce separate conductivity measurements for each electrode array. The measured potential difference can also be monitored and used to determine the relative accuracy of the two conductivity measurements. If the measured potential difference indicates that both measurements have a likelihood of being erroneous, certain parameters derived from both electrode arrays can be combined in accordance with a given relationship to produce a computed conductivity measurement. Then, if the measured potential difference indicates a likelihood that all of the above designated measurements may be erroneous, that measurement which will be less in error than the others can be identified.

**3,462,680**  
**METHOD AND APPARATUS FOR MAGNETICALLY MEASURING THE THICKNESS OF A MOVING WEB AND FOR ENGAGING AND DISENGAGING SAID APPARATUS WITH THE WEB**  
 John B. Kahoun and Gary D. Stout, Wisconsin Rapids, Wis., assignors to Consolidated Papers, Inc., Wisconsin Rapids, Wis., a corporation of Wisconsin  
 Filed Dec. 6, 1965, Ser. No. 511,663  
 Int. Cl. G01 33/12 6 Claims

U.S. Cl. 324-34 An improved magnetic caliper gauge for continuously measuring the thickness of a moving web of non-magnetic material including improved guide means and the like for controlling the orientation of a moveable detector member such as an electromagnetic reactor or a magnetically

permeable shoe as the same is moved up and down into and out of engagement with a moving web, and a method for bringing two detector units into engagement with a

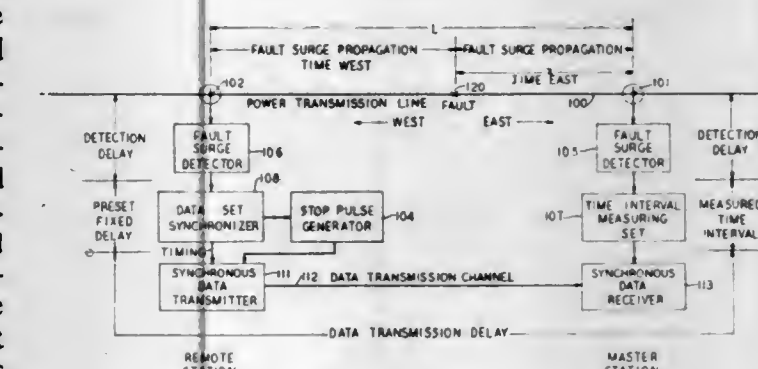


moving web for measuring the caliper thereof where at least one of the detector units comprises a roller which is brought up to the speed of the web through engagement with an unsupported portion of the web.

**3,462,681**  
**FAULT LOCATING SYSTEM UTILIZING NARROW BANDWIDTH CHANNEL TO TRANSMIT FAULT SURGE ARRIVAL TIMES TO A MASTER TIMING LOCATION**

Donald R. Biskup, Kansas City, Mo., assignor to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York

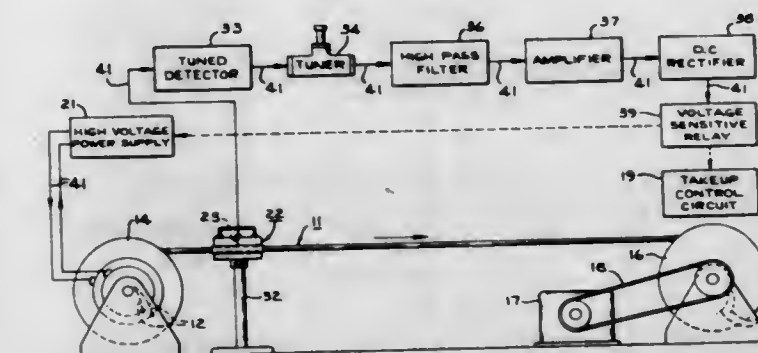
Filed Aug. 23, 1967, Ser. No. 662,806  
 Int. Cl. G01r 31/08, 31/11; H04m 3/26  
 U.S. Cl. 324-52 7 Claims



A digital fault locating system times the interval between the respective arrivals of oppositely directed fault surges at the opposite end terminals of a high voltage power transmission line to locate a fault therein. The fault surge arriving at the one end terminal is utilized to initiate timing action in a digital time interval measuring set. The oppositely directed fault surge arriving at the other end terminal is utilized to activate a stop time measurement pulse generator and synchronizing apparatus which synchronizes a four phase synchronous data transmission system with the leading edge of the detected faulted surge. The data transmission system transmits the generated stop time measurement pulse to the one terminal where it halts the timing measurement of the time interval measuring set. The measured time interval is converted to a distance measurement to locate the fault.

**3,462,682**  
**ULTRAHIGH FREQUENCY METHOD AND APPARATUS FOR LOCATING AN INSULATING FAULT BETWEEN TWO INSULATED ELECTRICAL CONDUCTORS**  
 Richard D. Barnett, Phoenix, Ariz., and Robert E. Strelch, Millard, Nebr., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

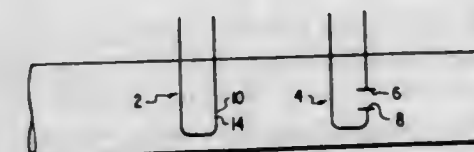
Filed Nov. 7, 1967, Ser. No. 683,431  
 Int. Cl. G01r 31/12 9 Claims  
 U.S. Cl. 324-54



In locating a fault in insulated wires of a cable, the cable is advanced past a directional antenna mounted in an electrically shielded enclosure and forming a part of a fault detecting circuit tuned so as to be responsive only to radio frequency energy of a selected ultrahigh frequency (UHF), preferably in a range on the order of 1500-2000 mHz. A high insulation breakdown voltage is applied to the insulated wires of the advancing cable so as to cause arcing and thus the generation of radio frequency energy at the fault. The electrically shielded enclosure shields the antenna so that no substantial UHF energy is received by the antenna to cause energization of the fault detecting circuit until the fault enters the enclosure.

**3,462,683**  
**METHOD AND APPARATUS FOR DETERMINING THE RELATIVE VOLUME OF CRYSTALLINE SOLIDS IN SOLUTION HAVING AT LEAST ONE PAIR OF ELECTRODES WITH ELECTRODE SPACING LESS THAN CRYSTAL SEPARATION DISTANCE**  
 Kenneth M. Onna, Honolulu, Hawaii, assignor to Hawaiian Sugar Planters' Association, Honolulu, Hawaii, a voluntary, nonprofit agricultural organization

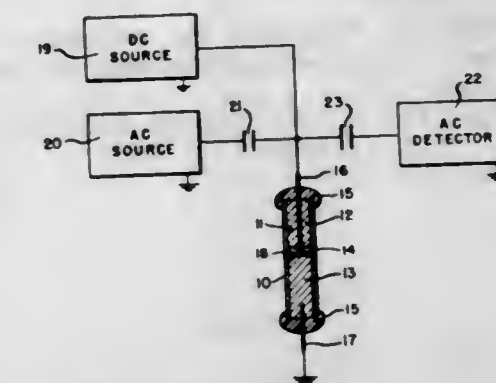
Filed Dec. 7, 1966, Ser. No. 599,892  
 Int. Cl. G01r 27/02 4 Claims  
 U.S. Cl. 324-65



The relative volume of crystalline solids in a crystallizing solution or mother liquor, such as a sugar solution, is measured by comparing the electrical resistance of the mother liquor wherein uniformly separated, identical crystals are present, with the resistance of the mother liquor alone. The resistance of the mother liquor alone is derived by utilizing a pair of electrodes spaced apart by less than the uniform separation distance between adjacent crystals.

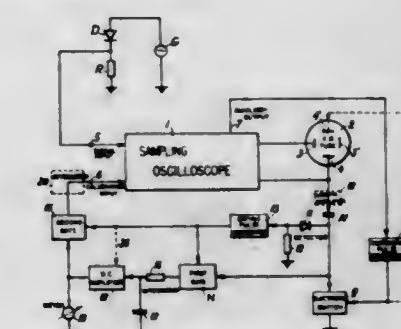
**3,462,684**  
**APPARATUS FOR DETECTING THE POSITION OF AN ELECTROCHEMICAL COULOMETER GAP**  
 Curtis C. Beusman, Mount Kisco, N.Y., assignor to Curtis Instruments Inc., Mount Kisco, N.Y., a corporation of New York

Filed June 27, 1966, Ser. No. 560,522  
 Int. Cl. G01r 27/22, 11/00; H01h 29/00  
 U.S. Cl. 324-94 1 Claim



An electrochemical coulometer is shown having two liquid metal columns separated by a liquid electrolyte gap. When the device is energized by direct current one of the columns grows at the expense of the other, causing the electrolyte gap to change position. The present invention provides a sensing electrode within the body of the coulometer for penetrating and bridging the electrolyte gap when the gap has reached a predetermined position. In bridging the gap the sensing electrode short circuits the two liquid metal columns. An A.C. voltage source and an A.C. voltage detection means are connected across the columns of the coulometer to give an indication of the occurrence of the gap bridging.

**3,462,685**  
**APPARATUS FOR AUTOMATICALLY MEASURING THE REVERSE RECOVERY TRANSIENT OF A SEMICONDUCTOR DIODE**  
 Tomáš Horňák, Prague, Czechoslovakia, assignor to Vyzkumny ústav matematických strojů, Prague, Czechoslovakia  
 Filed Jan. 25, 1966, Ser. No. 522,968  
 Claims priority, application Czechoslovakia, Jan. 28, 1965, 592/65  
 Int. Cl. G01r 23/16, 23/20, 27/02  
 U.S. Cl. 324-158 1 Claim



The time integral of the reverse transient interval of a repetitively switched semiconductor diode whose output is applied to a sampling oscilloscope is automatically read out by a feedback integrating circuit coupled to the oscilloscope output. For this purpose, the integration in the feedback path is selectively effected over the corresponding reverse transient interval of the slowed-down replica waveform at the oscilloscope output, whereby the DC level of the replica is shifted by an amount proportional to the read-out integrated feedback signal and thus



to the desired time integral. The diode output and the integrated feedback signal are simplified by substantially identical amounts so that the read-out is independent of the gain and time transformation factor of the oscilloscope.

### 3,462,686 SIGNAL PROCESSING AND RECONSTRUCTION APPARATUS UTILIZING CONSTANT AREA QUANTIZATION

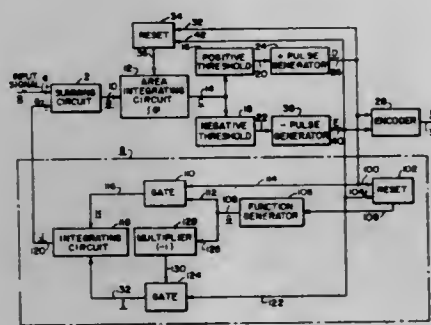
Harold B. Shutterly, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 4, 1966, Ser. No. 525,198

Int. Cl. H04b 1/16, 7/00

U.S. Cl. 325—38

10 Claims



Signal processing and reconstruction apparatus is disclosed wherein the difference between input signals and reconstructed input signals are quantized according to a constant area to provide indication signals which are utilized to reconstruct the original input signals at a receiver and also serve as an error reference for the input signals during the quantizing operation.

### 3,462,687 AUTOMATIC PHASE CONTROL FOR A MULTI- LEVEL CODED VESTIGIAL SIDEBAND DATA SYSTEM

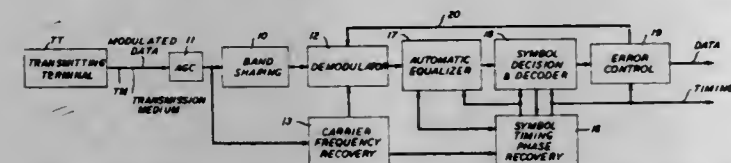
Floyd K. Becker, Colts Neck, and Frank W. Lescinsky, Middletown Township, Monmouth County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Continuation of application Ser. No. 459,589, May 28, 1965. This application Apr. 17, 1968, Ser. No. 722,137

Int. Cl. H04b 1/10

U.S. Cl. 325—42

23 Claims



A data transmission system employing vestigial sideband modulation and multilevel coding is provided to ensure efficient bandwidth utilization. An automatic transversal filter equalizer is coordinated with automatic phase and symbol recovery circuits during an initial start-up sequence to provide a reconstituted data signal at a receiver.

### 3,462,688 COMMUNICATION SYSTEM FOR CLASSROOM USE AND THE LIKE

William E. Abel, 4920 NE. Gilsan, Portland, Oreg. 97213

Filed Apr. 10, 1967, Ser. No. 629,641

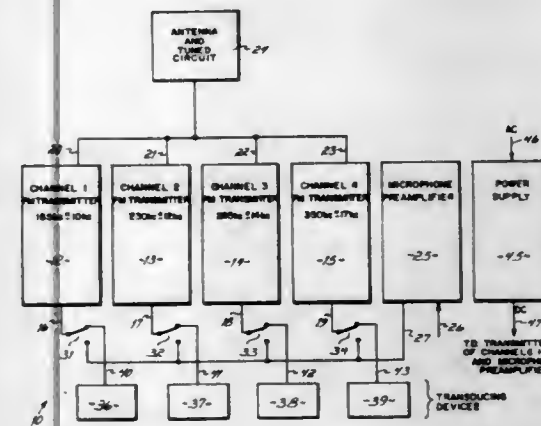
Int. Cl. H04b 1/04, 1/16

U.S. Cl. 325—47

13 Claims

A wireless multichannel FM communication system is disclosed which is suitable for use in a classroom with sound transducers, such as microphones and tape re-

orders, to enable an instructor to simultaneously provide different instructional material or, if desired, the same instructional material, to diverse groups of students having their own individual receivers. The system includes a plurality of FM transmitters having high efficiency Class C amplifiers, and frequency modulatable multivibrators oscillating at R.F. frequencies which are spaced at increas-



ingly larger intervals to provide interference-free transmission. The transmitter outputs are coupled to a common antenna where transmission is provided to selectively tunable student receivers. The receivers include wide band direct coupled amplitude-limiters and pulse counting detectors, as well as audio amplifiers adaptable for use with sound transducing devices having differing impedances.

### 3,462,689 ELECTRONIC TEST PROBE HAVING MEANS FOR SWITCHING FROM GENERATING TO AMPLIFY- ING FUNCTION

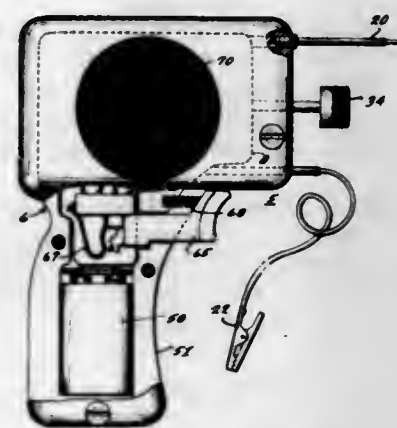
Oscar D. Fenton, 606 Manitoba Drive, Colorado Springs, Colo. 80910

Filed Apr. 30, 1965, Ser. No. 452,402

Int. Cl. G01r 1/06, 15/12; H04b 1/00

U.S. Cl. 325—363

5 Claims



The invention includes a signal generator and a separate audio frequency amplifier housed in a gun shaped case having a probe electrically coupled to each of said circuits, internally mounted loudspeakers and a trigger mechanically coupled with means for selectively activating the generator or the amplifier.

### 3,462,690 SELF-OSCILLATING TRANSISTOR MIXER HAV- ING TWO RC MEMBERS IN EMITTER CIRCUIT

Horst Pelka, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

Filed Sept. 21, 1964, Ser. No. 397,913

Claims priority, application Germany, Sept. 24, 1963, S 87,486

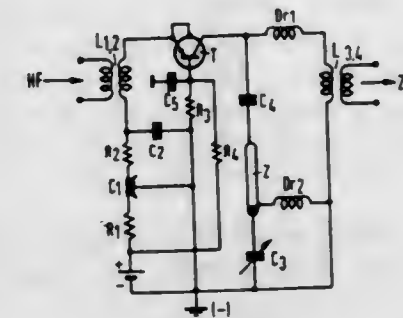
Int. Cl. H04b 1/26

U.S. Cl. 325—440

4 Claims

A capacitor arrangement provides a high frequency bypass across a resistor arrangement which is series connected in the emitter circuit of a transistor which has a

high frequency input emitter circuit and an oscillatory becomes unbalanced due to a change in the variable capacitor in response to the presence of an object. A collector circuit. The resistor and capacitor arrangements



are subdivided and jointly form two component RC members having respectively different time constants.

### 3,462,691 DETECTOR SYSTEM USING BLANKING

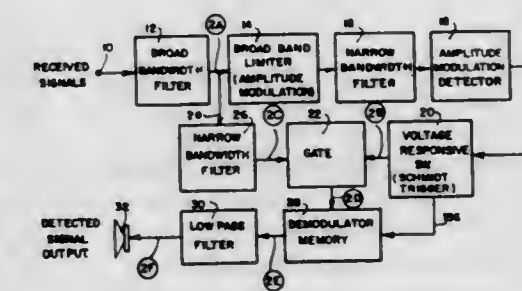
James A. McDonald, Melrose Park, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Aug. 5, 1966, Ser. No. 570,515

Int. Cl. H04b 1/10, 1/16

U.S. Cl. 325—475

13 Claims



Receiver for deriving small signals in a first frequency band in the presence of stronger wide band signals with-in a second larger frequency band including a filter for selecting the first band of frequencies and a gate connecting the output of the filter to a demodulator for the signals. A detector responsive to the received signal provides a control signal in the absence of a signal in the first frequency band which exceeds a predetermined amplitude, and this control signal operates the gate to apply the small signal to the demodulator. This gates out the components of the high energy wide band signal which sweeps through the first frequency band. A memory may be provided so that the signal from the demodulator is retained during the gated out portions.

### 3,462,692 PEDESTRIAN DETECTION SYSTEM

Peter G. Bartlett, Bettendorf, Iowa, assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

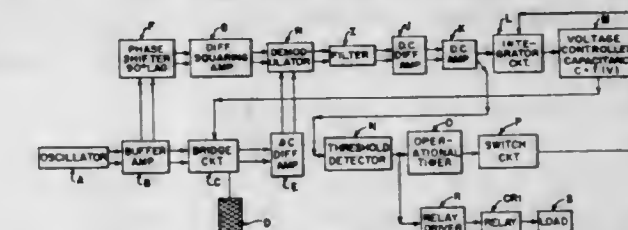
Filed Mar. 27, 1967, Ser. No. 626,335

Int. Cl. G08b 13/26, 13/00; H03k 3/02

U.S. Cl. 328—5

7 Claims

A detection system for detecting the presence of an object, such as a pedestrian, with a sensing device, such as an electrically conductive plate, exhibiting a variable capacitance with respect to earth ground. The sensing device is coupled to one arm of a normally balanced capacitance bridge, having an input circuit coupled to an oscillator providing a reference voltage frequency signal relative to earth ground, and an output circuit for providing an output frequency voltage signal when the bridge



pensating device is coupled to another arm of the bridge for rebalancing the bridge under the control of a compensating control circuit.

### ERRATUM

For Class 328—119 see:  
Patent No. 3,462,695

### 3,462,693 DATA PULSE DETECTION APPARATUS

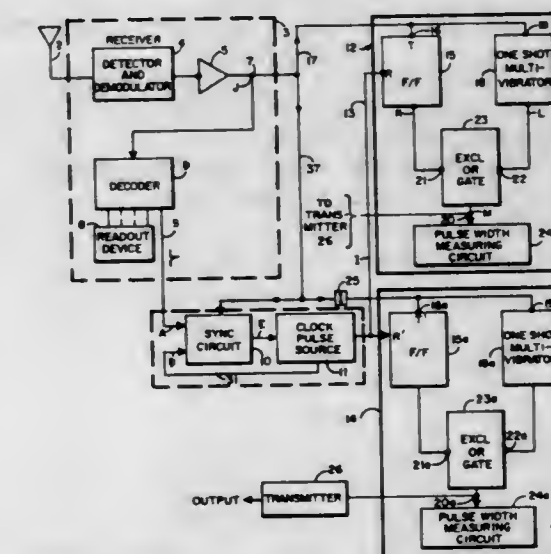
Harvey H. McCowen, Rochester, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware

Filed Jan. 27, 1966, Ser. No. 523,469

Int. Cl. H03k 5/00, 13/32

U.S. Cl. 328—162

8 Claims



The test apparatus measures start and end distortion of each data pulse in each character which may be transmitted. Clock pulses having half the width of the data pulses and synchronous therewith are used to reset flip flops which are respectively triggered by the leading and lagging edges of the data pulses thereby generating transitional pulses. The leading and lagging of the data pulses also trigger one-shot multivibrators thereby producing reference pulses. Exclusive OR gates, to which the outputs of the flip flops and multivibrators are applied, generate error pulses representing start or front distortion and end distortion which may exist in any of the data pulses. The error pulses may be transmitted back to the data pulse transmitting point and used to command repetition of any character which has a distorted data pulse.

### 3,462,694 FREQUENCY MODULATION DETECTOR CIRCUIT PROVIDING BALANCED DETECTION OVER A WIDE RANGE OF SIGNAL LEVELS

Jack Avins, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Continuation-in-part of application Ser. No. 396,178,

Feb. 28, 1966, now Patent No. 3,383,607. This

application Feb. 28, 1966, Ser. No. 530,480

Int. Cl. H03d 1/18, 3/02

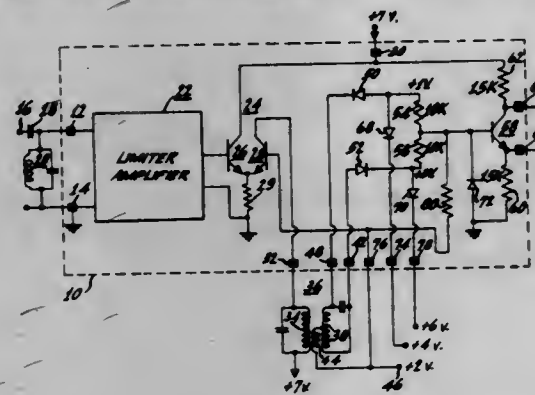
U.S. Cl. 329—110

12 Claims

A high performance frequency modulation detector circuit especially suited for fabrication using integrated



circuit techniques, includes a predominantly resistive load network having a time constant of the order of the period or less of an applied angle modulated wave. Average detection is employed, with filtering of the signal frequency and its harmonics being provided by the distributed



capacitance of the detector load resistors, with or without augmentation by the capacitance of additional reverse biased rectifiers. Resistive arrangements are additionally included to maintain the detector output point at substantially the same direct potential so as to provide balanced detection over a wide range of input signal levels.

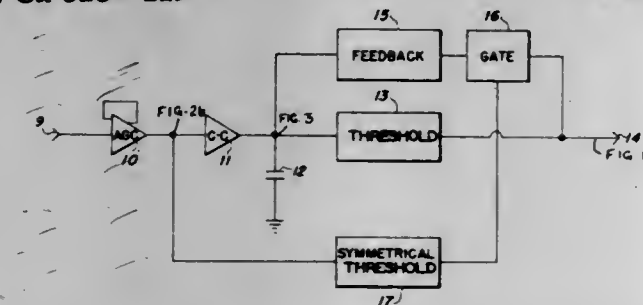
### 3,462,695 DICODE DECODER WITH INTERRUPTED FEEDBACK

Stephen E. Townsend and Donald E. Mack, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Sept. 14, 1966, Ser. No. 579,302  
Int. Cl. H03k 5/20

U.S. Cl. 328—119

10 Claims



A dicode decoder which discriminates between true signals and noise pulses by integrating a dicode signal, detecting transitions through the medium value of the integrated signal and clamping the integrated signal except when input signals or noise is present.

### 3,462,696 PARAMETRIC AMPLIFIER USING DIODE SELF- RESONANCE FOR IDLE CIRCUIT

Walter Heinlein, Munich, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany

Continuation of application Ser. No. 274,527, Apr. 22, 1963. This application Feb. 6, 1967, Ser. No. 614,363  
Claims priority, application Germany, Apr. 25, 1962, S 79,157

The portion of the term of the patent subsequent to Dec. 12, 1984, has been disclaimed and dedicated to the Public

Int. Cl. H03f 7/00

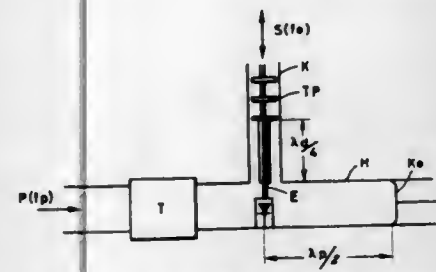
U.S. Cl. 330—4.9

7 Claims

A parametric amplifier having a cavity-type diode presenting an average barrier layer capacitance  $C_m$ , an intrinsic inductivity  $L_o$ , and a housing capacitance  $C_g$  such that its upper intrinsic resonance frequency equals the lower intrinsic resonance frequency multiplied by

$$\sqrt{1 + \frac{C_m}{C_g}}$$

the difference frequency circuit of the amplifier consisting only of  $C_m$ ,  $L_o$ , and  $C_g$  in series, and receiving



energy at an average difference frequency substantially equal to the diode upper intrinsic resonance frequency.

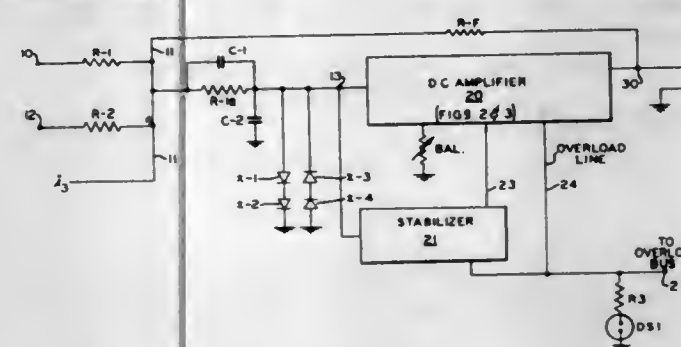
### 3,462,697 STABILIZED AMPLIFIER HAVING IMPROVED OVERLOAD RECOVERY

Edward O. Gilbert, Ann Arbor, Mich., assignor to Applied Dynamics, Inc., Ann Arbor, Mich., a corporation of Michigan

Filed July 9, 1965, Ser. No. 471,790  
Int. Cl. H03f 1/02

U.S. Cl. 330—9

8 Claims



A drift-stabilized dual-channel operational amplifier in which amplifier overload is detected to provide a switching signal which switches the amplifier to an oscillatory condition whereby it may rapidly drive itself out of the overload condition upon removal of the overload. A differential amplifier includes voltage-follower field-effect transistor input stages and a pair of opposite-polarity supply voltages for the differential stage are provided using an inverting amplifier so that supply fluctuations tend not to increase offset. A totem-pole output stage is provided with current-limiting which varies inversely with voltage across the output stage transistors. The system power ground and signal ground busses are interconnected through a low-pass filter.

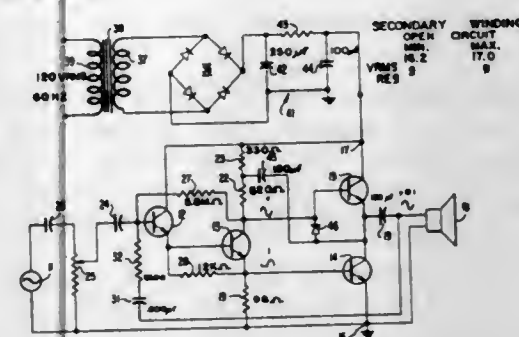
### 3,462,698 ALL NPN TRANSISTOR DC AMPLIFIER

Charles Yagher, Jr., Decatur, Ill., assignor to General Electric Company, a corporation of New York

Filed Feb. 14, 1967, Ser. No. 616,055  
Int. Cl. H03f 3/26, 3/30, 3/42

U.S. Cl. 330—15

29 Claims



A class B push-pull transistor comprises a pair of NPN output transistors having their emitter collector paths series connected with an inductive load shunting the emitter collector path of one output transistor. The output transistors are driven by a paraphase NPN tran-

sistor stage that responds to a low level input NPN transistor stage. A biasing resistor in the emitter circuit of the driver transistor biases the emitter base junction of said one transistor. Stabilizing feedback circuits are provided to maintain the bias across the resistor fixed so that thermal runaway of the output transistors does not occur. Positive bootstrapping between the output stage and the driver increases the drive signal of the driver while providing ripple filtering for the power supply of all four transistors. Negative signal feedback from the output to the low level input is provided to reduce distortion.

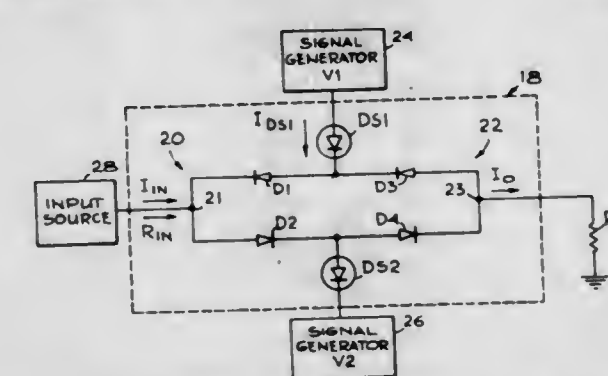
### 3,462,699 POWER AMPLIFIER

Brian E. Sear, Canoga Park, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed Nov. 8, 1965, Ser. No. 506,649  
Int. Cl. H03f 3/10

U.S. Cl. 330—34

8 Claims



A power amplifier suitable for use up to microwave frequencies. The amplifier utilizes first and second oppositely poled unidirectional circuit branches connected in series with first and second serially connected and similarly poled storage diodes. A pump source is connected across the storage diodes to alternately apply forward and reverse biasing potentials thereto to alternately charge and discharge the storage diodes. An input signal is applied to the storage diodes to differentially charge the storage diodes based upon its polarity and amplitude. During each cycle, the storage diode storing less charge will be discharged first, thereby permitting the charge remaining in the other storage diode to be steered into an output load. Power gain is achieved if the magnitude of the reverse biasing exceeds the magnitude of the forward biasing.

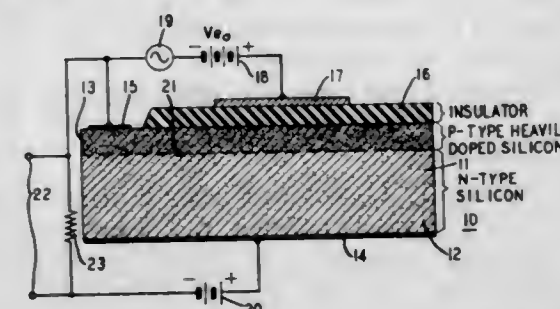
### 3,462,700 SEMICONDUCTOR AMPLIFIER USING FIELD EFFECT MODULATION OF TUNNELING

Carl N. Berglund, North Plainfield, and Dawon Kahng, Bridgewater Township, Somerset County, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Aug. 10, 1966, Ser. No. 571,636  
Int. Cl. H03f 3/16; H011 3/12

U.S. Cl. 330—35

7 Claims



A solid state amplifier comprises an MOS structure in which the semiconductor body has a surface layer adjoin-

ing the dielectric oxide film of extreme thinness, about a carrier diffusion length, and has a very high impurity concentration. The remainder of the body is of opposite conductivity type and of moderate impurity concentration defining with the surface layer a PN junction which, in operation, is biased to collect minority carriers injected by application of a sufficiently large D.C. voltage between the field electrode and the thin surface layer to enable quantum-mechanical tunneling. The D.C. field voltage may be modulated by a suitable superimposed signal voltage.

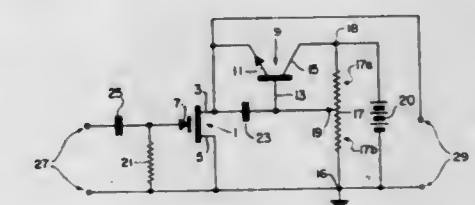
### 3,462,701 BIASING CIRCUIT FOR USE WITH FIELD- EFFECT TRANSISTORS

Peter S. Miller, Toledo, Ohio, assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Jan. 26, 1967, Ser. No. 611,914  
Int. Cl. H03f 3/04

U.S. Cl. 330—40

5 Claims



A biasing circuit for establishing a D.C. bias voltage across the current path of a field-effect semiconductor (FET) is provided by use of the low-impedance characteristic of the base-emitter path of a transistor connected in a common-collector configuration. A fixed bias signal is established at the base of the transistor and this fixed bias is reflected through the aforementioned low-impedance transistor characteristic and is applied across the current path of the FET.

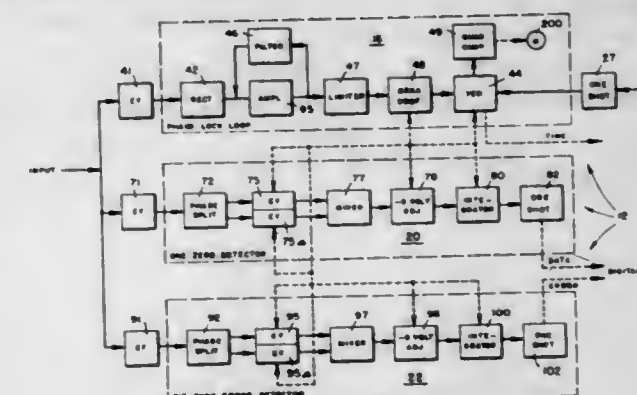
### 3,462,702 PHASE LOCK SYSTEM FOR CODED SIGNAL RECEIVER

Loran F. McCormick, Canoga Park, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Dec. 1, 1967, Ser. No. 687,333  
Int. Cl. H03b 3/04

U.S. Cl. 331—18

4 Claims



A phase lock loop is provided between a phase modulated receiver and decoding circuitry to provide reliable input signals and gating signals to the decoding circuitry under adverse signal to noise ratio conditions. The signal from the phase detector of the receiver, after passing through an emitter follower, is rectified and the resultant signal is passed through another emitter follower to an amplifier. This amplifier has a degenerative feedback loop containing a notch filter tuned to the fundamental frequency of the signal so that the feedback greatly attenuates all but the fundamental signal. The output of



the amplifier passes through a diode limiter with a clipping level selected to allow high sensitivity in downstream stages. A high gain amplifier is used to drive a phase comparison circuit which compares the difference in phase between the signal from the feedback amplifier and the signal from a voltage controlled oscillator driven by a phase difference related voltage from the comparison circuit. An ammeter is connected to indicate a DC level based on the average of the gated input and shows a constant amplitude when the system is locked onto the input signal.

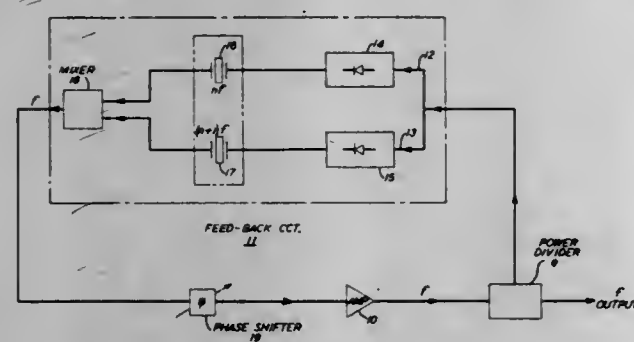
3,462,703

### LOW FREQUENCY OSCILLATOR CONTROLLED BY THE DIFFERENCE FREQUENCY OF TWO CRYSTALS

Harold Seidel, Warren Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York  
Filed Dec. 14, 1967, Ser. No. 690,507  
Int. Cl. H03b 21/00

U.S. Cl. 331-37

3 Claims



A portion of the output signal of an amplifier is used to generate harmonics of a signal frequency. From among these harmonics, two adjacent harmonics are extracted by means of two crystal filters and coupled to a mixer. The latter, tuned to the difference frequency, produces a signal at the signal frequency which is fed back in phase to the input of the amplifier to sustain oscillations.

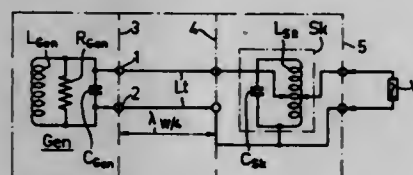
3,462,704

### DEVICE FOR COUPLING A CONTINUOUSLY OPERATING SELF-EXCITED VELOCITY MODULATION TUBE GENERATOR TO A LOAD

Werner Golombek, Quickborn, and Franciscus Timmermans, Harkshelde, Germany, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware  
Filed Sept. 25, 1967, Ser. No. 670,347  
Claims priority, application Germany, Sept. 29, 1966, P 40,461

Int. Cl. H03b 11/08, 9/02  
U.S. Cl. 331-74

12 Claims



In a high frequency heating device for high-loss materials, the efficiency of the system is increased by providing, in series, an impedance inverting network and a resonant circuit, between the high frequency generator and the load heating chamber. The resonant frequency of the resonant circuit is approximately equal to the mean frequency of the high frequency generator. In one embodiment of the invention, the impedance inverting network comprises a quarter wavelength waveguide having a characteristic impedance equal to the generator output impedance.

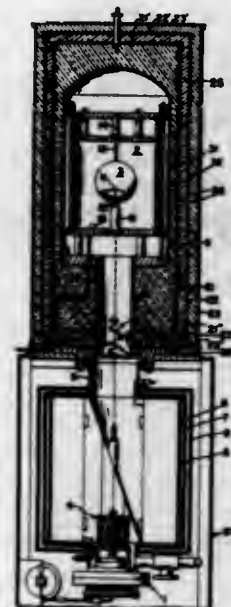
### 3,462,705 COMPENSATION COILS FOR MAGNETIC FLUX LEAKAGE THROUGH HOLES IN MAGNETIC SHIELDS

Robert F. C. Vessot, Marblehead, Mass., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed July 11, 1966, Ser. No. 564,213  
Int. Cl. H01s 1/02

U.S. Cl. 331-94

7 Claims



An atomic beam maser is disclosed. The maser includes a cavity resonator structure tuned to the atomic resonance frequency of the atomic particles. A bounce box type storage bulb is disposed within the cavity resonator for storage of the atomic particles for electro-magnetic interaction with the fields of the cavity to stimulate coherent emission of radiation from the atomic particles. A magnetic shield structure encloses the cavity resonator and storage bulb for shielding the bulb and the atomic particles from extraneously produced magnetic fields and for reducing the magnetic field to a low value representing only a small fraction of the earth's magnetic field. The shield structure includes a beam access aperture through which a beam of atomic particles passes from a source of atomic particles into the storage bulb. A compensating coil structure is disposed at the beam access aperture in the magnetic shield structure. An adjustable current is passed through the compensating coils for cancelling leakage magnetic field tending to leak into the region of the storage bulb through the beam access aperture, whereby the magnetic field inside the magnetic shield structure is compensated for magnetic field leakage through the beam access aperture.

3,462,706

### SATURABLE ABSORBER LASER Q-SWITCH

James William Ammons, Paul Bernard Mauer, George A. Reynolds, and James A. Van Allan, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 27, 1965, Ser. No. 490,655  
Int. Cl. H01s 3/11

U.S. Cl. 331-94.5

5 Claims

1. In a passively Q-switched laser utilizing a saturable absorber as the passive Q-switch, the improvement wherein said saturable absorber is a compound formed by the anion of a strong acid and one of the following cations:  
(1) 8-[5-(6,7-dihydro-2,4-diphenyl-5H-1-benzopyran-8-yl)-2,4-pentadienylidene]-5,6,7,8-tetrahydro-2,4-diphenyl-1-benzopyrylium+

- (2) 8-[5-(6,7-dihydro-6-methyl-2,4-diphenyl-5H-1-benzopyran-8-yl)-2,4-pentadienylidene]-5,6,7,8-tetrahydro-6-methyl-2,4-diphenyl-1-benzopyrylium+
- (3) 8-[5-[2,4-di(4-pentyloxyphenyl)-6,7-dihydro-5H-1-benzopyran-8-yl]-2,4-pentadienylidene]-2,4-di(4-pentyloxyphenyl)-5,6,7,8-tetrahydro-1-benzopyrylium+

3,462,707

### ND AND YB DOPED BORATE LASER GLASS

Arthur D. Pearson, Bernardsville, George E. Peterson, Plainfield, and Sergio P. S. Porto, North Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 25, 1965, Ser. No. 458,624  
Int. Cl. H01s 3/09, 3/16, 3/08

U.S. Cl. 331-94.5

3 Claims

An active glass laser material composed of a lithium-calcium borate glass host containing from 0.1 percent to 10 percent each of neodymium and ytterbium is described. Features of the inventive material include: pumping of ytterbium by neodymium, by way of a nonradiative resonant energy transfer, thus permitting lasing of ytterbium at a threshold of about 100 joules, almost three times smaller than the threshold for lasing of ytterbium in the absence of neodymium; an increase in the total number of absorption bands as compared to a material containing either neodymium or ytterbium separately, and the apparent elimination of concentration quenching of neodymium, thus permitting a more highly absorbing material and consequent laser emissions at greater power levels.

3,462,708

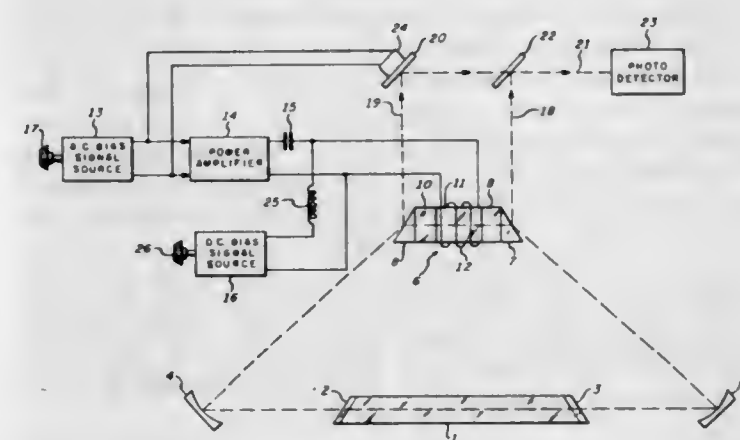
### RING LASER HAVING A PIEZOELECTRIC REFLECTOR EXTERNAL TO THE CLOSED LOOP TO CANCEL A FREQUENCY MODULATION WITHIN THE LOOP

Robert E. McClure, Locust Valley, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware

Filed Nov. 29, 1966, Ser. No. 597,761  
Int. Cl. H01s 3/08, 3/10

U.S. Cl. 331-94.5

8 Claims

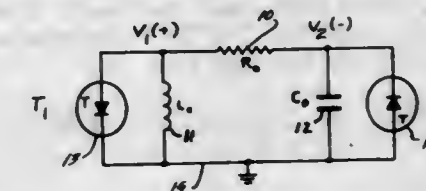


A closed loop (triangular) resonant cavity laser equipped with a frequency bias cell sandwiched between a pair of prisms at one of the corners of the closed loop optical path. The frequency bias cell comprises a birefringent material which introduces a differential delay in the two counterrotating laser beams in accordance with the amplitude of an applied alternating control signal. The amplitude of the control signal is adjusted to a particular value to minimize mode locking of the two counterrotating beams.

- 3,462,709  
TUNNEL DIODE MICROWAVE OSCILLATOR  
James C. Mitchell, Jr., Canoga Park, Calif., assignor to the United States of America as represented by the Secretary of the Navy  
Filed Dec. 27, 1967, Ser. No. 693,973  
Int. Cl. H03b 5/18, 7/12, 5/24

U.S. Cl. 331-96

7 Claims



An apparatus for producing microwave electrical oscillations using a cascade circuit comprising tunnel diode negative resistance elements and distributed parameter capacitors and inductors.

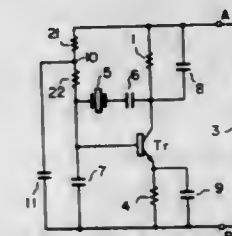
3,462,710

### CRYSTAL-CONTROLLED GROUNDED EMITTER OSCILLATOR

Fumio Watase, Tokyo, Japan, assignor to Tohoku Oki Electric Company  
Filed Dec. 27, 1967, Ser. No. 693,919  
Int. Cl. H03b 5/36

U.S. Cl. 331-116

3 Claims



In a grounded emitter type transistor oscillator with its operating point set at a low source voltage means is provided to delay the shift of the operating point toward the saturation region when the source voltage is increased rapidly in a short time whereby to satisfy the condition for initiating oscillations.

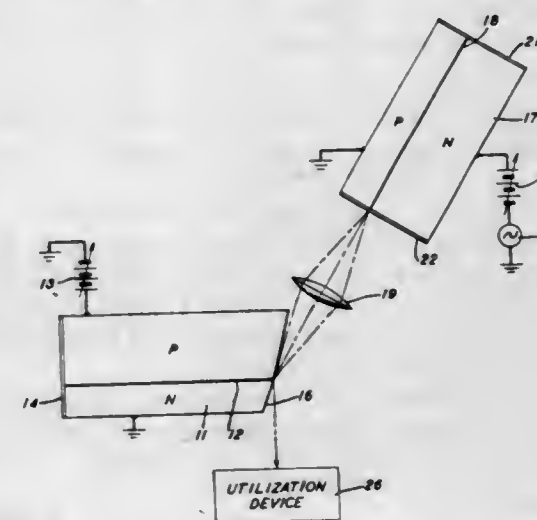
3,462,711

### ELECTRO-OPTIC DIODE MODULATORS

Donald F. Nelson, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York  
Filed Aug. 28, 1967, Ser. No. 663,689  
Int. Cl. H01s 3/02

U.S. Cl. 332-7.51

8 Claims



An internal resonator coupling modulator for laser light utilizes the Pockels effect to vary the amount of



light reflected from a Brewster angle facet of the laser, thereby varying the light coupled out. Over a specific range of phase change or retardation by the modulator, the light output is frequency modulated.

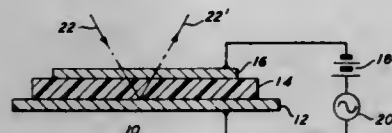
### 3,462,712 OPTICAL MODULATOR

Philip J. Boddy, Short Hills, and Andrea F. Frova, North Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Nov. 23, 1966, Ser. No. 596,498  
Int. Cl. H01s 3/10

U.S. Cl. 332-7.51

5 Claims



1. Apparatus for modulating an optical beam comprising

a thin film of a metal oxide having a high dielectric constant and a characteristic energy gap, and characterized by the property that its absorption of optical energy varies with an applied electric field, means for forming an electric field in said thin film, means for directing an optical beam to be modulated for transmission through said thin film, the beam being characterized by photon energies greater than the energy gap of the metal oxide, means for varying in accordance with modulating information the electric field in said thin film, whereby a modulated optical beam results.

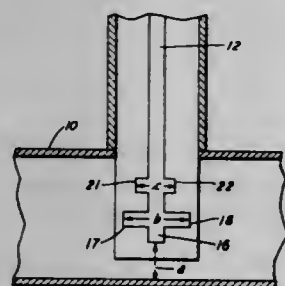
### 3,462,713 WAVEGUIDE-STRIPLINE TRANSDUCER

Reinhard H. Knerr, Bethlehem, Pa., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed July 19, 1967, Ser. No. 654,480  
Int. Cl. H01p 1/16

U.S. Cl. 333-21

5 Claims



A broadband waveguide to stripline transducer in which the end of the stripline center conductor is directly inserted into the waveguide and is provided with lumped reactive elements which form a plurality of stagger tuned resonant circuits with distributed reactances of the inserted portion.

### 3,462,714 ACOUSTIC SIGNAL TRANSLATING DEVICE HAVING A PROPAGATING MEDIUM COMPOSED OF A PLURALITY OF EFFECTIVELY DISTINCT SIGNAL TRANSLATING PATHS OF MUTUALLY DIFFERENT EFFECTIVE LENGTHS

Robert Adler, Northfield, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

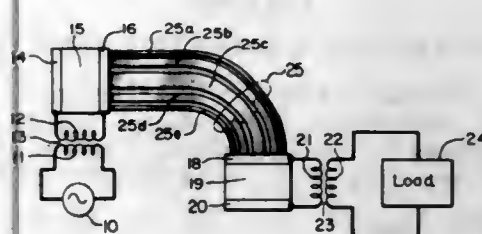
Filed Oct. 3, 1966, Ser. No. 583,634  
Int. Cl. H03h 9/00, 7/30

U.S. Cl. 333-72

6 Claims

An acoustic wave propagating medium is composed of a plurality of acutally or effectively distinct signal translating paths of mutually different effective lengths. An

input transducer responds to an input signal to create acoustic waves in the medium, and an output transducer coupled to the medium responds to the waves to develop an output signal. By correlating the relationship between the different lengths, the selectivity of the device is enhanced so that it serves advantageously as a selective filter. In one embodiment, physically separate acoustic



delay lines of different lengths are provided between the input and output transducers, preferably with different cross-sectional areas. In another embodiment, a liquid such as water is used as the acoustic wave propagating medium, and an acoustic phase grating is included at an angle to the path of acoustic wave propagation, which angle may be adjustable to provide for selective tuning.

### 3,462,715 REMOVABLE ELECTRICAL CONNECTOR FILTER ASSEMBLY

Ferdinand William Schor, Altadena, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed June 6, 1966, Ser. No. 555,398  
Int. Cl. H01h 7/14

U.S. Cl. 333-79

6 Claims



A filter assembly comprises capacitor means including a tube made of dielectric material and an electrically conductive coating on the exterior of the tube. Preferably, one or more electrically conductive coatings are formed in the interior of the tube in spaced relation to each other. Inductor means are positioned within the tube having a central aperture for receiving a connector terminal. The inductor means are confined within the tube by conductive means closing the ends of the tube and having flexible fingers defining a central opening slightly smaller than the aperture in the inductor means. Hence, the fingers are adapted to receive and frictionally grip the terminal. The end closing means are spaced from the outer coating on the tube and connected to the inner coatings. Such a simple and unique construction can be easily slipped onto and removed from a terminal pin and the unit is very easy to assemble.

### 3,462,716 CIRCUIT BREAKER WITH IMPROVED TRIP STRUCTURE

Nick Yorgin, Ambridge, and John Majcher, Beaver Falls, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

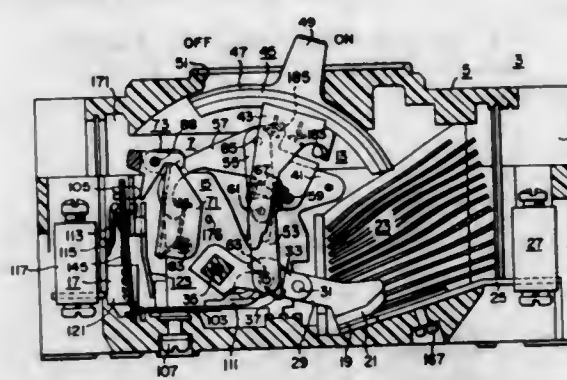
Filed Mar. 7, 1967, Ser. No. 621,329  
Int. Cl. H01h 73/48, 75/12

U.S. Cl. 335-23

10 Claims

A circuit breaker comprising an armature and a trip member positioned to maintain the armature in place which trip member is operated by the armature to trip

the breaker upon the occurrence of overload current conditions. An elongated spring member is supported against lateral movement at one end in one of a plurality of



vessel in which the portions including the contacts of the pair of the magnetic support pieces are enclosed. The magnetic support pieces are so formed and arranged in the vessel that the contacts of the pair of the magnetic support pieces contact with each other without producing a so-called chattering when an external magnetic force is applied thereto so as to contact the contacts with each other.

### 3,462,719 UNIVERSAL MODULAR PRINTED CIRCUIT MAGNETIC REED KEYBOARD SWITCH ASSEMBLY

Peter A. Peroni, 1080 Morris St., Pottstown, Pa. 19464, and John Paul Jones, Jr., 664 Valley View Lane, Wayne, Pa. 19087

Filed Oct. 26, 1967, Ser. No. 678,336  
Int. Cl. H01h 9/02, 1/66

U.S. Cl. 335-206

8 Claims

slots in the breaker housing and connected at the other end to the armature to bias the armature to a non-tripping position.

### 3,462,717 REVERSE SWITCHING MECHANISM FOR HEADLIGHT COVER ACTUATOR

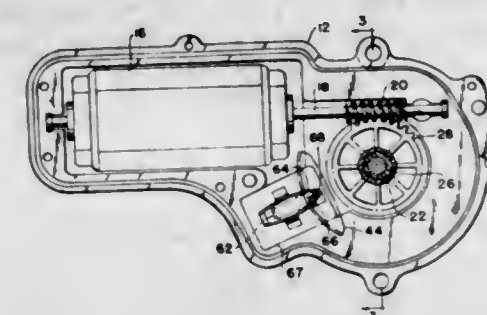
Joseph C. Littmann, Grosse Pointe Woods, Mich., assignor to Ferro Manufacturing Corporation, Detroit, Mich., a corporation of Michigan

Filed Aug. 31, 1967, Ser. No. 664,812

Int. Cl. H01h 3/58, 9/54

U.S. Cl. 335-74

8 Claims



Headlight cover actuating mechanism including a single motor, friction clutches, and torque responsive mechanism to de-energize the motor when further movement of both headlight covers is terminated, including means for re-energizing the motor if further movement of either or both of the covers in the same direction is permitted.

### 3,462,718 REED RELAY HAVING CONTACTS CONSTRUCTED TO PREVENT CHATTERING

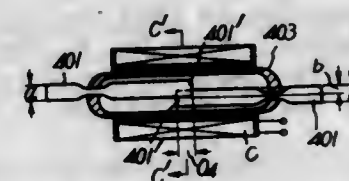
Kenzo Takei, 5-2, Fujimicho-3, Chonfu-shi, Tokyo, Japan

Filed Jan. 4, 1967, Ser. No. 607,307  
Claims priority, application Japan, Jan. 11, 1966, 41/1,459; July 26, 1966, 41/49,213; Aug. 25, 1966, 41/56,012; Sept. 1, 1966, 41/57,778; Sept. 16, 1966, 41/61,141

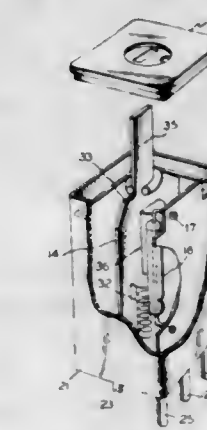
Int. Cl. H01h 51/28, 1/66

U.S. Cl. 335-154

6 Claims



A reed contact device having a pair of magnetic support pieces each of which has on one end portion thereof a contact cooperating with that of the other, and a



At least one glass tube enclosed magnetic reed switch is mounted on a planar printed circuit board which is removably inserted into a hollow housing member in grooves on either side of an axially movable planar key member with a magnet thereon actuating the switch contacts during a limited range of movement. This provides a universal mounting arrangement wherein one to four switches and other circuit elements may be located upon the printed circuit cards for operation by a single manually depressed key at one or more positions of its stroke. Each switch is standardized for predetermined operation timing during the magnet movement by selectively bending the leads and inserting into registration apertures in the printed circuit boards. The switch is thus precisely located within the magnetic field by simplified structure affording strain relief at closed ends of the glass tubes. The leads are bent normal to the reed switch axis for this purpose at calibrated positions to thereby precisely locate the magnetic switch gaps by means of punched hole pairs easily located to close tolerances in the printed circuit board.

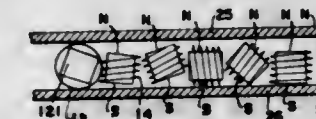
### 3,462,720 MAGNETIC ASSEMBLY FOR FILTERING

Saburo Miyata, 58 Shimo Takanawa, Minato-ku, Yokohama, Japan

Filed Feb. 14, 1967, Ser. No. 615,976  
Int. Cl. H01f 7/02

U.S. Cl. 335-305

12 Claims



Permanent magnets are provided for producing high flux density for removal of paramagnetic particles from fluids in contact with said magnets. There is also a helical



spring type enclosure or confining means for individual magnets or linearly arranged groups thereof, whereby individual magnets may not contact each other to short out the magnetic forces of a pair or group of such magnets, or in which a linear assembly has the individual magnets so constructed and arranged that the flux at adjacent poles is a maximum.

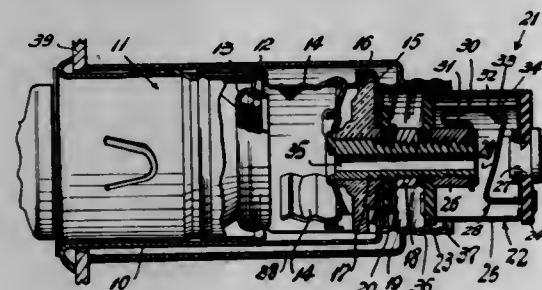
3,462,721

# **THERMALLY RESPONSIVE CIRCUIT BREAKER FOR ELECTRIC CIGAR LIGHTER**

John L. Boudreau, Stratford, Conn., assignor to Casco Products Corporation, Bridgeport, Conn., a corporation of Connecticut  
Filed Mar. 25, 1968, Ser. No. 715,741  
Int. Cl. H01h 71/16

U.S. Cl. 337—75

1 Claim



A cigar lighter receptacle having a circuit breaker at its rear end comprising a heat-responsive member which is responsive to excessive heat to open a circuit to a resilient input terminal and thus to the heating element of the lighter, the heat-responsive member being resettable through the open end of the receptacle by the use of a rod extending through the receptacle and a passage leading to said resilient input terminal.

3,462,722

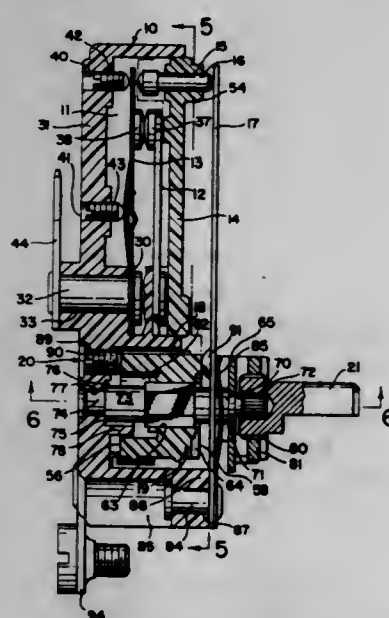
# **THERMOSTATIC CONTROL WITH ADJUSTING CAM**

Howard W. Bletz, Washington Township, Richland County, Ohio, assignor, by mesne assignments, to Therm-O-Disc, Incorporated, Mansfield, Ohio, a corporation of Ohio

Filed Nov. 16, 1966, Ser. No. 594,868  
Int. Cl. H01h 37/12

U.S. Cl. 337—347

11 Claims



A thermostatic control embodying a switch wherein a cam element is employed to adjust the operating temperature range of the device. Calibration of the control is effected by adjusting screw which positions the cam element axially and fixes the position of the camming surface of the cam element with respect to the bimetallic arm.

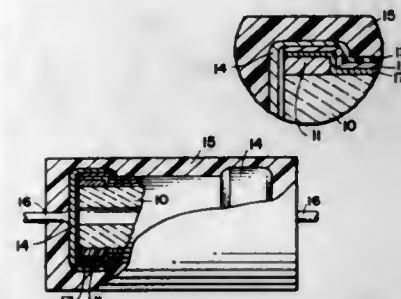
# **3,462,723 METAL-ALLOY FILM RESISTOR AND METHOD OF MAKING SAME**

Bernard L. Phillips, Norwood, Mass., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed Mar. 23, 1966, Ser. No. 536,738  
Int. Cl. H01c 7/06, 7/00, 17/00

U.S. Cl. 338—7

14 Claims



The TCR characteristics in film resistors of the nickel-chromium type and having an insulating layer of silicon monoxide are improved by applying aluminum to the resistive film.

3,462,724

# **ELECTRICALLY OPERATED HEAT TRANSFER DEVICES**

Jacob Jackson, 58 The Ridings, London W5, England

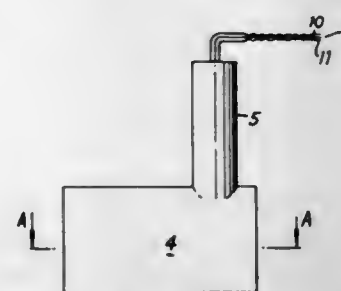
Filed June 15, 1967, Ser. No. 646,281

Claims priority, application Great Britain, June 20, 1966, 27,395/66

Int. Cl. H01c 1/02

U.S. Cl. 338—229

6 Claims



An electrically operated heat transfer device suitable for use as an immersion heater or as a resistance thermometer comprises a flat former which supports an electrical conducting wire and is disposed flatwise between the sides of an envelope which sides are stressed, either by reduction of the pressure in the envelope or by the inherent shape of the side of the envelope, to urge the envelope into contact with the wire.

3,462,725

# **SOCKET FOR SPACED CONTACTS OF TUBULAR MEMBERS**

William Joseph Garver, Harrisburg, and Michael Anthony O'Hanlan, Jr., Carlisle, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Original application Dec. 14, 1965, Ser. No. 513,696, now Patent No. 3,363,217, dated Jan. 9, 1968. Divided and this application Nov. 14, 1967, Ser. No. 682,829

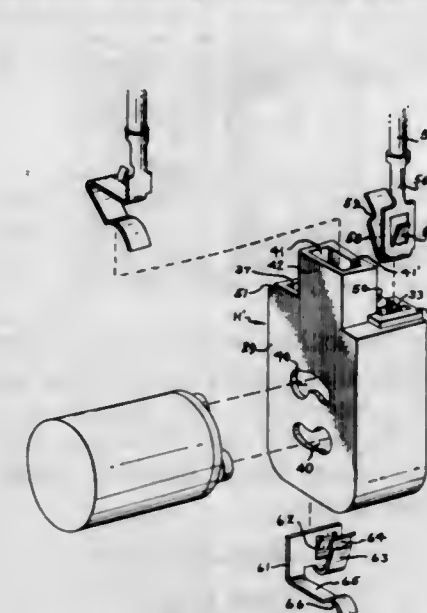
Int. Cl. H01r 33/08

U.S. Cl. 339—51

5 Claims

A unitary socket comprises first and second sections, the first section provided with a generally triangular-shaped chamber and contact passages in communication therewith, the triangular-shaped chamber being open at one surface for receiving contact pins of a tubular light member, the contact pins being electrically engageable

with contact members removably secured in the contact passages, the second section provided with spaced openings and contact-receiving areas, contact elements re-



movably secured in the contact-receiving areas for electrical engagement with spaced contacts of a starter member.

3,462,726

# **ELECTRICAL CONNECTORS**

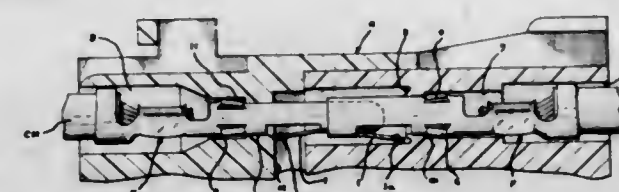
Frank Benjamin Stark, Wormleysburg, and Roydon William Merry, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed July 20, 1967, Ser. No. 654,752

Int. Cl. H01r 21/28, 9/08; F16d 1/00

U.S. Cl. 339—64

7 Claims



An electrical connector comprises a dielectric housing having a passageway therethrough, an electrical terminal disposed therein, the electrical terminal including a body portion and a connecting section; the connecting section connected to a conductor member, means on the body portion and in the passageway to prevent the terminal from moving out of the passageway in one direction, and projection means extending outwardly from the body portion and along the body portion in the same direction as an insertion axis of the electrical terminal, the projection means engaging the means in the passageway thereby preventing the terminal from moving out of the passageway in a direction opposite to the one direction and to stabilize the terminal in the passageway.

3,462,727

# **ELECTRICAL CONNECTOR OR THE LIKE HAVING COUPLING NUT DETENT MEANS**

Dennis Jack Blight, Stanley Harold Boswell, and Anthony John Damolsiaux, Basingstoke, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed May 25, 1967, Ser. No. 671,900

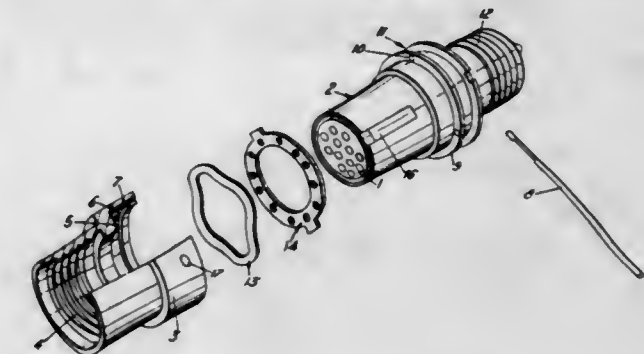
Claims priority, application Great Britain, June 3, 1966, 24,793/66

Int. Cl. H01r 13/54; F16l 55/00; F16b 39/28

U.S. Cl. 339—89

2 Claims

The invention includes a coupling apparatus for an electrical connector or the like to prevent a coupling nut



washer. The projections thus can slip from one set of detent washer holes to another, but not without the application of some substantial torque.

3,462,728

# **CONSTRUCTION FOR A PANEL LAMP SOCKET ASSEMBLY**

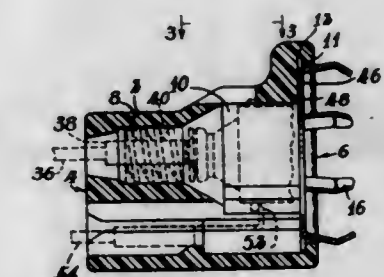
Howard A. Elliott, Detroit, Mich., assignor to Essex International, Inc., Fort Wayne, Ind., a corporation of Michigan

Original application Jan. 11, 1965, Ser. No. 424,795, now Patent No. 3,364,456, dated Jan. 16, 1968. Divided and this application Nov. 6, 1967, Ser. No. 680,629

Int. Cl. H01r 13/54

U.S. Cl. 339—128

4 Claims



A completely insulated panel lamp mounting assembly made up of a molded plastic socket housing and a method of making same, which has a spring-loaded central contact member carried in one end of the housing and connected to an electrical supply conductor, and a ring insert, having an aperture larger than the opening in the socket, carried in a recess at the other end of the plastic housing. The ring insert is provided with outwardly extending, resilient, panel-gripping fingers which are radially spaced from the lamp bulb. Flanged receptacles for retaining the bulb bayonet base are carried on the inner circumference of the socket housing. A ground contact is adapted to contact the bulb bayonet base and is disposed in the housing. The ring insert is held in place by heat spinning the socket housing to form a recess in which the insert is confined.

3,462,729

# **PASSIVE SONAR BEARING AND FREQUENCY DETECTING AND INDICATING SYSTEM**

Milton D. Papineau, Kailua, Hawaii, and Claude C. Routh, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Apr. 13, 1964, Ser. No. 360,173

Int. Cl. H04b 13/02

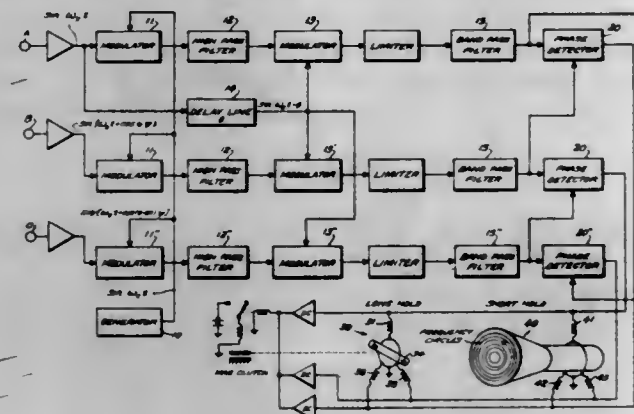
U.S. Cl. 340—6

5 Claims

A sonar receiver for determining the bearing and frequency of a sonar ping. The signals are received by three spaced hydrophones, passed through autocorrelation cir-

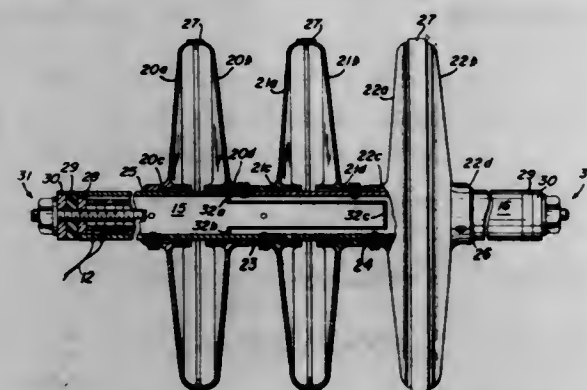


cuitry and three phase detectors. The output signals from the phase detectors are connected to a cathode ray tube with



three deflection coils to obtain an indication of the bearing and frequency of the received sonar ping.

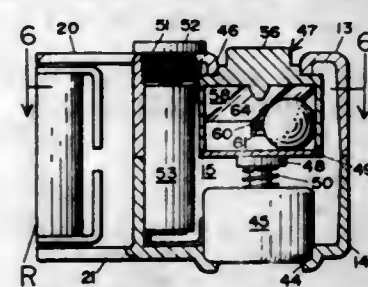
**3,462,730**  
**TRANSDUCER OF ACOUSTICAL ENERGY EXHIBITING THE CHARACTERISTICS OF A PULSATING SPHERE**  
Wesley L. Angeloff, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy  
Filed Mar. 11, 1968, Ser. No. 711,968  
Int. Cl. H04b 13/00  
U.S. Cl. 340-8 5 Claims



The present invention relates to a transducer of acoustic energy capable of operating in a transmitting or receiving mode. An elongate electromechanical means, preferably a stack of piezoelectric cylinders, provides a mechanical deformation when an electric field is impressed thereacross or, when mechanically compressed, yields an electrical signal proportional to the mechanical deformation. A housing is provided with two interlocking splined portions enclosing the piezoelectric stack. The housing carries a plurality of piston surfaces resiliently separated in opposed pairs with the opposing surfaces of the pairs each secured to different ones of the two splined portions. Thusly constructed, with a large radiating and receiving surface in contact with the surrounding medium, the transducer tends to exhibit the attendant advantages of a nominal sphere having the attendant advantages of a greater broad-band-linear operation and lower frequency response than possible with a nominal piston transducer.

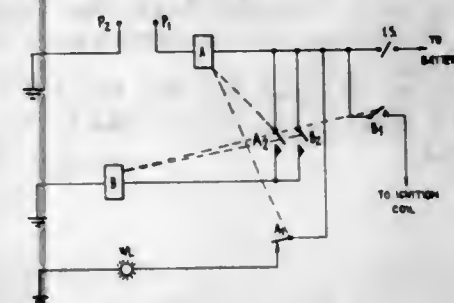
**3,462,731**  
**ALARM FOR VEHICLE SAFETY BELTS**  
Steven M. Gray, 1514 Salzedo Ave., Coral Gables, Fla. 33134  
Filed Jan. 3, 1966, Ser. No. 518,120  
Int. Cl. B60q 5/00  
U.S. Cl. 340-52 17 Claims  
1. A signaling device for safety seat belts of motor vehicles including:  
a housing arranged to be fastened to the safety seat belt;

a power supply carried within said housing;  
a signaling mechanism carried within said housing and disposed for connection to said power supply; and



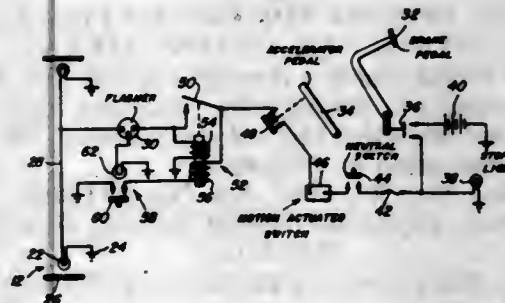
switch means connected between said power supply and said signaling mechanism to energize said signaling mechanism when the motor vehicle is in operation and when the safety seat belts are not used, and said switch means being disabled when the safety seat belts are in use.

**3,462,732**  
**SEAT BELT SAFETY SYSTEM**  
Gordon Douglas Griffin, Roland Highway, Spreyton, Tasmania, Australia  
Filed Apr. 14, 1967, Ser. No. 631,044  
Claims priority, application Australia, July 20, 1966, 8,580/66; Aug. 10, 1966, 9,486/66  
Int. Cl. B60q 1/00; G08b 5/00  
U.S. Cl. 340-52 5 Claims



A vehicle safety device in which a seat belt is wired to complete part of an electrical circuit when in its fastened condition and wherein a solenoid is connected in series with the wiring of the seat belt, the solenoid controlling a switch having a pair of normally open contacts which form part of the ignition circuit of a vehicle, there being connected warning means in parallel with part of the circuit containing the seat belt and a switch in series with the warning means controlled by the solenoid to open when the seat belt circuit is closed and to close when the seat belt circuit is opened.

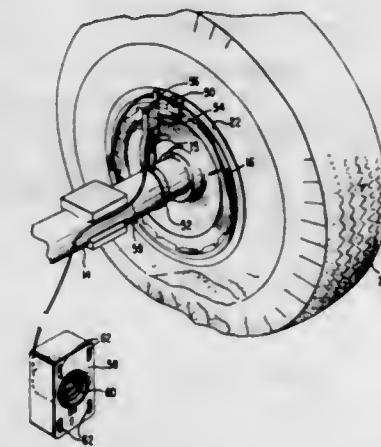
**3,462,733**  
**RIGHT-OF-WAY SIGNALLING SYSTEM FOR VEHICLES**  
Theodore L. F. Boya, Robstown, Tex. (3516 3rd St., Brownwood, Tex. 76801), and Harry Burger, Jr., P.O. Box 785, Robstown, Tex. 78380  
Filed Oct. 5, 1966, Ser. No. 584,530  
Int. Cl. B60q 1/50, 1/44  
U.S. Cl. 340-54 15 Claims



Signal lamps mounted on the front fenders of a vehicle emit laterally directed signals to inform other motorists

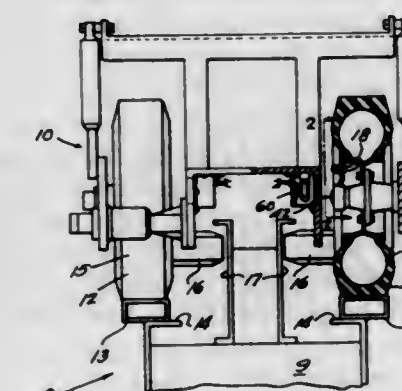
that it is safe to pass the intersection adjacent to which the vehicle emitting the right-of-way signals has stopped. An illuminated push-pull button switch actuated by the driver sets the signal lamps into operation. Right-of-way signalling is cancelled by release of the brake pedal, actuation of the accelerator, or movement of the vehicle.

**3,462,734**  
**TIRE DEFLATION INDICATION SYSTEM**  
Wallace I. Neu, 1601 N. 5th St., Alpine, Tex. 79330  
Filed Feb. 18, 1966, Ser. No. 528,577  
Int. Cl. B60c 23/06  
U.S. Cl. 340-58 8 Claims



A tire deflation indicator is secured to a wheel rim at spaced locations and latched to the rim intermediate these locations by a pressure operated latch. Upon loss of pressure the latch releases allowing the indicator to move away from the rim and actuate a signal to indicate loss of pressure.

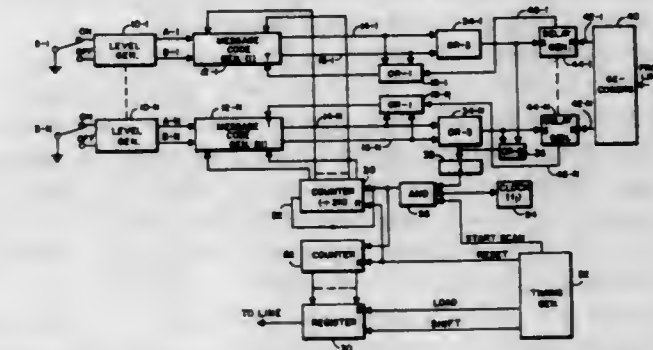
**3,462,735**  
**ELECTRONIC TIRE DEFLATION DETECTING DEVICE**  
Alan B. Hawes, 8504 Seaview Ave., Wildwood Crest, N.J. 08260  
Filed May 6, 1966, Ser. No. 548,078  
Int. Cl. B60c 23/06  
U.S. Cl. 340-58 4 Claims



An electronic device, for indicating deflation of a pneumatic tire below a prescribed pressure, wherein the inflating valve stem of the tire is opened by an element carrying a diaphragm and a switch actuating member housed in a cap closing the inflation tube. Closure of said switch on loss of pressure lights a battery operated lamp which illuminates a photoelectric cell through a lens, the cell being operative in an electronic circuit to energize a signal. In one embodiment said diaphragm, switch, battery, lamp and lens are housed in said cap.

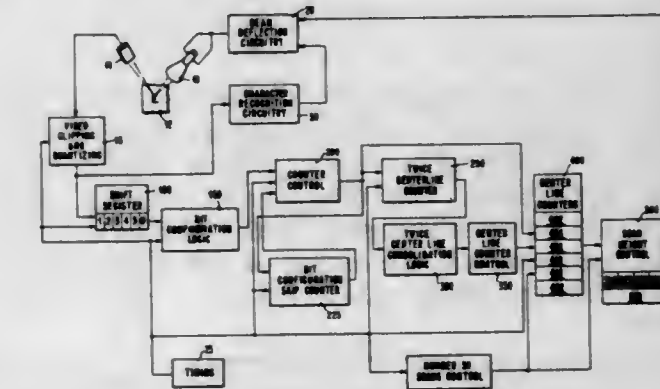
865 O.G.—86

**3,462,736**  
**DATA COMMUNICATION SYSTEM**  
Daniel H. Hollands, Webster, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware  
Filed Nov. 26, 1965, Ser. No. 510,023  
Int. Cl. G08b 29/00  
U.S. Cl. 340-146.1 13 Claims



A system for transmitting information regarding the condition of a large number of binary elements such as single-pole-double-throw switches is described. The system is efficient in that it transmits a message corresponding to the condition of the switch only when its condition changes (viz the switch pole moves from on to off or from off to on). A counter of the recirculating type interrogates a message code generator which is associated with each switch. The interrogation of each switch occupies two time slots; one corresponding to the on and the other to the off condition of the switch. The message code generator also has a flip-flop. The flip-flop is either set or reset depending upon the condition of the switch during a previous interrogation. Upon each interrogation, if the position of the switch changes, the message code generator associated with that switch produces an output which stops the counter. The code stored in the counter is then read out into the line as a digital message which represents the changed state of the switch and identifies the switch which changes state.

**3,462,737**  
**CHARACTER SIZE MEASURING AND NORMALIZING FOR CHARACTER RECOGNITION SYSTEMS**  
Davey L. Malaby, Rochester, Minn., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York  
Filed Dec. 18, 1964, Ser. No. 419,428  
Int. Cl. G06k 9/00  
U.S. Cl. 340-146.3 18 Claims



4. Character height measuring and normalizing apparatus comprising scanning means for scanning a character in a series of scans to provide output signals; timing means for furnishing first and second series of time related pulses; quantizing means connected to said scanning means and to said timing means for dividing the signal of each scan with said first series of time related pulses into a series of binary signals;



storing means connected to said quantizing means and to said timing means for temporarily storing said binary signals in the sequence of occurrence under control of said second series of time related pulses; logic means connected to said timing means to be rendered operable thereby at predetermined times and connected to said storing means to provide first, second and third control signals upon said binary signals having predetermined sequences;

a first counter connected to said timing means to receive said second series of time related pulses and connected to said logic means to be controlled by said first control signal to count by one's and by said second control signal to count by two's for each said second series of time related pulses where the value in said first counter represents twice the centerline height of the character scanned;

a series of second counters connected to said logic means to be rendered operable in a counting mode by said third control signal, said second counters each representing a discrete centerline height; and

counter logic means connected between said first counter and said series of second counters to control the entry of pulses therein according to the value in said first counter at the time said series of second counters are rendered operable by said third control signal.

3,462,738

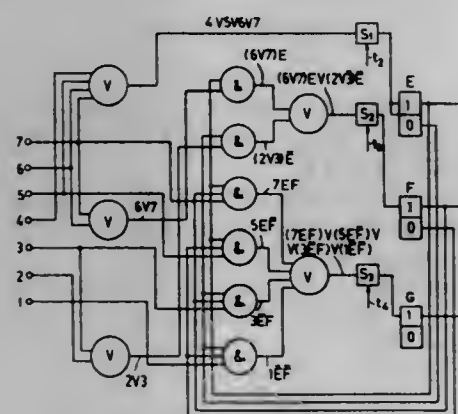
**POLYPHASE PRIORITY DETERMINING SYSTEM**  
Claude Chemla, Saint-Cloud, Claude Cramer, Champigny-sur-Marne, and Francois Leger, Vincennes, France, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware  
Filed May 19, 1966, Ser. No. 551,268

Claims priority, application France, June 18, 1965, 21,409

Int. Cl. H04q 3/42

U.S. Cl. 340-147

2 Claims



A system for sequentially determining the priority between groups of program request signals and the priority of individual program request signals within a group. The system uses dual output switches for first passing all the request signals into a first priority determining logic network, the output of which determines the highest priority group to be fed to a second priority network.

3,462,739

**VARIABLE RATE SYSTEM FOR HANDLING SECURITY PRICE INFORMATION**  
John R. Scantlin, Los Angeles, Calif., assignor to Scantlin Electronics, Inc., Los Angeles, Calif., a corporation of Delaware  
Filed Mar. 14, 1966, Ser. No. 533,983

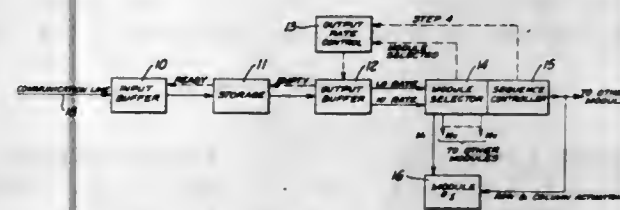
Int. Cl. H04q 5/00

U.S. Cl. 340-154

11 Claims

Apparatus for use with a stock price display board or the like and providing for data transmission rates

higher than can be handled by the board for display. Apparatus for screening incoming data at a high rate,



rejecting or diverting unwanted items, and transmitting wanted items onward at a lower rate to the board for display.

3,462,740

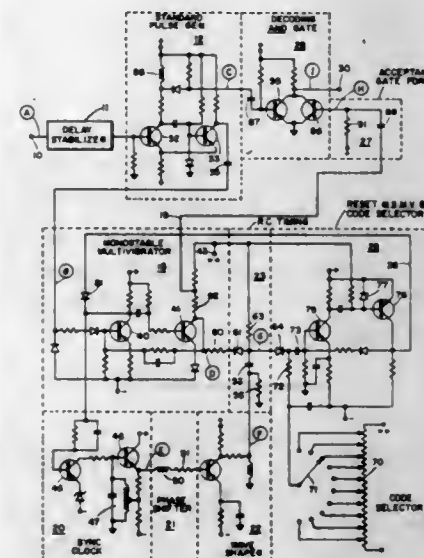
**PRECISION PULSE DECODER**

Howard L. Kennedy, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois  
Filed Aug. 4, 1966, Ser. 570,288

Int. Cl. H04q 9/14

U.S. Cl. 340-167

9 Claims



1. A pulse decoding system responsive to a signal including first and second pulses having a predetermined spacing, said system including in combination, first means responsive to the signal for providing a regular pulse in response to each of the first and second pulses of the signal, multivibrator means having set and reset inputs and first and second output means, means connecting said first means to said set input for applying thereto said regular pulses so that said multivibrator means is set by the regular pulse associated with the first pulse and acts to produce signals at said first and second outputs, clock means for producing pulses at regularly recurring intervals connected to said first output means and rendered operative by the signal from said multivibrator means, a timing circuit connected to said second output means and to said clock means for providing a composite voltage wave including a ramp component having pulses from said clock means superimposed thereon, pulse selector means connected to said timing circuit for producing a reset pulse when said composite voltage wave reaches a predetermined level, means applying said reset pulse to said reset input of said multivibrator means for returning the same to reset condition, gate means having a first input connected to said first means for receiving said regular pulses therefrom and a second gate input, and means coupled to said second output means of said multivibrator means and to said gate input for producing a gating pulse when

said multivibrator means is reset and applying said gating pulse for actuating said gate means for a predetermined time duration to thereby control the time during which the regular pulse associated with the second pulse is passed by said gate means.

## ERRATUM

For Class 340-172.5 see:  
Patent No. 3,462,411

3,462,741

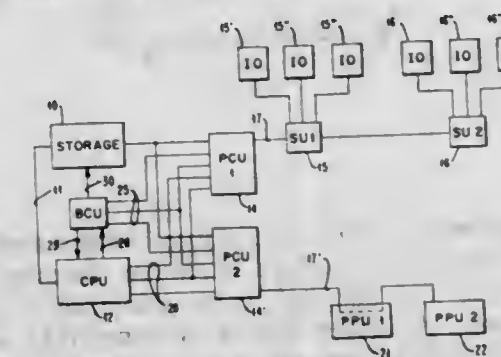
**AUTOMATIC CONTROL OF PERIPHERAL PROCESSORS**

Grant H. Bush, Poughkeepsie, and Keith A. Duke, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed July 25, 1966, Ser. No. 567,480

Int. Cl. G06f 7/39, 15/06

U.S. Cl. 340-172.5

6 Claims



A peripheral processor which attaches to the input/output interface of a computer, and has the ability to perform arithmetic operations in parallel with the central processing unit (CPU) of the computer. Operands called samples (multipliers) and filters (multiplicands) are transferred over the I/O interface from the CPU to the peripheral processor's storage unit by a start I/O instruction specifying a write command. After data transfer, the peripheral processor automatically forms product sums in parallel with CPU operation. At completion, the peripheral processor signals the end of the operation. The peripheral processor stores the results in a local store until the CPU recognizes the end of the operation signal. Product sums are transferred over the I/O interface from the peripheral processor's storage to the CPU in response to a start I/O instruction specifying a read command.

3,462,742

**COMPUTER SYSTEM ADAPTED TO BE CONSTRUCTED OF LARGE INTEGRATED CIRCUIT ARRAYS**

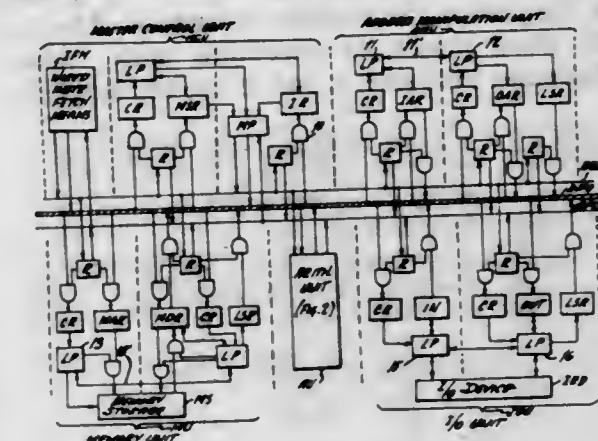
Henry S. Miller, Yardley, Pa., and Robert J. Linhardt, Moorestown, and Robert D. Sidnam, Cinnaminson, N.J., assignors to RCA Corporation, a corporation of Delaware  
Filed Dec. 21, 1966, Ser. No. 603,635

Int. Cl. G11b 13/00

U.S. Cl. 340-172.5

17 Claims

A general-purpose computer system is disclosed which is particularly adapted to be constructed of a plurality of large integrated circuit arrays. The computer system consists of partitioned parts which are interconnected by means of system buses. Each partitioned part of the computer system includes registers for storing information. The term "information" is meant to include instructions, commands, addresses, status and data. Each partitioned part also includes means for controlling information transfers between its registers and the system buses. Each partitioned part further includes processor or control means responsive to the contents of at least one of its



preferably fabricated in the form of a single integrated circuit array.

3,462,743

**PATH FINDING APPARATUS FOR SWITCHING NETWORK**

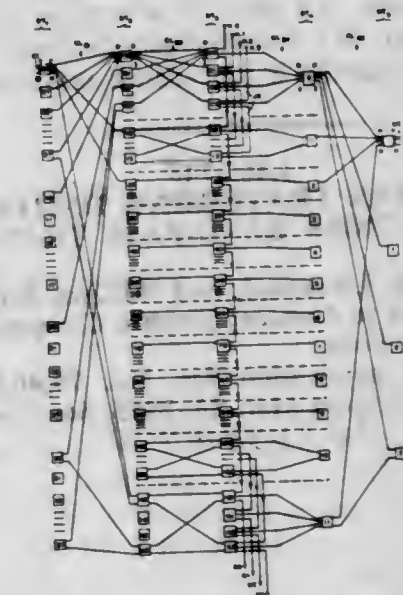
Andrzej Milewski, St. Jeannet, France, assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Dec. 29, 1966, Ser. No. 605,756

Claims priority, application France, Jan. 4, 1966, 7,716 AM

Int. Cl. G11b 13/00; G06f 7/00, 15/00

U.S. Cl. 340-172.5

5 Claims



An address register including a plurality of orders for storing a tentative address routing between two matrices in a plurality of stages of matrices with sensing means responsive to the respective orders of the register to establish whether links between matrices so designated are busy or idle and control apparatus responsive to the output from the sensing apparatus for modifying the address to indicate a free path.

3,462,744

**EXECUTION UNIT WITH A COMMON OPERAND AND RESULTING BUSSING SYSTEM**

Robert M. Tomasulo, Staatsburg, and David W. Anderson and Don M. Powers, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Sept. 28, 1966, Ser. No. 582,675

Int. Cl. G06f 7/08, 7/10, 1/04

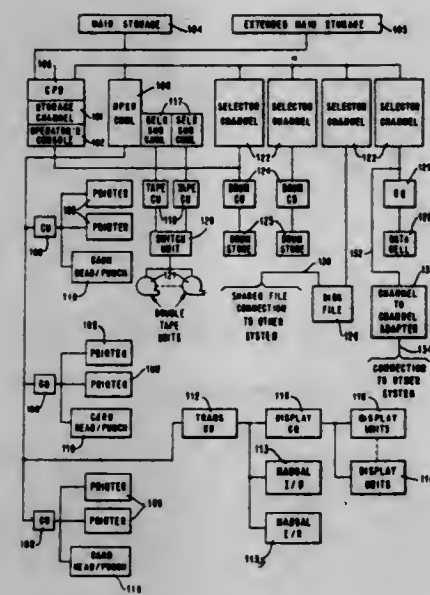
U.S. Cl. 340-172.5

50 Claims

A computer execution unit which at instruction decoding time dynamically assigns a tag to represent an assigned register for each unavailable sink operand. Thereafter, execution continues using the tag to set-up a path along



a Common Data Bus to any of plural reservation units which require the operand when it is later made available either by a fetch from memory, or by a result of execution completion for another instruction. The reservation units store inputs to execution units. When the operand becomes available, it and its tag are input to the

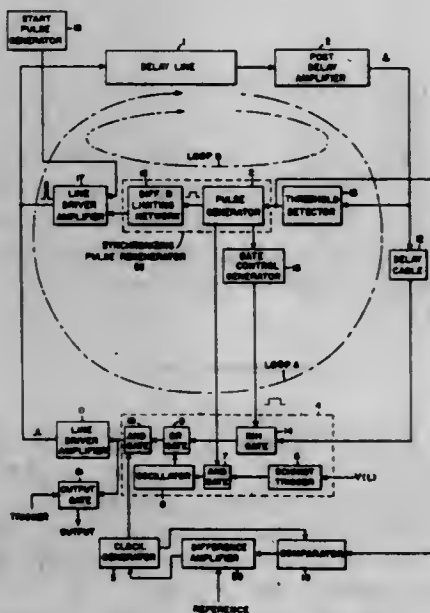


Common Data Bus, which gates it into all units having the same tag at that moment. This tagging scheme preserves sink register dependencies among instruction sequences to obtain (1) parallel execution of sequential instructions, and (2) out-of-sequence execution among instructions not having a precedence relationship.

**3,462,745**  
**APPARATUS FOR TRAVERSING DIGITAL INFORMATION ACROSS BAND-PASS TRANSMISSION MEDIA**

Joseph P. Hesler, Liverpool, and William Pell, Syracuse, N.Y., assignors to General Electric Company, a corporation of New York  
Continuation of application Ser. No. 79,403, Dec. 29, 1960. This application Mar. 23, 1965, Ser. No. 445,838  
Int. Cl. G11b 9/00  
U.S. Cl. 340—173

9 Claims

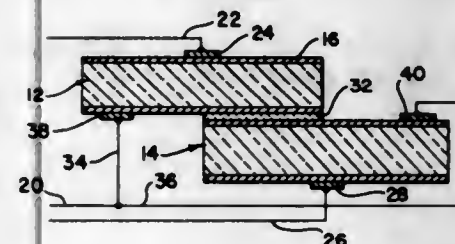


Apparatus for providing traversal of a transmission medium exhibiting a band-pass frequency characteristic by a digital signal in pulse form, wherein the frequency re-

sponse of said medium is critically related to the energy frequency spectrum of said digital signal so that the output signal has an energy frequency spectrum of relatively constant amplitude and is in the form of distinctly separate pulses. The present apparatus obviates the need to apply a signal to said transmission media as a modulated carrier or as a series of shock impulses of extremely short duration.

**3,462,746**  
**CERAMIC FERROELECTRIC MEMORY DEVICE**  
Peter G. Bartlett, Bettendorf, Iowa, assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware  
Filed Feb. 14, 1966, Ser. No. 527,223  
Int. Cl. G11b 9/02  
U.S. Cl. 340—173.2

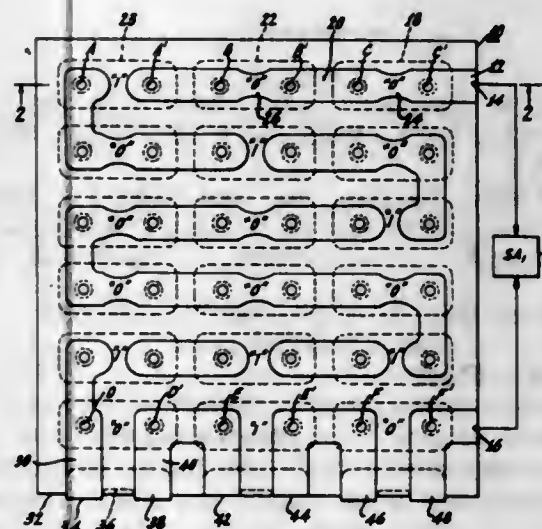
19 Claims



A ceramic memory device is disclosed herein and which includes a ferroelectric storage capacitor memory plate having a surface and adapted to be polarized in one of two stable states. A driver means is adhesively secured to the memory plate to prevent relative lateral movement therebetween so that the driving means may transmit lateral and perpendicular mechanical forces to the memory plate. Means are also provided for obtaining output signals from the memory plate in response to forces imparted thereto by the driving means.

**3,462,747**  
**SEMI-PERMANENT MEMORY**  
Charles M. Wine, Princeton, and James C. Miller, Pennington, N.J., assignors to Radio Corporation of America, a corporation of Delaware  
Filed Aug. 12, 1965, Ser. No. 479,096  
Int. Cl. G11b 5/62  
U.S. Cl. 340—174

5 Claims

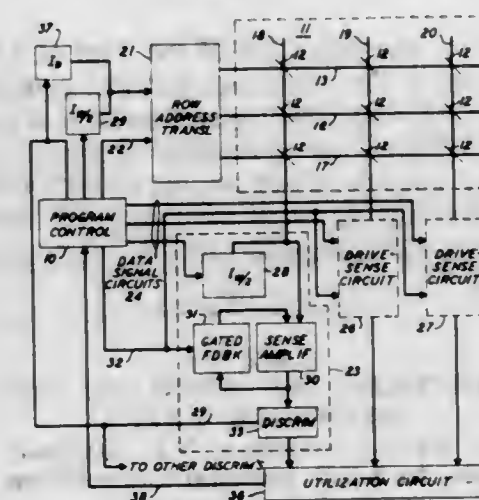


Memory in which stored information is determined mechanically and read out electrically. A magnetic sheet has a printed sense conductor sequentially threading aperture pairs in the sheet. The sense conductor goes in one

aperture of a pair and out the other aperture of the pair to store a "1," and it encircles the magnetic material between two apertures of a pair to store a "0." A plurality of such magnetic sheets is arranged in a stack with interrogate wires threaded through the stack. Each interrogate wire passes through one aperture of corresponding aperture pairs in all sheets and returns through the other aperture of the corresponding aperture pairs in all sheets.

**3,462,748**  
**MEMORY USING SENSE AMPLIFIERS WITH GATED FEEDBACK**  
Arthur W. Klippe, Neptune, and William M. Regitz, Colonia, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Jan. 28, 1965, Ser. No. 428,759  
Int. Cl. G11b 5/02  
U.S. Cl. 340—174

14 Claims



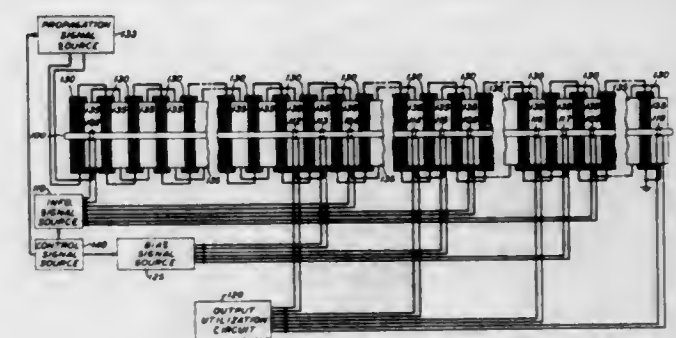
A store system containing a magnetic memory wherein one set of coordinate drive circuits, which is also used to supply readout signals to sensing amplifiers, is provided with gated negative feedback circuits on such amplifiers. The gating fixes the amount of negative feedback in a stepwise fashion to different levels for reading and writing portions of the memory operating cycle. The sensing amplifier is thus continuously operatively coupled to the digit circuits but is at the same time comparatively insensitive to the drive signals also applied to such circuits to the extent that such drive signals are unable to drive the amplifier into saturated conduction. The feedback control is so exercised that the amplifier presents a substantially constant impedance to the digit circuit with which it is associated, and minimum memory operating times are realized by fixing that constant impedance at the critical damping impedance for the sensing circuit.

**3,462,749**  
**MULTIPLE SHIFT REGISTER ARRANGEMENT**  
Paul Mecklenburg, Fort Lee, N.J., and Lawrence H. Young, Emmaus, Pa., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York  
Filed Mar. 10, 1966, Ser. No. 533,155  
Int. Cl. G11b 5/02  
U.S. Cl. 340—174

9 Claims

At least one biasing coil is coupled to an intermediate portion of the propagating medium of a domain-wall shift register to divide the medium into a plurality of distinct or isolated shift registers. Each such distinct register includes a nucleating coil and a sensing coil. The respective stored contents of the registers can be shifted in unison along the medium in an isolated manner by a

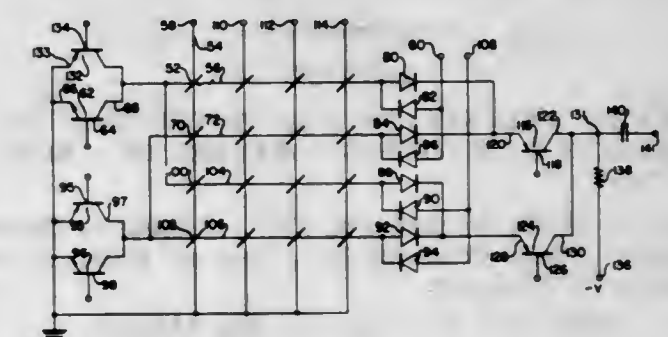
common propagating structure. Such a multiregister arrangement is well suited to be included in various types



of information processing equipment, such as, for example, an error control system of the interleaved type.

**3,462,750**  
**BACK-E.M.F. SENSING MEMORY SYSTEM**  
Sidney J. Schwartz, Beavercreek Township, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland  
Filed Nov. 14, 1966, Ser. No. 593,861  
Int. Cl. G11c 7/00, 7/02  
U.S. Cl. 340—174

10 Claims



A magnetic memory which includes an array of magnetic memory elements is disclosed. A plurality of row conductors are connected via the collector-emitter path of a plurality of transistors to a common junction point to which is coupled a threshold sensing detector, a differential amplifier detector, or any other appropriate type of detector. Upon application of coincident read current to a row and to a column drive conductor, the elements coupled to that pair of conductors switch, inducing a back-EMF into the associated pair of conductors, the induced back-EMF being sensed by the sensing means that is coupled to the common junction point.

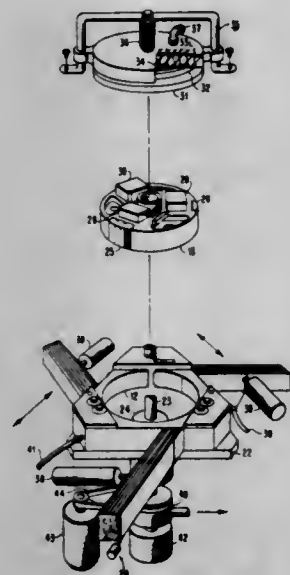
**3,462,751**  
**HIGH PERFORMANCE RANDOM ACCESS MEMORY**  
Friedrich R. Hertrich, Boulder, Colo., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Nov. 26, 1965, Ser. No. 509,889  
Int. Cl. G11b 5/76  
U.S. Cl. 340—174.1

7 Claims

A high-speed random access memory employing strips of magnetically coated flexible material as the recording medium. A fixed read-write station is provided having a cylindrical chamber and a plurality of circumferentially-spaced, tangentially-extending entry chutes. A plurality of strips are provided in a plurality of trays, each tray being positioned at an entry chute. Solenoid operated means selects a strip from an associated tray by pushing



it into engagement with a capstan. The capstan moves the strip into position along the wall of the cylindrical chamber. A strip from each of the chutes may be in the chamber simultaneously since the strips are spaced cir-



cumferentially along the chamber. A cylindrical drum, having a plurality of heads, is mounted within the cylindrical chamber and constantly rotated so the heads traverse the selected strips.

3,462,752

#### METHOD AND SYSTEM FOR DETECTING THE PRESENCE OF FOREIGN MATTER IN A BODY OF GAS

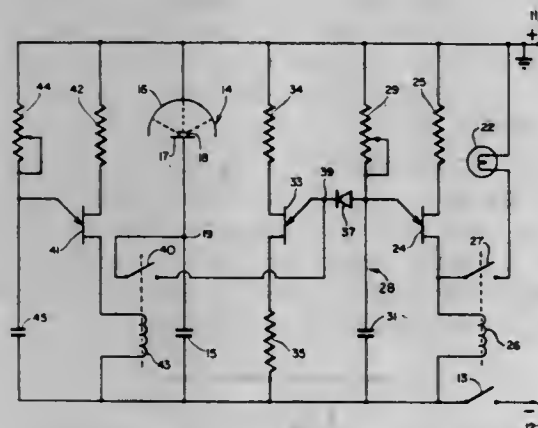
Donald G. Stroh, Westminster, Colo., assignor to Denver Burglar Alarm Products, Inc., Denver, Colo., a corporation of Colorado

Filed Mar. 30, 1966, Ser. No. 538,694

Int. Cl. G08b 21/00

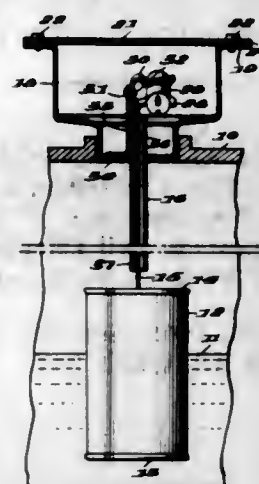
U.S. Cl. 340-237

8 Claims



An apparatus and method for detecting and indicating the presence of foreign matter in a body of gas provides for the accumulation during successive equal intervals of time of charges proportional to current passing through the gas under examination. The conductivity of the body of gas is sensed by an electric potential across the body and a radioactive source for ionizing a portion of the body of gas. The charge is dissipated upon each sampling and the accumulation of a charge less than normal is employed for producing an indication of the presence of foreign matter in the gas. Very high sensitivity is obtained and the apparatus has been found particularly useful in the field of fire or combustion detection.

3,462,753  
**LIQUID LEVEL INDICATOR**  
Shirley Leonard Graham, 1105 Baltimore National Pike, Ellicott City, Md. 21043  
Filed Oct. 22, 1965, Ser. No. 501,693  
Int. Cl. G08b 21/00, 23/00; H01h 35/18  
U.S. Cl. 340-244 2 Claims



A system for the indication of the level of a liquid in a tank employing a float actuating electrical switching means by mechanical linkage. The system includes a push rod of a flexible mechanical spring material, immovably attached to the float at one end which rotates under torsional loading by the buoyant thrust of the float, and rotates in the other direction when unloaded, so that binding in its guide is prevented.

#### 3,462,754 PERFORMANCE MONITOR FOR RECTIFIER CELLS

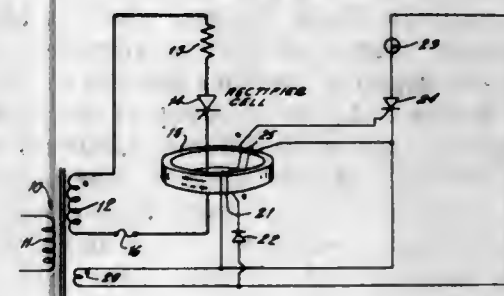
Thomas Ray Kelley, Audubon, N.J., assignor, by mesne assignments, to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Jan. 10, 1966, Ser. No. 519,695

Int. Cl. G08b 21/00; H03k 19/16

U.S. Cl. 340-253

5 Claims



A fail-safe monitoring circuit for monitoring the operation of semiconductor devices which includes a transformer connected in series with the device being monitored. The flux of the transformer is reversed each time the device conducts and this flux is reversed by a flux-reversing circuit while the device is in a blocking condition. The flux reversal of the transformer generates an output voltage which causes a switching device to conduct each half cycle in series with an indicating device so that the indicating device is energized so long as the device being monitored operates correctly and so long as all of the components in the monitoring circuit operate correctly.

#### 3,462,755 CAPACITY ALARM

Donald E. Hansen, Brookfield Center, Conn., assignor to Mosler Research Products, Inc., Danbury, Conn., a corporation of Delaware

Filed Apr. 26, 1966, Ser. No. 545,465

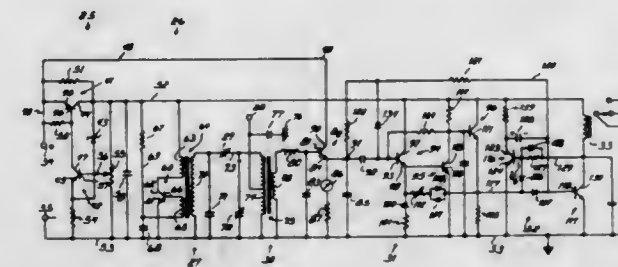
Int. Cl. G08b 13/26

U.S. Cl. 340-258

8 Claims

A capacity type intruder alarm system, including an oscillator and a tuned resonant circuit. The tuned resonant

circuit includes an antenna formed by equipment being protected. The detector senses changes in oscillations due to intrusion. The detector normally has a predetermined output signal which rises or drops due to the presence of an intruder. This detector output is amplified and ap-



plied to a multivibrator. When the detector output changes in either direction, the multivibrator is flipped to actuate an alarm. High and low fail-safe circuits are provided. The unit also includes a regulated power supply and a variable capacitance coupling between the oscillator and detector.

#### 3,462,756 APPARATUS FOR TRANSMITTING AND RECEIVING A HIGH FREQUENCY TRANSIENT OVER A POWER LINE

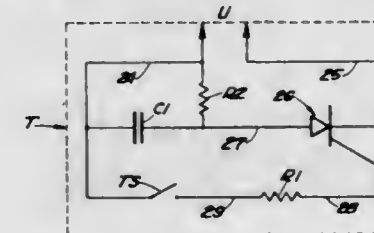
George A. Mills, 1320 Highridge St., Riverside, Calif. 92506

Filed Apr. 28, 1967, Ser. No. 634,557

Int. Cl. H04m 11/04

U.S. Cl. 340-310

3 Claims



A signaling system having a transmitting or control station and a receiving or controlled station both of which are connected across first and second conductors of an A.C. utility line which is continuously energized for accommodating electric utility-line loads such as appliances, and the transmitting station of which is arranged to provide during each control signal period a short-duration utility-line short circuit once during each alternate half-cycle of the A.C. utility wave, to thereby produce at each such occurrence a high-frequency electric transient signal on the utility line, which transient is received at the receiving station and there made effective to trigger a SCR to conductive state to initiate operation of a signal-activated device such as a relay, an alarm, or the like.

#### 3,462,757 MEMORY AND CONVERSION CIRCUIT

Harry Curtis Brown, Glen Burnie, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 12, 1964, Ser. No. 410,657

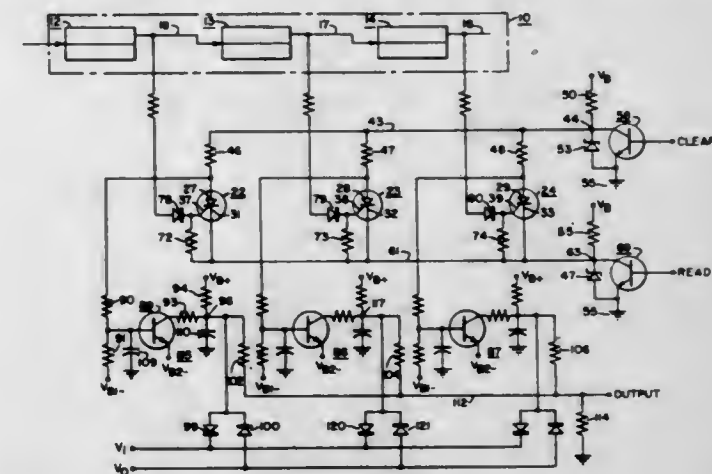
Int. Cl. H03k 13/02

U.S. Cl. 340-347

10 Claims

Each silicon controlled rectifier (SCR) of a plurality, receives at its gate electrode a signal from a respective stage of a counter. A clear circuit connected to the anodes of the SCR's initially places them into their non-conducting condition and a read circuit connected to the cathode and gate electrodes of the SCR's maintain them in their off condition even with an input signal being applied to the gate electrode. When a read pulse is provided to the read circuit it allows any input signal present to trigger

its respective SCR to an on or conducting condition. The anode electrode of each SCR is connected to a respective current supply circuit having a certain valued resistor and first and second valued voltage supplies, and operable to



supply a predetermined current in response to the condition of its associated SCR. Any currents provided are summed, which summation is an indication of the particular count in the counter.

#### 3,462,758 ANALOG TO DIGITAL CONVERTER

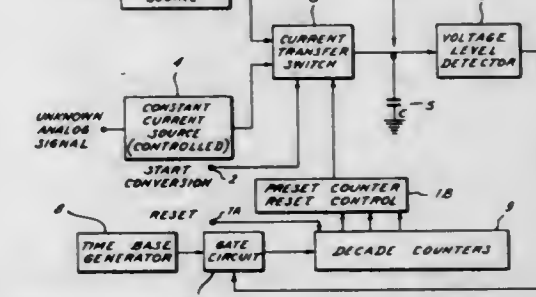
Thomas J. Reynal, Houston, Tex., and Thomas J. Blocher, Oakland, Calif., assignors, by mesne assignments, to Dresser Systems, Inc., Houston, Tex., a corporation of Delaware

Filed Nov. 26, 1965, Ser. No. 509,943

Int. Cl. H03k 13/02

U.S. Cl. 340-347

9 Claims



An unknown analog voltage controls a constant current source whose current output is proportional to the unknown analog signal. The controlled current source charges an energy storage device, such as a capacitor, for a given time period, the time period being measured by counting digital pulses generated during the period. The energy storage device is then allowed to discharge at a known rate and means are provided for counting the time required for such discharge, as by counting digital pulses. Means are also provided for comparing the time to charge the energy storage device with the time to discharge said device. A voltage level detector responsive to the energy storage device drives a gate circuit which gates the output of a time base generator into a decade counter, whereby indications are made of the charge and discharge times

#### 3,462,759 ANALOG-TO-DIGITAL CONVERTER

Philip A. Hoffman, Towson, Md., assignor, by mesne assignments, to The Bendix Corporation, a corporation of Delaware

Filed Apr. 26, 1966, Ser. No. 545,395

Int. Cl. H047 3/00; H03k 13/02

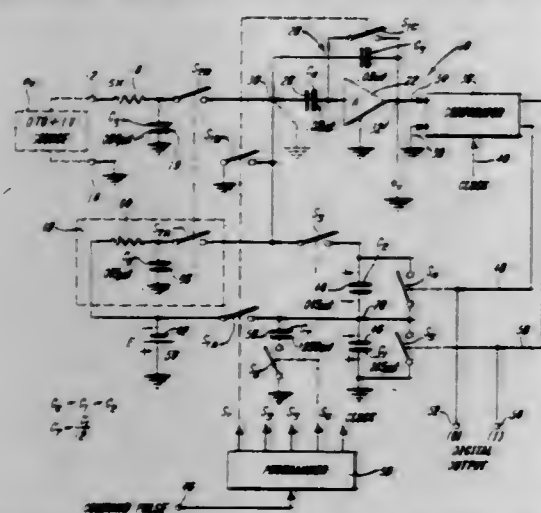
U.S. Cl. 340-347

14 Claims

Disclosed is a binary coded decimal analog to digital converter. The converter is of the charge transfer, suc-

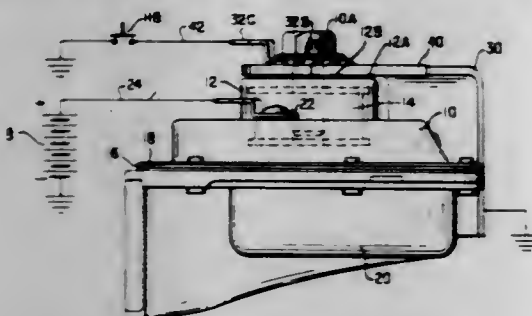


cessive approximation type wherein a charge transfer amplifier has a feedback capacitor which receives a signal representative of the analog input. The capacitor signal is reduced in steps and after each step compared



with a reference signal to generate a digital output code. A novel weighting capacitor and switching arrangement make possible the generation of a binary coded decimal output.

**3,462,760**  
**ELECTRIC HORN WITH UNGROUNDED BASE AND INSULATED MOUNTING BRACKET**  
William C. Wetzel, Bay City, Mich., assignor to Eltra Corporation, Toledo, Ohio  
Filed July 10, 1967, Ser. No. 652,862  
Int. Cl. G10k 9/12; G08b 3/00; B60g 5/00  
U.S. Cl. 340-390 5 Claims

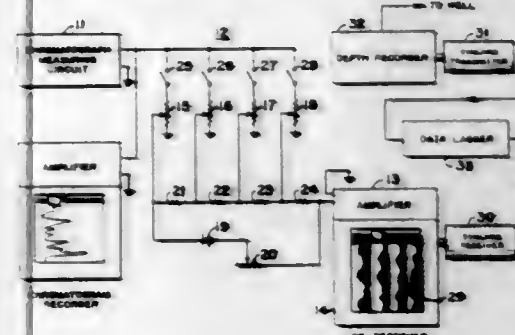


An electric horn with a base insulated from ground. The base is grounded only during horn operation by a manually operated switch, to obviate corrosion due to electrolysis under adverse ambient conditions.

**3,462,761**  
**AUTOMATIC MUD LOG PRINTOUT SYSTEM**  
John M. Horeth, William D. Howard, and Richard H. Langenheim, Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware  
Filed Jan. 20, 1966, Ser. No. 521,889  
Int. Cl. G01d 9/10 6 Claims

A method and an apparatus for recording the light hydrocarbon content of drilling fluids as a function of drill-

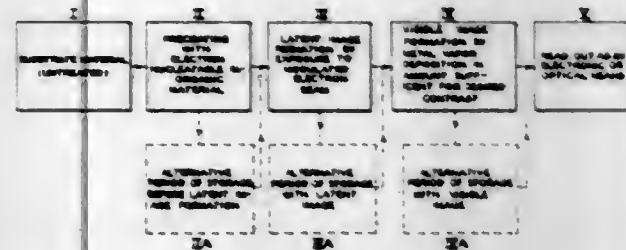
ing depth. The chromatographic analysis of individual components of the hydrocarbons are transmitted to a recorder and individually recorded. The advance of the recorder is controlled by the drilling depth at the time of



the analysis and in a more limited embodiment the advance of the recorder is controlled so that the analysis is reproduced on the depth scale at a point at which the hydrocarbons are introduced into the mud stream.

**3,462,762**  
**ELECTRONIC BEAM RECORDING WITH VAPOR DEPOSITION DEVELOPMENT**  
Alfred F. Kaspari and Erika K. Kaspari, Madison, Calif., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware  
Continuation-in-part of application Ser. No. 70,159, Nov. 18, 1960. This application Dec. 2, 1964, Ser. No. 416,963  
Int. Cl. G01d 15/06 7 Claims

U.S. Cl. 346-74



A process for recording information on a solid substrate by selective deposition of metallic vapors and the like, in which the substrate is pre-treated to coat it with a layer ranging in thickness from monomolecular up to about 30 Å of an inorganic metallic compound selected from the group consisting of metal chalcogenides and metal halogenides having vapor pressure of at least about 1 mm. Hg between 500 and 1800° C. and practically no vapor pressure below about 50° C. Substrates thus coated can be subjected to the action of an electron beam modulated according to the information to be recorded, thereby producing a latent image consisting of nucleation sites on the surface. Subsequently, vapor deposition of e.g. metal causes formation of a visible image at the nucleation sites.

## DESIGNS

AUGUST 19, 1969

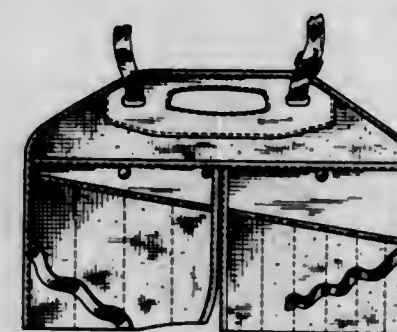
**214,982**  
**BRASSIERE**  
Ginette Annie Fontanet, Chemin de Chaddes 38, Ruy, France  
Filed Dec. 19, 1967, Ser. No. 9,852  
Term of patent 14 years  
Int. Cl. D2-02

U.S. Cl. D2-24



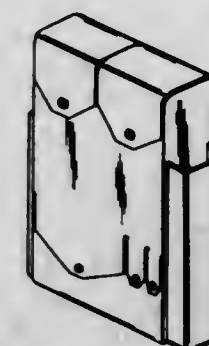
**214,983**  
**CARRYING BAG FOR HAND TOOLS**  
Ulrich Knigge, Stresemannstrasse 39, Bremen, Germany  
Continuation-in-part of design application Ser. No. 5,332, Jan. 6, 1967. This application Mar. 26, 1968, Ser. No. 11,224  
Claims priority, application Germany July 7, 1966  
Term of patent 14 years  
Int. Cl. D2-01

U.S. Cl. D2-229



**214,984**  
**BELT ATTACHED PURSE**  
William F. Woolfolk, 3335 Lincoln Ave., Altadena, Calif. 91001  
Filed Apr. 15, 1968, Ser. No. 11,456  
Term of patent 14 years  
Int. Cl. D2-08

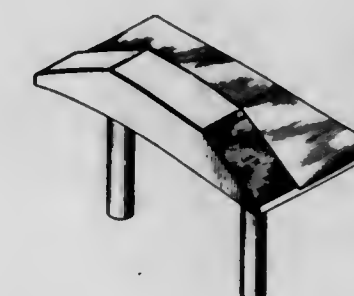
U.S. Cl. D2-400



865 O.G.-87

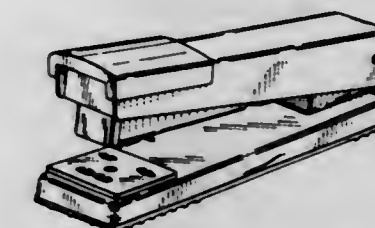
**214,985**  
**CONCRETE JOINT SHAPING TOOL**  
Herman W. Davis, Pollock Pines, Calif., assignor to A. Teichert & Son, Inc., a corporation of California  
Filed Oct. 30, 1968, Ser. No. 14,228  
Term of patent 14 years  
Int. Cl. D8-02

U.S. Cl. D8-45



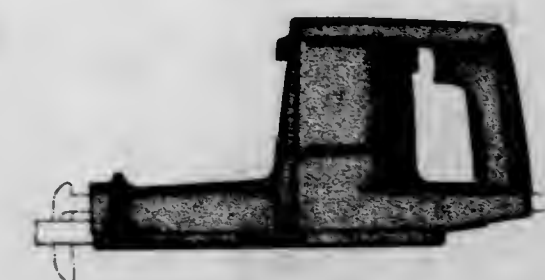
**214,986**  
**STAPLING MACHINE**  
Maurice Charles Glennon, 15 Hornshay St., London, England  
Filed July 29, 1968, Ser. No. 12,931  
Claims priority, application Great Britain Apr. 9, 1968  
Term of patent 14 years  
Int. Cl. D8-02

U.S. Cl. D8-49



**214,987**  
**PORTABLE POWER-OPERATED SABRE SAW**  
Michael P. Ballone, Baltimore, and Roderick F. Bunyea and Russell A. Fritts, Towson, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland  
Filed Oct. 1, 1968, Ser. No. 13,797  
Term of patent 14 years  
Int. Cl. D8-02

U.S. Cl. D8-64



1003



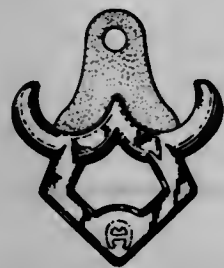
**214,988**  
**PRY BAR**  
Emory W. Isley, P.O. Box 341,  
Hartford, Iowa 50118  
Filed May 28, 1968, Ser. No. 12,112  
Term of patent 14 years  
Int. Cl. D8—02

U.S. Cl. D8—89



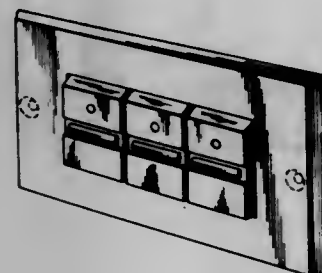
**214,989**  
**HANDBAG CLOSURE CLASP**  
Etienne Aigner, New York, N.Y., assignor to The  
Villager, Inc., Philadelphia, Pa., a corporation of  
Delaware  
Filed Sept. 18, 1968, Ser. No. 13,595  
Term of patent 14 years  
Int. Cl. D8—03

U.S. Cl. D8—125



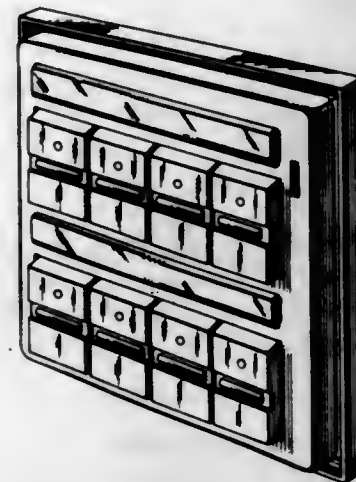
**214,990**  
**SWITCH PLATE FOR ELECTRIC SWITCH**  
Lawrence P. Mellyn, Gloucester, R.I., assignor to General  
Electric Company, a corporation of New York  
Filed Oct. 30, 1968, Ser. No. 14,225  
Term of patent 14 years  
Int. Cl. D8—03

U.S. Cl. D8—181



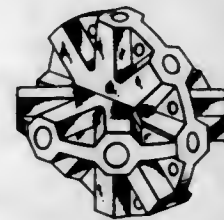
**214,991**  
**SWITCH PLATE FOR ELECTRIC SWITCH**  
Lawrence P. Mellyn, Gloucester, R.I., assignor to General  
Electric Company, a corporation of New York  
Filed Oct. 30, 1968, Ser. No. 14,232  
Term of patent 14 years  
Int. Cl. D8—03

U.S. Cl. D8—181



**214,992**  
**ROD-SECURING ELEMENT**  
Alfred H. Kelch, Jr., Mequon, Wis., assignor to The  
Kelch Corporation, Mequon, Wis., a corporation  
of Wisconsin  
Filed Sept. 11, 1968, Ser. No. 13,485  
Term of patent 14 years  
Int. Cl. D8—03

U.S. Cl. D8—236



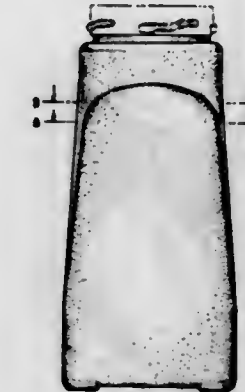
**214,993**  
**RAILROAD TRACK SPIKE**  
Royce G. Kershaw, 2066 Allendale Road,  
Montgomery, Ala. 36111  
Filed Aug. 14, 1968, Ser. No. 13,137  
Term of patent 14 years  
Int. Cl. D8—04

U.S. Cl. D8—271



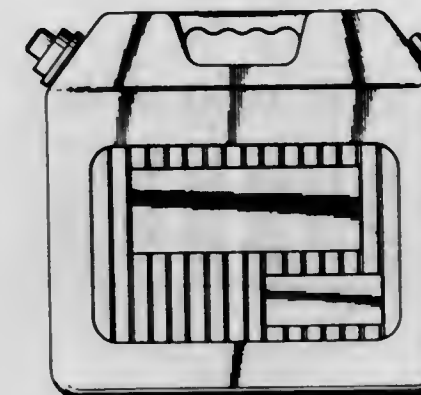
**214,994**  
**JAR**  
Lawrence Goldman, Valley Stream, N.Y., assignor to  
General Mills, Inc., a corporation of Delaware  
Filed May 3, 1968, Ser. No. 11,778  
Term of patent 14 years  
Int. Cl. D9—01

U.S. Cl. D9—129



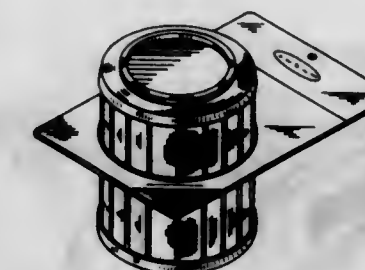
**214,995**  
**CAN**  
Melvin S. Shutt, Bartlesville, Okla., assignor to Phillips  
Petroleum Company, a corporation of Delaware  
Filed Mar. 28, 1968, Ser. No. 11,180  
Term of patent 14 years  
Int. Cl. D9—07

U.S. Cl. D9—175



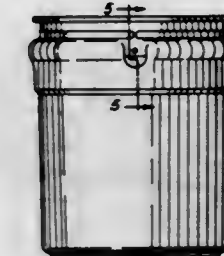
**214,996**  
**FOOD DISPLAY PACKAGE**  
Jack V. Cline, Hinsdale, Ill., assignor to Tee-Pak, Inc.  
Filed Dec. 20, 1967, Ser. No. 9,871  
Term of patent 14 years  
Int. Cl. D9—04

U.S. Cl. D9—191



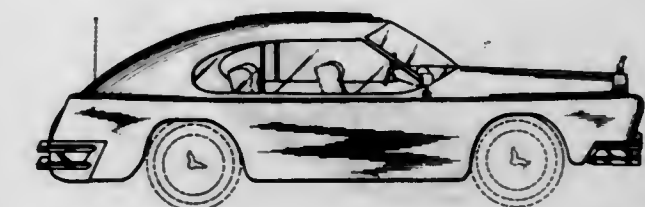
**214,997**  
**INDUSTRIAL SHIPPING CONTAINER**  
Roy G. Charan, Oak Lawn, Ill., assignor to Bennett  
Industries, Inc., Peotoma, Ill., a corporation of Delaware  
Filed June 20, 1967, Ser. No. 7,528  
Term of patent 14 years  
Int. Cl. D9—04, 05, 09

U.S. Cl. D9—216



**214,998**  
**AUTOMOBILE**  
Bruce B. Mohr, Rte. 1, Waukegan, Wis. 53597  
Filed July 9, 1968, Ser. No. 12,661  
Term of patent 14 years  
Int. Cl. D12—08

U.S. Cl. D14—3



**214,999**  
**RESILIENT GUN RECOIL PAD**  
Edward L. Morrow, Fairfield, Conn., assignor to Olin  
Mathieson Chemical Corporation, a corporation of  
Virginia  
Filed Feb. 12, 1968, Ser. No. 10,524  
Term of patent 14 years  
Int. Cl. D22—02

U.S. Cl. D22—9





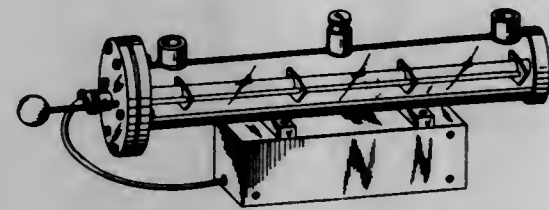
215,000

**ULTRAVIOLET WATER PURIFIER**

Albert Young, Sands Point, N.Y., assignor to Ultra-dynamics Corporation, Paterson, N.J., a corporation of Delaware  
Continuation-in-part of design application Ser. No. 3,264, July 29, 1966. This application June 10, 1968, Ser. No. 12,690

Term of patent 14 years  
Int. Cl. D23—01

U.S. Cl. D23—3



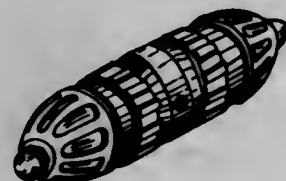
215,001

**ADJUSTABLE GAS PRESSURE REGULATOR**

George L. Hammon, Oakland, Calif., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware  
Filed Apr. 26, 1968, Ser. No. 11,638

Term of patent 14 years  
Int. Cl. D23—01

U.S. Cl. D23—21



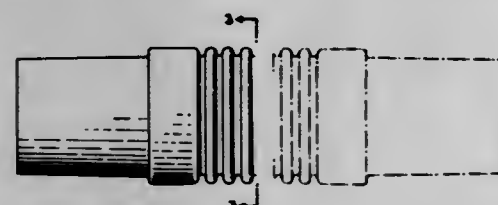
215,002

**CORRUGATED HOSE**

Joseph F. Bauman, Trenton, N.J., assignor to Acme-Hamilton Manufacturing Corporation, Trenton, N.J.  
Filed Feb. 27, 1968, Ser. No. 10,746

Term of patent 14 years  
Int. Cl. D23—01

U.S. Cl. D23—45



215,003

**COMBINED INLET AND EXHAUST VENT**

Walter A. Stevens, Monterey Park, N.Y., and Richard E. Carlson, Alhambra, Calif., assignors to Carlson Industries, Alhambra, Calif., a corporation of California  
Filed Mar. 28, 1968, Ser. No. 12,191

Term of patent 7 years  
Int. Cl. D23—04

U.S. Cl. D23—151



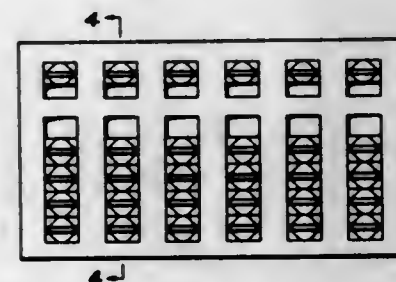
215,004

**ABACUS**

Kelichi Oota, 2257-5 Nagamori Kitatsubiki, Gifu Prefecture, Gifu, Japan  
Filed Nov. 4, 1968, Ser. No. 14,294

Term of patent 14 years  
Int. Cl. D19—08

U.S. Cl. D25—1



215,005

**ENCLOSURE FOR ELECTRONIC EQUIPMENT**

Lawrence G. Brunetti, Santa Barbara, Calif., Leonard W. Gilmore, Las Vegas, Nev., Jack R. Goodrich, Newark, and John F. Henshaw and Victor H. Henshaw, San Francisco, and Richard G. Richards, Goleta, Calif., assignors to EG&G, Inc., Bedford, Mass., a corporation of Massachusetts  
Filed May 15, 1968, Ser. No. 11,944

Term of patent 14 years  
Int. Cl. D14—02

U.S. Cl. D26—5



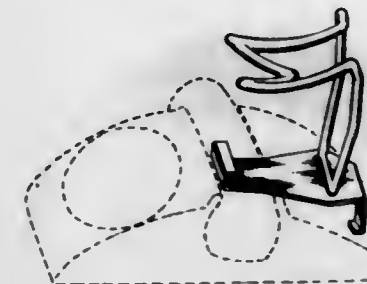
215,006

**TELEPHONE HANDSET SUPPORT OR THE LIKE**

Alexander Behring, 951 15th St., Santa Monica, Calif. 90403  
Filed Apr. 1, 1968, Ser. No. 11,237

Term of patent 14 years  
Int. Cl. D14—03

U.S. Cl. D26—14



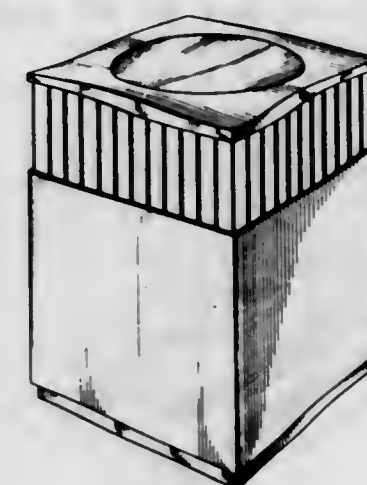
215,007

**LOUD SPEAKER ENCLOSURE**

Lawrence Levow, Huntington, N.Y., assignor to Harman-Kardon, Incorporated, Plainview, N.Y., a corporation of Delaware  
Filed Jan. 8, 1969, Ser. No. 15,246

Term of patent 14 years  
Int. Cl. D14—01; D6—01

U.S. Cl. D26—14



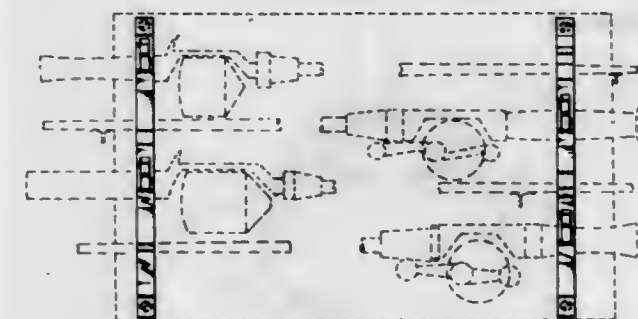
215,008

**FISHING ROD RACK OR THE LIKE**

Elsworth W. Wilson, Longview, Tex., assignor to Stemco Manufacturing Company, Inc., Longview, Tex.  
Filed Feb. 26, 1968, Ser. No. 10,706

Term of patent 14 years  
Int. Cl. D8—03; D6—01

U.S. Cl. D33—3



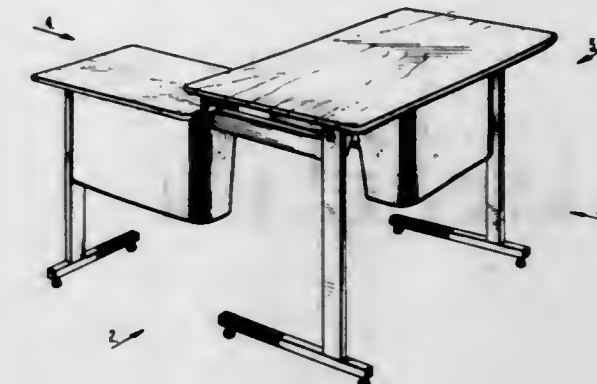
215,009

**COMBINED DESK AND TABLE UNIT**

Raymond C. Barnes, Temple, Tex., assignor to American Desk Manufacturing Company, Temple, Tex., a corporation of Texas  
Filed May 29, 1968, Ser. No. 12,130

Term of patent 14 years  
Int. Cl. D6—01

U.S. Cl. D33—7



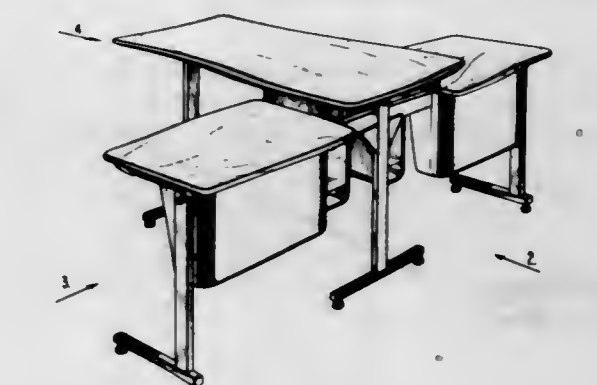
215,010

**COMBINED TABLE AND DUAL DESK UNIT**

Raymond C. Barnes, Temple, Tex., assignor to American Desk Manufacturing Company, Temple, Tex., a corporation of Texas  
Filed May 29, 1968, Ser. No. 12,131

Term of patent 14 years  
Int. Cl. D6—01

U.S. Cl. D33—7



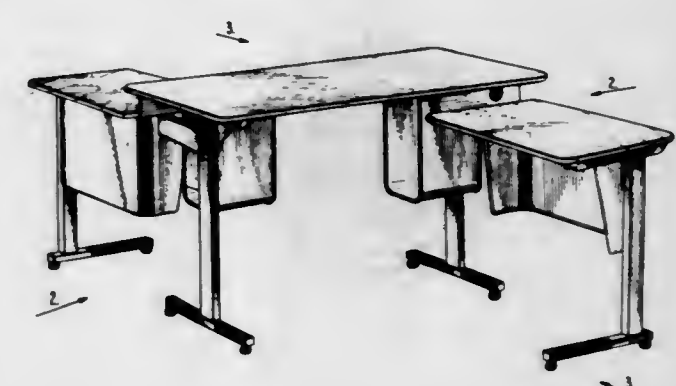
215,011

**COMBINED TABLE AND DUAL DESK UNIT**

Raymond C. Barnes, Temple, Tex., assignor to American Desk Manufacturing Company, Temple, Tex., a corporation of Texas  
Filed May 29, 1968, Ser. No. 12,132

Term of patent 14 years  
Int. Cl. D6—01

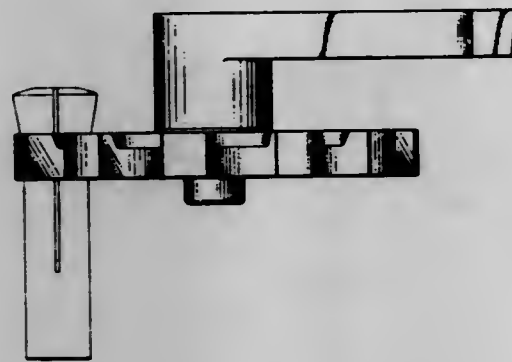
U.S. Cl. D33—7





**215,012**  
**RACK FOR COLLETS OR THE LIKE**  
 Daniel S. Marselli, 99 West St.,  
 Cromwell, Conn. 06416  
 Filed May 6, 1968, Ser. No. 11,792  
 Term of patent 14 years  
 Int. Cl. D6—01

U.S. Cl. D33—17



**215,013**  
**GRASS MOWER**  
 Bernt Filip Valentin Holm, Teckomatorp, Sweden, as-  
 signor to Karl Sven Ingemar Svenningsson, Anderstorp,  
 Sweden

Filed Apr. 10, 1968, Ser. No. 11,403  
 Term of patent 14 years  
 Int. Cl. D15—03

U.S. Cl. D40—1



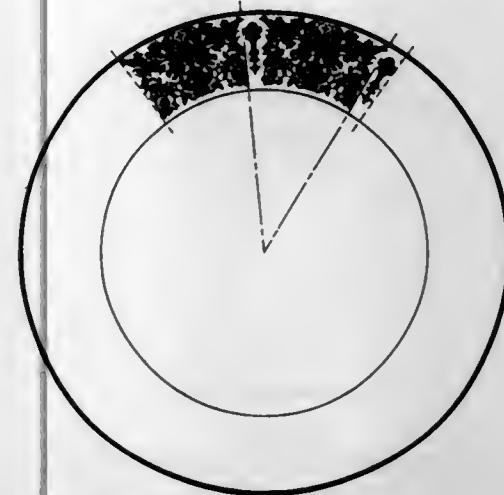
**215,014**  
**COASTER**  
 Wilbert J. Gahn, 185 Elmwynd Drive,  
 Orange, N.J. 07050  
 Filed May 14, 1968, Ser. No. 11,916  
 Term of patent 7 years  
 Int. Cl. D7—01

U.S. Cl. D44—10



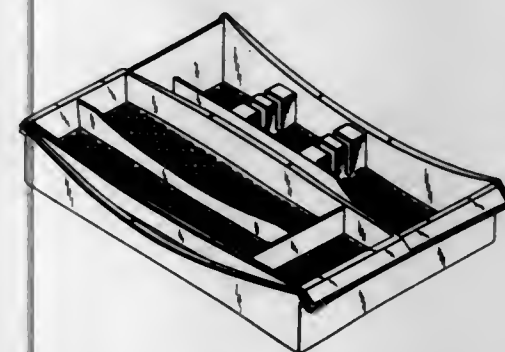
**215,015**  
**PLATE OR SIMILAR ARTICLE**  
 Ryotaro Takeoka, 221 Kitayamato-cho, Nishikasuga-gun,  
 Aichi-ken, Japan  
 Filed June 7, 1968, Ser. No. 12,260  
 Term of patent 7 years  
 Int. Cl. D7—01

U.S. Cl. D44—15



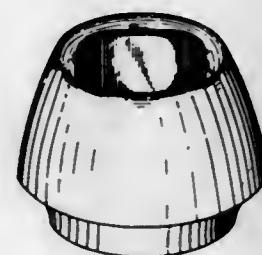
**215,016**  
**COMBINED DISPLAY AND STORAGE TRAY FOR CUTLERY OR THE LIKE**  
 Louis Krieger, Flushing, N.Y., assignor to Joy Plastics, Inc., New York, N.Y., a corporation of New York  
 Filed Mar. 12, 1968, Ser. No. 10,928  
 Term of patent 14 years  
 Int. Cl. D7—02

U.S. Cl. D44—29



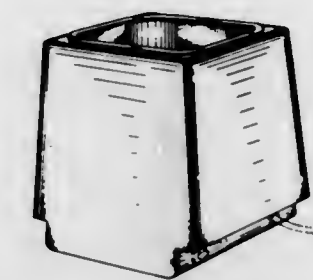
**215,017**  
**ULTRASONIC CLEANING APPARATUS**  
 Carl R. Yudin, Port Washington, N.Y., assignor to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware  
 Filed July 26, 1968, Ser. No. 12,907  
 Term of patent 14 years  
 Int. Cl. D15—06

U.S. Cl. D49—1



**215,018**  
**ULTRASONIC CLEANING APPARATUS**  
 Herman A. Rissolo, Norwalk, Conn., assignor to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware  
 Filed Sept. 17, 1968, Ser. No. 13,574  
 Term of patent 14 years  
 Int. Cl. D7—06; D15—06

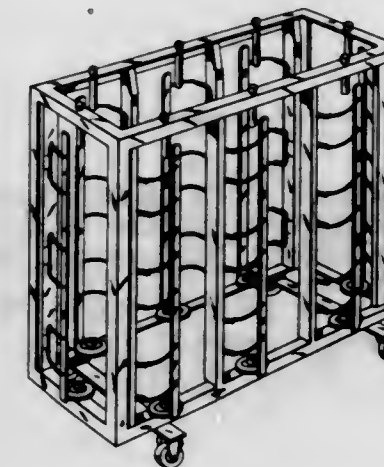
U.S. Cl. D49—11



**215,019**  
**MOVABLE RACK FOR ROLL PAPER PRODUCTS**  
 John J. M. Larson, Des Peres, Mo., assignor to Graham Paper Company, St. Louis, Mo., a corporation of Missouri

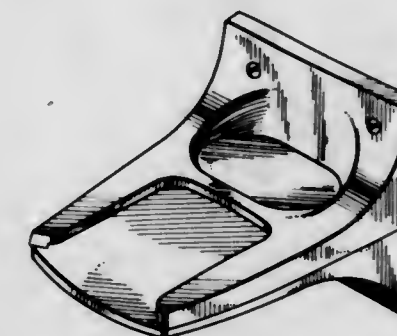
Filed May 3, 1968, Ser. No. 11,782  
 Term of patent 14 years  
 Int. Cl. D19—99

U.S. Cl. D52—2



**215,020**  
**COIN CHUTE OR THE LIKE**  
 Robert K. Unter, Rockford, Ill., assignor to Keystone Consolidated Industries, Inc., a corporation of Delaware  
 Filed July 19, 1968, Ser. No. 12,829  
 Term of patent 14 years  
 Int. Cl. D20—01

U.S. Cl. D52—3



**215,021**  
**THERMOMETER HOLDER**  
 Frank R. Beich, Wilmette, and Leonard Seeley, Palatine, Ill., assignors to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois  
 Original design application May 2, 1967, Ser. No. 6,917.  
 Divided and this application May 2, 1968, Ser. No. 12,193

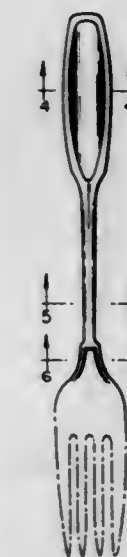
Term of patent 14 years  
 Int. Cl. D10—09

U.S. Cl. D52—7



**215,022**  
**FORK OR SIMILAR ARTICLE OF FLATWARE**  
 Richard C. Gavette, Hampton, N.H., assignor to Towle Manufacturing Company, Newburyport, Mass., a corporation of Massachusetts  
 Filed Sept. 23, 1968, Ser. No. 13,653  
 Term of patent 14 years  
 Int. Cl. D7—03

U.S. Cl. D54—12

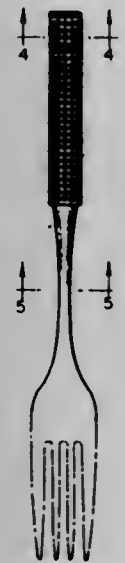




215,023

**FORK OR SIMILAR ARTICLE OF FLATWARE**  
 Colin B. Richmond II, Newbury, Mass., assignor to Towle Manufacturing Company, Newburyport, Mass., a corporation of Massachusetts  
 Filed Sept. 23, 1968, Ser. No. 13,661  
 Term of patent 14 years  
 Int. Cl. D7—03

U.S. Cl. D54—12



215,025

**FORK OR SIMILAR ARTICLE OF FLATWARE**  
 Colin B. Richmond II, Newbury, Mass., assignor to Towle Manufacturing Company, a corporation of Massachusetts  
 Filed Sept. 23, 1968, Ser. No. 13,676  
 Term of patent 14 years  
 Int. Cl. D7—03

U.S. Cl. D54—12



215,024

**FORK OR SIMILAR ARTICLE OF FLATWARE**  
 Greenleaf B. Martin, Newburyport, Mass., assignor to Towle Manufacturing Company, a corporation of Massachusetts  
 Filed Sept. 23, 1968, Ser. No. 13,675  
 Term of patent 14 years  
 Int. Cl. D7—03

U.S. Cl. D54—12



215,026

**FORK OR SIMILAR ARTICLE OF FLATWARE**  
 Colin B. Richmond II, Newbury, Mass., assignor to Towle Manufacturing Company, Newburyport, Mass., a corporation of Massachusetts  
 Filed Sept. 23, 1968, Ser. No. 13,677  
 Term of patent 14 years  
 Int. Cl. D7—03

U.S. Cl. D54—12



215,027

**SPOON OR SIMILAR ARTICLE**  
 Ellen B. Manderfield, Syracuse, N.Y., assignor to Onelda Ltd., Onelda, N.Y., a corporation of New York  
 Filed Dec. 10, 1968, Ser. No. 14,859  
 Term of patent 14 years  
 Int. Cl. D7—03

U.S. Cl. D54—12



215,029

**PLECTRUM HOLDER**  
 Christer Olof Gardsby, Svalbogatan 3, Malmo, Sweden  
 Filed Dec. 6, 1967, Ser. No. 9,658  
 Term of patent 14 years  
 Int. Cl. D17—99

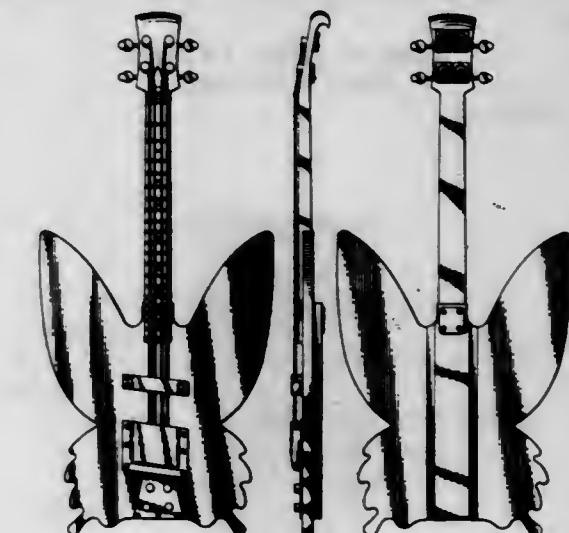
U.S. Cl. D56—1



215,030

**GUITAR**  
 Francis B. Cutright, 52 Prentiss St., Munroe Falls, Ohio 44262  
 Filed Dec. 12, 1968, Ser. No. 14,941  
 Term of patent 14 years  
 Int. Cl. D17—03

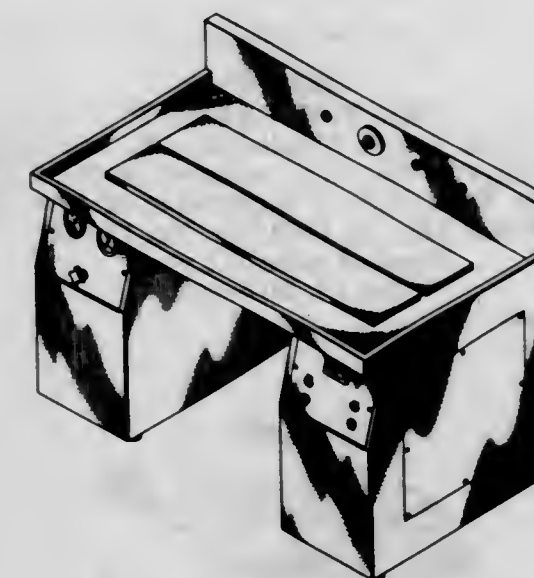
U.S. Cl. D56—1



215,028

**CONTROL CONSOLE FOR DEBURRING APPARATUS**  
 Robert L. Paden, Rochester, N.Y., assignor to El-Chem Machinery, Inc., Rochester, N.Y., a corporation of New York  
 Filed Sept. 25, 1968, Ser. No. 13,696  
 Term of patent 14 years  
 Int. Cl. D15—05

U.S. Cl. D55—1



215,031

**HAND MAGNIFIER**  
 St. Barth Alaska, 3811 Scoville Ave., Berwyn, Ill. 60402  
 Filed July 8, 1968, Ser. No. 12,650  
 Term of patent 14 years  
 Int. Cl. D16—08

U.S. Cl. D57—1





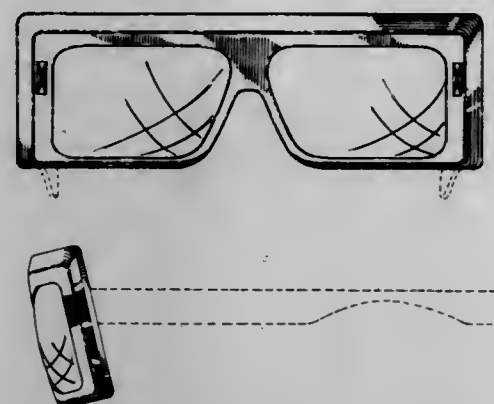
215,032

## PAIR OF EYEGLASSES

Richard L. Huggins, Lima, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed July 1, 1968, Ser. No. 12,577  
Term of patent 14 years  
Int. Cl. D16-08

U.S. Cl. D57-1



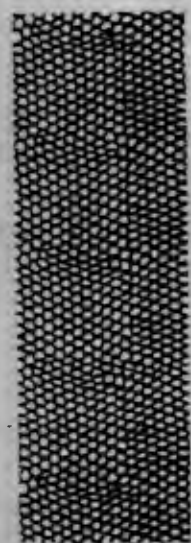
215,033

## SYNTHETIC FOOD CASING

Richard A. Ottens, Downers Grove, Ill., assignor to Union Carbide Corporation, a corporation of New York  
Continuation-in-part of design application Ser. No. 8,647, Sept. 19, 1967. This application Aug. 7, 1968, Ser. No. 13,052

Term of patent 14 years  
Int. Cl. D5-03

U.S. Cl. D59-2

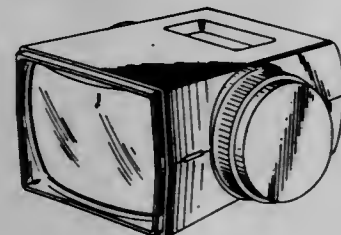


215,034

## SLIDE VIEWER

Thomas M. Steinbach, Park Ridge, Ill., assignor to GAF Corporation, a corporation of Delaware  
Filed Feb. 14, 1968, Ser. No. 10,569  
Term of patent 14 years  
Int. Cl. D16-03

U.S. Cl. D61-1



215,035

## SLIDE VIEWER AND STAND THEREFOR

Thomas M. Steinbach, Park Ridge, Ill., assignor to GAF Corporation, a corporation of Delaware  
Filed Feb. 14, 1968, Ser. No. 10,575  
Term of patent 14 years  
Int. Cl. D16-03

U.S. Cl. D61-1

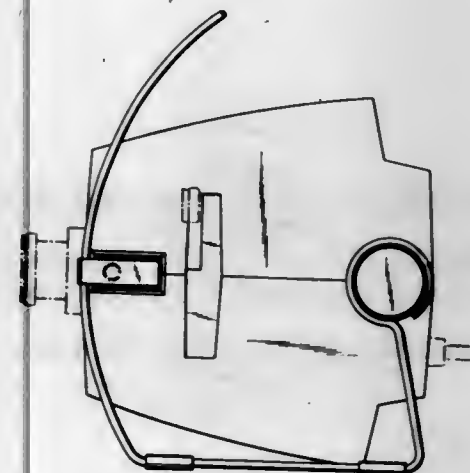


215,036

## PROJECTOR FOR FILMSTRIP OR OTHER IMAGE-BEARING TRANSPARENCY

Eugene Martinez, Irvington, N.Y., assignor of one-half interest to Robert H. Reibel, Croton-on-Hudson, N.Y.  
Filed Mar. 25, 1968, Ser. No. 11,125  
Term of patent 14 years  
Int. Cl. D16-03, 04

U.S. Cl. D61-1

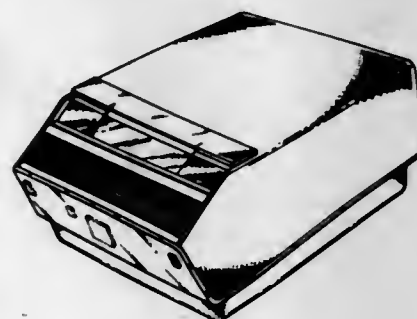


215,037

## PRINTER CABINET

Clayton Harold Clark, Mundelein, Ill., and Gerald M. Adams, Fayetteville, N.Y., assignors to SCM Corporation, New York, N.Y., a corporation of New York  
Filed May 16, 1968, Ser. No. 11,968  
Term of patent 14 years  
Int. Cl. D14-02

U.S. Cl. D64-11



215,038

## PADDLE BOAT

Robert H. Reeder, 301 S. Nimbus Ave., and Billy R. Peak, 15097 63rd St., both of Clearwater, Fla. 33516  
Filed Feb. 29, 1968, Ser. No. 10,789  
Term of patent 7 years  
Int. Cl. D12-06

U.S. Cl. D71-1

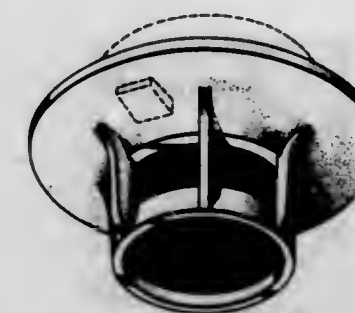


215,039

## FIRE DETECTOR OR THE LIKE

Nagao Abe, Tokyo, Japan, assignor to Nittan Company, Limited, Tokyo, Japan, a corporation of Japan  
Filed June 14, 1968, Ser. No. 12,369  
Claims priority, application Japan Jan. 11, 1968  
Term of patent 14 years  
Int. Cl. D29-01

U.S. Cl. D72-1

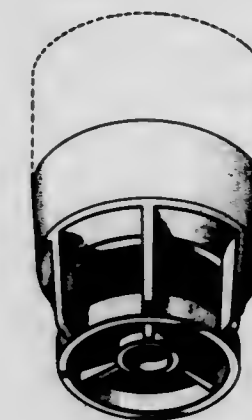


215,040

## FIRE DETECTOR OR THE LIKE

Nagao Abe, Tokyo, Japan, assignor to Nittan Company, Limited, Tokyo, Japan, a corporation of Japan  
Filed June 14, 1968, Ser. No. 12,370  
Claims priority, application Japan Dec. 27, 1967  
Term of patent 14 years  
Int. Cl. D29-01

U.S. Cl. D72-1



215,041

## LETTER OPENER OR THE LIKE

Clayton A. Laughlin, Minneapolis, Minn., assignor to Arthur Salm Inc., Chicago, Ill., a corporation of Illinois  
Filed Apr. 10, 1968, Ser. No. 11,401  
Term of patent 14 years  
Int. Cl. D9-02

U.S. Cl. D74-10



215,042

## WRITING INSTRUMENT

Gino Di Spirito, Hasbrouck Heights, N.J., assignor to All-Rite Pen Company, Inc., Hackensack, N.J., a corporation of Delaware  
Filed Dec. 29, 1967, Ser. No. 9,978  
Term of patent 14 years  
Int. Cl. D19-06

U.S. Cl. D74-17





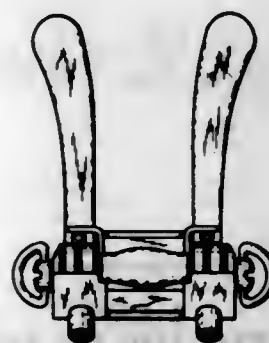
**215,043**  
**ADJUSTABLE WIG STAND**  
 Woodrow J. Leonard, 7500 NE. 8th Ave.,  
 Miami, Fla. 33138  
 Filed Aug. 20, 1968, Ser. No. 13,207  
 Term of patent 3½ years  
 Int. Cl. D20—02

U.S. Cl. D80—8



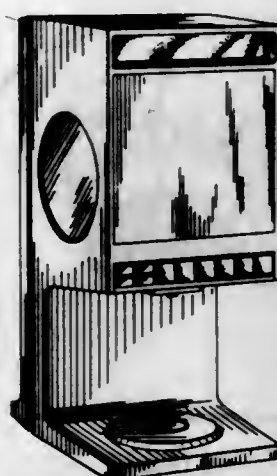
**215,044**  
**CONTROL LEVER FOR THE SPEED CHANGE GEAR**  
**OF A BICYCLE OR THE LIKE**  
 Nobuo Ozaki, Sakai, Osaka, Japan, assignor to Maeda  
 Iron Works Co., Ltd., Osaka Prefecture, Japan, a cor-  
 poration of Japan  
 Filed Sept. 30, 1968, Ser. No. 13,776  
 Claims priority, application Japan May 23, 1968  
 Term of patent 14 years  
 Int. Cl. D12—14

U.S. Cl. D90—1



**215,045**  
**BEVERAGE DISPENSER**  
 E. Burton Benjamin, Highland Park, Ill., assignor to  
 Dominion Electric Corporation, a corporation of Ohio  
 Filed Mar. 25, 1968, Ser. No. 11,129  
 Term of patent 14 years  
 Int. Cl. D15—12

U.S. Cl. D94—3



## LIST OF REISSUE PATENTEEES

TO WHOM

PATENTS WERE ISSUED ON THE 19TH DAY OF AUGUST, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AMP Inc.: See—  
 Evans, William R. Re. 26,646.  
 Elektrokemisk A/S.: See—  
 Terjesen, Sven G., and Ve. Re. 26,645.  
 Essex International, Inc.: See—  
 Stol, Walter, and Thomson, Re. 26,648.  
 Evans, William R., to AMP Inc. Blanked strip from which female contacts are to be formed for electrical connecting system. Re. 26,646, 8-19-69, Cl. 29—190.  
 Forbes, Sydney, to PPG Industries, Inc. Method of operating an alkali chlorate cell. Re. 26,644, 8-19-69, Cl. 204—95.  
 PPG Industries, Inc.: See—  
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Stol, Walter, and B. Thomson, to Essex International, Inc. Automatic cancelling turn signal with an intermediate signal position which is manually operable and releasable. Re. 26,648, 8-19-69, Cl. 200—61.34.  
 Terjesen, Sven G., and A. Ve, to Elektrokemisk A/S. Method of recovering fluorine, aluminum and sodium compounds from electrolytic furnace wastes. Re. 26,645, 8-19-69, Cl. 23—88.  
 Thomson, Robert: See—  
 Stol, Walter, and Thomson. Re. 26,648.  
 Ve, Arnfinn: See—  
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 Welty, Frank. Apparatus for controlling the rate of flow of liquids. Re. 26,647, 8-19-69, Cl. 137—504.

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 Adams, Gerald M.: See—  
 Clark, Clayton H., and Adams. 215,037.  
 Aigner, Etienne, to The Villager, Inc. Handbag closure clasp. 214,989, 8-19-69, Cl. D8—125.  
 Alaska, St. Barth. Hand magnifier. 215,031, 8-19-69, Cl. D57—1.  
 All-Rite Pen Co., Inc.: See—  
 Di Spirito, Gino. 215,042.  
 American Desk Mfg. Co.: See—  
 Barnes, Raymond C. 215,009.  
 Barnes, Raymond C. 215,010.  
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 American Hospital Supply Corp.: See—  
 Belch, Frank R., and Seeley. 215,021.  
 Ave. Nagao, to Nittan Co., Ltd. Fire detector or the like. 215,059, 8-19-69, Cl. D72—1.  
 Ave. Nagao, to Nittan Co., Ltd. Fire detector or the like. 215,040, 8-19-69, Cl. D72—1.  
 Ballone, Michael P., R. F. Bunyea, and R. A. Fritts, to The Black and Decker Mfg. Co. Portable power operated saw. 214,987, 8-19-69, Cl. D8—64.  
 Barnes, Raymond C., to American Desk Mfg. Co. Combined desk and table unit. 215,009, 8-19-69, Cl. D33—7.  
 Barnes, Raymond C., to American Desk Mfg. Co. Combined table and dual desk unit. 215,010, 8-19-69, Cl. D33—7.  
 Barnes, Raymond C., to American Desk Mfg. Co. Combined table and dual desk unit. 215,011, 8-19-69, Cl. D33—7.  
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 Behring, Alexander. Telephone handset support or the like. 215,006, 8-19-69, Cl. D28—14.  
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 Yuridin, Carl R. 215,017.  
 Brunetti, Lawrence G., L. W. Gilmore, J. R. Goodrich, J. F. and V. H. Henshaw, and R. G. Richards, to EG & G, Inc. Enclosure for electronic equipment. 215,005, 8-19-69, Cl. D26—5.  
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 Kelch, Alfred H., Jr., to The Kelch Corp. Rod-securing element. 214,992, 8-19-69, Cl. D8—236.  
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 Kelch, Alfred H., Jr. 214,992.  
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 Larson, John J. M., to Graham Paper Co. Movable rack for roll paper products. 215,019, 8-19-69, Cl. D52—2.  
 Laughlin, Clayton A., to Salm, Arthur, Inc. Letter opener or the like. 215,041, 8-19-69, Cl. D74—10.  
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 Manderfeld, Ellen B., to Oneda Ltd. Spoon or similar article. 215,027, 8-19-69, Cl. D54-12.  
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 Martin, Greenleaf B., to Towle Mfg. Co. Fork or similar article of flatware. 215,024, 8-19-69, Cl. D54-12.  
 Martinez, Eugene, 1/2 to R. H. Reibel. Projector for film-strip or other image bearing transparency. 215,036, 8-19-69, Cl. D61-1.  
 Mellyn, Lawrence P., to General Electric Co. Switch plate for electric switch. 214,990, 8-19-69, Cl. D8-181.  
 Mellyn, Lawrence P., to General Electric Co. Switch plate for electric switch. 214,991, 8-19-69, Cl. D8-181.  
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 Ave, Nagao, 215,040.  
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 Gavette, Richard C. 215,022.  
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## LIST OF PATENTEEES

TO WHOM

PATENTS WERE ISSUED ON THE 19TH DAY OF AUGUST, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

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Arc-Co Incorporated: See—  
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Archer, Giles A., and Sternbach, Leo Henryk, to Hoffmann-La Roche, Inc. Preparation of 1,4-benzodiazepin-2-one-4-oxide from 2-lower alkoxy-1,4-benzodiazepine-4-oxide. 3,462,418, Cl. 260-239.3  
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113 : 3,462,542	113 : 3,462,542	273- 1.5 : 3,462,056	94.3 : 3,462,434	674 : 3,462,506	346 : 3,462,233
143 : 3,462,543	143 : 3,462,543	274- 1 : 3,462,057	94.3 : 3,462,435	674 : 3,462,506	352 : 3,462,234
175- 4.5 : 3,461,977	175- 4.5 : 3,461,977	275- 1 : 3,462,058	94.3 : 3,462,436	674 : 3,462,506	353 : 3,462,235
27 : 3,461,978	27 : 3,461,978	276- 1 : 3,462,059	94.3 : 3,462,437	674 : 3,462,506	354 : 3,462,236
45 : 3,461,979	45 : 3,461,979	277- 1 : 3,462,060	94.3 : 3,462,438	674 : 3,462,506	355 : 3,462,237
70 : 3,461,980	70 : 3,461,980	278- 1 : 3,462,061	94.3 : 3,462,439	674 : 3,462,506	356 : 3,462,238
246 : 3,461,981	246 : 3,461,981	279- 1 : 3,462,062	94.3 : 3,462,440	674 : 3,462,506	357 : 3,462,239
294 : 3,461,982	294 : 3,461,982	280- 11.35 : 3,462,063	94.3 : 3,462,441	674 : 3,462,506	358 : 3,462,240
375 : 3,461,983	375 : 3,461,983	281- 1 : 3,462,064	94.3 : 3,462,442	674 : 3,462,506	359 : 3,462,241
176- 36 : 3,462,545	176- 36 : 3,462,545	282- 1 : 3,462,065	94.3 : 3,462,443	674 : 3,462,506	360 : 3,462,242
177- 3 : 3,461,984	177- 3 : 3,461,984	283- 1 : 3,462,066	94.3 : 3,462,444	674 : 3,462,506	361 : 3,462,243
7 : 3,461,985	7 : 3,461,985	284- 1 : 3,462,067	94.3 : 3,462,445	674 : 3,462,506	362 : 3,462,244
178 : 3,461,986	178 : 3,461,986	285- 1 : 3,462,068	94.3 : 3,462,446	674 : 3,462,506	363 : 3,462,245
3,461,987	3,461,987	286- 1 : 3,462,069	94.3 : 3,462,447	674 : 3,462,506	364 : 3,462,246

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324- 5 : 3,462,674	330- 4.9 : 3,462,696	335-154 : 3,462,718	340-167 : 3,462,740	346- 1 : 3,462,761	356-168 : 3,462,228
3,462,676	9 : 3,462,697	206 : 3,462,719	172.5 : 3,462,741	74 : 3,462,762	169 : 3,462,229
3,462,677	15 : 3,462,698	305 : 3,462,720	172.5 : 3,462,741	350-140 : 3,462,210	401- 11 : 3,462,230
10 : 3,462,678	34 : 3,462,699	337- 75 : 3,462,721	172.5 : 3,462,741	150 : 3,462,211	176 : 3,462,231
3,462,679	35 : 3,462,700	347 : 3,462,722	172.5 : 3,462,741	160 : 3,462,212	209 : 3,462,232
34 : 3,462,680	40 : 3,462,701	338- 7 : 3,462,723	172.5 : 3,462,741	352- 86 : 3,462,213	56 : 3,462,235
52 : 3,462,681	331- 18 : 3,462,702	229 : 3,462,724	173 : 3,462,742	353- 88 : 3,462,214	90 : 3,462,236
54 : 3,462,682	37 : 3,462,703	339- 51 : 3,462,725	174 : 3,462,743	117 : 3,462,216	128 : 3,462,237
65 : 3,462,683	74 : 3,462,704	64 : 3,462,726	174 : 3,462,744	355- 14 : 3,462,217	200 : 3,462,239
70 : 3,462,675	94 : 3,462,705	89 : 3,462,727	174 : 3,462,745	50 : 3,462,218	217 : 3,462,230
94 : 3,462,684	.5 : 3,462,706	128 : 3,462,728	174 : 3,462,746	53 : 3,462,219	244 : 3,462,231
158 : 3,462,685	3,462,707	139 : 3,462,729	174 : 3,462,747	64 : 3,462,220	266 : 3,462,232
325- 38 : 3,462,686	96 : 3,462,708	8 : 3,462,730	174 : 3,462,748	77 : 3,462,221	304 : 3,462,233
42 : 3,462,687	116 : 3,462,710	52 : 3,462,731	174 : 3,462,749	356- 12 : 3,462,222	308 : 3,462,234
47 : 3,462,688	332- 7.51 : 3,462,711	54 : 3,462,732	174 : 3,462,750	32 : 3,462,223	309 : 3,462,235
363 : 3,462,689	3,462,712	58 : 3,462,733	174 : 3,462,751	47 : 3,462,224	326 : 3,462,237
440 : 3,462,690	333- 21 : 3,462,713	54 : 3,462,734	174 : 3,462,752	72 : 3,462,225	431- 25 : 3,462,233
475 : 3,462,691	72 : 3,462,714	146.1 : 3,462,736	174 : 3,462,753	72 : 3,462,226	255 : 3,462,234
328- 5 : 3,462,692	79 : 3,462,715	.3 : 3,462,737	174 : 3,462,754	100 : 3,462,227	289 : 3,462,235
119 : 3,462,695	335- 23 : 3,462,716	147 : 3,462,738	174 : 3,462,755	106 : 3,462,127	
162 : 3,462,693	74 : 3,462,717	154 : 3,462,739	174 : 3,462,756		
329-110 : 3,462,694			174 : 3,462,757		
			390 : 3,462,760		



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## PATENTS

1 : 3,461,672	6 : 3,461,880	6 : 3,462,588	9 : 3,461,903	17 : 3,461,551	17 : 3,462,280
3,461,800	3,461,885	3,462,595	3,461,943	3,461,556	3,462,329
3,462,145	3,461,886	3,462,620	3,461,946	3,461,576	3,462,364
3,462,238	3,461,894	3,462,622	3,461,964	3,461,581	3,462,367
3,462,297	3,461,901	3,462,626	3,462,025	3,461,588	3,462,374
4 : 3,461,634	3,461,911	3,462,628	3,462,056	3,461,604	3,462,403
3,462,175	3,461,912	3,462,629	3,462,084	3,461,629	3,462,419
3,462,317	3,461,924	3,462,633	3,462,096	3,461,638	3,462,422
3,462,574	3,461,936	3,462,637	3,462,217	3,461,640	3,462,426
3,462,661	3,461,937	3,462,639	3,462,259	3,461,665	3,462,461
3,462,682	3,461,954	3,462,642	3,462,279	3,461,699	3,462,466
3,462,740	3,461,959	3,462,654	3,462,307	3,461,710	3,462,467
5 : 3,461,845	3,461,969	3,462,655	3,462,387	3,461,714	3,462,505
3,461,974	3,461,970	3,462,659	3,462,492	3,461,756	3,462,506
6 : 3,461,479	3,461,971	3,462,662	3,462,518	3,461,758	3,462,508
3,461,533	3,461,972	3,462,674	3,462,563	3,461,761	3,462,509
3,461,538	3,461,977	3,462,677	3,462,581	3,461,788	3,462,510
3,461,555	3,461,979	3,462,699	3,462,648	3,461,812	3,462,511
3,461,558	3,461,982	3,462,702	3,462,679	3,461,817	3,462,540
3,461,563	3,462,001	3,462,709	3,462,721	3,461,818	3,462,554
3,461,564	3,462,010	3,462,715	3,462,755	3,461,832	3,462,559
3,461,571	3,462,030	3,462,730	3,462,758	3,461,839	3,462,564
3,461,574	3,462,063	3,462,739	3,462,772	3,461,840	3,462,585
3,461,591	3,462,070	3,462,756	3,462,786	3,461,865	3,462,589
3,461,598	3,462,080	3,462,762	3,462,796	3,461,873	3,462,616
3,461,606	3,462,101	3,462,772	3,462,849	3,461,877	3,462,634
3,461,621	3,462,109	3,461,597	3,461,597	3,461,889	3,462,640
3,461,626	3,462,113	3,461,708	3,461,708	3,461,913	3,462,666
3,461,632	3,462,117	3,461,834	3,461,834	3,461,940	3,462,668
3,461,643	3,462,123	3,461,841	3,461,841	3,462,006	3,462,691
3,461,668	3,462,138	3,462,090	3,462,090	3,461,656	3,462,698
3,461,673	3,462,140	3,462,183	3,462,183	3,461,976	3,462,714
3,461,674	3,462,147	3,462,188	3,462,188	3,461,988	3,462,046
3,461,696	3,462,152	3,462,602	3,462,602	3,462,092	3,462,047
3,461,709	3,462,161	3,462,689	3,462,689	3,462,184	3,462,048
3,461,711	3,462,169	3,462,751	3,462,751	3,462,325	3,461,684
3,461,712	3,462,170	3,462,752	3,462,752	3,462,731	3,462,112
3,461,713	3,462,223	3,461,480	3,461,480	3,462,051	3,462,120
3,461,720	3,462,227	3,462,227	3,462,227	3,462,208	3,462,173
3,461,730	3,462,239	3,461,529	3,461,529	3,462,242	3,462,207
3,461,739	3,462,267	3,461,547	3,461,547	3,462,683	3,462,216
3,461,750	3,462,311	3,461,553	3,461,553	3,462,729	3,462,233
3,461,771	3,462,314	3,461,612	3,461,612	3,461,967	3,462,287
3,461,780	3,462,316	3,461,704	3,461,704	3,462,102	3,462,326
3,461,790	3,462,349	3,461,731	3,461,731	3,461,470	3,462,359
3,461,802	3,462,435	3,461,748	3,461,748	3,461,476	3,462,431
3,461,825	3,462,530	3,461,822	3,461,822	3,461,482	3,462,488
3,461,843	3,462,547	3,461,847	3,461,847	3,461,483	3,462,444
3,461,862	3,462,553	3,461,859	3,461,859	3,461,484	3,462,446
3,461,870	3,462,573	3,461,902	3,461,902	3,461,535	3,462,477

XLII

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XLIII

19 : 3,461,929	26 : 3,461,860	34 : 3,461,742	36 : 3,461,763	39 : 3,461,688	42 : 3,461,754
3,461,932	3,461,861	3,461,781	3,461,776	3,461,703	3,461,772
3,462,075	3,461,938	3,461,803	3,461,787	3,461,725	3,461,799
3,462,283	3,461,948	3,461,871	3,461,813	3,461,737	3,461,816
3,462,692	3,461,991	3,461,884	3,461,842	3,461,768	3,461,819
3,462,746	3,462,028	3,461,996	3,461,849	3,461,775	3,461,853
20 : 3,461,478	3,462,033	3,462,013	3,461,858	3,461,777	3,461,864
3,461,573	3,462,053	3,462,026	3,461,867	3,461,794	3,461,875
3,461,811	3,462,097	3,462,064	3,461,878	3,461,795	3,461,893
3,462,360	3,462,143	3,462,093	3,461,879	3,461,798	3,461,895
3,462,486	3,462,181	3,462,095	3,461,892	3,461,814	3,461,930
21 : 3,461,906	3,462,191	3,462,111	3,461,898	3,461,815	3,461,950
3,462,565	3,462,192	3,462,131	3,461,908	3,461,838	3,461,951
3,462,566	3,462,197	3,462,135	3,461,910	3,461,876	3,461,953
22 : 3,461,831	3,462,198	3,462,212	3,461,923	3,461,907	3,461,960
3,461,962	3,462,200	3,462,215	3,461,924	3,461,921	3,462,012
3,462,139	3,462,201	3,462,215	3,461,975	3,461,934	3,462,023
3,462,176	3,462,251	3,462,237	3,461,998	3,461,941	3,462,049
23 : 3,461,582	3,462,281	3,462,249	3,462,034	3,461,945	3,462,079
3,461,635	3,462,288	3,462,301	3,462,041	3,461,952	3,462,083
3,461,496	3,462,292	3,462,308	3,462,045	3,461,956	3,462,094
24 : 3,461,539	3,462,324	3,462,320	3,462,054	3,461,966	3,462,110
3,461,595	3,462,330	3,462,327	3,462,082	3,461,985	3,462,121
3,461,646	3,462,363	3,462,335	3,462,116	3,461,992	3,462,134
3,461,649	3,462,368	3,462,344	3,462,124	3,462,007	3,462,195
3,461,687	3,462,373	3,462,348	3,462,136	3,462,019	3,462,234
3,461,801	3,462,414	3,462,354	3,462,144	3,462,024	3,462,253
3,461,855	3,462,416	3,462,357	3,462,151	3,462,042	3,462,278
3,461,874	3,462,446	3,462,377	3,462,171	3,462,050	3,462,291
3,461,899	3,462,448	3,462,378	3,462,177	3,462,052	3,462,293
3,461,900	3,462,451	3,462,385	3,462,182	3,462,055	3,462,337
3,462,155	3,462,472	3,462,390	3,462,189	3,462,058	3,462,346
3,462,300	3,462,473	3,462,392	3,462,203	3,462,059	3,462,350
3,462,309	3,462,495	3,462,399	3,462,214	3,462,061	3,462,358
3,462,310	3,462,496	3,462,418	3,462,218	3,462,067	3,462,382
3,462,369	3,462,522	3,462,428	3,462,219	3,462,073	3,462,391
3,462,590	3,462,532	3,462,450	3,462,229	3,462,081	3,462,438
3,462,596	3,462,541	3,462,460	3,462,231	3,462,087	3,462,439
3,462,606	3,462,570	3,462,464	3,462,232	3,462,119	3,462,440
3,462,615	3,462,571	3,462,465	3,462,235	3,462,160	3,462,441
3,462,753	3,462,576	3,462,474	3,462,256	3,462,186	3,462,443
3,462,757	3,462,584	3,462,480	3,462,266	3,462,187	3,462,453
3,462,759	3,462,614	3,462,487	3,462,269	3,462,194	3,462,459
25 : 3,461,463	3,462,697	3,462,491	3,462,275	3,462,209	3,462,497
3,461,506	3,462,717	3,462,499	3,462,289	3,462,225	3,462,503
3,461,507	3,462,728	3,462,507	3,462,315	3,462,252	3,462,535
3,461,554	3,462,760	3,462,514	3,462,339	3,462,257	3,462,539
3,461,616	3,461,464	3,462,517	3,462,362	3,462,312	3,462,543
3,461,637	3,461,669	3,462,520	3,462,384	3,462,328	3,462,545
3,461,663	3,461,741	3,462,524	3,462,386	3,462,336	3,462,567
3,461,693	3,461,844	3,462,536	3,462,407	3,462,340	3,462,572
3,461,736	3,461,928	3,462,555	3,462,411	3,462,341	3,462,578
3,461,757	3,461,981	3,462,556	3,462,470	3,462,342	3,462,586
3,461,765	3,462,172	3,462,557	3,462,475	3,462,343	3,462,594
3,461,784	3,462,206	3,462,560	3,462,479	3,462,355	3,462,601
3,461,796	3,462,276	3,462,569	3,462,482	3,462,372	3,462,621
3,461,837	3,462,284	3,462,598	3,462,494	3,462,375	3,462,646
3,461,856	3,462,295	3,462,603	3,462,512	3,462,395	3,462,686
3,461,919	3,462,295	3,462,607	3,462,525	3,462,405	3,462,713
3,461,939	3,462,737	3,462,612	3,462,534	3,462,579	3,462,716
28 : 3,461,955	3,461,851	3,462,613	3,462,542	3,462,583	3,462,719
3,461,997	3,462,230	3,462,617	3,462,544	3,462,610	3,462,725
3,462,004	3,461,466	3,462,630	3,462,548	3,462,645	3,462,742
3,462,222	3,461,648	3,462,643	3,462,551	3,462,664	3,462,754
3,462,265	3,461,719	3,462,658	3,462,597	3,462,701	3,462,804
3,462,321	3,461,738	3,462,671	3,462,605	3,462,750	3,462,823
3,462,331	3,461,769	3,462,687	3,462,625	3,461,503	3,461,467
3,462,410	3,461,883	3,462,694	3,462,635	3,461,587	3,461,603
3,462,429	3,461,989	3,462,700	3,462,657	3,461,904	3,461,659
3,462,469	3,461,993	3,462,703	3,462,663	3,461,905	3,461,695
3,462,513	3,462,014	3,462,707	3,462,669	3,461,918	3,461,869
3,462,515	3,462,038	3,462,711	3,462,684	3,461,944	3,462,027
3,462,599	3,462,114	3,462,712	3,462,693	3,461,963	3,462,294
3,462,604	3,462,115	3,462,735	3,462,695	3,462,118	3,462,568
3,462,611	3,462,133	3,462,747	3,462,706	3,462,228	3,462,622
3,462,632	3,462,164	3,462,748	3,462,708	3,462,261	3,461,555
3,462,670	3,462,196	3,462,749	3,462,736	3,462,285	3,461,666
3,462,705	3,462,213	3,462,754	3,462,741	3,462,290	3,462,009
3,462,723	3,462,233	3,462,755	3,462,744	3,462,318	3,462,199
26 : RE.26.648	3,462,323	3,461,868	3,462,745	3,462,353	3,462,222
3,461,481	3,462,330	3,462,462	3,461,468	3,462,376	3,461,488
3,461,485	3,462,592	3,462,609	3,461,475	3,462,516	3,461,577
3,461,497	3,462,681	3,461,460	3,461,477	3,462,582	3,461,600
3,461,505	3,462,722	3,461,489	3,461,492	3,462,647	3,461,644
3,461,526	3,461,586	3,461,499	3,461,521	3,461,689	3,461,666
3,461,531	3,461,544	3,461,511	3,461,785	3,461,639	3,461,677
3,461,545	3,461,968	3,461,514	3,461,882	3,461,857	3,461,717
3,461,589	3,461,513	3,461,550	3,462,062	3,461,890	3,461,829
3,461,593	3,461,520	3,461,552	3,461,947	3,461,927	3,461,833
3,461,613	3,461,694	3,461,561	3,461,973	3,462,122	3,461,919
3,461,614	3,461,727	3,461,562	3,462,089	3,462,688	3,461,955
3,461,617	3,461,733	3,461,567	3,462,647	3,461,966	3,461,966
3,461,618	3,461,745	3,461,583	3,461,474	RE.26.644	3,461,969
3,461,633	3,462,091	3,461,585	3,461,495	3,461,490	3,461,981
3,461,671	3,462,142	3,461,611	3,461,502	3,461,498	3,461,989
3,461,715	3,462,608	3,461,619	3,461,522	3,461,500	3,462,070
3,461,716	3,461,491	3,461,623	3,461,540	3,461,515	3,462,125
3,461,729	3,461,501	3,461,630	3,461,584	3,461,517	3,462,151
3,461,749	3,461,510	3,461,651	3,461,605	3,461,525	3,462,181
3,461,751	3,461,524	3,461,677	3,461,608	3,461,532	3,462,202
3,461,752	3,461,559	3,461,681	3,461,615	3,461,534	3,462,344
3,461,760	3,461,580	3,461,706	3,461,622	3,461,542	3,462,366
3,461,791	3,461,644	3,461,732	3,461,624	3,461,620	3,462,373
3,461,808	3,461,647	3,461,755	3,461,645	3,461,653	3,462,386
3,461,833	3,461,686	3,461,759	3,461,654	3,461,658	3,462,395
3,461,852	3,461,697	3,461,762	3,461,679	3,461,661	3,462,406



## GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

48 : 3,462,468	48 : 3,462,758	51 : 3,462,066	53 : 3,462,248	55 : 3,461,723	55 : 3,462,065
3,462,484	3,462,761	3,462,199	3,462,179	3,461,724	3,462,105
3,462,493	49 : 3,461,599	3,462,345	3,462,490	3,461,747	3,462,202
3,462,504	3,461,728	3,462,396	3,462,726	3,461,766	3,462,338
3,462,577	3,462,141	53 : 3,461,560	55 : 3,461,471	3,461,896	3,462,351
3,462,600	51 : 3,461,721	3,461,863	3,461,472	3,461,984	3,462,361
3,462,665	3,461,764	3,462,106	3,461,575	3,461,994	3,462,442
3,462,678	3,462,009	3,462,107	3,461,579	3,462,029	3,462,644
3,462,733	3,462,011	3,462,108	3,461,627	3,462,031	3,462,651
3,462,734	3,462,036	3,462,224	3,461,685	3,462,043	3,462,680

## Design Patents

1 : 214,993	9 : 215,018	17 : 215,034	25 : 215,026	36 : 215,003	40 : 214,995
6 : 214,984	12 : 215,038	215,035	27 : 215,041	44 : 214,990	
214,985	215,043	215,037	29 : 215,019	215,016	48 : 214,991
215,001	17 : 214,996	215,045	33 : 215,022	215,017	215,008
215,002	214,997	19 : 214,988	34 : 215,014	215,027	215,009
215,005	215,020	24 : 214,987	215,042	215,028	215,010
215,006	215,021	25 : 215,023	214,989	215,032	215,011
215,012	215,031	215,024	214,994	215,036	55 : 214,992
	215,033	215,025	215,000	39 : 215,030	214,998

U.S. DEPARTMENT OF COMMERCE  
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

August 19, 1969

Volume 865

Number 3

TRADEMARKS  
NOTICES

## Directory of Registered Patent Attorneys and Agents

The Patent Office has recently published a new edition of the Directory of Registered Patent Attorneys and Agents Arranged by States and Countries. The new edition shows the addresses furnished to the Committee on Enrollment as of December 1968, of all attorneys, agents, and firms registered to practice before the Patent Office in patent cases. An added feature in the present edition is the use of a symbol to denote those registrants who are registered as patent agents.

The publication is on sale by the Superintendent of Documents, United States Government Printing Office, Washington, D.C., 20402, for \$1.50.

EDWIN L. REYNOLDS,

July 25, 1969. *Chairman, Committee on Enrollment.*

## Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 22,406 (COCA-COLA), The Coca Cola Company, Tonic syrup or beverage; Reg. No. 47,189, same, Non-alcoholic maltless beverages and the syrups for making such beverages; Reg. No. 238,145, same, Beverages and syrups for the manufacture of such beverages; Reg. No. 238,146, same; Reg. No. 415,755 (COKE), same, Non-alcoholic maltless beverages and the syrups for making such beverages, filed June 16, 1969, D.C., N.D. Ala. (Birmingham), Doc. CA69-374-S, *The Coca-Cola Company v. Johnny J. Jones and Juanita (Mrs. Johnny J.) Jones, doing business as J's Drive In Restaurant.*

Reg. No. 47,189. (See Reg. No. 22,406.)

Reg. No. 133,143 (KITCHENAID), The Hobart Manufacturing Company, Electrically driven beating and mixing machines; Reg. No. 234,988, same, Oil droppers, food choppers, coffee mills and cereal grinders, fruit juice extractors, and vegetable slicers; Reg. No. 235,297, same, Ice cream freezers; Reg. No. 549,510, same, Electric dishwashers; Reg. No. 610,242, same, Dishwashers and dishwasher sinks, metal mixing bowls, bowl covers, pouring chutes, colanders and sieves, and parts therefor; Reg. No. 611,638, same, Buffing wheels and grinding and knife-sharpening wheels; Reg. No. 613,517, same, Electric beating and mixing machines and attachments for such machines for regulating the feeding of food materials thereto, for extracting juices from food materials, for slicing, shredding, grating, chopping, grinding, straining, stirring, beating, and mixing food materials, for operating ice-cream freezers, for chipping ice, for sharpening knives, for buffing, for opening cans, and for shelling peas; electric coffee mills, and electric dishwashers; and parts therefor; Reg. No. 614,411, same, Glass culinary equipment—namely, bowls, mixing bowls, and containers for receiving ground coffee; Reg. No. 615,734, same, Graduated measures for ground coffee and devices for feeding fluids to foodstuffs at a controlled rate—namely, droppers for oils, fruit juices, flavoring extracts, and the like; Reg. No. 615,905, same, Machines for beating and mixing food materials and attachments for such machines for regulating the feeding of food materials thereto, for extracting juices from food materials, for slicing, shredding, grating, chopping, grinding, straining, stirring, beating and mixing food materials, for

## CONDITION OF TRADEMARK APPLICATIONS AS OF JUNE 30, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]..... 13,377  
Date of oldest new application..... August 7, 1968  
Date of oldest amended application (filing date)..... November 13, 1964

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B.....	1-29-60	11-13-64
(II) F. H. WETHERBEE, Classes 1, 6, 15, 16, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200.....	10-17-68	2-28-68
(III) P. S. BALL, Classes 19, 21, 22, 26, 31, 34, 35, 36.....	12-17-68	2-21-68
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107.....	8-7-68	11-27-64
Renewals (All Classes).....	5-5-60	
Sec. 12(c) Publications (All Classes).....	5-12-69	

Applications filed during the month of June 1969—2,872

Registrations Issued ..... 488—No. 874,925 to No. 875,412  
Renewals Issued ..... 120

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, \$30.50 per annum, foreign mailing \$5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

TM 865 O.G.—6

TM 99



chipping ice, for sharpening knives, for buffing, for opening cans, and for shelling peas; and machines for grinding coffee and for washing dishes; and parts therefor; **Reg. No. 672,776**, same, Serving scrapers with blades of rubber-like material; **Reg. No. 777,997**, same, Inspection, maintenance and repairing of dishwashing machines, machines for beating and mixing food materials, and coffee grinders, and of attachment, accessories and parts therefor; **Reg. No. 841,987**, same, Food waste disposers, filed May 27, 1969, D.C., E.D. Mich. (Detroit), Doc. 32850, *Hobart Mfg. Co. v. Leonard Bibik, doing business as KitchenAid, Det.*

**Reg. No. 234,988.** (See Reg. No. 133,143.)

**Reg. No. 235,207.** (See Reg. No. 133,143.)

**Reg. No. 238,143.** (See Reg. No. 22,406.)

**Reg. No. 238,146.** (See Reg. No. 22,406.)

**Reg. No. 415,755.** (See Reg. No. 22,406.)

**Reg. No. 549,810.** (See Reg. No. 133,143.)

**Reg. No. 581,361.** (See Reg. No. 834,117.)

**Reg. No. 610,242.** (See Reg. No. 133,143.)

**Reg. No. 611,638.** (See Reg. No. 133,143.)

**Reg. No. 613,517.** (See Reg. No. 133,143.)

**Reg. No. 614,411.** (See Reg. No. 133,143.)

**Reg. No. 615,734.** (See Reg. No. 133,143.)

**Reg. No. 618,605.** (See Reg. No. 133,143.)

**Reg. No. 672,776.** (See Reg. No. 133,143.)

**Reg. No. 674,329** (TALMAN), Talman Federal Savings and Loan Association of Chicago, Savings and loan services, filed June 12, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1258, *Talman Federal Savings and Loan Association of Chicago v. J. K. Lawrence, doing business as Talman Real Estate.*

**Reg. No. 682,993** (JOSE L. PIEDRA), Concepcion Nodarse, trustee of Jose Lamadrid-Piedra y Nodarse, Orenco Lamadrid-Piedra y Nodarse, and Ana Maria Lamadrid-Piedra y Nodarse, Cigars, filed May 8, 1969, D.C., S.D. Fla. (Miami), Doc. 69-549-CCA, *Estela Nodarse Leaird, formerly Estela Nodarse Piedra, trustee for Ana Maria Piedra Leaird, formerly Ana Maria Piedra et al. v. Carlos Hevia, Piedra Tobacco Corp. et al.*

**Reg. No. 688,085.** (See Reg. No. 834,117.)

**Reg. No. 693,869** (SPEEDIFLEX), Moore Business Forms, Inc., Manifold blank forms, filed May 6, 1969, D.C., E.D. Mo.

(St. Louis), Doc. 69C144(3), *Moore Business Forms, Inc. v. Mulligan Company.*

**Reg. No. 777,997.** (See Reg. No. 133,143.)

**Reg. No. 791,172** (BONANZA SIRLOIN PIT), International Franchise Corporation, Restaurant services, filed Nov. 9, 1966, D.C. Puerto Rico (San Juan), Doc. C-576-66, *Franchise Corporation v. Bonanza Steak Incorporated, Raul Acrtlagos.* Consent judgment perpetually enjoining and restraining defendants, June 4, 1969.

**Reg. No. 800,031** (AMERICARE), American Republic Insurance Company, Underwriting of hospital, surgical, and medical insurance; **Reg. No. 838,463**, same, First aid kit, filed Apr. 11, 1969, D.C., E.D. Mo. (St. Louis), Doc. 69C114(3), *American Republic Inc. Co., doing business as Americare v. The Americare Corp.*

**Reg. No. 808,881** (JULI), Slumbertogs, Inc., Misses', girls', and children's pajamas and nightgowns; **Reg. No. 849,444** (JULI OF SLUMBERTOGS), same, Nightgowns, robes, and pajamas; **Reg. No. 864,581** (JULI JR. OF SLUMBERTOGS), same, Children's robes, nightgowns and pajamas; **Reg. No. 859,357** (SAUCYS BY JULI), same, Nightgowns; **Reg. No. 849,447** (DHOTI-NITI BY JULI), same, Gowns and pajamas; **Reg. No. 849,448** (KAPPOGI-NITI BY JULI), same, Sleepwear, filed June 6, 1969, D.C., S.D.N.Y., Doc. 69-2447, *Slumbertogs Inc. v. Seymour Stern et al.*

**Reg. No. 834,117** (HAIR DEW), Clairol Incorporated, Cosmetics and toilet preparations—namely, creme rinse, penetrating lotion conditioner; **Reg. No. 688,085**, same, Hair conditioning preparations; **Reg. No. 581,361** (HAIR DO), The Hair Do Company, Hair lacquer, filed June 11, 1969, D.C.N.J. (Newark), Doc. C-665-69, *Clairol Incorporated v. The Wella Corporation.*

**Reg. No. 838,463.** (See Reg. No. 800,031.)

**Reg. No. 841,987.** (See Reg. No. 133,143.)

**Reg. No. 843,768** (BATTERCRISP), 40-Fathom Seafoods, Inc., Frozen haddock fillets, filed June 10, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69-1124-1H, *National Sea Products Incorporated v. Rupert Fish Company, Inc.*

**Reg. No. 849,444.** (See Reg. No. 808,881.)

**Reg. No. 849,447.** (See Reg. No. 808,881.)

**Reg. No. 849,448.** (See Reg. No. 808,881.)

**Reg. No. 859,357.** (See Reg. No. 808,881.)

**Reg. No. 864,581.** (See Reg. No. 808,881.)

## MARKS PUBLISHED FOR OPPOSITION

### SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105. A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 258,788. The Drackett Company, Cincinnati, Ohio, assignee, by mesne assignment, of Domtar Limited, Montreal, Quebec, Canada. Filed Nov. 16, 1966.

**JAVEX**

Owner of U.S. Reg. No. 666,970.

#### Class 6—Chemicals and Chemical Compositions

For Liquid and Powdered Fabric Softener, Fabric Brightener, Fabric Conditioner To Improve the Finish of Fabrics, Liquid and Spray Starch, Household Ammonia, and Powdered Bleach (Int. Cl. 3).

First use May 28, 1966; in commerce May 28, 1966.

#### Class 52—Detergents and Soaps

For Liquid Preparation for Bleaching, Cleaning, Removing Stains and Deodorizing; All-Purpose Cleaner, Drain Cleaner, Window Cleaner, Toilet Bowl Cleanser; Wax Remover; and Household Spray Cleaner, Household Powdered Cleanser, and Household Liquid Detergent (Int. Cl. 3).

First use June 17, 1919; in commerce June 17, 1919.

SN 294,901. Allentorm Corporation, Chicago, Ill. Filed Apr. 4, 1968.



#### Class 12—Construction Materials

For Concrete Wall-Forming Systems and Parts Thereof, Form Ties and Accessories for Concrete Construction (Int. Cl. 19).

#### Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Water and Scaffold Brackets (Int. Cl. 6).

First use November 1962.

SN 295,296. Donald D. Arnett, Los Angeles, Calif. Filed Apr. 10, 1968.



#### Class 4—Abrasives and Polishing Materials

For Polishing Waxes for Boats (Int. Cl. 3).

#### Class 16—Protective and Decorative Coatings

For Paints and Finishes for Boats (Int. Cl. 2).

First use Feb. 1, 1968.

SN 295,646. Kameyama Candle Company, Limited, Kameyama-city, Mie-prefecture, Japan. Filed Apr. 15, 1968.



Owner of Japanese Reg. No. 775,601, dated Mar. 26, 1968.

#### Class 15—Oils and Greases

For Candles (Int. Cl. 4).

#### Class 34—Heating, Lighting, and Ventilating Apparatus

For Candle Sticks (Int. Cl. 21).

SN 297,823. Brattle Films, Inc., Cambridge, Mass. Filed May 10, 1968.

**TRUC**

#### Class 39—Clothing

For Men's and Women's Wearing Apparel—Namely, Suits, Sport Coats, Slacks, Jackets, Coats, Shirts, Blouses, Ties, Dresses, Belts and Shoes (Int. Cl. 25).

#### Class 52—Detergents and Soaps

For Hand and Face Soaps (Int. Cl. 3).

First use in or about December 1966.

SN 298,023. Megular Enterprises, Pasadena, Calif. Filed May 13, 1968.



The drawing is lined for the colors red and green.



**Class 4—Abrasives and Polishing Materials**

For Polish for Use on Finished Surfaces of Automobiles, Combination Cleaner, Polish and Preservative for Use on Finished Surfaces—Namely, Phonograph Records (Int. Cl. 3).

First use Nov. 23, 1967.

**Class 52—Detergents and Soaps**

For Cleaner for Use on Finished Surfaces of Automobiles (Int. Cl. 3).

First use Apr. 11, 1968.

SN 299,058. Sakowitz, Inc., Houston, Tex. Filed May 27, 1968.

**Class 39—Clothing**

For Girls' Dresses, Jumpers, Blouses, Sweaters, Skirts, Pants, Shorts, Shirts, Swimwear and Other Areas of Beachwear, Coats, Jackets, Shoes, Sleepwear, House Shoes, Robes, and Lingerie (Int. Cl. 25).

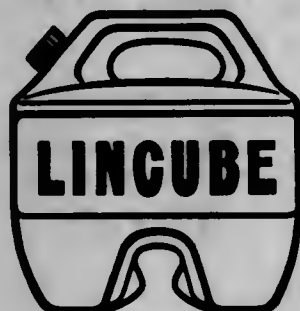
First use May 9, 1968.

**Class 101—Advertising and Business**

For Operating a Teen's Clothing Section of a Department Store (Int. Cl. 35).

First use May 22, 1966.

SN 304,534. Linco Products Corporation, Chicago, Ill. Filed Aug. 7, 1968.



The fanciful representation of a container is disclaimed apart from the mark as shown.

**Class 2—Receptacles**

For Plastic Liquid Containers (Int. Cl. 21).

**Class 6—Chemicals and Chemical Compositions**

For Liquid Bleaching Agent—Namely, Sodium Hypochlorite (Int. Cl. 3).

First use July 23, 1968.

SN 307,433. Costantino Brothers, Inc., Johnston, R.I. Filed Sept. 16, 1968.

**Class 12—Construction Materials**

For Wood Fences, Ornamental Iron Works and Fire Escapes (Int. Cl. 19).

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Wire Fences (Int. Cl. 6).

**Class 14—Metals and Metal Castings and Forgings**

For Guard Rails (Int. Cl. 6).

First use in or about December 1947.

SN 313,777. Morgan Manufacturing Co., Yankton, S. Dak. Filed Dec. 6, 1968.

**MORGEN**

Owner of Reg. No. 789,447.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Conveyors—Namely, Portable Conveyors, Feed Conveyors and Side Discharge Conveyors; and Concrete Pumps (Int. Cl. 7).

First use April 1957.

**Class 50—Merchandise Not Otherwise Classified**

For Adjustable Masonry Scaffolding (Int. Cl. 6).

First use October 1950.

SN 314,484. American Lacquer and Solvents Co. of Florida, doing business as American Lacquer and Solvents Co. of Fla., Tampa, Fla. Filed Dec. 16, 1968.

**AMER-GLOSS****Class 6—Chemicals and Chemical Compositions**

For Pigment Dispersions (Int. Cl. 2).

**Class 11—Inks and Inking Materials**

For Flexographic Inks (Int. Cl. 2).

First use Sept. 4, 1968.

SN 317,035. Glen-Gery Corporation, Reading, Pa. Filed Jan. 21, 1969.

**Class 1—Raw or Partly Prepared Materials**

For Fluorspar Briquettes (Int. Cl. 1).

First use Aug. 30, 1968.

**Class 12—Construction Materials**

For Fired Brick and Building Tiles (Int. Cl. 19).

First use Aug. 22, 1968.

SN 321,736. Kimberly-Clark Corporation, Neenah, Wis. Filed Mar. 14, 1969.

**FRESH'NERS****Class 39—Clothing**

For Garments—Namely, Aprons and Smocks (Int. Cl. 25).

First use Feb. 28, 1969.

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For Washcloths, Towels, Bathmats, and Curtains (Int. Cls. 24 and 27).

First use Jan. 24, 1969.

SN 321,739. Kimberly-Clark Corporation, Neenah, Wis. Filed Mar. 14, 1969.

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For Washcloths, Towels, Bathmats and Curtains (Int. Cls. 24 and 27).

First use Jan. 24, 1969.

SN 321,740. Kimberly-Clark Corporation, Neenah, Wis. Filed Mar. 14, 1969.

**TERICEL**

Owner of Reg. No. 724,840.

**Class 39—Clothing**

For Aprons and Smocks (Int. Cl. 25).

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For Washcloths, Towels, Bathmats and Curtains (Int. Cl. 24).

First use Feb. 28, 1969.



Owner of Reg. Nos. 444,050 and 673,537.

**Class 39—Clothing**

For Wearing Apparel—Namely, Aprons and Smocks (Int. Cl. 25).

First use Feb. 28, 1969.

**SECTION 2**

The following marks are published in compliance with section 19(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.106.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

**Class 1—Raw or Partly Prepared Materials**

SN 296,534. Green Giant Company, Le Sueur, Minn. Filed Apr. 25, 1968.

**GREEN GIANT**

Owner of Reg. Nos. 230,085, 826,189, and others.  
For Vegetable Seed (Int. Cl. 31).  
First use at least as early as Jan. 16, 1968.

SN 297,883. Cascade Charcoal, Inc., Los Angeles, Calif. Filed May 6, 1968.



The drawing is lined for the colors yellow and red. The representation of the brazier, apart from the representation of the mark in its entirety, is disclaimed.

For Charcoal Briquets for Cooking and Heating (Int. Cl. 4).  
First use Mar. 8, 1968.

SN 302,522. SCM Corporation, Cleveland, Ohio. Filed July 11, 1968.

**SYLVAMIX**

For Aqueous Dispersions of Tall Oil Pitch, Tall Rosin, or Mixtures Thereof (Int. Cl. 1).  
First use Sept. 25, 1964.

SN 306,390. Milchem Incorporated, Houston, Tex. Filed Aug. 30, 1968.

**CHEM-BEN**

For Drilling Mud Additive—Namely, A Modified Inorganic Colloidal Compound Used as a Suspending Agent for Fresh Water Muds (Int. Cl. 1).  
First use July 20, 1968.

SN 312,994. Gladwin Industries, Inc., Atlanta, Ga. Filed Nov. 25, 1968.

**RYTAR**

For Ink Receptive Polyester Film (Int. Cl. 17).  
First use on or about Aug. 27, 1968.

**Class 2—Receptacles**

SN 284,467. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Nov. 9, 1967.



Owner of Reg. Nos. 509,124, 744,454, and others.  
For Containers, Particularly Boxes and Cartons for Light-Sensitive Materials; Cases, Canisters, Boxes, Cartons, Cans, Foil and Paper and Foil Pouches, Spools and Reels; Slide Trays (Int. Cls. 16 and 20).  
First use January 1965.



SN 305,983. Sears, Roebuck and Co., Chicago, Ill. Filed Aug. 26, 1968.

**PERMANEX**

For Blow-Molded Plastic Tool Boxes and Cases (Int. Cl. 20).  
First use on or about Mar. 2, 1967.

SN 314,864. Aladdin Industries, Incorporated, Chicago, Ill. Filed Dec. 19, 1968.

**TEMP-RITE**

Owner of Reg. No. 774,317.  
For Heat Insulated Serving Trays for Food and Beverages (Int. Cl. 21).  
First use on or about Sept. 19, 1968.

**Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks**

SN 255,086. The Gilbert & Bennett Mfg. Co., Georgetown, Conn. Filed Sept. 28, 1966.

**PET-PEN**

For Containers Fabricated From Woven Wire Fencing and/or Woven Wire Fabric With Suitable Weldments (Int. Cl. 21).  
First use Sept. 14, 1966.

SN 298,349. Carl Pedro & Sons, Inc., St. Paul, Minn. Filed May 16, 1968.

**CABIN BAG**

The word "Bag" is disclaimed apart from the mark as shown.  
For Carrying-Cases for Airplane Pilots and Stewardesses (Int. Cl. 18).  
First use on or about June 1, 1967.

SN 300,852. Superior Pet Products, Inc., Curwensville, Pa. Filed June 19, 1968.

**RETRIEVER**

For Dog Toy Made of Bleached Densicated Rawhide (Int. Cl. 18).  
First use July 27, 1967.

SN 309,147. A. J. Siris Products Corp., Bronx, N.Y. Filed Oct. 8, 1968.

**FACE CASE**

Without waiving its common law rights herein, applicant makes no claim to the word "case" apart from the mark as shown.  
For Unfilled Travel Bags (Int. Cl. 18).  
First use Sept. 18, 1968.

**Class 4 — Abrasives and Polishing Materials**

SN 306,252. C. Kilingspor G.m.b.H., Dillkreiz, Germany. Filed Aug. 29, 1968.



For Grinding and Polishing Media; Grinding and Polishing Compounds; Grinding and Polishing Wheels; Grinding and Polishing Compounds in Flake Form; Grinding and Polishing Cloths; Flint Cloths; Glass-Paper; Emery Paper and Sandpaper; Grinding and Polishing Granules (Int. Cls. 3, 8, and 21).  
First use in 1908; in commerce year 1926.

**Class 6 — Chemicals and Chemical Compositions**

SN 294,234. The Norwich Pharmacal Company, Norwich, N.Y. Filed Mar. 27, 1968.

**CANDIFF**

For Kit for Medical Laboratory Use in the Diagnosis of Fungal Infections (Int. Cl. 1).  
First use Feb. 29, 1968.

SN 294,983. Leon J. Wirth, d.b.a. Wirth Co. Inc., Oakland, Calif. Filed Apr. 4, 1968.

**COVERETTE**

For Correction Fluid (Int. Cl. 16).  
First use Jan. 12, 1968.

SN 298,660. W. C. Copeland Jr., Madison, Fla. Filed May 16, 1968.



For Liquefied Petroleum Gas (Int. Cl. 4).  
First use Apr. 1, 1968.

SN 300,065. Chemical Industries, Inc., Borger, Tex. Filed June 10, 1968.

**Class 7 — Cordage****Hereford Brand**

The term "Brand" is disclaimed apart from the mark as shown.  
For Agricultural and Farm Chemicals—Namely, Insecticides, Miticides, DDT, Cotton Defoliants, Emulsifiers, Fungicides, Animal Dips, Fruit and Flower Sprays (Int. Cl. 5).  
First use on or before Jan. 1, 1957.

SN 300,824. Kent Industries, Inc., Fort Worth, Tex. Filed June 19, 1968.

**SEAL-SKIN**

For Liquid Dressing for Improving the Traction on Power Transmission Belts and for Liquid Corrosion and Rust Inhibitors (Int. Cls. 2 and 4).  
First use at least as early as Jan. 1, 1926, on belt dressing.

SN 302,135. Seravac Laboratories (Pty) Limited, Cape Town, Republic of South Africa. Filed July 5, 1968.

**ENZITE**

For Recoverable Insoluble Enzymes for Use as Catalysts in Chemical Processing, and Not for Use in Food or Pharmaceutical Preparations (Int. Cl. 1).  
First use Apr. 19, 1968.

SN 303,201. E. R. Squibb & Sons, Inc., New York, N.Y. Filed July 19, 1968.

**PAGANO-LEVIN**

For Diagnostic Reagent-Medium for Fungi, for Laboratory Use (Int. Cl. 1).  
First use Sept. 23, 1968.

SN 313,870. Miles Laboratories, Inc., Elkhart, Ind. Filed Dec. 9, 1968.

**TRILUTE**

For Laboratory Reagent To Test for Thyroid Function (Int. Cl. 1).  
First use on or before Oct. 3, 1968.

SN 313,871. Miles Laboratories, Inc., Elkhart, Ind. Filed Dec. 9, 1968.

**TETRALUTE**

For Laboratory Reagent To Test for Thyroid Function (Int. Cl. 1).  
First use on or before Oct. 3, 1968.

SN 314,398. Olin Mathieson Chemical Corporation, New York, N.Y. Filed Dec. 13, 1968.

**REDUCTONE**

Owner of Reg. Nos. 816,026 and 868,186.  
For Chemical Preparations Used for Decolorizing or Bleaching in the Textile, Pulp and Paper, and Mineral Refining Industries (Int. Cl. 1).  
First use Dec. 2, 1968.

SN 317,131. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Jan. 21, 1969.

**SONY**

Owner of U.S. Reg. Nos. 691,940, 824,847 and others.  
For Rope (Int. Cl. 22).  
First use June 11, 1968; in commerce June 11, 1968.

**Class 9 — Explosives, Firearms, Equipments, and Projectiles**

SN 268,409. Hitco, Gardena, Calif. Filed Apr. 5, 1967.

**PYRO-CARB**

For Carbonized Ablative and Insulative Materials Used in Components for Nose Cones, Rocket Nozzles, and Heat Shields (Int. Cl. 13).  
First use May 31, 1966.

SN 300,695. Explosives Corporation of America, Issaquah, Wash. Filed June 18, 1968.



The term "explosives," as used separate and apart from the mark, is disclaimed, applicant expressly reserving all common law rights with respect to use of the term "explosives" in combination with and as a part of the mark as shown.  
For Explosives (Int. Cl. 13).  
First use on or about June 15, 1966.

SN 317,419. Bernardelli Vincenzo S.p.A., Brescia, Italy. Filed June 24, 1969.

**V. BERNARDELLI**

For Firearms—Namely, Automatic Pistols, Revolvers and Shotguns (Int. Cl. 13).  
First use at least during the year 1880; in commerce at least on Feb. 15, 1950.

**Class 11 — Inks and Inking Materials**

SN 291,979. Formulabs, Incorporated, Escondido, Calif. Filed Feb. 27, 1968.

**"IT'S WHAT'S INSIDE THAT COUNTS!"**

For Ball Pen Inks, Recorder Inks, and Porous Tip Pen Inks (Int. Cl. 16).  
First use Jan. 15, 1968.



SN 295,968. Sun Chemical Corporation, New York, N.Y. Filed Apr. 18, 1968.

**AQUASUN**

Owner of Reg. Nos. 733,237, 858,496, and others.  
For Gravure Printing Inks (Int. Cl. 2).  
First use Mar. 11, 1968.

SN 295,976. Sun Chemical Corporation, New York, N.Y. Filed Apr. 18, 1968.

**SUNTONE**

Owner of Reg. Nos. 516,886, 858,496 and others.  
For Gravure Printing Inks (Int. Cl. 2).  
First use Mar. 11, 1968.

SN 300,762. UMC Industries, Inc., St. Louis, Mo. Filed June 18, 1968.

**NU JET SPEED**

Owner of Reg. No. 659,214.  
For Printing and Lithographing Inks (Int. Cl. 2).  
First use May 16, 1968, Sept. 10, 1952, as to "Jet Speed."

**Class 12—Construction Materials**

SN 275,326. Tiger Fabrics, Inc., New York, N.Y. Filed July 3, 1967.



Owner of Reg. No. 830,429.  
For Floor Tiles, Vinyl Floor Tiles (Int. Cl. 19).  
First use Aug. 9, 1966.

SN 298,910. Algemene Kunstzijde Unie N.V., Arnhem, Netherlands. Filed May 23, 1968.

**STRUCTOFORS**

For Non-Metallic Fabrics for Use in the Construction of Roads (Int. Cl. 19).  
First use Dec. 22, 1966; in commerce May 25, 1967.

SN 304,574. The Bailey Company, Inc., Amesbury, Mass. Filed Aug. 7, 1968.

**BAILEY**

Owner of Reg. Nos. 555,567, 555,568, and 832,367.  
For Rolled Metal Shapes and Rolled Metal Mouldings for Construction Purposes, Weatherstripping and Glass Run Channels (Int. Cl. 6).  
First use Dec. 23, 1932.

SN 305,059. Nippon Valqua Industries, Ltd., Chiyoda-ku, Tokyo, Japan. Filed Aug. 13, 1968.

**REFLITE**

Owner of Japanese Reg. No. 778,772, dated Apr. 19, 1968.  
For Architectural or Structural Special Use Materials—Namely, Lumber (Int. Cl. 19).

SN 310,379. Textone, Inc., Los Angeles, Calif. Filed Sept. 9, 1968.



For Vinyl Laminated Particle Board (Int. Cl. 19).  
First use Mar. 29, 1968.

SN 315,138. Hama Plastics Co. Ltd., Chuo-ku, Tokyo, Japan. Filed Dec. 24, 1968.

**HAMAWOOD**

For Floor Coverings—Namely, Floor Tile; Wall Sheets Comprising Various Types of Wood Veneers (Int. Cl. 19).  
First use in May 1964; in commerce in May 1964.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

SN 290,851. Hancock-Gross, Inc., Philadelphia, Pa. Filed Feb. 12, 1968.



For Residential Plumbing Specialties—Namely, Valves, Faucet Handles, T's, Crosses, Elbows, and Nipples (Int. Cl. 6).  
First use Oct. 10, 1965.

SN 292,994. Charles Wheatley Company, Tulsa, Okla. Filed Mar. 11, 1968.

**CHARLEY CHEK**

For Valves (Int. Cl. 6).  
First use Feb. 22, 1968.

SN 298,658. Floyd L. Thayer, d.b.a. Nite-Kap Co., Duxbury, Mass. Filed May 17, 1968.

**NITE-KAP**

For Caps or Plugs for Conduit Pipe (Int. Cl. 6).  
First use Jan. 23, 1968.

SN 305,575. Robert W. Taylor-Myers, Hollywood, Calif. Filed Aug. 20, 1968.

**LINESPOT**

For Road Surface Markers (Int. Cl. 6).  
First use June 10, 1968.

SN 310,661. Evelyn V. Hawkes, d.b.a. Hawkes Enterprises, Washington, D.C. Filed Oct. 28, 1968.

**ROLLOBAG**

For Wheel-Carrying Elastic Strap for Circumscribing Luggage (Int. Cl. 18).  
First use Oct. 20, 1968.

SN 310,881. Gardner-Denver Company, Quincy, Ill. Filed Oct. 30, 1968.

**TC**

For Bits for Wrapping Flexible Conductors Around a Stationary Terminal (Int. Cl. 6).  
First use July 26, 1968.

SN 311,124. The Fastener House, Inc., Cleveland, Ohio. Filed Nov. 1, 1968.

**THE FASTENER HOUSE**

The term "Fastener" is disclaimed except as a component of the subject mark.  
For Fasteners and Particularly Bolts, Nuts, and Screws for Industrial, Marine, Automotive, and Construction Applications (Int. Cl. 6).  
First use May 18, 1967.

SN 311,946. Spraying Systems Co., Bellwood, Ill. Filed Nov. 12, 1968.

**WASHJET**

For Spray Nozzles (Int. Cl. 11).  
First use at least as early as Oct. 22, 1968.

SN 312,837. The Young Associates, Santa Monica, Calif. Filed Nov. 21, 1968.

**ROAST RIGHT**

For Meat Roasting Aid Device (Int. Cl. 21).  
First use Apr. 17, 1968.

SN 312,853. E-Z Por Corporation, Niles, Ill. Filed Nov. 22, 1968.

**E-Z FOIL**

The word "Foil" is only claimed in association with the expression E-Z. Owner of Reg. No. 859,615.  
For Cooking, Baking and Heating Utensils Made of Aluminum Foil, Said Utensils Being Pie Pans, Cake and Utility Pans, Fry Pans, Potato Shells, Snack Shells, Biscuit Pans, Broiler Pans, Loaf Pans, Cookie Sheets, and Dinner Plates (Int. Cl. 21).  
First use Sept. 2, 1964.

SN 313,144. Harold Wiese, d.b.a. Safe-A-Matic Handrail Co. Inc., Madison, S. Dak. Filed Nov. 26, 1968.

**SAFE-A-MATIC**

For Hand Rails and Guard Rails (Int. Cl. 6).  
First use July 29, 1968.

SN 316,753. Metalurgica Vive y Casals, S.A., Barcelona, Spain. Filed Jan. 16, 1969.

**TORRE**

The term "Torre" is a Spanish term for "tower." Owner of Spanish Reg. No. 72,672, dated Aug. 1, 1929.  
For Pipe Nozzles, Cocks, Valves and Fittings for Fluid Elevation and Fluid Piping (Int. Cl. 6).

**Class 14—Metals and Metal Castings and Forgings**

SN 286,415. Chromium Corporation of America, Waterbury, Conn. Filed Dec. 7, 1967.

**CRODON**

Owner of Reg. No. 222,067.  
For Steel Sheets, Brass Sheets, Copper Sheets, Cast Iron, Wire (General), All Coated with Metal (Int. Cl. 6).  
First use Apr. 29, 1925.

**Class 15—Oils and Greases**

SN 301,468. Time Mechanisms, Inc., Ridgefield, N.J. Filed June 26, 1968.



Applicant disclaims the word "Meter" apart from the mark as shown.  
For Lubricant for Parking Meters. (Int. Cl. 4).  
First use Sept. 15, 1967.

SN 317,137. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Jan. 21, 1969.

**SONY**

Owner of U.S. Reg. Nos. 705,902, 824,847 and others.  
For Lubricating Oil (Int. Cl. 4).  
First use June 11, 1968; in commerce June 11, 1968.

SN 320,679. Diamond Shamrock Corporation, Cleveland, Ohio. Filed Mar. 4, 1969.

**LP/NG**

For Motor Oil (Int. Cl. 4).  
First use Nov. 15, 1968.

SN 321,019. Standard Oil Company, Flemington, N.J. Filed Mar. 7, 1969.

**ORCHEX**

For Spray Oils for Agricultural Use (Int. Cl. 4).  
First use Oct. 10, 1962.

**Class 16—Protective and Decorative Coatings**

SN 268,253. White Stores, Inc., Wichita Falls, Tex. Filed Apr. 8, 1967.



Applicant disclaims the use of the term "White" as a color designation. Owner of Reg. Nos. 623,991 and 756,430.  
For Interior and Exterior Paints (Int. Cl. 2).  
First use Feb. 15, 1967, 1952, as to "White."



SN 276,952. Products Incorporated, Paterson, N.J. Filed July 27, 1967.

## MR. ANTIQUE

The word "Antique" is disclaimed apart from the mark as shown.

For Antique Finishing Kit, Particularly Including Base Coat, Finishing Glaze, Sandpaper and Finishing Cloth (Int. Cl. 2).

First use June 23, 1967.

SN 285,226. W. R. Grace & Co., New York, N.Y. Filed Nov. 20, 1967.

## FILMITE

For Protective Coating for Paint Spray Booths (Int. Cl. 2). First use prior to July 27, 1962.

SN 291,514. Lumbermens Merchandising Corporation, Wayne, Pa. Filed Feb. 20, 1968.

# ELMCO

For Wall and Ceiling Latex Paint (Int. Cl. 2). First use October 1935.

SN 297,469. Wakefern Food Corporation, Elizabeth, N.J. Filed May 6, 1968.

## SHOP-RITE

Owner of Reg. Nos. 738,144, 812,305 and others. For Wall and Ceiling Paint (Int. Cl. 2). First use at least as early as 1963.

SN 317,138. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Jan. 21, 1969.

## SONY

Owner of U.S. Reg. Nos. 705,902, 824,847 and others. For Water Base Paints (Int. Cl. 2). First use June 11, 1968; in commerce June 11, 1968.

## Class 17—Tobacco Products

SN 275,471. Rothmans of Pall Mall Limited, Zurich, Switzerland. Filed July 6, 1967.

## PULLMAN

Owner of Swiss Reg. No. 122,631, dated Oct. 2, 1947. For Cigarettes (Int. Cl. 34).

SN 278,622. Welstab S. A., Brussels, Belgium. Filed Aug. 18, 1967.

## ARMADA

Owner of Belgian Reg. No. 67,012, dated Nov. 4, 1949. For Cigarettes (Int. Cl. 34).

SN 278,623. Welstab S.A., Brussels, Belgium. Filed Aug. 18, 1967.

## VISA

Owner of Belgian Reg. No. 75,812, dated Mar. 17, 1954. For Cigarettes and Smoking Tobacco (Int. Cl. 34).

SN 283,711. Regina Cigar Company, Inc., Philadelphia, Pa. Filed Oct. 30, 1967.

# Caribbean Rounds

For Cigars (Int. Cl. 34). First use Jan. 20, 1967.

SN 321,876. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Mar. 17, 1969.

## WILDWOOD

For Smoking Tobacco (Int. Cl. 34). First use Mar. 5, 1969.

## Class 18—Medicines and Pharmaceutical Preparations

SN 289,980. Etapharm Chem. Pharm. Laboratorium, Vienna, Austria. Filed Jan. 31, 1968.

## ETAMUCIN

Owner of Austrian Reg. No. 49,747, dated Mar. 15, 1963. For Preparation Intended To Replace the Corpus Vitreum After an Operation for Detachment of the Retina (Int. Cl. 5).

SN 291,278. Naremc, Inc., Springfield, Mo. Filed Feb. 16, 1968.

# FERRO-LAC

For Combination Medicament, Growth Stimulant and Food Supplement for Animal and Poultry Use (Int. Cl. 5). First use June 16, 1954.

SN 291,280. Naremc, Inc., Springfield, Mo. Filed Feb. 16, 1968.

# Naremc

For Medicinal, Vitamin and Mineral Preparations for Poultry and Animal Use (Int. Cl. 5). First use Nov. 11, 1954.

SN 291,281. Naremc, Inc., Springfield, Mo. Filed Feb. 16, 1968.

# HEMO-PLEX

For Vitamin-Fortified Feed Supplement for Animal Use (Int. Cl. 5). First use Apr. 6, 1960.

SN 291,306. A. R. Williams and Co., Carteret, N.J. Filed Feb. 19, 1968.

## VELVA-TONE

For Medicated Anti-Bacterial Skin Lotion (Int. Cl. 5). First use Mar. 14, 1962.

SN 291,466. A. R. Williams and Co., Carteret, N.J. Filed Feb. 20, 1968.

## HAZEL TOUCH

The word "Hazel" is disclaimed apart from the mark as shown. For Pads Impregnated With Witch Hazel for the Relief of Rectal and Outer Vaginal Irritations and Itching (Int. Cl. 5). First use Feb. 11, 1967.

SN 292,025. Sumitomo Chemical Co., Ltd., Higashi-ku, Osaka, Japan. Filed Feb. 27, 1968.

## SUMITOMO

Owner of Japanese Reg. No. 749,386, dated July 31, 1967. For Medicines and Pharmaceutical Preparations (Int. Cl. 5).

SN 297,462. Wakefern Food Corporation, Elizabeth, N.J. Filed May 6, 1968.

## SHOP-RITE

Owner of Reg. No. 738,144 and others. For Antiseptic Mouthwash, Medicated Chest Rub, and Aspirin (Int. Cl. 5). First use at least as early as 1962.

SN 298,472. Aaron O. Pope, d.b.a. Otto Manufacturing Co., DeQueen, Ark. Filed May 17, 1968.

## OTTO

For Mouthwash for Treating Irritated Gums and Pyorrhea (Int. Cl. 5). First use Mar. 14, 1968.

SN 298,860. Rachelle Laboratories, Inc., Long Beach, Calif. Filed May 22, 1968.

## MYCHEL

For Chloramphenicol (An Antibiotic) (Int. Cl. 5). First use Nov. 19, 1967.

SN 299,852. Crown Chemical Company Limited, Kent, England. Filed June 4, 1968.

## CRYOZOL

Owner of British No. B913,260, dated Aug. 15, 1967. For Veterinary Preparations for Use in the Treatment of Mastitis (Int. Cl. 5).

SN 306,995. Richardson-Merrell Inc., New York, N.Y. Filed Sept. 10, 1968.

## CLEAR GUARD

For Medicated Preparations for Use in the Treatment of Acne, Pimples and Other Skin Conditions (Int. Cl. 5). First use Aug. 2, 1968.

SN 308,734. American Products Corporation, New York, N.Y. Filed Oct. 3, 1968.

## ENCORE

For Analgesic Preparation (Int. Cl. 5). First use Sept. 23, 1968.

SN 311,082. U.S. Ethicals Inc., Long Island City, N.Y. Filed Oct. 31, 1968.

## PAVALETS

For Parasympatholytic Agent (Int. Cl. 5). First use Aug. 15, 1961.

SN 311,988. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Nov. 13, 1968.

## COMBISTEROID

Owner of Reg. No. 687,475. For Systemic Preparation for Use Against Antibiotic Susceptible Microorganisms and Related Inflammatory Conditions in Animals (Int. Cl. 5). First use Nov. 1, 1968.

SN 312,440. W. Valentine Deane, d.b.a. U'-Rub Research Laboratory, Los Angeles, Calif. Filed Nov. 18, 1968.

## U'-RUB

For Rubbing Compounds (Int. Cl. 5). First use June 14, 1968.

SN 312,819. Sterwin Laboratories Inc., Millsboro, Del. Filed Nov. 21, 1968.

## BURSA-VAC

For Vaccine for Immunization of Poultry (Int. Cl. 5). First use Sept. 14, 1968.

SN 313,437. Orbit Pharmaceutical, Inc., Kansas City, Kans. Filed Dec. 2, 1968.

## SATERVITE

For Multiple Vitamin Tablets (Int. Cl. 5). First use Jan. 9, 1967.

SN 313,478. American Cyanamid Company, Wayne, N.J. Filed Dec. 3, 1968.

## LEDERSPAN

Owner of Reg. Nos. 280,833, 754,934 and others. For Steroid Preparation (Int. Cl. 5). First use Nov. 18, 1968.

SN 313,548. Abbott Laboratories, North Chicago, Ill. Filed Dec. 4, 1968.

## FERRO-GRADUMET

Owner of Reg. No. 732,658. For Hematinic in Long-Release Dose Form (Int. Cl. 5). First use Nov. 15, 1968.



SN 314,407. Cameo, Inc., Toledo, Ohio. Filed Dec. 13, 1968. SN 272,761. Robert L. Thompson, Big Lake, Minn. Filed May 31, 1967.

# X-259

For Alkalinizing Powder for the Relief of Acid Indigestion (Int. Cl. 5).  
First use March 1942.

SN 314,539. The Dow Chemical Company, Midland, Mich. Filed Dec. 16, 1968.

## RIFADIN

For Antibiotic Preparation (Int. Cl. 5).  
First use Sept. 27, 1968.

SN 314,628. Southwestern Drug Corporation, d.b.a. Truett Laboratories, Dallas, Tex. Filed Dec. 16, 1968.

## BRAKE TIME

For "Salt" Drink, To Help Prevent Dehydration (Int. Cl. 5).  
First use Dec. 2, 1968.

SN 320,676. American Home Products Corporation, New York, N.Y. Filed Mar. 4, 1969.

## STREP-PAK

For Dispenser Containing Antibiotic Preparations (Int. Cl. 5).  
First use Oct. 29, 1968.

SN 321,131. Syntex Laboratories, Inc., Palo Alto, Calif. Filed Mar. 10, 1969.

## EVEX

Owner of Reg. No. 812,022.  
For Estrogenic Preparations for the Treatment of Gonadal Hormone Deficiencies (Int. Cl. 5).  
First use Mar. 4, 1969.

SN 321,132. Syntex Laboratories, Inc., Palo Alto, Calif. Filed Mar. 10, 1969.

## MICROSYN

For Pharmaceutical Preparations for External Use in Prophylaxis and Treatment of Skin Disorders (Int. Cl. 5).  
First use Feb. 11, 1969.

### Class 19—Vehicles

SN 262,207. Signatronic Co., Ltd., East Elmhurst, N.Y. Filed Jan. 9, 1967.

## SAV-A-STEP

For Adults' Scooters-Bicycles (Int. Cl. 12).  
First use Apr. 29, 1966.



Exclusive use of the word "Charlots" and the representation of the chariot are disclaimed apart from the mark.  
For Charlots (Int. Cl. 12).  
First use Apr. 2, 1965.

SN 276,220. Chris-Craft Industries, Inc., Pompano Beach, Fla. Filed July 18, 1967.

## COMMAND BRIDGE

The word "Bridge" is disclaimed apart from the complete mark.  
For Operating Compartment for Boats—Namely, a Flying or Fish Bridge (Int. Cl. 12).  
First use on or about Nov. 12, 1962.

SN 279,701. Raleigh Industries Limited, Nottingham, England. Filed Sept. 6, 1967.

## FIREBALL DER

Priority claimed under Sec. 44(d) on British Reg. No. 908,646, dated Apr. 27, 1967.  
For Bicycles, Motor Bicycles, Mopeds and Tricycles for Adults Only, and Parts and Fittings for All Such Goods (Int. Cl. 12).

SN 287,371. Bill Matthews, d.b.a. The Bill Matthews Company, Temple City, Calif. Filed Dec. 21, 1967.

## SISSY BAR

For Seat Support and Back Rest for Bicycle (Int. Cl. 12).  
First use Oct. 6, 1967.

SN 290,182. B.S.A. Motor Cycles Limited, Birmingham, England. Filed Nov. 28, 1967.

## ROAD ROCKET

For Motorcycles, Motor Scooters, Mopeds, and Parts of all the Aforesaid Goods (Int. Cl. 12).  
First use February 1955; in commerce February 1955.

SN 293,509. General Hitch Products, Inc., Detroit, Mich. Filed Mar. 18, 1968.

## GENERAL HITCH

Applicant disclaims the word "Hitch" apart from the mark as a whole.  
For Trailer Hitches (Int. Cl. 12).  
First use Aug. 31, 1967.

SN 293,619. E. G. Boyd Trailer Co., Dallas, Tex. Filed Mar. 19, 1968.



For Truck Trailer Parts—Namely, Brakes, Axles, Suspensions, and Wheels (Int. Cl. 12).  
First use June 18, 1964.

SN 299,774. C. Itoh & Co. (America) Inc., New York, N.Y. Filed June 5, 1968.



For Bicycles and Parts Thereof (Int. Cl. 12).  
First use Feb. 1, 1968.

SN 302,849. Lyon Metal Products, Incorporated, Aurora, Ill. Filed July 16, 1968.



The words "Metal Products" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 99,326, 749,664 and others.  
For Office and Book Carts; Parts of and Accessories for Office and Book Carts—Namely, Side Rails, Chair Trucks, Service Carts, and Tool Toters (Int. Cl. 12).  
First use January 1966.

SN 319,880. Harley-Davidson Motor Co., Inc., Milwaukee, Wis. Filed Feb. 24, 1969.

## TOUR-PAK

For Luggage Carrier (Int. Cl. 12).  
First use on or about Dec. 1, 1968.

SN 322,340. River Queen Boat Works, Inc., Gary, Ind. Filed Mar. 20, 1969.



For Boats (Int. Cl. 12).  
First use Oct. 7, 1968.

### Class 20—Linoleum and Oiled Cloth

SN 295,441. Kentile Floors Inc., Brooklyn, N.Y. Filed Apr. 11, 1968.

## ARCHITECTURAL CRITERION

For Vinyl Asbestos Tile for Walls and Flooring (Int. Cl. 19).  
First use Feb. 9, 1968.

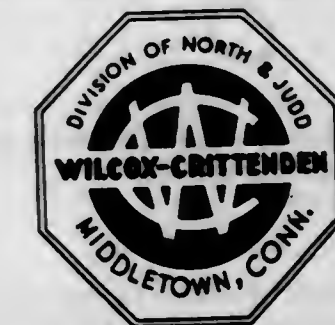
### Class 21—Electrical Apparatus, Machines, and Supplies

SN 271,717. Ball Brothers Research Corporation, Boulder, Colo., assignee of Miratel Electronics Company, St. Paul, Minn. Filed May 17, 1967.

## MIRATEL

For Broadcasting Equipment—Namely, Television Monitors and Program Failure Alarms (Int. Cl. 9).  
First use November 1965.

SN 275,452. North and Judd Manufacturing Company, New Britain, Conn. Filed July 6, 1967.



Applicant disclaims the words "Division of North & Judd" and "Middletown, Conn."  
For Anchor Lights, Flood Lights, Navigation Lights, and Cabin Lights (Int. Cls. 9 and 11).  
First use on or before Apr. 6, 1955.

SN 288,124. Donald L. Smith, Houston, Tex. Filed Jan. 4, 1968.

## GEOSONDE

For Telemetry Apparatus Communicating Geophysical Signals and Information From Geophones to the Recording Station, and Related Apparatus (Int. Cl. 9).  
First use Dec. 19, 1967.

SN 290,667. Triple-A Specialty Co., Chicago, Ill. Filed Feb. 8, 1968.

## AUTOTRONIC

For Battery Charger (Int. Cl. 9).  
First use Sept. 28, 1967.



SN 293,313. H. H. Scott, Inc., Maynard, Mass. Filed Mar. 14, 1968.

**GREAT  
SCOTT**

Owner of Reg. No. 730,718 and others.

For Amplifiers, Including Direct-Current, Alternating-Current, Audio-Frequency, Radio-Frequency, Power and Decade Amplifiers Parts Thereof, and Consoles, Housings and Carrying Cases Therefor; Radio-Wave Receiving Apparatus Including Amplitude, Phase and Frequency-Modulation Tuners, Oscillators, Converters and Multiplex Circuits; Radio-Frequency, Noise and Acoustic Generating Apparatus and Parts Thereof; Electric-Wave Filters, Networks, Attenuators, Electric Cables, Electromechanical and Electroacoustical Transducers Including Microphones and Loudspeakers; Power, Auto, High-Voltage, Radio-Frequency, Audio-Frequency and Filament Transformers; and Inductors and Reactors Including Multi-Tapped Inductors; and Stereophonic Receiving and Reproducing Apparatus, and Parts Thereof (Int. Cl. 9).  
First use on or about June 1, 1966.

SN 293,314. Scovill Manufacturing Company, Waterbury, Conn. Filed Mar. 14, 1968.

**Party-mates**

For Electrically Driven Power Unit With Ice Crusher and Food Blender Attachments (Int. Cl. 7).  
First use Nov. 27, 1967.

SN 293,748. Standard Elektrik Lorenz Aktiengesellschaft, Stuttgart-Zuffenhausen, Germany. Filed Mar. 20, 1968.

**TOURING**

Owner of German Reg. No. 828,092, dated Jan. 3, 1967. For Portable Broadcast Receivers (Int. Cl. 9).

SN 293,955. Superior Continental Corporation, Hickory, N.C. Filed Mar. 22, 1968.



Owner of Reg. No. 814,886. For Electronic Distribution Equipment—Namely, Telephone and Telecommunications Wire and Cable, Aerial Drop Wire, Direct Burial Service Wire, Inside Telephone Wire, Station Insulation Wire, Aerial and Duct Wire, and Coaxial Cable (Int. Cl. 9).  
First use September 1967.

SN 294,444. Allis-Chalmers Manufacturing Company, Milwaukee, Wis. Filed Mar. 29, 1968.

**VALUELINE**

For Electrical Controls for the Starting, Stopping, Reversing, and Speed Control of Electric Motors (Int. Cl. 9).  
First use May 22, 1964.

SN 294,977. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Apr. 4, 1968.

**CROSSBEAM**

For Television Tubes (Int. Cl. 9).  
First use Mar. 20, 1968; in commerce Mar. 20, 1968.

SN 295,380. Spar Aerospace Products Limited, Toronto, Ontario, Canada. Filed Apr. 10, 1968.

**HOTSPOTTER**

For Portable Fire Detectors (Int. Cl. 9).  
First use Apr. 24, 1967; in commerce Nov. 30, 1967.

SN 296,728. Stella Lamp Company Limited, London, England. Filed Apr. 26, 1968.

**STELLA**

Owner of British Reg. No. 648,194, dated May 28, 1946. For Electric Lamps and Electric Lighting Fittings (Int. Cl. 11).

SN 297,296. International Battery, Inc., Schiller Park, Ill. Filed May 3, 1968.

**ENERGYCEL**

For Automotive Lead-Acid Storage Batteries (Int. Cl. 9).  
First use at least as early as April 1968.

SN 297,446. Sprague Electric Company, North Adams, Mass. Filed May 6, 1968.

**MICADEL**

For Electrical Delay Lines (Int. Cl. 9).  
First use Dec. 8, 1967.

SN 297,703. Princeton Applied Research Corporation, Princeton, N.J. Filed May 8, 1968.

**PAR**

Owner of Reg. Nos. 775,569 and 769,724. For Electrical Apparatus—Namely, Amplifiers and Power Supplies (Int. Cl. 9).  
First use Feb. 13, 1968.

SN 298,077. Thomas L. Fawick, Cleveland, Ohio. Filed May 14, 1968.

**FAWICK-MARVELTONE**

The drawing is lined for the colors red and silver. For Electronic Speakers (Int. Cl. 9).  
First use Feb. 22, 1968.

SN 298,100. Armec Corporation, Huntington Station, N.Y. Filed May 14, 1968.

**CHRONODYNE**

For Resonators, More Particularly, Instruments for Affording Signals of Controlled or Uniform Frequency for Use in Timing Devices, or Power Supplies and Electronic Filters (Int. Cl. 9).  
First use Mar. 3, 1960.

SN 299,368. Mullard Limited, London, England. Filed May 29, 1968.



The drawing is lined for the color red, however no claim is made to color. Applicant disclaims any rights to the words "Infrared Detectors" apart from the mark as a whole. For Infrared Detectors (Int. Cl. 9).  
First use March 1968; in commerce March 1968.

SN 318,344. Vactec Incorporated, Maryland Heights, Mo. Filed Feb. 4, 1969.

**VACTROL**

For Photocell Combined With a Light Source (Int. Cl. 9).  
First use July 31, 1967.

SN 318,916. Omni Spectra, Inc., Farmington, Mich. Filed Feb. 11, 1969.

**OSMA**

For Small Size and Miniature Microwave Assemblies, and Components Therefor, Including Wave Guide Systems and Coaxial Line Constructions (Int. Cl. 9).  
First use Jan. 22, 1969.

SN 320,705. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Mar. 4, 1969.

**cintrojjet**

For Power Supply for Electrical Discharge Machine (Int. Cl. 9).  
First use prior to January 1965.

**Class 22—Games, Toys, and Sporting Goods**

SN 268,178. Fisher-Price Toys, Inc., East Aurora, N.Y. Filed Apr. 3, 1967.



The drawing is lined for the colors red and blue. For Toys (Int. Cl. 28).  
First use at least as early as Dec. 6, 1955.



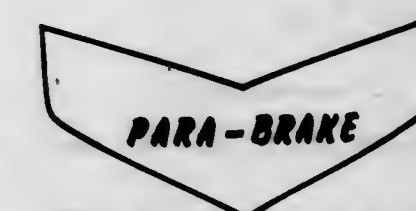
For Holster for Golf Ball Tees and Markers, Toy Autos, Toy Boats, Toy Flying Saucers, and Equipment (or Apparatus) Sold as a Unit for Playing an Auto Racing Game (Int. Cl. 28).  
First use Sept. 15, 1967.

SN 289,209. Republic Tool & Manufacturing Corp., Century City, Calif. Filed Jan. 19, 1968.

**REPUBLIC**

For Holster for Golf Ball Tees and Markers, Toy Autos, Toy Boats, Toy Flying Saucers, and Equipment (or Apparatus) Sold as a Unit for Playing an Auto Racing Game (Int. Cl. 28).  
First use Sept. 15, 1967.

SN 291,383. Glenn Gary Davis, Robert Walton Dahlin and Morris Lavine, Palm Springs, Calif. Filed Feb. 19, 1968.



For Toys Adapted for Mounting on the Rear Portion of a Bicycle Frame, All of Which Include a Drag Chute, and a Mechanism for Opening of the Chute (Int. Cl. 28).  
First use Nov. 8, 1967.

SN 296,841. Kohner Bros., Inc., East Paterson, N.J. Filed Apr. 29, 1968.

**PEOPLE PUPPET CRAFT**

The words "Puppet Craft" are disclaimed apart from the mark as shown. For Toys Do-It-Yourself Puppet Maker Kits (Int. Cl. 28).  
First use March 1968.

SN 297,877. Modern Lines Incorporated, Clark, N.J. Filed May 10, 1968.

**CHALK-UP**

For Carbonate of Magnesia Spray To Be Applied to the Hands To Keep Them Free From Perspiration During Participation in Sports (Int. Cl. 28).  
First use June 3, 1967.

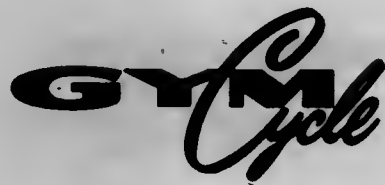
SN 298,466. Miyamae Light Metals Mfg. Co., Ltd., Ikuno-ku, Osaka, Japan. Filed May 17, 1968.

**MIYA**

The English translation of the term "Miya" is "shrine." For Fishing Reel and Buzzer Attached Thereto (Int. Cl. 28).  
First use July 31, 1967; in commerce July 31, 1967.



SN 298,619. New Products Corporation, Ogden, Utah. Filed May 20, 1968. SN 311,601. Kiddie Brush and Toy Co., Inc., Jonesville, Mich. Filed Nov. 7, 1968.



Applicant disclaims the word "Gym" apart from the mark as shown.

For Exercising Apparatus—Namely, an Exercising Device of the Bicycle Type (Int. Cl. 28).  
First use Mar. 28, 1968.

SN 298,683. Anderson & Thompson Ski Co., Inc., Seattle, Wash. Filed May 21, 1968.

## CHAMONIX

For Ski Boots (Int. Cl. 25).  
First use Oct. 1, 1958.

SN 298,832. Lisbeth Whiting Company, Inc., Jamaica, N.Y. Filed May 22, 1968.

## SNOWFLAKE LOOM

The term "Loom" is disclaimed apart from the mark as shown.

For Toy Loom (Int. Cl. 28).  
First use Feb. 20, 1968.

SN 298,915. Atlantic Lures, Inc., Providence, R.I. Filed May 23, 1968.

## METTS-ROCKET

For Fishing Lures (Int. Cl. 28).  
First use Aug. 7, 1960.

SN 300,157. King Athletic Goods Company, Philadelphia, Pa. Filed June 11, 1968.



Applicant disclaims the term "Pro-Sports" apart from the mark as shown.

For Badminton Shuttle Cock Sets, Baseball Gloves, Footballs, Basketballs, Volley Balls, Soccer Balls, Croquet Sets, Golf Gloves, Golf Balls, Golf Putting Sets, Ankle Training Weights, Table Tennis Paddles and Balls, Table Tennis Sets, Tennis Balls, Tennis Press, Tennis Racket Covers, Tennis Racket Sets, Tennis Rackets, Tetherball Sets, Badminton Sets, Badminton Rackets, Volley Ball Sets, Baseball Bats, Baseball Masks, Baseballs, Baseball Ball-Strike-Out Indicators, Football Shoulder Pads and Helmets, Boxing Gloves, and Striking Bags (Int. Cl. 28).  
First use 1964.

SN 311,230. Berkley & Company, Inc., Spirit Lake, Iowa. Filed Nov. 4, 1968.

## MICRO

For Monofilament Nylon Fishing Line (Int. Cl. 28).  
First use Oct. 21, 1968.



Owner of Reg. Nos. 394,239 and 502,118.  
For Children's Toys of All Kinds—Namely, Carpet Sweepers, House-Cleaning Sets and Parts Thereof, Floor Mops, Brooms, Vacuum Sweepers, Dust Pans, Dusters, Wet and Squeeze Floor Mops; Doll Furniture in Sets and Components, Namely, Beds, Wardrobes, and Vanity Dressers (Int. Cl. 28).  
First use Mar. 27, 1968; May 1936, in another display.

SN 312,427. Brunswick Corporation, Chicago, Ill. Filed Nov. 18, 1968.

## CUSTOM LTD

For Bowling Balls (Int. Cl. 28).  
First use Aug. 8, 1968.

SN 317,152. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Jan. 21, 1969.

## SONY

Owner of U.S. Reg. Nos. 770,275, 824,847 and others.  
For Inflatable Vinyl Air Mattresses for Recreational Use (Int. Cl. 28).  
First use June 11, 1968; in commerce June 11, 1968.

SN 319,358. Regent Sports Corporation, Hauppauge, N.Y. Filed Feb. 17, 1969.

## BENGAL

For Game Set Comprising a Ball and Hand-Held Baskets Wherein the Ball Is Caught and Whereby It Is Returned to Other Players (Int. Cl. 28).  
First use Jan. 22, 1969.

## Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 271,774. Dazey Products Company, Kansas City, Mo. Filed May 18, 1967.

## SEAL-A-MEAL

For Machines for Heat Sealing Plastic Bags (Int. Cl. 7).  
First use May 10, 1967.

SN 271,844. Salzgitter Stahlbau G.m.b.H., Salzgitter-Watenstedt, Germany. Filed May 18, 1967.

## ERGO

Owner of German Reg. No. 817, 305, dated Mar. 18, 1966.  
For Machines for the Storage, Selection, and Retrieval of Shelves or Drawers and Articles Held in Shelves or Drawers (Int. Cl. 7).

SN 275,666. H. D. Hudson Manufacturing Company, Chicago, Ill. Filed July 10, 1967. SN 291,835. The Carborundum Company, Niagara Falls, N.Y. Filed Feb. 26, 1968.

## THRED-LOK

For Sprayers and Applicators for Dispensing or Distributing Insecticides, Fungicides, Pesticides, Weed Killers, Fertilizers, Liquids, and the Like (Int. Cl. 7).  
First use on or about Dec. 31, 1956.

## STRONG ARM

For Pneumatically Operated Grinding Machine Attachments for Exerting Force on a Workpiece Against a Worktool (Int. Cl. 7).  
First use Oct. 20, 1966.

SN 276,648. Defibrator Aktiebolag, Stockholm, Sweden. Filed July 24, 1967.

SN 291,913. Syncroflo Inc., Downers Grove, Ill. Filed Feb. 26, 1968.

## FRICTIONATOR

Priority claimed under Sec. 44(d) on Swedish application filed Jan. 26, 1967; Reg. No. 120,418, dated July 14, 1967.  
For Apparatus for Grinding Cellulose Containing Material (Int. Cl. 7).

## FLOPAK

For Fluid Pressure Booster System Including Associated Pumps, Piping and Controls for Supplying Water to Large Buildings, Such as High-Rise, Commercial, Institutional and Industrial Buildings and to Municipalities (Int. Cl. 11).  
First use Jan. 31, 1968.

SN 285,426. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Nov. 22, 1967.

SN 293,164. Nicholson File Company, Providence, R.I. Filed Mar. 13, 1968.

## EARLY ROSE

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).  
First use Nov. 13, 1967.



SN 285,427. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Nov. 22, 1967.

## SEASWEPT

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).  
First use Nov. 13, 1967.

Owner of Reg. No. 732,424.  
For Hack Saws, Band Saws, Carbon Hole Saws, Blades, and Saws of All Kinds, Manually and/or Power Operated; Saw Tools, Knives, Files, and Parts Thereof for Replacement and Repair (Int. Cls. 7 and 8).  
First use Jan. 1, 1928.

SN 285,563. Leder- und Riemen-Patentverwertungsgesellschaft m.b.H., Vienna, Austria. Filed Nov. 24, 1967.

SN 293,388. Jackson Lumber Harvester Co., Inc., Mondovi, Wis. Filed Mar. 15, 1968.

## Robalit 61

Owner of U.S. Reg. No. 833,987.  
For Parts of Paper-Making Machinery—Namely, Suction Box Tops or Covers for Use in a Machine for Treating Paper or Pulp (Int. Cl. 23).  
First use about 1962; in commerce 1962.



SN 289,679. Hydromat Engineering Company, Livonia, Mich. Filed Jan. 26, 1968.

Applicant disclaims the representation of goods apart from its use in the complete composite mark as shown.  
For Portable Saw Mills, Edgers, Wood Shaving Mills, Hydraulic Sawmills, and Log Decks and Turners (Int. Cl. 7).  
First use Dec. 1, 1959.

## LEADING

For Automatic Parts Handling Systems—Namely, Conveying Systems and Components Therefor for Production Line Conveying and Handling of Parts to and Between Work Stations in Manufacturing Plants (Int. Cl. 7).  
First use prior to January 1954.

SN 293,704. Ekco Products, Inc., Wheeling, Ill. Filed Mar. 20, 1968.

SN 289,832. The Reliance Electric & Engineering Company, Cleveland, Ohio. Filed Jan. 29, 1968.

## GLAS-STAIR

For Moving Stairways and Elements of Moving Stairways (Int. Cl. 7).  
First use Nov. 2, 1967.

For Packaging Machines—Namely, Machines for Manufacturing, Depositing, Filling and Closing Packages and Receptacles, and Parts Thereof (Int. Cl. 7).  
First use on or about Jan. 3, 1958.





SN 293,951. Rotodyne Manufacturing Corporation, Brooklyn, N.Y. Filed Mar. 22, 1968.



For Rotational Plastic Molding Apparatus, Belt and Trolley Conveyors, and Water Spray Power Washers and Spray Booths for Cleaning Metal Articles (Int. Cl. 7).  
First use on or about Apr. 1, 1967.

SN 294,261. The Inta-Roto Machine Company, Inc., Richmond, Va. Filed Mar. 27, 1968.

### INTA-ROTO

For Rotogravure and Flexographic Printing Presses, Slitters, Laminators, Coaters, Unwind Apparatus, Rewind Apparatus, Foil Separators, Foil Doublers, Butt Splicers, Engraving Cylinders, Embossing Rolls, and Parts for Said Apparatus (Int. Cl. 7).  
First use Jan. 1, 1954.

SN 294,396. The Huffman Manufacturing Company, Miami-burg, Ohio. Filed Mar. 28, 1968.

### FAIRLANE

For Power-Operated Lawn Mowers (Int. Cl. 7).  
First use at least as early as May 1, 1966.

SN 294,678. Snorkel Fire Equipment Company, St. Joseph, Mo. Filed Apr. 1, 1968.

### SQURT

For Vehicle Mounted Mobile Fire Fighting Equipment—Namely, Articulated Boom Water Tower With Remotely Controlled Water Stream Nozzle for Use in Fire Fighting (Int. Cl. 9).  
First use Mar. 5, 1968.

SN 295,750. Marquette Tool and Die Company, St. Louis, Mo. Filed Apr. 16, 1968.

### MARGAY

Owner of Reg. No. 777,832.  
For Gear Boxes (Int. Cl. 7).  
First use May 1964.

SN 296,038. Paul Ferd. Peddinghaus, Gevelsberg, Germany. Filed Apr. 19, 1968.



The mark consists of a four leaf clover in a surrounding frame design.  
For Shears, Punches, Bar Bending Machines and Bar Cutting Machines (Int. Cl. 7).  
First use 1934; in commerce Jan. 1, 1950.

SN 297,835. American Chain & Cable Company, Inc., Bridgeport, Conn. Filed May 10, 1968.

### LOUDEN

For Monorail Machinery and Crane Machinery for Material Handling, and Fork Lift Cranes and Tiering Trolleys for Stacking Material (Int. Cl. 7).  
First use 1917.

SN 298,791. Breeze Corporations, Inc., Union, N.J. Filed May 22, 1968.

### RES-CULATOR

For Winches and Hoists for Transferring Personnel and Stores From Airborne Helicopters to the Ground (Int. Cl. 7).  
First use Mar. 12, 1968.

SN 298,792. Breeze Corporations, Inc., Union, N.J. Filed May 22, 1968.

### AIR-LEVATOR

For Winches and Hoists for Transferring Personnel and Stores From Airborne Helicopters to the Ground (Int. Cl. 7).  
First use Mar. 12, 1968.

SN 299,047. The Singer Company, New York, N.Y. Filed May 24, 1968.

### STYLE-MATE

Owner of Reg. No. 310,667.  
For Sewing Machines, Their Parts and Attachments (Int. Cl. 7).  
First use November 1961.

SN 300,117. Santa Anita Mfg. Corp., Temple City, Calif. Filed June 10, 1968.



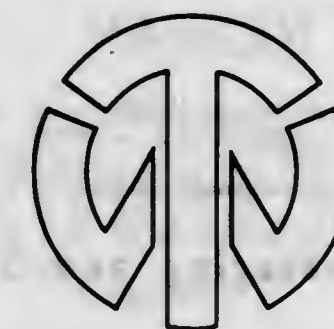
For Tailgate Loading Platforms, Winches and Cranes for Use on Trucks, Trailers, and Other Motor Vehicles (Int. Cl. 7).  
First use May 1956.

SN 300,118. Santa Anita Mfg. Corp., Temple City, Calif. Filed June 10, 1968.



The drawing is lined for the colors red and yellow.  
For Tailgate Loading Platforms, Winches and Cranes for Use on Trucks, Trailers, and Other Motor Vehicles (Int. Cl. 7).  
First use May 1956.

SN 308,246. Trans-Wheel, Inc., Addison, Ill. Filed Sept. 26, 1968. SN 319,256. Amchem Products, Inc., Ambler, Pa. Filed Feb. 17, 1969.



For Truck and Auxiliary Power Driven Wheel Drives and Pumps, and Controls Therefor; Hydraulic Positive Displacement Variable Speed Motor Assemblies and Pumps, and Controls Therefor (Int. Cl. 7).  
First use on or before Aug. 1, 1967.

SN 314,443. Oneida Ltd., Oneida, N.Y. Filed Dec. 13, 1968. Owner of Reg. No. 504,435.

### SWEET BRIAR

For Flatware Made of Non-Precious Material (Int. Cl. 8).  
First use Aug. 14, 1965.

SN 314,556. Hupp, Inc., Cleveland, Ohio. Filed Dec. 16, 1968.

### TRU-TRED

For Material Handling Equipment—Namely, Overload Monorail Systems, Including Track Therefor (Int. Cl. 7).  
First use Apr. 17, 1966.

SN 317,410. Wayne Manufacturing Co., Pomona, Calif. Filed Jan. 23, 1969.

### WAYNE

Owner of Reg. No. 730,376.  
For Mobile, Power-Operated Wood Reduction Machines (Int. Cl. 7).  
First use July 8, 1963.

SN 318,861. Ing. C. Olivetti & C., S.p.A., Ivrea, Italy. Filed Feb. 3, 1969.

### HORIZON

Owner of Italian Reg. No. 213,701, dated Sept. 4, 1967.  
For Automated Machine Tools and Controls Therefor, and the Respective Components Thereof (Int. Cl. 7).

SN 319,158. Giddings & Lewis, Inc., Fond Du Lac, Wis. Filed Feb. 14, 1969.

### "SUPER-MIKE"

For Boring Tool Sets Comprising, Boring Bars, Cutter Tools, Adjustable Flycutter Tools, Adapter Sleeves, Feed Heads, Hand Wheels, Wrenches, and Combination Stop and Jack Blocks, Adjustable Stop Jacks, and Parallel Blocks (Int. Cls. 7 and 8).  
First use at least as early as July 1960.

SN 319,255. Amchem Products, Inc., Ambler, Pa. Filed Feb. 17, 1969.

### ECONO-MISER

For Power-Operated Pesticides Sprayers (Int. Cl. 7).  
First use Dec. 31, 1968.

### PORTA-PHOS

For Power-Operated Sprayers for Testing Metals (Int. Cl. 7).  
First use Sept. 6, 1968.

SN 319,431. The Challenge Machinery Company, Grand Haven, Mich. Filed Feb. 18, 1969.

### MAGNA-SPACER

For Power-Operated Paper Cutting Machines (Int. Cl. 7).  
First use on or about Dec. 3, 1968.

SN 320,260. Grob & Co. Limited, Horgen, Zurich, Switzerland. Filed Feb. 27, 1969.

### GROBAT

Owner of U.S. Reg. No. 840,839.  
For Weaving Heddles, Heddle Frames, Weaving Harnesses as Well as Drop Wires, Electric Warp Stop Motions (Int. Cl. 7).  
First use January 1953; in commerce June 1953.

SN 320,426. E. D. Bullard Company, Sausalito, Calif. Filed Mar. 3, 1969.

### ROLLOX

For Hoisting Hooks Having Safety Closure Gates (Int. Cl. 7).  
First use about Feb. 4, 1969.

SN 320,704. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Mar. 4, 1969.

### TOOLMASTER

For Milling Machine (Int. Cl. 7).  
First use prior to January 1957.

SN 320,780. Paul Abbott Co., Inc., Blytheville, Ark. Filed Mar. 5, 1969.



The mark consists of the stylized letter "A."  
For Agricultural Equipment—Namely, Tractor Hitches and Yokes, Rear Mounting Cultivator Harnesses, Conversion Kits for Tractor Hitches; Agricultural Tool Bars; and Parts Thereof (Int. Cl. 7).  
First use Aug. 9, 1968.

SN 320,800. Cuffin Holdings Limited, Retford, England. Filed Mar. 5, 1969.

### DUCTUBE

Owner of British Reg. No. 704,635, dated Feb. 5, 1952.  
For Inflatable Cores, Wholly or Partly of Rubber or Artificial Rubber, for Use in Moulding Concrete and Like Materials (Int. Cl. 17).



SN 320,859. Roberts Company, Sanford, N.C. Filed Mar. 5, 1969. SN 296,353. Societe d'Exploitation des Brevets Nelman, Neuilly (Seine), France. Filed Apr. 23, 1968.

**SINTRON**

For Ring Travelers (Int. Cl. 7).  
First use May 24, 1966.

SN 320,864. Sears, Roebuck and Co., Chicago, Ill. Filed Mar. 5, 1969.

**COURIER**

For Typewriters (Int. Cl. 16).  
First use in or about February 1968.

SN 321,041. Challenge-Cook Bros., Incorporated, Industry, Calif. Filed Mar. 7, 1969.

**MUDSLINGER**

For Discharge Conveyor and Chute for Concrete Transit Mixers (Int. Cl. 7).  
First use Feb. 18, 1969.

SN 321,728. Roberts Company, Sanford, N.C. Filed Mar. 14, 1969.

**DYNACARD**

For Carding Machines (Int. Cl. 7).  
First use January 1966.

**Class 24 — Laundry Appliances and Machines**

SN 297,077. McGraw-Edison Company, Elgin, Ill. Filed May 1, 1968.



The term "Laundry Machinery Industries" is disclaimed apart from the mark as shown. Owner of Reg. No. 156,610.

For Laundry Machinery, Washers, Dryers, Extractors, Shirt Ironers, Flatwork Ironers, Dry Cleaning Machinery, Presses, and Parts Thereof (Int. Cl. 7).  
First use Jan. 12, 1962.

**Class 25 — Locks and Safes**

SN 295,747. LeFebure Corporation, Cedar Rapids, Iowa. Filed Apr. 16, 1968.

**UNIVAUULT**

For Bank Vaults (Int. Cl. 6).  
First use on or about Jan. 17, 1968.

**NEIMAN**

For Safety Locks for Motor Vehicles (Int. Cl. 6).  
First use 1932; in commerce in June 1957.

**Class 26 — Measuring and Scientific Appliances**

SN 274,580. Automatic Burner Corporation, Chicago, Ill. Filed June 23, 1967.

**ABC**

Owner of Reg. No. 281,933.  
For Automatic Metering, Mixing and Dispensing Device for Multi-Component Plastic Resin Systems Used in the Manufacture of Products Which Require Sealants, Potting, Moulding, Impregnating and/or Adhesive Compounds, Which Device Is Sold to Manufacturers of Such Products (Int. Cl. 9).  
First use May 19, 1967.

SN 277,972. Art-O-Graph Inc., Minneapolis, Minn. Filed Aug. 10, 1967.

**MAP-O-GRAPH**

For Opaque Projection Equipment for Projecting a Sharp, Bright Image of a Section of Any Size Map or Document Directly on the Drafting Table (Int. Cl. 9).  
First use Sept. 24, 1959.

SN 279,246. Sherwood Medical Industries Inc., Chicago, Ill., by assignment and change of name from Brunswick Corporation, Chicago, Ill. Filed Aug. 29, 1967.

**TRIDENT**

For Scientific and Technical Laboratory Paraphernalia—Namely, Microscope Slides, Cover Glasses, Graduated Cylinders, Pipettes, Disposable Glass Tubes, Specimen Bottles, Thermometers, and Coagulation Capillary Tubes (Int. Cl. 9).  
First use December 1963.

SN 283,735. Tokheim Corporation, Fort Wayne, Ind. Filed Oct. 30, 1967.

**ardmore**

For Fuel Measuring and Dispensing Apparatus, and Parts Thereof (Int. Cl. 9).  
First use at least as early as July 13, 1959.

SN 285,519. Bausch & Lomb Incorporated, Rochester, N.Y. Filed Nov. 24, 1967.

**MAGNA-RULE**

Owner of Reg. No. 239,513.  
For Magnifiers for General Use in Reading Typed or Written Material (Int. Cl. 9).  
First use February 1965.

SN 288,713. Oval Kiki Kogyo Kabushiki Kaisha, d.b.a. Oval Gear Engineering Co., Ltd., Shinjuku-ku, Tokyo, Japan. Filed Jan. 12, 1968. SN 294,961. National Design Center Delaware Inc., New York, N.Y. Filed Apr. 4, 1968.



For Liquid, Gaseous, and Steam Flowmeters (Int. Cl. 9).  
First use May 10, 1949; in commerce Nov. 8, 1963.

SN 292,169. Baird-Atomic, Inc., Cambridge, Mass. Filed Feb. 29, 1968.

**EVAPOROGRAPH**

For Infrared Cameras for Sensing a Subject in Terms of Infrared Radiation and Displaying a Corresponding Image of the Subject in Terms of Visible Light—Namely, Infrared Image Detecting and Converting Devices (Int. Cl. 9).  
First use Mar. 3, 1959.

SN 293,294. Payne Manufacturing Company Limited, Toronto, Ontario, Canada. Filed Mar. 14, 1968.

**GOLDEN FLOW**

For Liquid Dispensers in the Nature of Automatic Jiggers for Dispensing Alcoholic Beverages in Predetermined Amounts (Int. Cl. 21).  
First use January 1953; in commerce January 1963.

SN 293,797. Biotronex Laboratory, Incorporated, Silver Spring, Md. Filed Mar. 21, 1968.



For Blood Flowmeters; Computers for Use in Determining Stroke Volume and for Calibration of Blood Flow Transducers; and Blood Pressure Amplifiers, All for Laboratory Use (Int. Cl. 9).  
First use Mar. 2, 1965.

SN 294,833. The Gerber Scientific Instrument Company, South Windsor, Conn. Filed Apr. 3, 1968.

**GRAPHANALOGUE**

For Manually Operated Mechanical Instrument Utilizing a Measuring Scale With Variable Length Graduations and a Number of Mathematically Related Scales With Fixed Graduations and a Common Cursor, Used in Performing Computations Directly on Graphs, Curves and Recordings, Also Used in Reading, Plotting, and Interpreting Graphical Work—Namely, Oscillograms and Telemetering Data; and in Direct Multiplication and Division of Graphical Functions, and in the Reading Thereof (Int. Cl. 9).  
First use January 1953.

**MONOSCAN**

For Mounted Multiple Microfilm Transparencies for Projection Viewing (Int. Cl. 9).  
First use on or about Dec. 4, 1967.

SN 298,857. Parmatic, Inc., Newark, N.J. Filed May 22, 1968.

**PARSENSOR**

For Differential Pressure Range Indicator for Measuring and Signalling Preset Differential Pressures (Int. Cl. 9).  
First use Apr. 30, 1968.

SN 303,357. SPEX Industries, Inc., Metuchen, N.J. Filed July 22, 1968.

**RAMALOG**

For Laser Raman Spectrometric System, Comprising Laser Source, Sample Illuminator, Double Spectrometer, Detection Photomultiplier, Picoammeter, and Recorder (Int. Cl. 9).  
First use May 14, 1968.

SN 307,455. General Time Corporation, Stamford, Conn. Filed Sept. 16, 1968.



Owner of Reg. Nos. 854,121 and 816,589.  
For Timers—Namely, Cycle Timers, Delay Timers, Reset Timers, Interval Timers, and Elapsed Time Indicators (Int. Cl. 9).  
First use Aug. 24, 1965.

SN 308,003. Andrew Smith Harkness Limited, Boreham Wood, England. Filed Sept. 23, 1968.

**VISTARAMA**

For Motion Picture Projection Screens (Int. Cl. 9).  
First use February 1965; in commerce May 1, 1968.

SN 312,286. F. W. Dwyer Mfg. Co., Inc., Michigan City, Ind. Filed Nov. 15, 1968.

**TRAIL-TAIL**

For Static Pressure Sensors (Int. Cl. 9).  
First use Nov. 4, 1968.

SN 313,028. RFL Industries, Inc., Boonton, N.J. Filed Nov. 25, 1968.

**MAGNESEARCH**

For Magnetometer for Measuring Magnetic Fields (Int. Cl. 9).  
First use Nov. 5, 1968.

SN 322,218. F. W. Dwyer Mfg. Co., Inc., Michigan City, Ind. Filed Mar. 20, 1969.

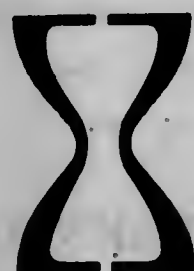
**MINIHELIC**

For Pressure Gauges (Int. Cl. 9).  
First use Mar. 3, 1969.



**Class 27—Horological Instruments**

SN 295,139. R. Gsell & Co., Inc., New York, N.Y. Filed Apr. 8, 1968.



For Watches and Parts Thereof, Watch Cases, and Watch Movements (Int. Cl. 14).  
First use January 1967.

SN 311,383. Fabrique des Montres Wyler Societe Anonyme, Bienne, Switzerland. Filed Nov. 5, 1968.

**WYCOFLEX**

Owner of Swiss Reg. No. 174,994, dated Apr. 3, 1959.  
For Horological Products—Namely, Watches, Alarm Clocks, and Pendulum Clocks (Int. Cl. 14).  
First use Apr. 30, 1959; in commerce Apr. 30, 1959.

SN 312,020. Bulova Watch Company, Inc., Flushing, N.Y. Filed Nov. 13, 1968.

**SKYSTAR**

For Watches and Parts Thereof (Int. Cl. 14).  
First use Oct. 21, 1968.

**Class 28—Jewelry and Precious-Metal Ware**

SN 300,716. Mad Moddery Creations Limited, Toronto, Ontario, Canada. Filed June 18, 1968.



For Fashion Jewelry and Costume Jewelry (Int. Cl. 14).  
First use April 1968; in commerce April 1968.

SN 304,458. Nadia Z. Garden, d.b.a. N.G. Company, Conyers, Ga. Filed Aug. 6, 1968.

**NADIA'S CREATIONS**

Applicant disclaims the word "Creations" apart from the mark as shown.  
For Custom Jewelry (Int. Cl. 14).  
First use June 1, 1968.

SN 308,258. International Silver Company, Meriden, Conn. Filed Sept. 26, 1968.

**GOLD CROWN**

Without waiving any of its common law rights thereto, applicant disclaims the word "Gold" apart from the mark as shown.  
For Flatware and Holloware Made in Whole or in Part of Gold (Int. Cls. 8 and 14).  
First use at least as early as June 3, 1968.

SN 312,675. Hamilton Watch Company, Lancaster, Pa. Filed Nov. 20, 1968.

**WEATHERLY**

For Silverplated Holloware (Int. Cl. 14).  
First use Sept. 6, 1968.

SN 312,676. Hamilton Watch Company, Lancaster, Pa. Filed Nov. 20, 1968.

**MADRILENA**

For Silverplated Holloware (Int. Cl. 14).  
First use Sept. 6, 1968.

SN 318,432. Kinsman Ring Co., Inc., New York, N.Y. Filed Feb. 5, 1969.

**KIN**

For Finger Rings (Int. Cl. 14).  
First use Nov. 11, 1968.

SN 318,930. Emmons Jewelers, Inc., Newark, N.Y. Filed Feb. 12, 1969.

**CAROLINE EMMONS**

The name "Caroline Emmons" is fanciful. Owner of Reg. Nos. 662,555 and 778,172.  
For Jewelry (Int. Cl. 14).  
First use on or about Jan. 6, 1969.

**Class 30—Crockery, Earthenware, and Porcelain**

SN 304,712. Rosenthal Aktiengesellschaft, Selb, Bavaria, Germany. Filed Aug. 8, 1968.

**FLAMMFEST**

Owner of German Reg. No. 758,765, dated Jan. 18, 1962.  
For Ceramic Cookware (Int. Cl. 21).

**Class 31—Filters and Refrigerators**

SN 273,983. Rayne Corporation, Santa Barbara, Calif. Filed June 15, 1967.



The shading on the drawing is an integral part of the mark.  
For Water Softening Units in the Nature of Tanks (Int. Cl. 11).  
First use Feb. 9, 1967.

SN 316,228. Mid-South Industries, Inc., Laurel, Miss. Filed Jan. 9, 1969.



For Walk-In Refrigerators (Int. Cl. 11).  
First use Aug. 1, 1962.

**Class 32—Furniture and Upholstery**

SN 287,230. D. R. Munro & Son, Inc., Portland, Ore. Filed Dec. 19, 1967.

**MUNRO-SECURPLAND**

For Storage Equipment, Specifically Lockers, Racks, and Wire Baskets Sold as a Unit (Int. Cl. 20).  
First use Dec. 8, 1967.

SN 289,014. Drexel Enterprises, Inc., Drexel, N.C., assignee of Drexel Enterprises, Inc. Drexel, N.C. Filed Jan. 17, 1968.

**CLASSICTREASURY**

For Bedroom, Dining Room, Occasional, and Living Room Furniture (Int. Cl. 20).  
First use November 1967.

SN 289,672. Tenneco Chemicals, Inc., New York, N.Y., by merger from General Foam Corporation, New York, N.Y. Filed Jan. 26, 1968.

**RESTAIR**

For Polyurethane Foam Cushions (Int. Cl. 20).  
First use on or about May 1, 1967.

SN 294,650. Palmer-Shile Company, Detroit, Mich. Filed Apr. 1, 1968.

**WHERE SPACE IS ENGINEERED INTO WORKING STORAGE**

For Materials Handling Equipment—Namely, Steel Storage Racks (Int. Cl. 20).  
First use June 1964.

SN 294,912. Carl L. Brumbaugh, d.b.a. Brumbaugh Enterprises, West Milton, Ohio. Filed Apr. 4, 1968.

**NYL-VEL**

For Flock Covered Tables, Table Tops, Chairs, Cabinets, Furniture Panels, Picture Frames, Room Dividers, and Screens (Int. Cl. 20).  
First use Jan. 15, 1968.

SN 295,178. Royal-T Company, Mount Pleasant, Mich. Filed Apr. 8, 1968.

**BATH N' BED BY ROYAL-T**

Applicant disclaims the words "Bath" and "Bed" apart from the mark as shown.  
For Bassinets (Int. Cl. 20).  
First use Mar. 12, 1968.

SN 299,097. Broyhill Furniture Industries, Lenoir, N.C. Filed May 27, 1968.

**GRACIAS**

The mark "Gracias" is a Spanish word meaning "thanks." For Bedroom, Dining Room, and Living Room Furniture (Int. Cl. 20).  
First use on or about Jan. 30, 1968.

SN 299,665. Foamland U.S.A., Inc., West Hempstead, N.Y. Filed June 4, 1968.

**foamland USA**

No claim is made to the word "Foam" and the letters "U.S.A." apart from the mark as shown.  
For Foam Rubber Mattresses, Box Springs and Head Boards; Settees, Couches, Chairs, Tables, Wall Units, Storage Units, Bolsters, Pillows, and Cushions (Int. Cl. 20).  
First use Mar. 25, 1953.

SN 303,429. Monsanto Company, St. Louis, Mo. Filed July 23, 1968.

**VYKAN**

For Rigid Plastic Parts and Components—Namely, Seats Sold for Use in Manufacturing Furniture (Int. Cl. 20).  
First use Jan. 10, 1968.

SN 312,686. Monsanto Company, St. Louis, Mo. Filed Nov. 20, 1968.

**PLACUBE**

For Furniture—Namely, Chairs and Desks (Int. Cl. 20).  
First use Oct. 28, 1968.

SN 314,859. Elizabeth Stowall and Florence Smith (joint venture), d.b.a. Nek-ker Pillows, St. Petersburg, Fla. Filed Dec. 19, 1968.

**NEK-KER**

For Pillows (Int. Cl. 20).  
First use Nov. 19, 1968.

SN 316,159. Robert Yordy, Morton, Ill. Filed Jan. 8, 1969.



For Adjustable Hairdressing and Apparel Grooming Mirror Device (Int. Cl. 20).  
First use July 1965.

SN 319,924. P. R. Mallory & Co. Inc., Indianapolis, Ind. Filed Feb. 24, 1969.

**MALLOBIN**

For Multiple Compartment Merchandising Cabinets (Int. Cl. 20).  
First use on or about Dec. 16, 1968.



SN 322,392. Wolff Products Co., Long Island City, N.Y. Filed Mar. 21, 1969.

## SPLENDOUR

For Shelving, With or Without Towel Bars (Int. Cl. 20).  
First use Feb. 14, 1969.

### Class 33—Glassware

SN 280,603. Libbey-Owens-Ford Company, Toledo, Ohio, by change of name from Libbey-Owens-Ford Glass Company, Toledo, Ohio. Filed Sept. 18, 1967.

## VARI-TRAN

For Vacuum Coated Flat Glass and Curved Glass, Laminated Glass, and Multiple Sheet Glazing Units Made Therefrom (Int. Cl. 21).  
First use Sept. 1, 1967.

SN 282,505. Ingrid Hutte Kurt Wokan, Euskirchen, Germany. Filed Oct. 13, 1967.



The mark consists of a fanciful representation of the letters "IG." Owner of German Reg. No. 739,873, dated Sept. 5, 1960.

For Drinking Vessels Made of Glass—Namely, Glasses for Champagne, Wine, Beer, Liqueur, Brandy; Whisky-Tumblers; Drinking Cups for Fruit Juice; and Water Tumblers (Int. Cl. 21).

### Class 34—Heating, Lighting, and Ventilating Apparatus

SN 274,105. Unibraze Corporation, New Rochelle, N.Y. Filed June 16, 1967.

## UNIBRAZE

For Welding, Brazing and Soldering Alloys; Welding, Brazing, and Soldering Supplies—Namely, Tungsten, Electrodes, Welding Wire and Anti-Spatter Compounds; and Allied Welding Equipment, Namely, Welding Positioners, Ceramic and Alumina Cups, Electrode Holders and Torch Tips (Int. Cls. 1, 6, and 9).  
First use November 1966.

SN 305,505. Cory Corporation, Chicago, Ill. Filed Aug. 20, 1968.

## NICRO

Owner of Reg. Nos. 441,695, 561,145, and 564,484.  
For Electric Beverage Brewers, Stoves and Warmers, Combinations Thereof and Parts Thereof (Int. Cl. 11).  
First use July 12, 1968.

SN 305,906. American Farm Equipment Co., Lake Zurich, Ill. Filed Aug. 26, 1968.

## AMERICAN

For Crop Dryers, Space Heaters, and Parts Thereof (Int. Cl. 11).  
First use Jan. 8, 1947.

SN 308,649. Zada Establishment, Vaduz, Liechtenstein. Filed Oct. 1, 1968.

## ZADA

Priority claimed under Sec. 44(d) on Liechtenstein Reg. No. 2,652, dated July 31, 1968.

For Ventilation Units and Fan Units, and Parts Thereof (Int. Cl. 11).

SN 309,223. Bar-B-Cone Manufacturing Co., Inc., Wichita, Kans. Filed Oct. 9, 1968.

## BAR B CONE

For Electrically Fired Cooking Grills for Outdoor and Indoor Use (Int. Cl. 11).  
First use Feb. 28, 1968.

### Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 290,468. Rex Chainbelt Inc., Milwaukee, Wis., assignee of Cartriseal Corporation, Wheeling, Ill. Filed Feb. 7, 1968.

## COKGARD

For Shaft Seals—Namely, Sealing Devices for Preventing the Transfer of Fluids Between Relatively Movable Parts (Int. Cl. 17).

First use Nov. 17, 1967.

SN 318,408. Dayco Corporation, Dayton, Ohio. Filed Feb. 5, 1969.

## DRIVE RITE

For Power Transmission Belts and Fluid Conveying Hose (Int. Cls. 7 and 17).  
First use on or about Dec. 11, 1968.

SN 319,852. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Feb. 24, 1969.

## FIBER-STEEL

Owner of Reg. Nos. 424,424, 525,049, and 746,931.  
For Resilient Vehicle Tires (Int. Cl. 12).  
First use Jan. 24, 1969.

### Class 36—Musical Instruments and Supplies

SN 250,662. Al. P. Wetle, d.b.a. Glen Recording Company, Chicago, Ill. Filed July 20, 1966.



For Pre-Recorded Travel Information and Travel Talk on Magnetic Tape for Use by Travelers (Int. Cl. 9).  
First use Sept. 2, 1964.

SN 274,391. Ambico Trading Corporation, Valley Stream, N.Y. Filed June 21, 1967.

SN 318,419. Hammond Corporation, Deerfield, Ill. Filed Feb. 5, 1969.



The drawing is lined for the color red.  
For Guitars, Lapharps, Violins, Cellos, Violas, Trumpets, Coronets, Saxophones, Clarinets, Harmonicas, Recorders (a Musical Instrument), Tambourines, Batons, Drum Sets, Tym-bale Sets; and Parts, Accessories, and Cases for the Above Named Musical Instruments (Int. Cl. 15).  
First use July 8, 1968.

SN 283,329. Excelsior Accordions, Inc., New York, N.Y. Filed Oct. 25, 1967.



For Tone Generators for Use With Musical Instruments (Int. Cl. 15).  
First use June 21, 1967.

SN 308,464. Carroll Sound Incorporated, Rochell Park, N.J. Filed Sept. 30, 1968.



Applicant disclaims the words "The House of Sound" and "Sound."  
For Percussion Musical Instruments (Int. Cl. 15).  
First use June 18, 1968.

SN 310,311. Robert de Gourdon, Paris, France. Filed Oct. 23, 1968.

## F. LOREE

For Oboes, English Horns, and Clarinets (Int. Cl. 15).  
First use in 1881; in commerce in 1926.

SN 316,641. Hammond Corporation, Deerfield, Ill. Filed Jan. 15, 1969.

## CONDOR

For Musical Instrument Accessory for Electronically Modifying and Amplifying the Natural Sound of the Instrument (Int. Cl. 15).  
First use Jan. 3, 1969.



For Musical Instrument Accessory for Electronically Modifying and Amplifying the Natural Sound of the Instrument (Int. Cl. 9).  
First use Jan. 3, 1969.

### Class 37—Paper and Stationery

SN 287,768. Tele-Quick Corporation, New Haven, Ind. Filed Dec. 28, 1967.

## TELE-LOG

For Invoice Forms Used in Connection With the Repair of Electronic Apparatus Such as Television and Radio Receivers (Int. Cl. 16).  
First use February 1967.

SN 304,384. Phillips Petroleum Company, Bartlesville, Okla. Filed Aug. 5, 1968.

## ECONOKLEAR

For Plastic Film for Packaging (Int. Cl. 16).  
First use June 17, 1968.

SN 311,725. The Harding Jones Paper Company, Middletown, Ohio. Filed Nov. 6, 1968.



For Bond Writing Paper (Int. Cl. 16).  
First use June 1, 1968.

SN 313,592. The Lynn Pacific Corporation, Union City, Calif. Filed Dec. 4, 1968.

## LADY LINEN

The word "Linen" is disclaimed apart from the mark as shown.  
For Paper Pads and Tablets (Int. Cl. 16).  
First use Mar. 15, 1968.

SN 317,259. S-K Forms Company, Philadelphia, Pa. Filed Jan. 22, 1969.

## ECHO NOTE

The word "Note" is disclaimed apart from the mark as shown.  
For Message Forms (Int. Cl. 16).  
First use on or about Aug. 1, 1968.



SN 317,774. Tuckersharpe Pen Company, Inc., Richmond, Va. Filed Jan. 28, 1969. SN 282,760. American Research Council, Inc., Rye, N.Y. Filed Oct. 18, 1967.

**TUCKER COMBO**

For Writing Instruments—Namely, Fine Line Markers (Int. Cl. 16).  
First use at least as early as about August 1967.

SN 318,465. Statler Tissue Corp., Medford, Mass. Filed Feb. 5, 1969.



For Towels, Toilet Tissue, Napkins, and Boxed Facial Tissue (Int. Cl. 16).  
First use October 1968.

SN 318,890. Check Savers, Inc., Park Ridge, Ill. Filed Feb. 11, 1969.

**PHOTO-LUCENT**

For Folders for Enclosing Checks (Int. Cl. 16).  
First use at least as early as September 1965.

**Class 38—Prints and Publications**

SN 268,869. Helen Briggs Crosier, Madison, N.J. Filed Apr. 11, 1967.



Applicant claims no exclusive rights to the word "Music" apart from the mark as shown.

For Music Instruction Books and Printed Teaching Aids (Int. Cl. 16).  
First use Feb. 12, 1967.

SN 268,870. Helen Briggs Crosier, Madison, N.J. Filed Apr. 11, 1967.



Applicant claims no exclusive rights to the word "Music" apart from the mark as shown.

For Music Instruction Books and Printed Teaching Aids (Int. Cl. 16).  
First use Feb. 12, 1967.

**\$YOUR INVESTMENTS\$**

For Financial Reports Appearing on a Regular Basis Involving the Broad Field of Finance, Stock Market Analysis and Trend Evaluations of This Genre (Int. Cl. 16).  
First use June 1967.

SN 290,568. American Stock Exchange, New York, N.Y. Filed Feb. 8, 1968.

**AMERICAN INVESTOR**

THE MAGAZINE OF THE AMERICAN STOCK EXCHANGE

For Magazine Published at Regular Intervals, Devoted to Matters of Interest Relating to the American Stock Exchange and the Securities Industry (Int. Cl. 16).  
First use June 1956.

SN 293,013. American Aviation Publications, Inc., Washington, D.C. Filed Mar. 12, 1968.

**AIR CARGO**

For Magazine (Int. Cl. 16).  
First use July 1957.

SN 293,190. The World Press Company, New York, N.Y. Filed Mar. 13, 1968.



Owner of Reg. No. 730,444.  
For Monthly Magazine (Int. Cl. 16).  
First use Aug. 11, 1967.

SN 293,484. Digital Equipment Corporation, Maynard, Mass. Filed Mar. 18, 1968.

**FOCAL**

For Booklets and Manuals Containing a Computer Language and Instructions for Programming (Int. Cl. 16).  
First use Feb. 16, 1968.

SN 293,803. The Confederate Air Force, Mercedes, Tex. Filed Mar. 21, 1968.



For Pamphlets (Int. Cl. 16).  
First use Sept. 6, 1957.

SN 299,482. The Petroleum Engineer Publishing Company, Dallas, Tex. Filed May 31, 1968.

**ENERGY WEEK**

For Newsletter Published Periodically (Int. Cl. 16).  
First use April 1968.

SN 304,538. American Chemical Society, Washington, D.C. Filed Aug. 7, 1968. SN 317,922. Pathe News, Inc., New York, N.Y. Filed Jan. 30, 1969.

**CBAC**

For Bi-Weekly Index Containing Abstracts From the Current Chemical-Biological Literature (Int. Cl. 16).  
First use Jan. 11, 1965.

SN 308,511. Magazine Management Co., Inc., New York, N.Y., assignee of Perfect Film & Chemical Corporation, d.b.a. Marvel Comics Group, New York, N.Y. Filed Sept. 30, 1968.



For Publications, Particularly Comic Material (Int. Cl. 16).  
First use on or about Feb. 2, 1967; at least as early as December 1943 in a different form.

SN 309,162. The Curtis Publishing Company, Philadelphia, Pa. Filed Oct. 8, 1968.

**STATUS**

For Magazine (Int. Cl. 16).  
First use September 1965.

SN 316,554. Marshall Jay Yaeger, d.b.a. Embassy Theatre Arts, Englewood Cliffs, N.J. Filed Jan. 14, 1969.

**MICROPLAYS**

For Scripts in Book Form (Int. Cl. 16).  
First use Jan. 2, 1968.

SN 317,118. The Sears-Roebuck Foundation, Skokie, Ill. Filed Jan. 21, 1969.

**OFFICER FRIENDLY**

For Educational Booklets, Brochures, Coloring Books, Printed Display Material, and the Like for Improving Rapport Between Children and Police (Int. Cl. 16).  
First use on or about July 1, 1966.

SN 317,338. Gelman Instrument Company, Ann Arbor, Mich. Filed Jan. 23, 1969.

**CLP**

For Magazine Published Bi-Monthly Directed to Laboratory, Biological and Medical Techniques and Apparatus (Int. Cl. 16).  
First use Jan. 2, 1969.



For Moving Pictures (Int. Cl. 9).  
First use Dec. 31, 1948.

SN 319,961. Roth Greeting Cards, Hollywood, Calif. Filed Feb. 24, 1969.

**SPICY**

For Greeting Cards (Int. Cl. 16).  
First use Jan. 9, 1969.

SN 319,999. Walter J. Black, Inc., Roslyn, N.Y. Filed Feb. 25, 1969.



For Books and Series of Books (Int. Cl. 16).  
First use Apr. 1, 1925.

SN 320,883. The University Society Inc., Midland, N.J. Filed Mar. 5, 1969.

**THE INTERNATIONAL LIBRARY OF PIANO MUSIC**

Owner of Reg. Nos. 745,152 and 746,653.  
For Books of Musical Compositions, Index Manuals for Musical Compositions, Periodical Bulletins, Instruction Manuals, and Books of Music (Int. Cl. 16).  
First use September 1967.

SN 322,949. National Periodical Publications, Inc., New York, N.Y. Filed Mar. 27, 1969.

**TOMAHAWK**

For Comic Magazine (Int. Cl. 16).  
First use July 21, 1950.

**Class 39—Clothing**

SN 98,314. Studio Petites, New York, N.Y. Filed June 2, 1960.



For Coats and Suits for Women (Int. Cl. 25).  
First use Apr. 27, 1960.



SN 275,327. Tiger Fabrics, Inc., New York, N.Y. Filed July 3, 1967. SN 289,956. Robert D. Andrus, d.b.a. Dip "n" Drop Swimwear for Men, Rochester, Minn. Filed Jan. 31, 1968.



Owner of Reg. No. 830,429.  
For Aprons, Bibs, Dresses, Kerchiefs, Novelty Dresses, Scarves, and Sweatshirts (Int. Cl. 25).  
First use Aug. 9, 1966.

SN 280,102. Societe Dite: Transocean Societe Anonyme, Paris, France. Filed Sept. 11, 1967.

*Olivier de Verlon.*

Priority claimed under Sec. 44(d) on French Reg. No. 730,326, dated Mar. 17, 1967. "Olivier de Verlon" is not the name of a particular living individual.  
For Knitted Outer Garments—Namely, Hosiery, Sweaters, Pullovers, and Cardigans (Int. Cl. 25).

SN 282,690. Doodles, Inc., New York, N.Y. Filed Oct. 17, 1967.

**DOODLES**

Owner of Reg. No. 380,574.  
For Girls' and Women's Skirts, Shifts, Jumpers, Blouses, and Pants (Int. Cl. 25).  
First use June 28, 1967.

SN 287,690. Winner Hat Manufacturing Co. Inc., New York, N.Y. Filed Dec. 27, 1967.



The lining on the drawing is for the purpose of shading only.  
For Ladies' Hats (Int. Cl. 25).  
First use Nov. 1, 1967.

SN 289,427. Societe Anonyme: Societe Gerard Roudine, Paris, France. Filed Jan. 23, 1968.

**dennet barry**

Priority claimed under Sec. 44(d) on French Reg. No. 729,093, dated Nov. 14, 1967. The name "Dennet Barry" is fanciful.  
For Men's, Women's, and Children's Clothing—Namely, Coats, Raincoats, Dresses, Overalls, Suits, Skirts, Jackets, Trousers, Pull-Overs, Shirts, Blouses, Hosiery, Underwear, Dressing Gowns, Pajamas, Ties, Scarves, Cravats, Hats, Caps, Bonnets, Berets, Stockings, Shoes, Socks, and Slippers (Int. Cl. 25).



"Patti Ann" is the name of a living individual whose consent is of record.  
For Plastic Swimwear for Men (Int. Cl. 25).  
First use Oct. 25, 1967.

SN 291,515. Mason Shoe Manufacturing Company, Chippewa Falls, Wis. Filed Feb. 20, 1968.



No claim is made to the word "Welt" apart from the mark shown.  
For Footwear Made Wholly or Partly of Leather—Namely, Boots and Safety Shoes (Int. Cl. 25).  
First use Jan. 22, 1968.

SN 291,600. Empire Pants and Boys' Wear Limited, Toronto, Ontario, Canada. Filed Feb. 21, 1968.

**Jon Jon**

Owner of Canadian Reg. No. 153,146, dated Sept. 15, 1967.  
For Children's, Boys', and Misses' Garments—Namely, Shirts, Shorts, Pants, Overalls, Skirts, Dresses, and Jackets (Int. Cl. 25).  
First use Aug. 1, 1967; in commerce Aug. 1, 1967.

SN 294,523. Patty Day, Inc., Milwaukie, Ore. Filed Mar. 29, 1968.

**PATTY DAE**

For Women's Hosiery (Int. Cl. 25).  
First use at least as early as Mar. 2, 1964.

SN 297,170. Confecciones Leonisa S.C., Medellin, Colombia. Filed May 2, 1968.



For Brassieres, Garter-Belts, Girdles, Corsets, Underwear, and Blouses for Women (Int. Cl. 25).  
First use Jan. 1, 1952; in commerce Nov. 30, 1967.

SN 299,223. Etablissements Rosy, Paris, France. Filed May 28, 1968. SN 304,368. Ronnie L. Merritt, d.b.a. Lamski, Yesso, N. Mex. Filed Aug. 5, 1968.

**ROSY PARIS**

Priority claimed under Sec. 44(d) on French Reg. No. 735,235, dated Dec. 8, 1967. The word "Paris" is disclaimed apart from the mark as shown.

For Women's Clothing—Namely, Dresses, Blouses, Skirts, Bodices, Sweaters; Undergarments, Namely, Slips, Brassieres, Corsets, Garter Belts, Panties, Petticoats; Lingerie; Hosiery; and Sport Clothes, Namely, Bathing Suits, Beach Dresses, Tunics, and Beach Ensembles (Int. Cl. 25).

SN 301,455. Sport-Ease Fashions, Ltd., Winnipeg, Manitoba, Canada. Filed June 26, 1968.



The word "Fashions" is disclaimed apart from the mark as shown.

For Skirts for Ladies, Teen-Agers, and Girls, Pedalpushers, Shorts, Slacks, Slack Suits, Cover-alls, Jackets, Car Coats, Suburban Coats, Raincoats, Rain Jackets and Matching Rain Cap Wear (Int. Cl. 25).  
First use 1955; in commerce Nov. 15, 1962.

SN 304,333. Fort Howard Paper Company, Green Bay, Wis. Filed Aug. 5, 1968.



For purposes of registration, applicant makes no claim to the exclusive right to use the illustration of the goods identified herein apart from the mark as shown, but applicant waives none of its common law rights therein.  
For Disposable Bibs and Aprons (Int. Cl. 25).  
First use June 11, 1968.



For Dyed Mouton Lamb Ski Clothing and Hats (Int. Cl. 25).  
First use Aug. 2, 1968.

SN 304,764. Cluett, Peabody & Co., Inc., New York, N.Y. Filed Aug. 9, 1968.

**PERMA-IRON**

Owner of Reg. No. 833,505.  
For Ladies' Blouses, Skirts, Dresses, Slacks, and Culottes (Int. Cl. 25).  
First use July 31, 1968.

SN 305,536. Davenshire Inc., Davenport, Iowa. Filed Aug. 20, 1968.

**GREGORY COURT**

For Women's Slacks, Shorts, Pants, and Sweaters (Int. Cl. 25).  
First use on or about Aug. 9, 1968.

SN 306,251. Kayser-Roth Corporation, New York, N.Y. Filed Aug. 29, 1968.

**SHUR-UP**

For Men's and Boys' Hosiery (Int. Cl. 25).  
First use Aug. 17, 1937.

SN 306,664. Hampton Shirt Co., Inc., New York, N.Y. Filed Sept. 5, 1968.

**DE SICA**

For Men's and Boys' Shirts (Int. Cl. 25).  
First use Dec. 19, 1967.

SN 306,881. Chambers Sherwin, Inc., New York, N.Y. Filed Sept. 9, 1968.

**Monti**

For Fur Wearing Apparel—Namely, Coats, Jackets, Stoles, Sweaters, Capes, Collars, Scarfs, Muffs, Hats, Belts, and Fur Trimmed Cloth Coats (Int. Cl. 25).  
First use Aug. 23, 1968.



SN 308,389. Mister Pants, Inc., New York, N.Y. Filed Sept. 27, 1968. SN 311,644. Fordham Felt Works, Inc., Paterson, N.J. Filed Nov. 8, 1968.

**SWEEPERS**

For Ladies' Pants (Int. Cl. 25).  
First use Sept. 3, 1968.

SN 308,874. Cluett, Peabody & Co., Inc., New York, N.Y. Filed Oct. 4, 1968.

**FREEWAY**

For Men's and Boys' Outer Shirts (Int. Cl. 25).  
First use Oct. 18, 1955.

SN 309,015. Joseph Bancroft & Sons Co., Rockford, Wilmington, Del. Filed Oct. 7, 1968.

**BANDURA**

Owner of Reg. Nos. 768,446 and 862,753.  
For Garments Made From Textile Fabrics—Namely, Formal, Informal and Semi-Formal Robes, Gowns, Dresses and Pajamas; Underwear and Lingerie; Shirts, Blouses and Tunics; Swimwear and Beachwear; Skirts, Pants and Culottes (Int. Cl. 25).  
First use on or about July 20, 1966.

SN 309,583. Handcraft Incorporated, New York, N.Y. Filed Oct. 14, 1968.

**SAILOR SCARF**

Applicant disclaims the word "Scarf" apart from the mark as shown.  
For Men's Neck Scarf (Int. Cl. 25).  
First use May 20, 1968.

SN 309,584. Handcraft Incorporated, New York, N.Y. Filed Oct. 14, 1968.

**SAILOR SQUARE**

For Men's Silk Handkerchief (Int. Cl. 24).  
First use Sept. 10, 1968.

SN 311,039. Jacel, Inc., Philadelphia, Pa. Filed Oct. 31, 1968.

*Jacel*

For Women's and Girls' Shorts and Slacks (Int. Cl. 25).  
First use at least as early as Sept. 19, 1967.

SN 311,480. Giancarlo Ltd., New York, N.Y. Filed Nov. 6, 1968.

*Giancarlo*

For Ladies' Dresses, Suits, and Coats (Int. Cl. 25).  
First use Aug. 23, 1968.



Applicant disclaims any rights in the word "Felt" separate and apart from the mark as shown.

For Wearing Apparel—Namely, Blazer Jackets, Athletic Jackets, Club Jackets and School Jackets; and Sweat Shirts, T-Shirts, Gym Pants and Suits, Sweat Pants; Football, Baseball, Basketball, Softball, Soccer, Track and Skating Uniforms, Cheerleader Skirts and Sweaters, Bathing Suits, Hats, Baseball Caps, and Athletic Socks (Int. Cl. 25).  
First use Dec. 31, 1948.

SN 312,450. Gelles Neckwear Ltd., Inc., Boston, Mass. Filed Nov. 18, 1968.

*DiMaro Elegante*

For Neckties and Bow Ties (Int. Cl. 25).  
First use January 1962.

SN 313,142. Unishops, Inc., Jersey City, N.J. Filed Nov. 26, 1968.

**"TD" JEANS**  
by SCORECARD

The word "Jeans" is disclaimed apart from the mark as shown.

For Men's and Boys' Jeans, Jackets, Sport Coats, Suits, Overcoats, Sport Shirts, Pajamas, Sweaters, Gloves, Hosiery, Knit Shirts, and Bathing Suits (Int. Cl. 25).  
First use Oct. 18, 1968.

SN 313,685. De Luxe Girdlecraft Co., Inc., New York, N.Y. Filed Dec. 5, 1968.



Owner of Reg. No. 500,559.  
For Maternity Girdles, Panty Girdles, Panties, Garter Belts, and Petticoats (Int. Cl. 25).  
First use June 1952; July 2, 1947, in a different form.

SN 313,729. S & Q Clothiers, Inc., Dallas, Tex. Filed Dec. 5, 1968. SN 317,171. The Yorke Shirt Corporation, New York, N.Y. Filed Jan. 21, 1969.

**S & Q CLOTHIERS**

The word "Clothiers" is disclaimed apart from the mark as shown.

For Men's, Boys' and Young Men's Suits, Sport Coats, Top Coats, Slacks, Ties, Shirts, Hosiery, Hats and Belts; and Women's and Girls' Clothing—Namely, Coats, Suits, Dresses, Blouses, Pants, Skirts, Lingerie, Foundations, Sweaters, Hosiery, Gloves, and Furs (Int. Cl. 25).  
First use 1915.

SN 315,596. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. Filed Jan. 2, 1969.

**ROYAL**  
**Sealino**

For Men's and Ladies' Coats (Int. Cl. 25).  
First use on or about May 15, 1968.

SN 315,597. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. Filed Jan. 2, 1969.

**ROYAL**  
**Sealino**

For Men's and Ladies' Coats (Int. Cl. 25).  
First use on or about May 15, 1968.

SN 316,677. Red Wing Shoe Company, Inc., Red Wing, Minn. Filed Jan. 15, 1969.

**Dunoon**

For Men's Shoes and Boots (Int. Cl. 25).  
First use Dec. 18, 1968.

SN 316,914. Southern Knitwear Mills, Inc., Charlotte, N.C. Filed Jan. 17, 1969.

**VULPERA**

For Men's and Boys' Knit Shirts as Well as Men's and Boys' Sweaters of All Types (Int. Cl. 25).  
First use Oct. 1, 1968.

**NICOLA MANCINI**

The name "Nicola Mancini" is fanciful.  
For Men's Outer Shirts (Int. Cl. 25).  
First use September 1968.

SN 317,805. Alleen, Inc., New York, N.Y. Filed Jan. 29, 1969. Owner of Reg. No. 858,980.

**THE RED EYE**

For Misses', Junior Misses', Girls' and Infants' Sportswear—Namely, Shorts, Pants, Shirts, Skirts, Dresses, Blouse Tops, Jackets, Sweaters, Slacks, Blouses, and Beach Wear (Int. Cl. 25).  
First use on or before May 22, 1967.

SN 318,269. Interco Incorporated, d.b.a. The Florsheim Shoe Company, Chicago, Ill. Filed Feb. 4, 1969.

**FLORSHEIM**  
**Flexibles**

Applicant makes no claim of exclusive right to use of the word "Flexibles" separate and apart from the mark as shown.  
Owner of Reg. Nos. 73,586, 203,292, and others.  
For Shoes (Int. Cl. 25).  
First use Jan. 8, 1969; January 1890 as to "Florsheim."

SN 318,661. L. E. Massey Shoes, Incorporated, Washington, D.C. Filed Feb. 7, 1969.

**mark Tavenner**

The name "Mark Tavenner" is fictitious.  
For Shoes (Int. Cl. 25).  
First use February 1962.

SN 318,713. Higgins Company, Lineville, Ala. Filed Feb. 10, 1969.

**SEBRING**

For Men's Slacks and Trousers (Int. Cl. 25).  
First use January 1966.

SN 319,543. Isaacson-Carrico Manufacturing Company, El Campo, Tex. Filed Feb. 19, 1969.

**ISAACSON-CARRICO**

For Girls' Panties, Slips, and Sleepwear (Int. Cl. 25).  
First use at least as early as 1951.



SN 320,605. House of Worsted-Tex, Inc., Philadelphia, Pa.  
Filed Mar. 3, 1969.

WORSTED-TEX

**DESIGN  
STUDIO**

Owner of Reg. Nos. 218,057, 829,498 and others.  
For Men's and Young Men's Suits, Sport Coats, Topcoats,  
and Slacks (Int. Cl. 25).  
First use on or about Jan. 15, 1969.

SN 320,642. Matsell Brothers, Inc., Long Island City, N.Y.  
Filed Mar. 3, 1969.

**Mr. Traveler**

For Men's and Boys' Robes (Int. Cl. 25).  
First use May 1966.

SN 320,847. O.K.I. Supply Co., Cincinnati, Ohio. Filed Mar.  
5, 1969.

**COMFORTGARD**

Owner of Reg. No. 811,336.  
For Winter Woven Liners for Hard Hats and Caps (Int.  
Cl. 25).  
First use on or about Sept. 12, 1968.

SN 320,932. Angelica Corporation, St. Louis, Mo. Filed  
Mar. 6, 1969.

**IMAGINEERING**

For Uniforms, Coats, Jackets, Shirts and Pants (Int.  
Cl. 25).  
First use Dec. 12, 1968.

SN 320,942. Craddock-Terry Shoe Corporation, Lynchburg,  
Va. Filed Mar. 6, 1969.

**ROUNDERS**

Owner of Reg. No. 824,948.  
For Shoes (Int. Cl. 25).  
First use Jan. 9, 1969.

SN 321,838. Trimfoot Company, St. Louis, Mo. Filed Mar.  
14, 1969.



Owner of Reg. No. 690,946.  
For Infants' Shoes (Int. Cl. 25).  
First use on or about July 1, 1964.

## Class 40—Fancy Goods, Furnishings, and Notions

SN 280,758. The Boye Needle Company, Chicago, Ill. Filed  
Sept. 20, 1967.

**World's  
Standard  
of Quality**

For Art Needlework Products and Sewing Notions—Name-  
ly, Straight Knitting Needles, Circular Knitting Needles,  
Jumper Needles, Crochet Hooks, Buttons, Stitch Holders,  
Knitting Needle Point Protectors, Knit Tallys, Stitch Marker  
Rings, Yarn Bobbins, Yarn Needles, Cable Stitch Needles,  
Cabane Rings, Embroidery Hoops, Tatting Shuttles, Knitting  
Spools, Sewing Machine Needles, Covered Button and Buckle  
Kits, Sewing Hooks, Eyes and Loops, Snap Fasteners, Needle  
Threaders, Thimbles, Pin Cushions, Thread Locks, Hem Mark-  
ers, Pattern Markers, Dressmakers' Pins, Tracing Kits, Trac-  
ing Wheels and Tracing Paper, Tailors' Chalk, Safety Pins,  
Seam Rippers, Hand Pleat Markers, and Zipper Repair Kits  
(Int. Cls. 8, 16, and 26).  
First use during or before 1927.

SN 295,531. Inviza-Mend Corporation, Los Angeles, Calif.  
Filed Apr. 12, 1968.

**INVIZA-MEND**

For Fabric Repair Kit Containing Patches and Dies (Int.  
Cl. 26).  
First use on or about July 15, 1967.

SN 307,668. Pilgrim Industries Inc., New York, N.Y. Filed  
Sept. 18, 1968.

**"DIMENSION WELD"**

For Appliques (Int. Cl. 26).  
First use Aug. 2, 1968.

SN 310,649. Delbanco Wigs, Inc., New York, N.Y. Filed  
Oct. 28, 1968.

**del-B-lon**

For Wigs, Wiglets, Falls, and Hairpieces (Int. Cl. 26).  
First use on or about Sept. 15, 1968.

SN 311,345. All-American Brush Mfg. Corp., Newark, N.J.  
Filed Nov. 5, 1968.

**FRENCH LIFT**

Applicant disclaims the word "Lift" separate and apart  
from the mark shown. Owner of Reg. No. 757,309.  
For Combs (Int. Cl. 21).  
First use Mar. 4, 1968.

SN 315,454. Waldes Kobinoor, Inc., Long Island City, N.Y.  
Filed Dec. 30, 1968.

**WALDES**

Owner of Reg. Nos. 335,423 and 520,343.  
For Hooks and Eyes, Hook Tape, Eye Tape, Eyelet Tape,  
and Adjustable Eyelet Tape (Int. Cl. 26).  
First use 1922.

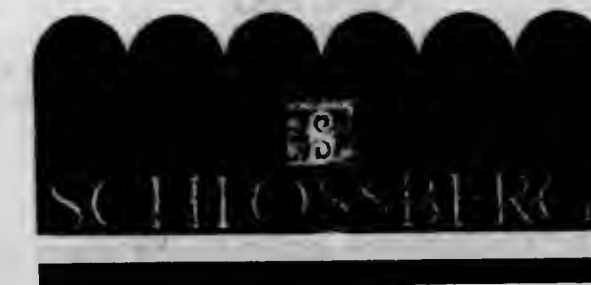
## Class 41—Canes, Parasols, and Umbrellas

SN 320,744. Schlossberg Textil AG, Zurich, Switzerland.  
Filed Mar. 4, 1969.

SN 306,594. Telesco Brophey Limited, Montreal, Quebec,  
Canada. Filed Sept. 4, 1968.

**BELAMI**

Priority claimed under Sec. 44(d) on Canadian application  
filed Mar. 5, 1968; Reg. No. 162,212, dated Apr. 18, 1969.  
The drawing is lined for the color red. Owner of U.S. Reg.  
Nos. 763,588 and 831,878.  
For Umbrellas (Int. Cl. 18).  
First use Mar. 25, 1957; in commerce September 1963.



Priority claimed under Sec. 44(d) on Swiss Reg. No.  
234,667, dated Sept. 6, 1968.  
For Household Linen, Especially Bed-Linen, Bath and  
Kitchen Towels, Table-Linen; and Blankets (Int. Cl. 24).

## Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 299,449. Fieldcrest Mills, Inc., Eden, N.C. Filed May 31,  
1968.

**Laurelcrest**

For Textile Rugs and Carpeting (Int. Cl. 27).  
First use June 5, 1967.

SN 300,134. Teijin Limited, Osaka, Japan. Filed June 10,  
1968.

**SILART**

Owner of Japanese Reg. No. 613,974, dated May 22, 1963.  
For Fabrics Including Those Made of Felt, and Knitted  
Ones, of Cotton, Silk, and Synthetic Fibers (Int. Cl. 24).

SN 301,366. Societe Anonyme, Etablissements Andre Giller,  
Troyes (Aube), France. Filed June 25, 1968.



Owner of French Reg. No. 4,710, dated Aug. 20, 1957  
(Troyes); Natl. Inst. No. 99,070; and U.S. Reg. Nos. 295,389  
and 299,392.

For Knitted Piece Goods for Making Dresses, Skirts, Bath-  
ing Suits, Jackets and Other Articles of Clothing, and Baby  
Clothes (Int. Cl. 24).

SN 314,047. C. R. Bard, Inc., Murray Hill, N.J. Filed Dec.  
10, 1968.

**VIGILON**

For Non-Woven Fabric for Use in Fabrication of Surgical  
Drapes, Surgical Garments, Sheeting and Underpads for Sick  
Beds (Int. Cl. 24).  
First use Oct. 25, 1968.

TM 865 O.G.—7

SN 320,808. Fieldcrest Mills, Inc., Eden, N.C. Filed Mar. 5,  
1969.

**VIVEAU**

For Textile Rugs and Carpeting (Int. Cl. 27).  
First use Jan. 30, 1969.

SN 320,865. Sears, Roebuck and Co., Chicago, Ill. Filed Mar.  
5, 1969.

**WINDSONG**

For Carpets Formed of Natural Fibers, Synthetic Fibers,  
and Mixtures Thereof (Int. Cl. 27).  
First use on or about Dec. 14, 1966.

SN 321,065. M. Lowenstein & Sons, Inc., New York, N.Y.  
Filed Mar. 7, 1969.

**PACITWIN**

For Industrial Fabrics Including Shoe Linings, Made of  
Cotton and/or Synthetic Fibers (Int. Cl. 24).  
First use Apr. 30, 1968.

## Class 44—Dental, Medical, and Surgical Appliances

SN 291,645. Seton Products Limited, Oldham, England. Filed  
Feb. 21, 1968.

**LESTREBAND**

Priority claimed under Sec. 44(d) on British Reg. No.  
B917,168, dated Nov. 14, 1967. Owner of U.S. Reg. No.  
434,970.

For Bandages, and Bandaging Materials for Medical and  
Surgical Purposes, Medical and Surgical Plasters, and Surgi-  
cal Dressings (Int. Cl. 5).

SN 298,811. Crescent Dental Manufacturing Co., Chicago,  
Ill. Filed May 22, 1968.

**WIG-L-CAPS**

Owner of Reg. No. 739,983.  
For Disposable Pre-Proportioned Alloy Mercury Capsule  
Used in the Preparation of Dental Fillings (Int. Cl. 5).  
First use Feb. 13, 1968.



SN 299,023. Howmet Corporation, New York, N.Y. Filed May 24, 1968.

## NEURO

For Surgical Instruments—Namely, Power-Operated Surgical Drills and Surgical Cutting Appliances, and Adaptors and Accessories Therefor (Int. Cl. 10).  
First use Nov. 15, 1967.

SN 302,545. Vogt Appliance Corporation, Kalamazoo, Mich., assignee of Vogt Appliance Company, Kalamazoo, Mich. Filed July 11, 1968.

## POLORATOR

For Electrically Operated Portable Massagers (Int. Cl. 10).  
First use 1947.

SN 304,300. Battle Creek Equipment Co., Battle Creek, Mich. Filed Aug. 5, 1968.

## REGALCYCLE

Owner of Reg. Nos. 623,613 and 847,085.  
For Therapeutic Exercising Machine Primarily Designed for Use in Sanitariums, Treatment Parlors, and Like Institutions, Said Exercising Machine Having a Frame With a Hand Grip Portion, a Rotatable Foot Crank Mechanism, and a Variable Loading Means for Resisting the Rotation of Said Foot Crank Mechanism (Int. Cl. 10).  
First use July 5, 1968.

SN 306,094. La Maur, Inc., Minneapolis, Minn. Filed Aug. 28, 1968.

## STYLE-O-MATIC

For Hair Setting Kit Containing Hair Curlers, Rollers, Clips, and Hair Setting Rollers With Electric Cord (Int. Cl. 9).  
First use Aug. 22, 1968.

SN 306,655. Everest & Jennings, Inc., Los Angeles, Calif. Filed Sept. 5, 1968.

## HOLLYWOOD

For Medical Appliances—Namely, Invalid Wheel Chairs, Invalid Walkers, Commode Chairs, and Cane Gliders (Int. Cls. 10 and 12).  
First use May 31, 1949.

SN 307,241. Sound Ear Inc., Mount Kisco, N.Y. Filed Sept. 12, 1968.



The mark is a replica of the inner ear enclosed in two concentric circles.  
For Hearing Aid (Int. Cl. 10).  
First use Oct. 15, 1966.

SN 317,080. Medtronic, Inc., Minneapolis, Minn. Filed Jan. 21, 1969.

## ANGISTAT

For Biomedical Devices—Namely, Electronic Nerve Stimulators (Int. Cl. 10).  
First use Dec. 3, 1968.

SN 813,366. Kimberly-Clark Corporation, Neenah, Wis. Filed Feb. 5, 1969.

## SIMPLIQUE

For Sanitary Napkins (Int. Cl. 10).  
First use Nov. 20, 1968.

## Class 45—Soft Drinks and Carbonated Waters

SN 253,943. Sinalco Aktiengesellschaft, Detmold, Germany. Filed Aug. 31, 1966.

# Sinola

Owner of German Reg. No. 713,381, dated Apr. 28, 1958; and U.S. Reg. No. 599,747 and others.  
For Non-Alcoholic Fruit Juice Drinks Containing Water, Lemonades, and Flavoring Essences for Making Same (Int. Cl. 32).

SN 308,047. Supermarkets General Corporation, Cranford, N.J. Filed Sept. 23, 1968.



The drawing is lined for the colors red and blue, but no claim is made to color as a feature of the mark. The representation of the can is disclaimed. The vertical lining on the drawing indicates the contour of the can and is not color lining. Owner of Reg. Nos. 854,358 and 856,871.  
For Soft Drinks (Int. Cl. 32).  
First use May 1968.

SN 309,237. Circle Enterprises, Inc., Providence, R.I. Filed Oct. 9, 1968.

## for the best drink in the WORLD

No claim is made to the words "Best Drink" apart from the mark as shown.  
For Carbonated Soft Drinks and Syrups Therefor (Int. Cl. 32).  
First use July 30, 1968.

## Class 46—Foods and Ingredients of Foods

SN 293,062. United States Baking Company, Inc., Carrollton, Mo. Filed Mar. 12, 1968.

SN 281,563. Dutch Pantry, Inc., Selinsgrove, Pa. Filed Oct. 2, 1967.



## DUTCH PANTRY

Owner of Reg. Nos. 582,150 and 688,808.  
For Frozen Foods—Namely, Prepared Meat Products, Prepared Poultry Products, Prepared Seafood Products, Vegetables, Prepared Soups, Rice Pudding, Chow Mein, Croutons; and Frozen Bakery Products, Namely, Coffee Cake, Cherry Pie Filling, Shoo Fly Pie, Coconut Custard Pie Mix, Unbaked Pie Shells and Chocolate Layer Cake; Prepared Canned and Bottled Products—Namely, Salad Dressings, Sweet and Sour Dressing, Apple Butter, Chow Chow, Corn Relish; Prepared and Refrigerated Salad or Dressing, Namely, Dressing With Bacon and Maple Syrup, Parmesan Sauce With Tomatoes and Mushrooms, Pickled Cabbage, a Combination Sauce Consisting of Catsup, Mayonnaise and Mustard for Salads and Sandwiches; Barbecue Sauce, Glaze Sauce and Sauce for Shrimp; Dry Mixes—Namely, Chicken Mix (No Chicken), Pancake Mix, and Pie Crumb Topping, the Major Ingredients of Each of Which Are Flour; Meringue Topping, the Major Ingredient of Which Is Dried Egg Whites; Pie Filling, the Major Ingredient of Which Is Dried Whole Milk; and Jellies and Preserves (Int. Cls. 29 and 30).  
First use January 1954.

SN 282,932. Sea Harvest Corporation (Proprietary) Limited, Saldanha, Cape Province, Republic of South Africa. Filed Oct. 19, 1967.

## CAPE DOVER

Priority claimed under Sec. 44(d) on South African Reg. No. 67/1892, dated May 11, 1967. No claim is made to the exclusive use of the word "Dover" apart from the mark as a whole.  
For Fresh and Frozen Fish (Int. Cl. 29).  
First use May 12, 1967; in commerce June 19, 1967.

SN 286,888. Gene J. Alessi, d.b.a. D.A. Company, Independence, La. Filed Dec. 14, 1967.

## Old New Orleans FRENCH MARKET

For Prepared Mix for Making Fried Pastry Products (Int. Cl. 30).  
First use at least as early as Mar. 20, 1967.

SN 292,003. Nishimoto Trading Co., Ltd., Ikutaku, Kobe, Japan. Filed Feb. 27, 1968.

## KOTOBUKI

The Japanese word "Kotobuki" has no precise meaning in English, but is used as an expression to indicate good wishes or good feelings for the state of being of another person.  
For Rice (Int. Cl. 30).  
First use on or about Jan. 8, 1968; in commerce on or about Jan. 8, 1968.



For Bakery Products—Namely, Cookies and Crackers; and Snack Items—Namely, Corn Chips, Corn Puffs and Tortilla Chips (Int. Cl. 30).  
First use October 1967.

SN 296,172. Kockos Bros., Inc., Union City, Calif., assignee of Kockos Bros., Ltd., Union City, Calif. Filed Apr. 22, 1968.



For Canned Fruits, Canned Vegetables, Canned Fish, Preserves, Pickles; Condiments—Namely, Mustard and Catsup; and Pet Foods—Namely, Cat Food, Dog Food, and Dog and Cat Food (Int. Cls. 29, 30, and 31).  
First use Mar. 1, 1967.

SN 296,174. Lambert M. Kowalewski and Alphonse P. Bamberk, d.b.a. Hot Fish Shop Enterprises and Hot Fish Shop, Winona, Minn. Filed Apr. 22, 1968.

## HOT FISH SHOP

For Meatless Flavoring Sauce (Int. Cl. 30).  
First use prior to about 1928.

SN 297,227. Trunz, Inc., Brooklyn, N.Y. Filed May 2, 1968.



The word "Petite" and "Ham" are disclaimed apart from the mark shown. Owner of Reg. No. 832,255.  
For Refrigerated Cooked Hams (Int. Cl. 29).  
First use Apr. 3, 1968.

SN 299,365. Marketing Merchandisers, Inc., Trotwood, Ohio. Filed May 29, 1968.

## STOP-N-GO

Owner of Reg. No. 739,191.  
For Retail Grocery Products—Namely, Bread, Buns, Fresh Eggs, Ice Cream, and Fluid Milk (Int. Cls. 29 and 30).  
First use June 1, 1964.

SN 299,438. Cudahy Company, Phoenix, Ariz. Filed May 31, 1968.

## REGIO

The English translation of "Regio" is "royal."  
For Salami Sausage (Int. Cl. 29).  
First use Feb. 2, 1968.



SN 299,839. General Foods Corporation, White Plains, N.Y. SN 307,061. Beech-Nut, Inc., New York, N.Y. Filed Sept. 11, 1968. Filed June 6, 1968.

**TAGGLE**

For Processed Cheese Spread (Int. Cl. 29).  
First use Apr. 18, 1968.

SN 299,840. General Foods Corporation, White Plains, N.Y.  
Filed June 6, 1968.

**WHIPSAW**

For Processed Cheese Spread (Int. Cl. 29).  
First use Apr. 18, 1968.

SN 306,238. The Gorton Corporation, d.b.a. Gorton's of Gloucester, Gloucester, Mass. Filed Aug. 29, 1968.

**PARLIAMENT**

For Condiment Sauce (Int. Cl. 30).  
First use July 23, 1968.

SN 306,559. Gem Packing Corporation, Brooklyn, N.Y. Filed Sept. 4, 1968.



For Olive Oil (Int. Cl. 29).  
First use in or about 1948.

SN 306,690. Richard K. Ransom, d.b.a. Hickory Farms of Ohio, Toledo, Ohio. Filed Sept. 5, 1968.

**CARA-KRAUT**

For Sauerkraut (Int. Cl. 29).  
First use July 1968.

SN 306,691. Richard K. Ransom, d.b.a. Hickory Farms of Ohio, Toledo, Ohio. Filed Sept. 5, 1968.

**CRABBIES**

For Pickled Crabapples (Int. Cl. 29).  
First use July 1968.

SN 306,848. Lucky Stores, Inc., San Leandro, Calif. Filed Sept. 9, 1968.



Owner of Reg. Nos. 709,452 and 769,646.  
For Tea, Coffee, Cheese, Vinegar, Salad Oil, Salad Dressing, Salt, Spices, Fresh Eggs, Popcorn, Dried Vegetables, Alimentary Pastes, Marmalade, Evaporated Milk, and Peanut Butter (Int. Cls. 29 and 30).  
First use October 1935.

The picture which appears as a part of the mark is a portrait of the infant "Mary Ellen O'Neill"; consent is of record. Owner of Reg. Nos. 89,613, 831,938, and others.

For Line of Prepared Foods for Children, Invalids and Persons on Smooth-Food Diets, Particularly, Vegetables, Meats, Alimentary Pastes, Cereals, and Combinations Thereof; Soups, Creamed Cottage-Cheese Foods, Fruits, and Puddings (Int. Cl. 5).  
First use May 18, 1962.

SN 307,240. Snack Products, Inc., d.b.a. House of Snacks, Downers Grove, Ill. Filed Sept. 12, 1968.

**SOOPER SCOOPERS**

For Snack Food, the Principal Ingredient of Which Is Processed Corn Meal (Int. Cl. 30).  
First use Feb. 5, 1968.

SN 307,336. S. Lundy's Sons, Philadelphia, Pa. Filed Sept. 13, 1968.



Applicant disclaims the Star of David, the Hebrew word meaning "kosher," and the expression "Kosher Meat Since 1905." Owner of Reg. No. 840,943.  
For Koshered, Ready-To-Cook, Frozen Meats (Int. Cl. 29).  
First use Aug. 23, 1968.

SN 307,473. Helme Products, Inc., New York, N.Y. Filed Sept. 16, 1968.

**POUND O' PEPS**

Applicant disclaims the word "Pound" apart from its use in the mark as a whole.  
For Candy (Int. Cl. 30).  
First use June 7, 1968.

SN 308,359. Brokay Products, Inc., Philadelphia, Pa. Filed Sept. 27, 1968.

**IF IT'S BROKAY IT'S OKAY**

Owner of Reg. Nos. 631,877, 758,173 and 758,174.  
For Bakery Specialties—Namely, Icing Bases, Stabilizers, Cake Mixes, Pie Mixes, and Flavors (Int. Cl. 30).  
First use Dec. 1, 1949.

SN 309,643. Avoset Company, Oakland, Calif. Filed Oct. 15, 1968.

**DAIRY FRESH**

For Sterilized Cream for Whipping (Int. Cl. 29).  
First use September 1963.

SN 309,974. Liberty Orchards Company, Inc., Cashmere, Wash. Filed Oct. 18, 1968. SN 314,845. Aquaculture Corporation, Burlingame, Calif. Filed Dec. 19, 1968.

**ORANGE DELIGHT**

Applicant disclaims the word "Orange" apart from the mark in its entirety.  
For Candy (Int. Cl. 30).  
First use Mar. 25, 1968.

SN 310,428. A. & A. Spice and Food Company, Inc., New Orleans, La. Filed Oct. 24, 1968.



No claim is made to the word "Brand."  
For Garlic, Bay Leaf, Thyme, and Raw and Roasted Peanuts (Int. Cls. 29, 30, and 31).  
First use 1953.

SN 311,471. Crown Food Products, Inc., Atlanta, Ga. Filed Nov. 6, 1968.



Owner of Reg. Nos. 844,215 and 851,554.  
For Peanut Butter (Int. Cl. 29).  
First use Dec. 31, 1939.

SN 311,579. Duffy-Mott Company, Inc., New York, N.Y. Filed Nov. 7, 1968.

**APPLETIZER**

For Snack Food Made Principally of Dehydrated Apples (Int. Cl. 29).  
First use Oct. 16, 1968.

SN 312,281. DCA Food Industries, Inc., New York, N.Y. Filed Nov. 15, 1968.

**DOZEN+2**

For Frozen Confections on a Stick (Int. Cl. 30).  
First use Oct. 14, 1968.

SN 312,639. R. J. Reynolds Foods, Inc., New York, N.Y. Filed Nov. 20, 1968.

**COUNTRY VALLEY FARM**

For Table Syrup (Int. Cl. 30).  
First use at least as early as 1951.

SN 313,869. Hagy's, Hardin County, Tenn. Filed Dec. 9, 1968.

**TENNESSEE RIVER**

For Hush Puppies in the Frozen State (Int. Cl. 30).  
First use Nov. 13, 1968.

**MYTILIN**

For Food Supplement—Namely, Lyophilized-Homogenized Sea Mussels (Int. Cl. 5).  
First use Apr. 4, 1968.

SN 314,846. Aquaculture Corporation, Burlingame, Calif. Filed Dec. 19, 1968.

**LHM**

For Food Supplement—Namely, Lyophilized-Homogenized Sea Mussels (Int. Cl. 5).  
First use Apr. 23, 1968.

SN 316,055. Morton International, Inc., Chicago, Ill. Filed Jan. 8, 1969.

**IOFIXT**

For Salt and Mixtures Containing Salt for Animal Feeding (Int. Cl. 31).  
First use on or about Nov. 13, 1968.

SN 317,459. Midwest Biscuit Company, Burlington, Iowa. Filed Jan. 24, 1969.

**BRANNETTE**

For Cookies and Crackers (Int. Cl. 30).  
First use Jan. 3, 1969.

SN 317,460. Midwest Biscuit Company, Burlington, Iowa. Filed Jan. 24, 1969.

**WILD ROSE**

For Cookies and Crackers (Int. Cl. 30).  
First use Dec. 27, 1968.

SN 317,461. Midwest Biscuit Company, Burlington, Iowa. Filed Jan. 24, 1969.

**KOFFEE SNACKERS**

Owner of Reg. No. 572,114.  
For Cookies and Crackers (Int. Cl. 30).  
First use Jan. 7, 1969.

SN 318,274. The Quaker Oats Company, d.b.a. Burry's and Burry Biscuit Division, Chicago, Ill. Filed Feb. 4, 1969.

**SCOOTER-PIE**

Owner of Reg. Nos. 834,843 and 858,047.  
For Frozen Confections (Int. Cl. 30).  
First use Jan. 3, 1969.

SN 319,222. B/G Foods, Inc., d.b.a. Dutchland, Chicago, Ill. Filed Feb. 17, 1969.



For Fluid Milk (Int. Cl. 29).  
First use in about April 1968.



SN 319,240. International Minerals & Chemical Corporation, Skokie, Ill. Filed Feb. 17, 1969.

### MY SECRET

Owner of Reg. No. 856,124.  
For Seasoning and Food Flavoring Which Combines Meat Flavor or Meat and Other Ingredients (Int. Cl. 30).  
First use Nov. 11, 1968.

SN 320,325. Confection Products Corporation, Perryville, Mo. Filed Feb. 28, 1969.

### BANGYS

For Candy (Int. Cl. 30).  
First use July 3, 1967.

SN 322,530. Sahara Packing Company, Brawley, Calif. Filed Mar. 24, 1969.



For Fresh Vegetables (Int. Cl. 31).  
First use Feb. 28, 1969.

SN 322,678. Eskimo Pie Corporation, Richmond, Va. Filed Mar. 25, 1969.

### PATIO SERV

For Frozen Desserts—Namely, Ice Milk (Int. Cl. 30).  
First use at least as early as Mar. 3, 1969.

SN 322,812. Abner Baldinger, d.b.a. Baldinger's Truffade Co., New York, N.Y. Filed Mar. 26, 1969.

### ESTHER RACHEL'S

The mark is not the name of any particular living individual.  
For Canned Chopped Chicken Livers With Eggs and Onion (Int. Cl. 29).  
First use Mar. 21, 1969.

### Class 47—Wines

SN 306,812. Schenk S.A., Rolle, Vaud, Switzerland. Filed Sept. 6, 1968.



Applicant disclaims, separate and apart from the mark as shown on the drawing, the term "Vin Rosé Supérieur d'Utiel." The words "Estrella" and "Vin Rosé Supérieur d'Utiel" are translated as "star" and "superior rose wine from Utiel," respectively. Owner of Swiss Reg. No. 173,639, dated Jan. 6, 1959.  
For Rosé Wine From Utiel, Spain (Int. Cl. 33).

SN 323,194. Hawaiian Wines, Ltd., d.b.a. Pacific Plantations, Fresno, Calif. Filed Apr. 1, 1969.



For Wines (Int. Cl. 33).  
First use Sept. 3, 1960.

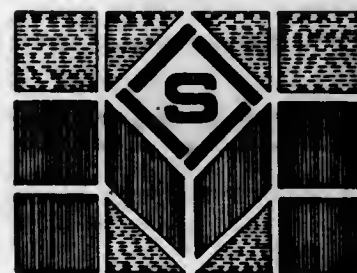
### Class 50—Merchandise Not Otherwise Classified

SN 294,017. David W. Lupton, New York, N.Y., assignee of Contact Marketing Inc., New York, N.Y. Filed Mar. 25, 1968.



For Flags and Award Plaques (Int. Cls. 20 and 24).  
First use Jan. 5, 1968.

SN 305,949. Marvel Equipment Corp., Oshkosh, Wis. Filed Aug. 26, 1968.



The drawing is lined for the colors red and gray. Owner of Reg. No. 745,290.  
For Sectional Steel Scaffolding (Int. Cl. 6).  
First use July 8, 1968.

SN 311,373. Inflat-A-Industries, Inc., New York, N.Y. Filed Nov. 5, 1968.

### INFLAT-A-BOOTREE

For Plastic Inflatable Forms, Particularly Useful as Footwear and/or Hosiery Trees (Int. Cl. 21).  
First use Sept. 10, 1968.

SN 313,905. Cleaners Hanger Company, Detroit, Mich. Filed Dec. 9, 1968.

### SLAKETTE

For Wire Garment Hangers (Int. Cl. 26).  
First use Sept. 4, 1968.

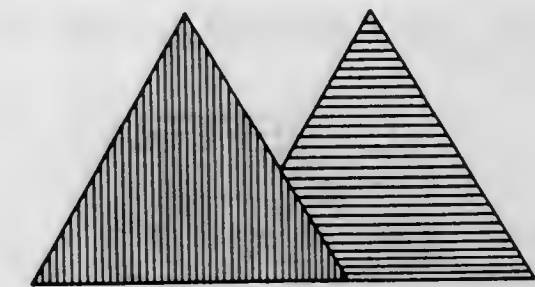
### Class 51—Cosmetics and Toilet Preparations

SN 311,352. Clairol Incorporated, New York, N.Y. Filed Nov. 5, 1968.

SN 280,665. Helene Curtis France S.A., Aubervilliers, France. Filed Sept. 19, 1967.

### LIGNE DE COEUR

The mark may be translated into English as "heart line."  
Owner of French Reg. No. 531,407, dated May 17, 1965 (Seine); Natl. Inst. No. 248,939.  
For Perfumery and Cosmetic Preparations—Namely, Hair Lotions and Dentifrices (Int. Cl. 3).



SN 293,256. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 14, 1968.

### SHOW-BIZ

For Liquid Make-Up Foundation (Int. Cl. 3).  
First use on or about Feb. 23, 1968.

The mark depicted in the drawing consists of overlapping triangles lined with the colors blue and pink; however, color is not claimed as a necessary feature of the mark. Owner of Reg. No. 694,000.  
For Hair Dressing and Conditioning Cream (Int. Cl. 3).  
First use Dec. 8, 1958.

SN 293,260. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 14, 1968.

### POWER SET

Without waiving common law rights, the word "Set" is disclaimed apart from the mark as shown.  
For Wave Set Preparation (Int. Cl. 3).  
First use on or about Feb. 23, 1968.

SN 312,386. The Gillette Company, Boston, Mass. Filed Nov. 18, 1968.

### SEDATE

For Deodorant for Personal Use (Int. Cl. 5).  
First use Oct. 10, 1968.

SN 293,263. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 14, 1968.

### BATH WAND

Without waiving common law rights the word "Bath" is disclaimed apart from the mark as shown.  
For Bath Oil (Int. Cl. 3).  
First use on or about Feb. 23, 1968.

### NAUDET

For Perfumes and Toilet Water (Int. Cl. 3).  
First use 1935.

SN 293,265. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 14, 1968.

### LIP GUNS

The word "Lip" is disclaimed apart from the mark as shown.  
For Lipstick (Int. Cl. 3).  
First use on or about Feb. 23, 1968.

SN 314,500. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Dec. 16, 1968.

### SUN SESSIONS

Applicants make no exclusive claim to the word "Sun" separately and apart from the mark as shown.  
For Sun Tanning Preparation (Int. Cl. 3).  
First use Nov. 5, 1968.

SN 298,454. La Chemise Lacoste, Paris, France. Filed May 17, 1968.



Priority claimed under Sec. 44(d) on French Reg. No. 734,277, dated Feb. 14, 1968.  
For Perfumery, Toilet Waters, Skin Creams and Skin Lotions, Hair Tonics and Hair Oils, Face Powders, and Perfumed Body Powders (Int. Cl. 3).

SN 317,809. Apex-Trol, Inc., Carlstadt, N.J. Filed Jan. 29, 1969.

### Little Miss LOVELY

For Hair Spray for Children (Int. Cl. 3).  
First use Aug. 21, 1968.

SN 302,877. Yardley of London, Inc., New York, N.Y. Filed July 16, 1968.

### ENGLISH SPRING

For Cosmetics, Particularly Moisturizing Cream, Cleansing Cream, Astringent, Moisturizing Lotion, and Hand and Body Lotion (Int. Cl. 3).  
First use June 6, 1968.



For Men's Cologne (Int. Cl. 3).  
First use Feb. 11, 1963.

SN 319,541. Robert Herr, Miami, Fla. Filed Feb. 19, 1969.



**Class 52 — Detergents and Soaps**

SN 298,022. Megular Enterprises, Pasadena, Calif. Filed May 13, 1968.



The drawing is lined for the color green.  
For Preparation for Cleaning and Preserving Phonograph Records (Int. Cl. 3).  
First use Nov. 23, 1967.

SN 299,034. Nash-Finch Company, d.b.a. Nash Finch Company, Minneapolis, Minn. Filed May 24, 1968.

**OUR LADY**

For Household Detergent (Int. Cl. 3).  
First use Jan. 24, 1968.

SN 302,346. J. A. Sexauer Mfg. Co., Inc., White Plains, N.Y. Filed July 9, 1968.

**SEXAUER**

Owner of Reg. Nos. 558,236, 861,261 and others.  
For Waste-Pipe Cleaner, Scale Removers and Rust Removers (Int. Cl. 3).  
First use during 1921.

SN 310,180. North American Detergents Corp., Washington, D.C. Filed Oct. 22, 1968.

**EXCOLENE**

For Cleaning Preparations for Use on Brick and Masonry, Marble, and Limestone (Int. Cl. 3).  
First use July 7, 1967.

SN 311,587. Economica Laboratory, Inc., St. Paul, Minn. Filed Nov. 7, 1968.

**RESTORE**

For Heavy Duty Cleaner and Wax Stripper (Int. Cl. 3).  
First use Oct. 3, 1968.

**SERVICE MARKS****Class 100 — Miscellaneous**

SN 282,437. The Central Laboratories, Inc., Detroit, Mich. Filed Oct. 13, 1967.

**HEMOFILE**

For Hematological Testing Service (Int. Cl. 42).  
First use Sept. 5, 1967.

SN 313,237. Holliston Laboratories, Inc., Boston, Mass. Filed Nov. 29, 1968.

**PET-GARD**

For Animal Shampoo (Int. Cl. 3).  
First use on or about Sept. 6, 1968.

SN 313,980. Shiseido Co. Ltd., Chuo-ku, Tokyo, Japan. Filed Dec. 9, 1968.

**GOLDLUCENT**

For Toilet Soap and Bath Soap (Int. Cl. 3).  
First use Oct. 2, 1968; in commerce Oct. 3, 1968.

SN 314,753. Calgon Corporation, Pittsburgh, Pa. Filed Dec. 18, 1968.

**SURE THING**

For All-Laundry Pre-Soak Composition With Stain Removing Enzymes (Int. Cl. 3).  
First use Dec. 10, 1968.

SN 318,204. Lensclean Inc., New York, N.Y. Filed Feb. 3, 1969.

**RAINBOW**

For Anti-Fog and Glass Cleaner Preparation (Int. Cl. 3).  
First use Jan. 7, 1969.

SN 319,652. Utility Products Inc., Portland, Ore. Filed Feb. 19, 1969.

**LANSOL**

For Hand Cleaner Paste (Int. Cl. 3).  
First use Aug. 8, 1961.

SN 320,902. American Home Products Corporation, New York, N.Y. Filed Mar. 6, 1969.

**SUDDEN POWER**

For Laundry Detergent (Int. Cl. 3).  
First use Feb. 7, 1969.

SN 286,500. Buffet, Inc., Portland, Ore. Filed Dec. 8, 1967.



The word "Buffet" is disclaimed apart from the mark as shown.  
For Mobile Restaurant Services (Int. Cl. 42).  
First use May 1, 1962.

SN 287,069. The Idaho Nuclear Energy Commission, Boise, Idaho. Filed Dec. 18, 1967.



Applicant disclaims the terminology "Idaho Nuclear Energy Commission" apart from the mark as shown. The drawing is lined for the colors blue and gold.

For Promoting Nuclear Energy Research and Development in the Fields of Industry, Agriculture, and Education (Int. Cl. 42).

First use Sept. 19, 1967.

SN 288,209. Vincent A. Gesumaria, d.b.a. Vincent et Vincent, Washington, D.C. Filed Jan. 5, 1968.



The mark consists of a fanciful representation of two letter V's.

For Beauty Parlor Services (Int. Cl. 42).  
First use January 1950.

SN 289,313. Marriott Corporation, Washington, D.C. Filed Jan. 22, 1968.

**WINDJAMMER**

Owner of Reg. No. 766,853.  
For Serving of Food and Beverages in Cocktail Lounges (Int. Cl. 42).  
First use Apr. 30, 1962.

SN 291,065. Gollob Analytical Service Corp., Berkeley Heights, N.J., assignee of Gollob Analytical Service, Inc., Berkeley Heights, N.J. Filed Feb. 14, 1968.



The words "Analytical Service Inc." are disclaimed apart from the mark as a whole.  
For Analyzing Gas and Gas Systems by Means of Mass Spectrometry and Gas Chromatography, and the Detection of Leaks in Gas Systems (Int. Cl. 42).  
First use September 1964.

SN 291,148. Gary's Restaurants Franchise Co., Inc., Maplewood, N.J. Filed Feb. 15, 1968.

**GARY'S**

For Restaurant Services (Int. Cl. 42).  
First use April 1960.

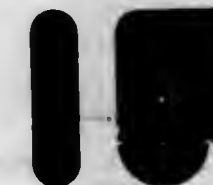
SN 291,439. R. C. Simpson & Staff, Inc., Ridgewood, N.J. Filed Feb. 19, 1968.



The word "Service" is disclaimed apart from the mark as shown. Owner of Reg. No. 728,974.

For Investigative Services in Connection With the Qualifications of Professional Arbitrators and the Rendering of Specially Prepared Written and/or Telephonic and Telegraphic Reports to Subscribers (Int. Cl. 42).  
First use Apr. 30, 1953.

SN 292,209. Logicon, Inc., San Pedro, Calif. Filed Feb. 29, 1968.



The mark can be described as a symbol comprised of horizontally spaced portions in which the left portion comprises a vertically oriented solid bar and the right portion comprises a solid circle extending into a solid square with the circle containing an arrowhead.

For Systems Engineering and Computer Sciences Consulting Services (Int. Cl. 42).  
First use on or about Sept. 1, 1967.

SN 298,356. Sanson Institute of Heraldry, Inc., Boston, Mass. Filed May 16, 1968.

**WHAT'S IN YOUR NAME?**

The word "Name" is disclaimed apart from the mark as shown.

For Rendering of Research and Report Services and for Certification of Reports Relating to the Origination of Names and to the Writing of Articles Relating to the Origination of Names for Publication and Newspapers and Like Publications (Int. Cl. 42).  
First use at least as early as Mar. 26, 1967.

SN 303,614. Wilbur L. Ihlenfeldt, Birmingham, Mich. Filed July 25, 1968.

**DALY**

For Restaurant Services (Int. Cl. 42).  
First use in or about August 1948.



SN 305,326. Griffs of America, Inc., Dallas, Tex. Filed Aug. 16, 1968.



The words "Burger Bar" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 762,094 and 763,267. For Restaurant Services (Int. Cl. 42). First use during April 1968; Sept. 17, 1960, in a different form.

SN 307,441. Econo Lodge, Inc., Vestal, N.Y. Filed Sept. 16, 1968.



The word "Lodge" is disclaimed apart from the mark as shown. The drawing is lined for the colors blue, green, yellow, and red. Owner of Reg. No. 813,642. For Motel Services (Int. Cl. 42). First use July 1965.

SN 308,098. Ronald Downing, d.b.a. Dreammakers Unlimited, Raytown, Mo. Filed Sept. 24, 1968.

## DREAMMAKERS UNLIMITED

For Computerized Dating Services (Int. Cl. 42). First use Sept. 15, 1968.

SN 312,873. The Beef Ranch, Inc., Chicago, Ill. Filed Nov. 22, 1968.



For Drive-In Restaurant Services (Int. Cl. 42). First use at least as early as December 1966.

SN 316,556. B/G Foods, Inc., Chicago, Ill. Filed Jan. 15, 1969.

## DUTCHLAND DAIRY

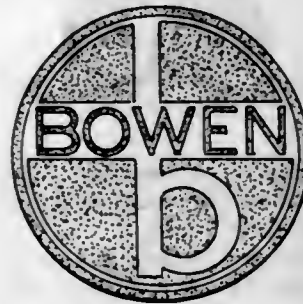
"Dairy" is disclaimed apart from the mark as shown. For Restaurant Services (Int. Cl. 42). First use in about December 1943.

SN 316,559. B/G Foods, Inc., Chicago, Ill. Filed Jan. 15, 1969.

## DUTCHLAND

For Restaurant Services (Int. Cl. 42). First use December 1943.

SN 316,926. Bowen Engineering Inc., North Branch, N.J. Filed Jan. 21, 1969.



Owner of Reg. Nos. 520,087 and 531,971. For Engineering Service, Comprising Engineering in the Field of Spray Drying Including Consultant Services on Special Problems in the Field of Spray Drying, Designing of Spray Drying Equipment To Be Fabricated by Others and Conducting Tests To Determine the Technical and Drying Factors of the Material To Be Dried (Int. Cl. 42). First use in July 1928.

SN 317,923. Quality Courts Motels, Inc., Silver Spring, Md. Filed Jan. 30, 1969.

## QUALITY MOTEL

Without waiver of any of its common law rights, applicant disclaims exclusive right to use of the word "Motel" except in the combination shown. Owner of Reg. Nos. 578,820, 804,874 and others. For Providing Lodging in Tourist Courts (Int. Cl. 42). First use December 1939.

SN 318,364. Hobo Joe's, Inc., Scottsdale, Ariz. Filed Feb. 5, 1968.

## KING OF THE ROAD MOTOR INN

No claim is made to the words "Motor Inn" apart from the mark, without waiving any common law rights therein. For Motel Services (Int. Cl. 42). First use Dec. 7, 1968.

SN 318,515. United States Franchise Corporation, San Francisco, Calif. Filed Feb. 6, 1969.



Applicant disclaims the terms "San Francisco" and "Roast Beef" apart from the mark as shown. For Restaurant Services (Int. Cl. 42). First use Apr. 29, 1968.

## Class 101—Advertising and Business

SN 280,417. The Lloyd H. Hall Co. Inc., New York, N.Y. Filed Sept. 15, 1967.

## MARKET/CHECK

Applicant disclaims the word "Market" apart from the mark as shown.

For Services Which Comprise Taking Scheduled and Special Surveys of Distribution and Marketing Methods of Specific Products and Brands of Products Sold in Retail Outlets and Reporting to Clients (Int. Cl. 35).

First use on or about June 23, 1967.

SN 280,540. Bandwagon U.S.A., Inc., Philadelphia, Pa. Filed Sept. 18, 1967.



"USA" is disclaimed apart from the mark as shown. For Promotion of the Sale of the Goods of Others Through Premium Redemption and Incentive Plan Services and Advertising the Goods of Others (Int. Cl. 35). First use Feb. 11, 1966.

SN 284,967. Musicpage, Inc., New Orleans, La., assignee of Max Fetty, d.b.a. Max Fetty and Associates, New Orleans, La. Filed Nov. 16, 1967.

## MUSICPAGE

For Providing Recorded Spot Advertising Announcements Between Musical Interludes on a Record Medium Placed in Consumer-Goods Stores (Int. Cl. 35). First use June 21, 1967.

SN 290,252. Burroughs Corporation, Detroit, Mich. Filed Feb. 5, 1968.

## FORGE

For Programming and Software Services Rendered in Conjunction With Data Processing Systems (Int. Cl. 35). First use Apr. 7, 1967.

SN 293,356. Chilton Company, Philadelphia, Pa. Filed Mar. 15, 1968.

## CHILTON

For Research Service in the Field of Marketing (Int. Cl. 35). First use 1960.

SN 296,708. Natural Rubber Thread Committee, Inc., Providence, R.I. Filed Apr. 26, 1968.

Natural rubber thread  
does so much,  
so much better..  
naturally



Applicant disclaims the words "Natural Rubber Thread Does So Much, So Much Better . . . Naturally" separate and apart from the mark as shown, at the same time reserving its common law rights with respect thereto.

For Promoting the Sale of Goods of Others Through the Distribution of Advertising and Printed Material Relating to Said Goods and by Supplying Technical Information in Connection With Said Goods To Assist Prospective Purchasers of Same (Int. Cl. 35). First use Feb. 29, 1968.

SN 298,016. H. Levitt, d.b.a. Levitt Ventures, San Francisco, Calif. Filed May 13, 1968.

## MINISHOW

For Promoting the Goods and Services of Others by Means of Radio or Television Commercials (Int. Cl. 35). First use about Apr. 24, 1968.

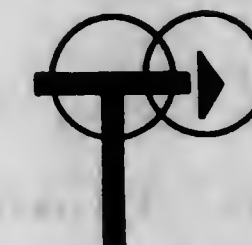
SN 301,935. Golden State Advertising Co., Inc., d.b.a. Golden State Banner Co., North Hollywood, Calif. Filed July 3, 1968.



The drawing is lined for the color gold, but no claim is made to color.

For Creation of Point of Purchase Advertising Displays for Others (Int. Cl. 35). First use Jan. 2, 1963.

SN 301,977. Tomsett Associates, Inc., Pittsburgh, Pa. Filed July 3, 1968.



For Employment Agency Services (Int. Cl. 35). First use June 1963.



SN 303,950. J. R. Wood & Sons, Inc., New York, N.Y. Filed July 30, 1968.

## ARTCARVED DIAMOND CENTER

Applicant disclaims exclusive use of the wording "Diamond Center" apart from the mark. Owner of Reg. Nos. 393,358 and 764,668.

For Establishing and Rendering Advisory Merchandising Services to Operators of Retail Jewelry Stores (Int. Cl. 35). First use June 16, 1968.

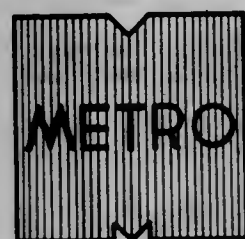
SN 305,408. Dairy and Food Industries Supply Association, Inc., Washington, D.C. Filed Aug. 19, 1968.



Applicant disclaims any right to the words "Data Bank" apart from the mark as shown.

For Providing Marketing Information to Those in the Dairy and Food Industries (Int. Cl. 35). First use Mar. 20, 1968.

SN 305,958. Metro-Politan Consultants, Inc., Dayton, Ohio. Filed Aug. 26, 1968.



Without waiving applicant's common-law rights with respect to color, the drawing is lined for red, but color is not claimed herein as a feature of the mark.

For Advisory, Consulting and Coordinating Services to Land Owners in the Economic, Planning, Designing, Engineering, Construction, Development, and Management Aspects of Urban Real Estate (Int. Cl. 35).

First use at least as early as Nov. 15, 1966.

SN 306,206. Acme Personnel Service of Spokane, Inc., Spokane, Wash. Filed Aug. 29, 1968.

# ACME

For Employment Agency Services (Int. Cl. 35). First use Jan. 21, 1948.

SN 306,758. Computicket Corporation, New York, N.Y. Filed Sept. 6, 1968.

## COMPUTICKET

For Issuance and Sale of Tickets and the Maintaining of Ticket Inventories for Entertainment Events of Others, by Means of a Computerized System. (Int. Cl. 35). First use Dec. 12, 1966.

SN 307,674. Sander Wood Engraving Company, Inc., Chicago, Ill. Filed Sept. 18, 1968.

## SANDER/LINE

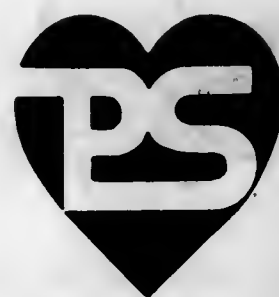
For Preparation of Art Work Simulating Wood Engraving for Advertising Use by Others (Int. Cl. 35). First use on or about July 1, 1968.

SN 308,237. Daniel Starch & Staff, Inc., Mamaroneck, N.Y. Filed Sept. 25, 1968.

## STARCHED

For Researching Analyzing and Reporting on the Effect of Advertisements and Publicity of All Types for All Communications Media (Int. Cl. 35). First use in or about 1932.

SN 311,991. Purity Supreme, Inc., Billerica, Mass., by change of name from Save-Mor Supermarkets, Inc., Billerica, Mass. Filed Nov. 13, 1968.



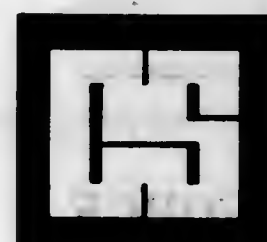
For Supermarket Services (Int. Cl. 35). First use at least as early as Mar. 16, 1966.

SN 314,689. Town & Country Auto Wash Systems, Youngstown, Ohio. Filed Dec. 17, 1968.

## TOWN & COUNTRY

For Advisory and Consultation Services in Connection With the Management, Organization, Construction and Operation of Automobile Washing Establishments (Int. Cl. 35). First use at least as early as September 1967.

SN 315,210. Computersearch Corporation, Williamsville, N.Y. Filed Dec. 26, 1968.



For Real Estate Information Retrieval and Inventory Control Services (Int. Cl. 35). First use on or about Apr. 29, 1968.

SN 318,385. Associometrics, Incorporated, Dallas, Tex. Filed Feb. 5, 1969.

## PLOMS

For Providing Automated Accounting and Daily Activity Record Keeping for Lawyers and Law Offices (Int. Cl. 35). First use Oct. 15, 1968.

SN 319,706. Goodway, Inc., Philadelphia, Pa. Filed Feb. 20, 1969. SN 303,551. Upper Avenue National Bank of Chicago, Chicago, Ill. Filed July 24, 1968.

## GOODWAY

For Duplicating Services (Int. Cl. 35). First use Apr. 30, 1966.

## Class 102 - Insurance and Financial

SN 286,099. Combined Insurance Company of America, Chicago, Ill. Filed Dec. 4, 1967.

## "CASH"

For Underwriting of Health and Accident Insurance (Int. Cl. 36). First use Oct. 14, 1966.

SN 286,133. Growth Industry Shares, Inc., Chicago, Ill. Filed Dec. 4, 1967.



Owner of Reg. No. 775,126. For Mutual Security Fund Services (Int. Cl. 36). First use Oct. 12, 1967.

SN 295,871. Provident National Bank, Philadelphia, Pa. Filed Mar. 27, 1968.

## PROVIDENT COSTCONTROL

Applicant disclaims the exclusive right to use of the word "Costcontrol" apart from the mark as shown, reserving, however, unto itself, any and all common law rights that it may have.

For Computer Service for Determining Profit and Loss Operations of Banks (Int. Cl. 36). First use Jan. 29, 1968.

SN 303,517. First National City Bank, New York, N.Y. Filed July 24, 1968.

## COFFEE BREAK AUTO LOAN

The words "Auto Loan" are disclaimed apart from the mark as shown.

For Personal Loans for Automobile Financing (Int. Cl. 36). First use September 1967.



The words "Premium Savings Account" are disclaimed apart from the mark as shown. For Savings Account Services (Int. Cl. 36). First use on or before June 27, 1968.

SN 313,614. Sun Life Assurance Company of Canada, Montreal, Quebec, Canada. Filed Dec. 4, 1968.

## THE INSURANCE PEOPLE WITH IDEAS

For Underwriting Individual and Group Life, Health, Accident, and Disability Insurance (Int. Cl. 36). First use June 26, 1967; in commerce Oct. 9, 1967.

SN 322,124. The British Petroleum Company Limited, London, England. Filed Mar. 19, 1969.



Owner of Reg. No. 654,019. For Credit Financing Services and Extending Credit to Customers at Automobile Service Stations, Marine and Aviation Terminals (Int. Cl. 36). First use Mar. 11, 1969; in commerce Mar. 11, 1969.

## Class 103 - Construction and Repair

SN 275,826. Binishells S.p.A., Crespellano, Bologna, Italy. Filed July 12, 1967.



Priority claimed under Sec. 44(d) on Italian application filed Jan. 13, 1967; Reg. No. 213,127, dated July 17, 1967. For Construction Services—Namely, the Construction of Thin-Walled Residence, Office, Factory, Restaurant, Public Facilities, Public Rooms, and Athletic Structures of Dome-Shaped Configuration of Concrete and Other Hardenable Materials (Int. Cl. 37).



SN 285,680. Salviam, Paris, France. Filed Nov. 27, 1967. SN 310,441. Bonded Oil Company, Springfield, Ohio. Filed Oct. 24, 1968.

**SALVIACIM**

Priority claimed under Sec. 44(d) on French Reg. No. 734,546, dated May 26, 1967.

For Construction of Industrial Floorings and Soils, Construction of Roads and Quays, Laying of Coats on Roads and Quays, Covering and Coating of Industrial Floorings and Soils; Renting of Tools, Building and Public Works Materials, Bulldozers and Tree Extractors; Services in Connection With Upkeep of Soil and Embankments (Int. Cl. 37).

SN 288,692. John K. Gould, Detroit, Mich. Filed Jan. 12, 1968.

*Crafteneered*

For Manufacturing Mechanical and Electrical Goods to the Specifications of Others (Int. Cl. 37).  
First use Jan. 3, 1968.

SN 290,846. John K. Gould, Detroit, Mich. Filed Feb. 12, 1968.

*Crafteneering*

For Manufacturing Mechanical and Electrical Goods to the Specifications of Others (Int. Cl. 37).  
First use Jan. 3, 1968.

SN 300,564. Cook's Pest Control, Inc., Decatur, Ala. Filed June 17, 1968.



Applicant disclaims the word "Pest" apart from the mark as shown. Owner of Reg. No. 838,083.  
For Termite, Insect and Pest Exterminating and Control Service (Int. Cl. 37).  
First use Nov. 3, 1965.

SN 301,402. Blenville Investment Corporation, Stapleton, Ala. Filed June 26, 1968.



No claim is made to word "Homes" apart from the mark as shown.  
For Erection of Prefabricated Houses (Int. Cl. 37).  
First use on or about June 15, 1967.

SN 310,441. Bonded Oil Company, Springfield, Ohio. Filed Oct. 24, 1968.

**BONDED**

Owner of Reg. Nos. 599,241, 646,286 and 646,359.  
For Service Station Services (Int. Cl. 37).  
First use at least as early as June 1932.

SN 312,791. Mobile Wash, Inc., Indianapolis, Ind. Filed Nov. 21, 1968.



For Pressure Washing and Cleaning Services (Int. Cl. 37).  
First use Aug. 10, 1964.

**Class 104—Communication**

SN 292,555. Communications Industries, Inc., Dallas, Tex. Filed Mar. 6, 1968.



The mark constitutes a fanciful representation of the letters "Ci" and design.  
For Operating a Radio-Telephone Utility, Including the Rental of Equipment Units Utilized in Such a Service (Int. Cl. 38).  
First use Aug. 25, 1961.

SN 313,532. WSM, Incorporated, Nashville, Tenn. Filed Dec. 3, 1968.

**OPRYLAND, USA**

Owner of Reg. Nos. 645,898 and 527,589.  
For Radio Broadcasting (Int. Cl. 38).  
First use May 3, 1968.

**Class 105—Transportation and Storage**

SN 274,373. Air West, Inc., San Francisco, Calif., by merger and change of name from West Coast Airlines, Inc., Seattle, Wash. Filed June 20, 1967.

**MiniLiner**

For Air Transportation Services (Int. Cl. 39).  
First use May 22, 1967.

SN 277,953. Wimble Aviation, Incorporated, Greensboro, N.C. Filed Aug. 9, 1967. SN 308,398. Putnam-Herz Finishing Company, Inc., New York, N.Y. Filed Sept. 27, 1968.

**MID-ATLANTIC AIRWAYS**

The word "Airways" is disclaimed apart from the mark as shown.  
For Transportation of Passengers and Freight by Air (Int. Cl. 39).  
First use on or about Nov. 1, 1958.

SN 288,761. Allegheny Airlines, Inc., Washington, D.C. Filed Jan. 15, 1968.

**ALLEGHENY COMMUTER**

Applicant disclaims the word "Commuter" apart from the mark as shown. Owner of Reg. No. 800,037.  
For Air Transportation of Persons, Property, Freight and Mail (Int. Cl. 39).  
First use Nov. 15, 1967.

SN 308,629. National Airlines Inc., Miami, Fla. Filed Oct. 1, 1968.

**FORTY-NINER**

For Air Transportation (Int. Cl. 39).  
First use Apr. 28, 1968.

**Class 106—Material Treatment**

SN 297,522. Brazing & Metal Treating, Inc., Cleveland, Ohio. Filed May 7, 1968.



The design shown is a disc having a plurality of variously curved lines thereon, the disc being lined for the purpose of depicting contrast. The drawing is lined for red, but color is not claimed.

For Annealing, Stress Relieving, and the Brazing and Assembly of Metal Parts, to the Individual Specifications of Others (Int. Cl. 40).  
First use Jan. 2, 1968.

SN 303,571. The Franklin Mint, Inc., Yeadon, Pa. Filed July 25, 1968.

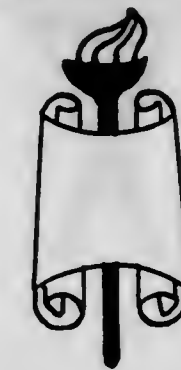


For Providing Custom Non-Monetary Coined Products—Namely, Non-Monetary Coins; Tokens; Medals; Medallions; and Souvenir, Novelty, and General Non-Monetary Coined Products (Int. Cl. 40).  
First use Apr. 28, 1965.

The mark comprises a fanciful representation of the letter "ph."  
For Bonding, Dyeing, Printing, and Finishing of Fabrics (Int. Cl. 40).  
First use December 1967.

**Class 107—Education and Entertainment**

SN 288,322. Institute for University Studies, Inc., Fort Lee, N.J. Filed Jan. 8, 1968.



For Educational and Tutorial Services Relating to the Providing of Correspondence and Home Study Courses (Int. Cl. 41).  
First use on or about Jan. 1, 1963.

SN 289,842. State University of New York and Board of Higher Education of the City of New York, Albany, N.Y. Filed Jan. 29, 1968.



The mark consists of the letters "UA" on the background of an oscilloscope.  
For Educational Services—Namely, Providing College Level Courses Through the Medium of Television and Radio (Int. Cl. 41).  
First use Aug. 1, 1967.

SN 289,958. Warren E. Avis, Detroit, Mich. Filed Jan. 31, 1968.

**AMERICAN BEHAVIORAL SCIENCE TRAINING LABORATORIES**

The words "Behavioral Science Training Laboratories" are disclaimed, as used apart from the mark.  
For Educational Services—Namely, Arranging for and Conducting Seminars in the Application of the Principles of the Behavioral Sciences to the Field of Management (Int. Cl. 41).  
First use Sept. 1, 1967.



SN 291,166. The Rainy Days Are, Philadelphia, Pa. Filed Feb. 15, 1968. SN 296,190. Adolfo L. Pego and Juan L. Pego, Miami, Fla. Filed Apr. 22, 1968.

**THE RAINY DAYS ARE**

For Musical Entertainment Services (Int. Cl. 41).  
First use Oct. 31, 1967.

SN 291,343. Warren E. Avis, Detroit, Mich. Filed Feb. 19, 1968.



The wording appearing in the mark is disclaimed as used apart from the mark. The lining and hatching shown in the mark indicates shading only.

For Educational Services—Namely, Arranging for and Conducting Seminars in the Field of Behavioral Science (Int. Cl. 41).

First use Sept. 1, 1967.

**LOS VIOLINES DE PEGO**

The mark "Los Violines de Pego" translated is "Pego and his violins."  
For Entertainment Services Rendered by an Orchestra (Int. Cl. 41).  
First use 1956.

SN 308,035. Thomas W. Saunders, Grosse Pointe Woods, Mich. Filed Sept. 23, 1968.

**SURF SIDE SIX**

For Musical Entertainment Rendered by a Band (Int. Cl. 41).  
First use July 1963.

SN 311,870. H & W Corporation, Fayetteville, N.C. Filed Nov. 12, 1968.

**THE PURPLE PENQUIN**

For Night Club Services (Int. Cl. 41).  
First use at least as early as September 1968.

**COLLECTIVE MEMBERSHIP MARKS****Class 200**

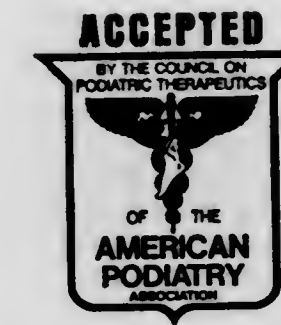
SN 298,528. American Institute for Design and Drafting, Fort Lauderdale, Fla. Filed May 20, 1968.



For Indicating Membership in Applicant.  
First use as early as Jan. 30, 1961.

**CERTIFICATION MARKS****Class A—Goods**

SN 283,846. American Podiatry Association, Washington, D.C. Filed Nov. 1, 1967.



The mark certifies that the claims made for the product are accurate in fact and in implication and are in accord with current scientific knowledge related to foot health.

For Foot Powder, Foot Deodorant, Penetrating Foam for Treating Athlete's Foot; and Other Preparations, Drugs and Products Used in the Care and Treatment of Foot Ailments, Disorders and Conditions.

First use Mar. 15, 1967.

SN 288,649. Supima Association of America, El Paso Tex. Filed Jan. 11, 1968.

**Supima**

This mark certifies that the goods to which it is applied are either made wholly of American (United States) Southwestern extra-long staple cotton in conformance with the standards of the applicant, or are blended textile constructions containing functionally significant portions of American (United States) Southwestern extra-long staple cotton in conformance with the standards of the applicant without the admixture of any other kind of cotton. Owner of Reg. No. 708,198.

For Thread, Fabrics and Wearing Apparel Made Wholly or in a Functionally Significant Part of American Southwestern Extra-Long Staple Cotton in Conformance With the Standards of the Applicant Without the Admixture of Any Other Kind of Cotton.

First use Apr. 9, 1956.

SN 320,339. Florida Citrus Commission, Lakeland, Fla. Filed Feb. 28, 1969.



The mark certifies that the goods bearing the mark either consist of citrus fruit grown in the State of Florida, under specified standards, or are processed or manufactured wholly from such citrus fruit.

For Oranges; Grapefruit; Orange Juice; Grapefruit Juice; Orange Juice Concentrate, Both Frozen and Unfrozen; Grapefruit Juice Concentrate, Both Frozen and Unfrozen; and Citrus Salad.

First use Feb. 24, 1969.

SN 320,340. Florida Citrus Commission, Lakeland, Fla. Filed Feb. 28, 1969.

**FLORIDA CITRUSA**

The mark certifies that the goods bearing the mark either consist of citrus fruit grown in the State of Florida, under specified standards, or are processed or manufactured wholly from such citrus fruit.

For Oranges; Grapefruit; Orange Juice; Grapefruit Juice; Orange Juice Concentrate, Both Frozen and Unfrozen; and Citrus Salad.

First use Feb. 24, 1969.



# TRADEMARK REGISTRATIONS ISSUED PRINCIPAL REGISTER

## Class 1—Raw or Partly Prepared Materials Class 5—Adhesives

874,925. YORKITE. NVF Company. SN 288,337. Pub. 6-3-69. Filed 1-8-68.  
874,926. DURATRON. Shell Oil Company. SN 291,904. Pub. 6-3-69. Filed 2-26-68.  
874,927. CENTRON. Dow Badische Company. SN 316,932. Pub. 6-3-69. Filed 1-21-69.  
874,928. RAINBOW. Rainbow Mealworms. SN 303,346. Pub. 6-10-69. Filed 7-22-68.

## Class 2—Receptades

874,929. FINNPOTS AND DESIGN. A. Ahlstrom Osakeyhtio. SN 285,300. Pub. 6-3-69. Filed 11-21-67.  
874,930. JIFFYSTRIPS "PLANT POT AND ALL" AND DESIGN. Geo. J. Ball, Inc., d.b.a. Jiffy-Pot Company of America. SN 285,984. Pub. 6-3-69. Filed 12-1-67.  
874,931. JIFFYPOTS "PLANT POT AND ALL" AND DESIGN. Geo. J. Ball, Inc., d.b.a. Jiffy-Pot Company of America. SN 285,985. Pub. 6-3-69. Filed 12-1-67.  
874,932. HUDSON AND DESIGN. Hudson Pulp & Paper Corp. SN 301,071. Pub. 6-3-69. Filed 6-21-68.  
874,933. THE WIGWAM INC. AND DESIGN. The Wigwam, Inc. MULTIPLE CLASS (Classes 2 and 37). SN 303,211. Pub. 6-3-69. Filed 7-19-68.  
874,934. FREEZETTE. Republic Molding Corporation. MULTIPLE CLASS (Classes 2, 5, and 37). SN 303,445. Pub. 6-3-69. Filed 7-23-68.  
874,935. PAK-MATE. Young Fire Equipment Corporation. SN 304,423. Pub. 6-3-69. Filed 8-5-68.  
874,936. TOP DOG AND DESIGN. Richard D. Riemann. SN 305,491. Pub. 6-3-69. Filed 8-19-68.  
874,937. PAC-MATE. Union Camp Corporation. SN 306,287. Pub. 6-3-69. Filed 8-29-68.  
874,938. FOAMGLAZE. Gulf States Paper Corporation. SN 308,001. Pub. 6-3-69. Filed 9-23-68.  
874,939. CAST-AWAY. Jersey Paper Co. SN 314,425. Pub. 6-3-69. Filed 12-13-68.  
874,940. IGLOO. Comet Packaging Corporation. MULTIPLE CLASS (Classes 2 and 37). SN 315,173. Pub. 6-3-69. Filed 12-26-68.  
874,941. TRU VALU AND DESIGN. Comet Packaging Corporation. SN 316,414. Pub. 6-3-69. Filed 1-13-69.  
874,942. COMFY-STATION. Roced Manufacturers Inc. SN 316,908. Pub. 6-3-69. Filed 1-17-69.  
874,943. PORT-A-JUG. Shoe Form Co. Inc. SN 316,913. Pub. 6-3-69. Filed 1-17-69.

## Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

874,944. HANG-A-HANDLE. Marketing & Motivation Incorporated. SN 290,000. Pub. 6-3-69. Filed 1-31-68.  
874,945. DATA BATCH. United States Tabulating Binder Corporation. SN 307,537. Pub. 6-3-69. Filed 9-17-68.

## Class 4—Abrasives and Polishing Materials

874,946. VIZABLES. Hanson-Kane, Inc. SN 313,650. Pub. 6-3-69. Filed 12-5-68.

874,934. (See Class 2 for this trademark.)  
874,947. SUNBEAM. Sunbeam Corporation. SN 296,210. Pub. 6-3-69. Filed 4-22-68.  
874,948. REM-WELD. Sperry Rand Corporation. SN 296,357. Pub. 6-3-69. Filed 4-23-68.  
874,949. HUDSON AND DESIGN. Hudson Pulp & Paper Corp. SN 301,070. Pub. 6-3-69. Filed 6-21-68.  
874,950. BIX-ROD. Bixby Box Toe Company, Inc. SN 304,577. Pub. 6-3-69. Filed 8-7-68.  
874,951. LONGLIFE. Sterneo Industries, Inc. SN 305,692. Pub. 6-3-69. Filed 8-21-68.  
874,952. GLITTER-IT. Sidney L. Pincus, d.b.a. Modern Products Co. SN 310,130. Pub. 6-3-69. Filed 10-21-68.  
874,953. REZEX. Krause Milling Company. SN 311,892. Pub. 6-3-69. Filed 11-12-68.  
874,954. TAG 136. Pecora Chemical Corporation. SN 314,904. Pub. 6-3-69. Filed 12-19-68.

## Class 6—Chemicals and Chemical Compositions

874,955. COPPERWET. Alpha Metals, Inc. SN 279,257. Pub. 2-25-69. Filed 8-29-67.  
874,956. MATHE. The Norac Company, Inc. SN 283,453. Pub. 6-3-69. Filed 10-26-67.  
874,957. HOKTHION. Hokko Chemical Industry Co., Ltd. SN 286,873. Pub. 6-3-69. Filed 12-11-67.  
874,958. ZYTTRITE. Cherrybrook Company. SN 287,277. Pub. 6-3-69. Filed 12-20-67.  
874,959. UA. United Aircraft Corporation. SN 292,728. Pub. 6-3-69. Filed 3-7-68.  
874,960. GEIGY. Gelgy Chemical Corporation. MULTIPLE CLASS (Classes 6 and 10). SN 299,901. Pub. 6-3-69. Filed 6-7-68.  
874,961. PERMALIFE. Sterneo Industries, Inc. SN 300,983. Pub. 6-3-69. Filed 6-20-68.  
874,962. CHAPCOTE. Chapman Chemical Company. SN 303,769. Pub. 6-3-69. Filed 7-29-68.  
874,963. BALL AND DESIGN. Ball Industries. SN 303,961. Pub. 6-3-69. Filed 7-31-68.  
874,964. ISOBAC. Nationwide Chemical Corporation. SN 309,068. Pub. 6-3-69. Filed 10-7-68.  
874,965. SHEATH. Fuller Laboratories, Inc. SN 310,080. Pub. 6-3-69. Filed 10-21-68.  
874,966. OFF-SHOOT-O. The Procter & Gamble Company. SN 310,978. Pub. 6-3-69. Filed 10-31-68.  
874,967. O DESIGN. The Procter & Gamble Company. SN 311,104. Pub. 6-3-69. Filed 11-1-68.  
874,968. CEC-TROL. Chas. Pfizer & Co., Inc. SN 316,574. Pub. 6-3-69. Filed 1-15-69.

## Class 9—Explosives, Firearms, Equipments, and Projectiles

874,969. PRIMEX. Apache Powder Company, assigned by mesne assignment, of Coast Manufacturing & Supply Company. SN 238,405. Pub. 1-3-67. Filed 2-9-66.

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874,970. BIG FIFTY. Roman T. Chandler, d.b.a. Old Reliable Cartridge Co. SN 296,111. Pub. 6-3-69. Filed 4-22-68.  
874,971. FAIRCHILD HILLER. Fairchild Hiller Corporation. SN 306,987. Pub. 6-3-69. Filed 9-10-68.  
874,972. UNCLE MIKE'S. Michaels of Oregon Co. SN 316,224. Pub. 6-3-69. Filed 1-9-69.

## Class 10—Fertilizers

874,960. (See Class 6 for this trademark.)  
874,973. SHEEP MOUNTAIN. Wyo-Ben Products, Inc. SN 312,627. Pub. 6-3-69. Filed 11-19-68.  
874,974. PLUS 2. The O. M. Scott & Sons Company. SN 316,756. Pub. 6-3-69. Filed 1-16-69.  
874,975. PLUS 1. The O. M. Scott & Sons Company. SN 316,757. Pub. 6-3-69. Filed 1-16-69.

## Class 11—Inks and Inking Materials

874,976. TECHNOS. L. & C. Hardtmuth, Inc., assignee of Gunther Wagner Pelikan-Werke. MULTIPLE CLASS (Classes 11 and 37). SN 294,494. Pub. 2-4-69. Filed 3-29-68.  
874,977. LIQUI-CARBON. A. Pomerantz and Company. SN 310,799. Pub. 6-3-69. Filed 10-29-68.

## Class 12—Construction Materials

874,978. JOINTITE. Mobil Oil Corporation. SN 269,680. Pub. 6-3-69. Filed 4-20-67.  
874,979. GLASSET. Continental Coatings Corporation. SN 275,037. Pub. 6-3-69. Filed 6-29-67.  
874,980. 4C AND DESIGN. Texas Industries, Inc. SN 292,309. Pub. 6-3-69. Filed 3-1-68.  
874,981. KING ARTHUR'S AND DESIGN. Arthur A. Rosner, d.b.a. National Lumber Company. SN 296,872. Pub. 6-3-69. Filed 4-29-68.  
874,982. WESTCHESTER BEAMS AND DESIGN. Westchester Timber Corporation. SN 298,651. Pub. 6-3-69. Filed 5-20-68.  
874,983. ORBITEX. Honeycomb Products, Inc. SN 299,021. Pub. 6-3-69. Filed 5-24-68.  
874,984. SPEED FAB-CRETE. Speed Fab-Crete Buildings, Inc. SN 300,131. Pub. 6-3-69. Filed 6-10-68.  
874,985. G AND DESIGN. Granite Research Industries, Inc. SN 303,019. Pub. 6-3-69. Filed 7-18-68.  
874,986. ROTO-LOK. Biltbest Corporation. SN 304,201. Pub. 6-3-69. Filed 8-2-68.  
874,987. STRESS-PLUS. Stress-Plus, Inc. SN 307,143. Pub. 6-3-69. Filed 9-11-68.  
874,988. POLYVYN. Set Products, Inc. SN 308,925. Pub. 6-3-69. Filed 10-4-68.  
874,989. TRANSACTALL. The Mosler Safe Company. SN 309,281. Pub. 6-3-69. Filed 10-9-68.  
874,990. POLYSORB. W. R. Grace & Co. SN 309,764. Pub. 6-3-69. Filed 10-16-68.  
874,991. STA-POD. Gratten Marine Research Corp. SN 309,864. Pub. 6-3-69. Filed 10-17-68.  
874,992. VILLAGER. Philip Carey Corporation. SN 310,129. Pub. 6-3-69. Filed 10-21-68.  
874,993. TEXPLY. Textone, Inc. SN 310,380. Pub. 6-3-69. Filed 9-9-68.  
874,994. DESIGN OF TRIANGLES WITHIN TWO PARALLEL LINES. Harco Corporation. SN 312,677. Pub. 6-3-69. Filed 11-20-68.  
874,995. SHERWOOD. Paeco, Inc. SN 312,905. Pub. 6-3-69. Filed 11-22-68.

## Class 13—Hardware and Plumbing and Steam-Fitting Supplies

874,996. R AND DESIGN. Rimar Manufacturing, Inc. SN 313,727. Pub. 6-3-69. Filed 12-5-68.  
874,997. ROUGH 'N' TUMBLE. U.S. Plywood-Champion Papers Inc. SN 316,171. Pub. 6-3-69. Filed 1-9-69.  
874,998. TWIN GRIP. American Home Products Corporation. SN 280,382. Pub. 6-3-69. Filed 9-15-67.  
874,999. R-2. Ridgewood Instrument Company. SN 289,834. Pub. 6-3-69. Filed 1-29-68.  
875,000. COMPAT. Flo-Lok, Inc. SN 289,982. Pub. 6-3-69. Filed 1-31-68.  
875,001. POSILOCK. Omco Inc. SN 293,049. Pub. 6-3-69. Filed 3-12-68.  
875,002. SEASHORE. Continental Copper & Steel Industries, Inc. SN 309,954. Pub. 6-3-69. Filed 10-18-68.  
875,003. UNARAMA. FWI, Inc. SN 311,025. Pub. 6-3-69. Filed 10-31-68.  
875,004. PIPE-O-LETS AND DESIGN. Wheeling Machine Products Company. SN 311,194. Pub. 6-3-69. Filed 11-1-68.  
875,005. ANTISEEZ. G.K.N. Bolts & Nuts Limited. SN 311,253. Pub. 6-3-69. Filed 11-4-68.  
875,006. THIOGLAS. Thiokol Chemical Corporation. SN 311,627. Pub. 6-3-69. Filed 11-7-68.

## Class 14—Metals and Metal Castings and Forgings

875,007. MAGNETICS INC. Magnetis, Incorporated. SN 300,463. Pub. 6-3-69. Filed 6-14-68.  
875,008. HP 9-4. Republic Steel Corporation. SN 300,965. Pub. 6-3-69. Filed 6-20-68.  
875,009. PAMPA. Pan American Trade Development Corp. SN 310,031. Pub. 6-3-69. Filed 10-21-68.

## Class 15—Oils and Greases

875,010. QVO AND DESIGN. The Standard Oil Company. SN 308,156. Pub. 6-3-69. Filed 9-24-68.

## Class 16—Protective and Decorative Coatings

875,011. AUTOTOUGH. Robin H. Berens, d.b.a. Berens Associates. SN 262,396. Pub. 9-26-67. Filed 1-12-67.  
875,012. TOPTEX. Wyandotte Paint Products Company. SN 282,649. Pub. 3-4-69. Filed 10-16-67.  
875,013. POWERCLAD. The Sherwin-Williams Company. SN 289,838. Pub. 6-3-69. Filed 1-29-68.  
875,014. ANTIQUE SATIN AND DESIGN. Sapolln Paints Inc. SN 312,230. Pub. 6-3-69. Filed 11-14-68.

## Class 18—Medicines and Pharmaceutical Preparations

875,015. DP IN FANCIFUL DESIGN. Durham Pharmacal Corp. SN 264,808. Pub. 6-3-69. Filed 2-16-67.  
875,016. SSK AND DESIGN. S. S. Kresge Company. SN 284,092. Pub. 9-17-68. Filed 11-3-67.



- 875,017. BLEMICIN. Thayer-Knomark, Inc. SN 284,950. Pub. 6-3-69. Filed 11-15-67.
- 875,018. SINUSEZE. Towne, Paulsen & Co., Inc. SN 287,843. Pub. 6-3-69. Filed 12-29-67.
- 875,019. PANTHOGESIC. USV Pharmaceutical Corporation. SN 288,653. Pub. 6-3-69. Filed 1-11-68.
- 875,020. ATIVAN. American Home Products Corporation. SN 288,666. Pub. 6-3-69. Filed 1-12-68.
- 875,021. POLYGRAN. Keim-Diat G.m.b.H. SN 289,903. Pub. 6-3-69. Filed 1-30-68.
- 875,022. PARADE. Peter Hand Foundation, Inc. MULTIPLE CLASS (Classes 18 and 46). SN 290,881. Pub. 6-3-69. Filed 2-12-68.
- 875,023. CORDARONE. Laboratoires Labaz, by change of name from Societe Francaise des Laboratoires Labaz. SN 298,760. Pub. 6-3-69. Filed 5-21-68.
- 875,024. COMPENSATOR. Allied Chemical Corporation. MULTIPLE CLASS (Classes 18 and 46). SN 300,772. Pub. 6-3-69. Filed 6-19-68.
- 875,025. TRYPTIZOL. Merck & Co., Inc. SN 303,181. Pub. 6-3-69. Filed 7-19-68.
- 875,026. KIDDI-FLUOR. King's Specialty Company. SN 304,231. Pub. 6-3-69. Filed 8-2-68.
- 875,027. VI-EDI-FLUOR. King's Specialty Company. SN 304,232. Pub. 6-3-69. Filed 8-2-68.
- 875,028. BUTE. Geigy Chemical Corporation. SN 304,459. Pub. 6-3-69. Filed 8-6-68.
- 875,029. BIACT. Hoffmann-La Roche Inc. SN 304,468. Pub. 6-3-69. Filed 8-6-68.
- 875,030. AVI-STRESS. Sterwin Chemicals Inc. SN 304,629. Pub. 6-3-69. Filed 8-7-68.
- 875,031. DOSSIL. Reed & Carnrick. SN 304,815. Pub. 6-3-69. Filed 8-9-68.
- 875,032. DOSS-SIL. Reed & Carnrick. SN 304,816. Pub. 6-3-69. Filed 8-9-68.
- 875,033. AMIS. Mead Johnson & Company. SN 307,715. Pub. 3-25-69. Filed 9-19-68.
- 875,034. AIRCO. Air Reduction Company, Incorporated. SN 314,169. Pub. 6-3-69. Filed 12-11-68.
- 875,041. BOMAN AND DESIGN. Robert Maniaci, d.b.a. California Auto Radio. MULTIPLE CLASS (Classes 21 and 36). SN 278,309. Pub. 4-30-68. Filed 8-15-67.
- 875,042. PHONOCOPIER. The Magnayox Company. SN 290,503. Pub. 6-3-69. Filed 2-7-68.
- 875,043. SILVER-MASTER. Economics Laboratory, Inc. SN 293,702. Pub. 6-3-69. Filed 3-20-68.
- 875,044. HAPPY COW. Gardner Manufacturing Company, d.b.a. Speed Clean Division of Gardner Mfg. Co. SN 302,932. Pub. 6-3-69. Filed 7-17-68.
- 875,045. MAKING FACES. Clairol Incorporated. SN 304,448. Pub. 6-3-69. Filed 8-6-68.
- 875,046. QUIET KLEEN AND DESIGN. National Union Electric Corporation. SN 306,163. Pub. 6-3-69. Filed 8-28-68.
- 875,047. ADCO. Automotive Devices Company of Pennsylvania. SN 307,001. Pub. 6-3-69. Filed 9-10-68.
- 875,048. PERMAGROUND. Vasco Metals Corporation. SN 308,055. Pub. 6-3-69. Filed 9-23-68.
- 875,049. TUBULAIRE. American District Telegraph Company. SN 308,263. Pub. 6-3-69. Filed 9-26-68.
- 875,050. FIL-PAC. American Plasticraft Company. SN 312,732. Pub. 6-3-69. Filed 11-21-68.
- 875,051. HABITAT. Habitat, Inc. SN 313,291. Pub. 6-3-69. Filed 11-29-68.

## Class 22—Games, Toys, and Sporting Goods

- 875,035. (See Class 19 for this trademark.)
- 875,052. LUCKY BUCKS. Fred Meyer, Inc., assignee of Group & Advertising Specialties, Ltd. SN 257,326. Pub. 7-18-67. Filed 9-28-66.
- 875,053. PRO FOOTBALL. Milton Bradley Company. SN 263,656. Pub. 10-24-67. Filed 1-31-67.
- 875,054. MUSICAL PLAYMATE. American Sankyo Corporation. SN 287,509. Pub. 6-3-69. Filed 12-26-67.
- 875,055. SUPERMATIC AND DESIGN. Edison Giocattoli Societa per Azioni. SN 297,664. Pub. 6-3-69. Filed 5-8-68.
- 875,056. TURN-ABOUT BLOCKS. Kohner Bros., Inc. SN 298,229. Pub. 6-3-69. Filed 5-15-68.
- 875,057. SKI WAY. American Machine & Foundry Company. SN 299,085. Pub. 6-3-69. Filed 5-27-68.
- 875,058. SW-ISH ROD. Swiss-Tech, Inc. SN 300,019. Pub. 6-3-69. Filed 6-7-68.
- 875,059. AQUASTATIC. Bayleysnit, Inc. SN 300,054. Pub. 6-3-69. Filed 6-10-68.
- 875,060. A BLO GO. Jefcor Industries, Inc. SN 300,200. Pub. 6-3-69. Filed 6-11-68.
- 875,061. ALUMIPOWERED. A. G. Spalding & Bros. Inc. SN 302,454. Pub. 6-3-69. Filed 7-10-68.
- 875,062. TARTAR AND DESIGN. Victor Comptometer Corporation. SN 302,543. Pub. 6-3-69. Filed 7-11-68.
- 875,063. COLOR-IFIC. American Toy & Furniture Co., Inc. SN 302,699. Pub. 6-3-69. Filed 7-15-68.
- 875,064. OREGON SLAMMER. Tanoak Industries, Inc. SN 302,775. Pub. 6-3-69. Filed 7-15-68.
- 875,065. FORTBUSTER. Ronald L. Morris, d.b.a. The Garron Co. SN 302,951. Pub. 6-3-69. Filed 7-17-68.
- 875,066. CATA-POLE. Dura Fiber Inc. SN 303,285. Pub. 6-3-69. Filed 7-22-68.
- 875,067. TUBMARINE. The Electric Game Company. SN 303,292. Pub. 6-3-69. Filed 7-22-68.
- 875,068. INFALLIBLE. The Kingfisher Corporation. SN 303,316. Pub. 6-3-69. Filed 7-22-68.
- 875,069. MATCH POINT. Wilson Sporting Goods Co. SN 303,461. Pub. 6-3-69. Filed 7-23-68.
- 875,070. OLD FAITHFUL. Atlantic Lures, Inc. SN 303,588. Pub. 6-3-69. Filed 7-25-68.
- 875,071. PRISSY MISS. Sportsman's Den, Inc., d.b.a. Kendon Mfg. Co. SN 303,711. Pub. 6-3-69. Filed 7-26-68.

## Class 19—Vehicles

- 875,035. HK AND DESIGN. Hochschild Kohn & Co., Incorporated. MULTIPLE CLASS (Classes 19, 22, 28, 32, 37, 38, 39, 40, 42, 50, 51, and 52). SN 272,660. Pub. 6-3-69. Filed 5-31-67.
- 875,036. HIGHWAY. Highway Trailer Industries, Inc. MULTIPLE CLASS (Classes 19 and 23). SN 308,943. Pub. 6-3-69. Filed 10-7-68.

## Class 20—Linoleum and Oiled Cloth

- 875,037. ASPEN. American Biltrite Rubber Co., Inc. SN 302,375. Pub. 6-3-69. Filed 7-10-68.

## Class 21—Electrical Apparatus, Machines, and Supplies

- 875,038. DALTRONICS. David Mendelsohn, d.b.a. Daltronics Co. SN 234,385. Pub. 6-3-69. Filed 11-18-65.
- 875,039. JIFFY JUNCTION. The Deutsch Company Electronic Components Division. SN 255,422. Pub. 4-16-68. Filed 9-29-66.
- 875,040. JIFFY JUNCTION BOX. Truck-Lite Co., Inc. SN 257,108. Pub. 4-16-68. Filed 10-24-66.

## Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

- 875,036. (See Class 19 for this trademark.)
- 875,072. KENGRIP-OKU. Kennametal Inc. SN 259,325. Pub. 6-3-69. Filed 11-23-66.
- 875,073. BINGHAM. Samuel Bingham Company. SN 273,937. Pub. 6-3-69. Filed 6-15-67.
- 875,074. MISCELLANEOUS DESIGN. Pullmax Aktiebolag. MULTIPLE CLASS (Classes 23 and 34). SN 278,239. Pub. 6-3-69. Filed 8-14-67.
- 875,075. PULLMAX AND DESIGN. Pullmax Aktiebolag. MULTIPLE CLASS (Classes 23 and 34). SN 278,240. Pub. 6-3-69. Filed 8-14-67.
- 875,076. DEADY AND DESIGN. Deady Chemical Company. SN 282,062. Pub. 6-3-69. Filed 10-9-67.
- 875,077. LOAD-A-MATIC. Lodal, Inc. SN 283,447. Pub. 6-3-69. Filed 10-26-67.
- 875,078. DIECO AND DESIGN. Die Supply Corporation. SN 301,920. Pub. 6-3-69. Filed 7-3-68.
- 875,079. WRIGHT AND DESIGN. Bealrd-Poulan Inc. SN 307,303. Pub. 6-3-69. Filed 9-13-68.
- 875,080. SWING-N-JOINT AND ARROW DESIGN. Gad-Jets, Inc. SN 307,451. Pub. 6-3-69. Filed 9-16-68.
- 875,081. FLOW-A-MATIC AND DESIGN. Flow-A-Matic Corporation. SN 307,993. Pub. 6-3-69. Filed 9-23-68.
- 875,082. WILL 'O' WISP. Onelda Ltd. SN 308,128. Pub. 6-3-69. Filed 9-24-68.
- 875,083. HYDRA-STAK. Eaton Yale & Towne Inc. SN 308,192. Pub. 6-3-69. Filed 9-25-68.
- 875,084. LABEL-CHIEF. Forbes Labeltape Company. SN 308,200. Pub. 6-3-69. Filed 9-25-68.
- 875,085. IMPULSATOR. Thor Power Tool Company. SN 308,327. Pub. 6-3-69. Filed 9-26-68.
- 875,086. PORTCO. United Industrial Syndicate, Inc. SN 308,334. Pub. 6-3-69. Filed 9-26-68.
- 875,087. MINI-SETTER. Rodgers Plastics Equipment, Inc. SN 308,814. Pub. 6-3-69. Filed 10-3-68.
- 875,088. MAGNE-BOOST. March Manufacturing Company. SN 308,910. Pub. 6-3-69. Filed 10-4-68.
- 875,089. GMG. Hollymatic Corporation. SN 309,258. Pub. 5-6-69. Filed 10-9-68.
- 875,090. CYCLECYL. The Precision Manufacturing Company, Inc. SN 311,406. Pub. 6-3-69. Filed 11-5-68.
- 875,091. EH (DESIGN). South Shore Tool & Development Corporation. SN 311,622. Pub. 6-3-69. Filed 11-7-68.

## Class 25—Locks and Safes

- 875,092. GEM-TONE. Curtis Noll Corporation. SN 291,363. Pub. 4-8-69. Filed 2-19-68.

## Class 26—Measuring and Scientific Appliances

- 875,093. CAC. Computer Accessories Corporation, Inc. SN 253,282. Pub. 7-11-67. Filed 8-29-66.
- 875,094. AW (DESIGN). Wilhelm Anger OHG. SN 289,437. Pub. 1-21-69. Filed 1-23-68.
- 875,095. CHARTMATE. Kenneth King, d.b.a. King Manufacturing Co. SN 289,592. Pub. 6-3-69. Filed 1-25-68.
- 875,096. ACROCLIP. Black Clawson-Sumner, Inc. SN 296,798. Pub. 6-3-69. Filed 4-29-68.
- 875,097. Z AND DESIGN. Zytron Industries, Inc. SN 299,054. Pub. 6-3-69. Filed 5-24-68.
- 875,098. FREEZ-CHECK. Perfect Parts, Inc. SN 304,015. Pub. 6-3-69. Filed 7-31-68.

- 875,099. COLLECTOROTORQUE. Collectron Corporation. SN 304,054. Pub. 6-3-69. Filed 8-1-68.
- 875,100. MIRAVIEW. GAF Corporation. SN 304,910. Pub. 6-3-69. Filed 8-12-68.
- 875,101. TIPPSY. The Star Case Company. SN 311,341. Pub. 6-3-69. Filed 11-5-68.
- 875,102. SSK AND DESIGN. S. S. Kresge Company. SN 313,587. Pub. 6-3-69. Filed 12-4-68.
- 875,103. PROXI-TRON AND DESIGN. Automation Devices, Inc. SN 314,015. Pub. 6-3-69. Filed 12-10-68.
- 875,104. LITE-TRON AND DESIGN. Automation Devices, Inc. SN 314,016. Pub. 6-3-69. Filed 12-10-68.
- 875,105. SCHULMERICH. Schulmerich Carillons, Inc. SN 315,018. Pub. 6-3-69. Filed 12-23-68.

## Class 27—Horological Instruments

- 875,106. PAR EXCELLENCE. Lyndamar Enterprises, Inc. SN 293,155. Pub. 6-3-69. Filed 3-13-68.
- 875,107. KINGMATIC VIDEO. Movado Watch Agency, Inc. SN 304,616. Pub. 6-3-69. Filed 8-7-68.
- 875,108. NASTRIX AND DESIGN. The Natrix Corporation. SN 312,488. Pub. 6-3-69. Filed 11-18-68.
- 875,109. DATACHRON. Movado Watch Agency, Inc. SN 314,726. Pub. 6-3-69. Filed 12-17-68.
- 875,110. LADYBUG. Villager Industries, Inc. SN 315,622. Pub. 6-3-69. Filed 12-31-68.

## Class 28—Jewelry and Precious-Metal Ware

- 875,035. (See Class 19 for this trademark.)
- 875,111. JETTE MESH. Textron Inc. SN 301,273. Pub. 6-3-69. Filed 6-24-68.
- 875,112. CUTE CLIP. Regal Manufacturing Company. SN 311,060. Pub. 6-3-69. Filed 10-31-68.
- 875,113. GOLDORADO. Sunbell Corporation. SN 311,416. Pub. 6-3-69. Filed 11-5-68.
- 875,114. SAV-A-LINK. Border Sunshine Novelty Co. SN 311,460. Pub. 6-3-69. Filed 11-6-68.
- 875,115. GRR! Nancy S. White, d.b.a. The Grr! Club. SN 311,541. Pub. 6-3-69. Filed 11-6-68.
- 875,116. PETI-CLIP. The Richelleu Corp. SN 311,931. Pub. 6-3-69. Filed 11-12-68.
- 875,117. DIAMOLIKE. Sylvester's Jewelers. SN 312,352. Pub. 6-3-69. Filed 11-15-68.
- 875,118. GOLDEN MARRIAGE. Gold-Master Corp. SN 313,930. Pub. 6-3-69. Filed 12-9-68.

## Class 29—Brooms, Brushes, and Dusters

- 875,119. RAIN-CHECK. Industrial Brush Company. SN 293,143. Pub. 6-3-69. Filed 3-13-68.
- 875,120. DUST-TEX AND DESIGN. American Uniform Company. SN 310,435. Pub. 6-3-69. Filed 10-24-68.
- 875,121. VELV-EDJ. Montrose Products, Inc. SN 312,794. Pub. 6-3-69. Filed 11-21-68.

## Class 31—Filters and Refrigerators

- 875,122. WINTERIZER. Carl O. Walcutt, d.b.a. The Winterizer Company. SN 199,645. Pub. 7-6-65. Filed 8-10-64.
- 875,123. FROSTMASTER. Carrier Corporation. SN 291,583. Pub. 6-3-69. Filed 2-21-68.
- 875,124. CON-VAP. Heaters, Incorporated. SN 312,888. Pub. 6-3-69. Filed 11-22-68.



**Class 32 — Furniture and Upholstery**

- 875,035. (See Class 19 for this trademark.)
- 875,125. ASTROLON. Flexsteel Industries, Incorporated, d.b.a. Brunswick Converters. SN 258,091. Pub. 4-1-69. Filed 11-7-68.
- 875,126. AUDIO TUTORIAL SYSTEMS. Burgess Publishing Company. MULTIPLE CLASS (Classes 32, 36, and 38). SN 266,479. Pub. 6-3-69. Filed 3-13-67.
- 875,127. PACKET CHEF. Diamond Crystal Salt Company. SN 304,320. Pub. 6-3-69. Filed 8-5-68.
- 875,128. COMPRIMA. Skogsviks Licens Aktiebolag. SN 304,827. Pub. 6-3-69. Filed 8-7-68.
- 875,129. ROLL-A-FOLD. B-C Manufacturing Corporation, d.b.a. Interior Fashions. SN 313,155. Pub. 6-3-69. Filed 11-27-68.

**Class 33 — Glassware**

- 875,130. ARMOR-GARD. American Saint Gobain Corporation. SN 312,415. Pub. 6-3-69. Filed 11-18-68.

**Class 34 — Heating, Lighting, and Ventilating Apparatus**

- 875,074. (See Class 23 for this trademark.)
- 875,075. (See Class 23 for this trademark.)
- 875,131. ROS-O-BAKE. ALD, Inc., assignee of Park-O Corporation. SN 285,345. Pub. 6-3-69. Filed 11-21-67.
- 875,132. SPATTER SCAT. Air Reduction Company, Incorporated. SN 289,463. Pub. 6-3-69. Filed 1-24-68.
- 875,133. GENCONTROL. Mechtron-Genco Corporation, by merger and change of name from Genco Manufacturing, Inc. SN 290,957. Pub. 6-3-69. Filed 2-13-68.
- 875,134. HYNES AND DESIGN. Hynes Electric Heating Company. SN 300,595. Pub. 6-3-69. Filed 6-17-68.
- 875,135. MESCO. Marine Engine Specialties Corporation. SN 304,101. Pub. 6-3-69. Filed 8-1-68.
- 875,136. COMPAKOMATIC AND DESIGN. Compak-O-Matic, Inc. SN 304,309. Pub. 6-3-69. Filed 8-5-68.
- 875,137. FIREBOWL AND DESIGN. The J. R. Clark Company. SN 305,721. Pub. 6-3-69. Filed 8-22-68.

**Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires**

- 875,138. STAR TRIPLE TRUCK. The Kelly-Springfield Tire Company. SN 270,575. Pub. 6-3-69. Filed 5-3-67.
- 875,139. VOGUE WIDE TRAC. Vogue Tyre & Rubber Company. SN 271,393. Pub. 6-3-69. Filed 5-12-67.
- 875,140. MOBAT AND DESIGN. Mobat Tire & Rubber Co., Inc. SN 295,359. Pub. 4-1-69. Filed 4-10-68.
- 875,141. HI-MATIC. Royal Industries, Inc., assignee of Royal Industries. SN 301,258. Pub. 5-20-69. Filed 6-24-68.
- 875,142. SURVEYOR. The Armstrong Rubber Company. SN 314,510. Pub. 6-3-69. Filed 12-16-68.
- 875,143. ADRAN. Adran Company, Inc. SN 314,944. Pub. 6-3-69. Filed 12-20-68.
- 875,144. SUNLINER. The Kelly-Springfield Tire Company. SN 315,081. Pub. 6-3-69. Filed 12-23-68.

**Class 36 — Musical Instruments and Supplies**

- 875,041. (See Class 21 for this trademark.)
- 875,126. (See Class 32 for this trademark.)
- 875,145. SIR ECHO AND DESIGN. Memory Master Corporation. SN 269,440. Pub. 6-3-69. Filed 4-18-67.
- 875,146. PLAYTAPE MUSIC MACHINE. Playtape, Inc. SN 288,641. Pub. 6-3-69. Filed 1-11-68.
- 875,147. TETRAGRAMMATOR RECORDS. Tetragrammator Records. SN 296,889. Pub. 5-6-69. Filed 4-29-68.
- 875,148. TETRAGRAMMATOR RECORDS AND DESIGN. Tetragrammator Records. SN 296,890. Pub. 5-6-69. Filed 4-29-68.
- 875,149. FRENCH HORN AND BOOK DESIGN. Bowmar Records, Inc. MULTIPLE CLASS (Classes 36 and 38). SN 310,608. Pub. 6-3-69. Filed 10-28-68.
- 875,150. MGM. Metro-Goldwyn-Mayer Inc. SN 319,063. Pub. 6-3-69. Filed 2-13-69.

**Class 37 — Paper and Stationery**

- 874,933. (See Class 2 for this trademark.)
- 874,934. (See Class 2 for this trademark.)
- 874,940. (See Class 2 for this trademark.)
- 874,976. (See Class 11 for this trademark.)
- 875,035. (See Class 19 for this trademark.)
- 875,151. JET MESSAGE. National Press, Inc. SN 295,940. Pub. 3-25-69. Filed 4-18-68.
- 875,152. SHORT SHORTY. Lindy Pen Company, Incorporated. SN 300,361. Pub. 6-3-69. Filed 6-13-68.
- 875,153. SCRIP-DEX ETC. AND DESIGN. Southwestern Drug Corporation. SN 301,266. Pub. 6-3-69. Filed 6-24-68.
- 875,154. PARTY MAGIC. Gibson Greeting Cards, Inc. SN 303,525. Pub. 6-3-69. Filed 7-24-68.
- 875,155. SSK AND DESIGN. S. S. Kresge Company. SN 312,311. Pub. 6-3-69. Filed 11-15-68.

**Class 38 — Prints and Publications**

- 875,035. (See Class 19 for this trademark.)
- 875,126. (See Class 32 for this trademark.)
- 875,149. (See Class 36 for this trademark.)
- 875,156. MILITARY MARKET. Army Times Publishing Company. SN 277,422. Pub. 6-3-69. Filed 8-3-67.
- 875,157. REPRESENTATION OF FISH AND DESIGN. New England Aquarium Corporation. SN 279,321. Pub. 6-3-69. Filed 8-29-67.
- 875,158. THE PHYSICIANS MARKET PLACE. Market Publications, Inc. SN 280,238. Pub. 6-3-69. Filed 9-13-67.
- 875,159. RHD. Random House, Inc. SN 285,854. Pub. 6-3-69. Filed 11-29-67.
- 875,160. THE AMERICAN JOURNAL OF MEDICAL TECHNOLOGY. The American Society of Medical Technologists. SN 294,002. Pub. 6-3-69. Filed 3-25-68.
- 875,161. THE STICKIE THING. Don Kracke, d.b.a. Rickie Tickle Sticks. SN 297,069. Pub. 6-3-69. Filed 5-1-68.
- 875,162. PFL PHYSICIAN/S FINANCIAL LETTER. Steber & McIntyre, Inc. SN 300,538. Pub. 6-3-69. Filed 6-17-68.
- 875,163. INNOVATION WORLD. The Raymond Lee Organization, Inc. SN 301,850. Pub. 6-3-69. Filed 7-2-68.
- 875,164. GLOBE AND DERRICK DESIGN. Mid-Continent Supply Co. SN 302,431. Pub. 6-3-69. Filed 7-10-68.
- 875,165. GR AND GLOBE DESIGN. Graphic Research, Inc. SN 306,479. Pub. 6-3-69. Filed 9-3-68.
- 875,166. COMPUTICKET. Computicket Corporation. SN 306,759. Pub. 6-3-69. Filed 9-6-68.

- 875,167. HOTEL & MOTEL RED BOOK. The American Hotel Association Directory Corporation. SN 306,999. Pub. 6-3-69. Filed 9-10-68.
- 875,168. YOU INCORPORATED. Luzier Incorporated. SN 307,032. Pub. 6-3-69. Filed 9-10-68.
- 875,169. AUTOMOBILE TALK. James Everette Marler, Sr. SN 307,035. Pub. 6-3-69. Filed 9-10-68.
- 875,170. RANDOM RADIATION. Howard S. Pyle. SN 307,501. Pub. 6-3-69. Filed 9-16-68.
- 875,171. IDR & DS. Institute for Scientific Information, Inc. SN 307,576. Pub. 6-3-69. Filed 9-17-68.
- 875,172. FUNDICATOR AND DESIGN. Fundicator Incorporated. SN 309,515. Pub. 6-3-69. Filed 10-14-68.
- 875,173. S AND STAR DESIGN. Sextant Systems, Inc. SN 310,700. Pub. 6-3-69. Filed 10-28-68.
- 875,174. AI AND DESIGN. American International Pictures. SN 310,995. Pub. 6-3-69. Filed 10-31-68.
- 875,175. CIBACHROME PRINT. Ciba Limited. SN 311,826. Pub. 6-3-69. Filed 11-12-68.
- 875,176. INTERNATIONAL TRADE REPORTER. The Bureau of National Affairs, Inc. SN 311,877. Pub. 6-3-69. Filed 11-13-68.
- 875,177. ICRS. Institute for Scientific Information, Inc. SN 312,200. Pub. 6-3-69. Filed 11-14-68.
- 875,178. CW. James Heermance, d.b.a. Corporate World. SN 312,294. Pub. 6-3-69. Filed 11-15-68.
- 875,179. FACULTY REPORT. Careers Incorporated. SN 312,380. Pub. 6-3-69. Filed 11-18-68.
- 875,180. CT (DESIGN). Computicket Corporation. SN 315,735. Pub. 6-3-69. Filed 1-3-69.

**Class 39 — Clothing**

- 875,035. (See Class 19 for this trademark.)
- 875,181. HAZY TONES. Camp and McInnes, Inc. SN 239,719. Pub. 12-6-66. Filed 2-28-66.
- 875,182. ROSINA FERRAGAMO SCHIAVONE. Rosina Ferragamo Schiavone. SN 245,271. Pub. 11-21-67. Filed 5-9-66.
- 875,183. STYLE-KEEP. La Maur, Inc., assignee of Rolf Brauchli Inc. SN 262,849. Pub. 9-12-67. Filed 1-19-67.
- 875,184. NINA. Nina Footwear Co., Inc. SN 276,943. Pub. 1-21-69. Filed 7-27-67.
- 875,185. TANNERWAY. Tanner of North Carolina, Inc. SN 287,181. Pub. 6-3-69. Filed 12-18-67.
- 875,186. LITTLE GUYS & GALS BY STATUS. The Status Shoe Corporation. SN 297,448. Pub. 6-3-69. Filed 5-6-68.
- 875,187. PREMIER. E.K. Helmet Mfg. Co. SN 299,910. Pub. 6-3-69. Filed 6-6-68.
- 875,188. JOY-LE ROSE. Edward Atlas, d.b.a. Le Rose Hosiery. SN 303,495. Pub. 6-3-69. Filed 7-24-68.
- 875,189. LA MANCHA. Charlesgate Clothes, Inc. SN 303,770. Pub. 6-3-69. Filed 7-29-68.
- 875,190. KLEINERT'S. I. B. Kleinert Rubber Company. SN 305,050. Pub. 6-3-69. Filed 8-13-68.
- 875,191. DAFFY DOWN. Draper Products, Inc. SN 308,099. Pub. 6-3-69. Filed 9-24-68.
- 875,192. KORET OF CALIFORNIA. Koracorp Industries, Inc., d.b.a. Koret of California, Inc. SN 308,425. Pub. 6-3-69. Filed 9-30-68.
- 875,193. UNI-MOLD. Gold Seal Rubber Company. SN 308,616. Pub. 6-3-69. Filed 10-1-68.
- 875,194. RAMPANT COLT DESIGN. Colt's Inc. SN 309,201. Pub. 6-3-69. Filed 10-9-68.
- 875,195. DS AND DESIGN. D.S. Safety Helmet Corporation. SN 309,622. Pub. 6-3-69. Filed 10-14-68.
- 875,196. ANK-L-JACS. Jay-Dee, Inc. SN 309,680. Pub. 6-3-69. Filed 10-15-68.
- 875,197. UNI-MATES. Kayser-Roth Corporation. SN 309,768. Pub. 6-3-69. Filed 10-16-68.
- 875,198. ANCHOR-MATE. Max Rubin Co., Inc. SN 309,991. Pub. 6-3-69. Filed 10-18-68.

- 875,199. RAINDRESS. Haymaker Sports, Inc. SN 312,155. Pub. 4-8-69. Filed 11-14-68.
- 875,200. BLU-FLEX. Jomac-North, Inc. SN 313,474. Pub. 6-3-69. Filed 12-3-68.
- 875,201. LADY LEE. The H. D. Lee Company, Inc. SN 314,575. Pub. 6-3-69. Filed 12-16-68.
- 875,202. LENITA. Lucky Stores, Inc. SN 317,425. Pub. 6-3-69. Filed 1-24-69.

**Class 40 — Fancy Goods, Furnishings, and Notions**

- 875,035. (See Class 19 for this trademark.)
- 875,203. CURTILON. Helene Curtis Industries, Inc. SN 306,486. Pub. 6-3-69. Filed 9-3-68.
- 875,204. NATURE BLEND. Helene Curtis Industries, Inc. SN 306,487. Pub. 6-3-69. Filed 9-3-68.
- 875,205. HEAVENLY CREATIONS. Heavenly Creations, Inc. SN 307,931. Pub. 6-3-69. Filed 9-23-68.

**Class 41 — Canes, Parasols, and Umbrellas**

- 875,206. STOWAWAY. Telesco Brophey Limited. SN 303,079. Pub. 6-3-69. Filed 7-18-68.
- 875,207. COUNTESS MARA. Countess Mara, Inc. SN 311,468. Pub. 6-3-69. Filed 11-6-68.
- 875,208. CORONET DESIGN. Countess Mara, Inc. SN 311,470. Pub. 6-3-69. Filed 11-6-68.

**Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

- 875,035. (See Class 19 for this trademark.)
- 875,209. ACRYLIC 73. Commercial Carpet Corporation. SN 291,713. Pub. 6-3-69. Filed 2-23-68.
- 875,210. ETASIL. Etacol International Ltd. SN 291,977. Pub. 6-3-69. Filed 2-27-68.
- 875,211. REFLECTA-GLO. Leo Warkol, Inc. SN 300,026. Pub. 6-3-69. Filed 6-7-68.
- 875,212. PRIMEAU. Fieldcrest Mills, Inc. SN 303,902. Pub. 6-3-69. Filed 7-30-68.
- 875,213. ARRIBEAU. Fieldcrest Mills, Inc. SN 303,903. Pub. 6-3-69. Filed 7-30-68.
- 875,214. STRETCHNIT. Stretchnit of Pennsylvania, Inc., by change of name from Stretchnit, Inc. SN 305,792. Pub. 6-3-69. Filed 8-23-68.
- 875,215. VANGUARD. Viking Carpets, Inc. SN 306,002. Pub. 6-3-69. Filed 8-26-68.
- 875,216. MAXFLOW. Mount Vernon Mills, Inc. SN 307,039. Pub. 6-3-69. Filed 9-10-68.
- 875,217. MAXAIR. Mount Vernon Mills, Inc. SN 307,040. Pub. 6-3-69. Filed 9-10-68.
- 875,218. CAMITALIA. Klopman Mills, Inc. SN 308,492. Pub. 6-3-69. Filed 9-30-68.
- 875,219. DAB 'N DRI. Charles Wayland Stuart, Jr., d.b.a. Stuart Specialty Co. SN 309,311. Pub. 6-3-69. Filed 10-9-68.
- 875,220. ROYAL HINDUSTAN. William Cherkizian & Son. SN 309,662. Pub. 6-3-69. Filed 10-15-68.
- 875,221. PERMASTAT. J. P. Stevens & Co., Inc. SN 309,699. Pub. 6-3-69. Filed 10-15-68.
- 875,222. PETAL SOFT. The Kendall Company. SN 310,108. Pub. 6-3-69. Filed 10-21-68.
- 875,223. WW IN A CIRCLE. Work Wear Corporation. SN 313,218. Pub. 6-3-69. Filed 11-27-68.
- 875,224. HYDROCON. E. T. Barwick Industries, Inc. SN 315,516. Pub. 6-3-69. Filed 1-2-69.



**Class 43—Thread and Yarn**

- 875,225. CIRCULAR DESIGN. Molnlycke Sytrad Aktiebolag. SN 303,920. Pub. 6-3-69. Filed 7-30-68.
- 875,226. KORLOOM. Spartans Industries, Inc. SN 310,144. Pub. 6-3-69. Filed 10-21-68.

**Class 44—Dental, Medical, and Surgical Appliances**

- 875,227. FLOG. Societe Anonyme des Laboratoires Robert & Carriere. SN 293,407. Pub. 6-3-69. Filed 3-15-68.
- 875,228. CULTURETTE. Medical Supply Company (Missouri corporation), assignee of Medical Supply Company (Illinois corporation). SN 293,540. Pub. 6-3-69. Filed 3-18-68.
- 875,229. HEINE. Optotechnik G.m.b.H. SN 303,816. Pub. 6-3-69. Filed 7-29-68.
- 875,230. BEAUTIFUL PEOPLE. Clairol Incorporated. SN 304,761. Pub. 6-3-69. Filed 8-9-68.
- 875,231. SUPERLATEX. Eagle Druggists Supply Co., Inc. SN 305,422. Pub. 6-3-69. Filed 8-19-68.
- 875,232. LIGHTCAST. Solar Laboratories, Inc. SN 310,254. Pub. 6-3-69. Filed 10-22-68.
- 875,233. FACIAL-FIRM. Stimulant Products, Inc. SN 310,365. Pub. 6-3-69. Filed 10-23-68.
- 875,234. BIOGARD. C. R. Bard, Inc. SN 314,040. Pub. 6-3-69. Filed 12-10-68.
- 875,235. HYGEN-AIRE AND DESIGN. Mark VII Industries, Inc. SN 315,805. Pub. 6-3-69. Filed 1-2-69.
- 875,236. RIBBON PACK. Jintan Terumo Co., Ltd. SN 315,926. Pub. 6-3-69. Filed 1-6-69.
- 875,237. ADAPTIC. Johnson & Johnson. SN 316,652. Pub. 6-3-69. Filed 1-15-69.
- 875,238. JET. Jobst Institute, Inc. SN 316,792. Pub. 6-3-69. Filed 1-16-69.
- 875,239. VARI-MIX. The Dentists' Supply Company of New York. SN 316,886. Pub. 6-3-69. Filed 1-17-69.
- 875,240. TEMP-AID. Kay Laboratories, Incorporated. SN 317,063. Pub. 6-3-69. Filed 1-21-69.
- 875,241. CHUCK-IT. Sybron Corporation. SN 317,161. Pub. 6-3-69. Filed 1-21-69.
- 875,242. M MORRISON AND DESIGN. A. F. Morrison Company. SN 318,083. Pub. 6-3-69. Filed 1-31-69.
- 875,243. CYSTOMAT. Leo Pharmaceutical Products Ltd. SN 318,436. Pub. 6-3-69. Filed 2-5-69.

**Class 45—Soft Drinks and Carbonated Waters**

- 875,244. J & R ROOT BEER. James V. Legg, d.b.a. J & R Root Beer and Rocketburger Drive-In. SN 281,587. Pub. 3-4-69. Filed 10-2-67.
- 875,245. ZEBRA MAN. Canada Dry Corporation. SN 304,051. Pub. 6-3-69. Filed 8-1-68.
- 875,246. SOCIETY CLUB. Canada Dry Corporation. SN 304,052. Pub. 6-3-69. Filed 8-1-68.

**Class 46—Foods and Ingredients of Foods**

- 875,022. (See Class 18 for this trademark.)
- 875,024. (See Class 18 for this trademark.)
- 875,247. TEEN BURGER AND DESIGN. Burger Family, Inc. SN 195,203. Pub. 1-19-65. Filed 6-9-1964.
- 875,248. ABRA LA BOCA A CHUPA CHUPS. Enrique Bernat Fontilladosa. SN 233,173. Pub. 6-3-69. Filed 11-23-65.

- 875,249. CG CONTINENTAL GRAIN AND DESIGN. Continental Grain Company. SN 251,107. Pub. 1-10-67. Filed 7-27-66.
- 875,250. SUNRISE FRESH AND DESIGN. The Kroger Co. SN 283,080. Pub. 6-3-69. Filed 1-23-67.
- 875,251. GOLDEN TREE. Savyon Holding SA. SN 264,974. Pub. 6-3-69. Filed 2-17-67.
- 875,252. RANCHO CALIFORNIA AND DESIGN. Rancho California. SN 275,467. Pub. 6-3-69. Filed 7-6-67.
- 875,253. TASTEE. Sea-Snack Company, assignee of Tastee Cocktails, Inc. SN 277,312. Pub. 6-3-69. Filed 8-1-67.
- 875,254. MOLO. Animex Centrala Importowo-Eksportowa Artykulow i Przetworow Pochodzenia Zwierzeczego, d.b.a. Animex. SN 281,951. Pub. 6-3-69. Filed 10-6-67.
- 875,255. TEVIO. Farbenfabriken Bayer Aktiengesellschaft. SN 283,438. Pub. 6-3-69. Filed 10-26-67.
- 875,256. COFFEE OF COLOMBIA AND DESIGN. National Federation of Coffee Growers of Colombia. SN 283,541. Pub. 6-3-69. Filed 10-27-67.
- 875,257. WHITE DAIRY AND DESIGN. White Dairy Company. SN 284,772. Pub. 6-3-69. Filed 11-13-67.
- 875,258. FERGY AND DESIGN. Martin J. Ferguson. SN 289,579. Pub. 6-3-69. Filed 1-25-68.
- 875,259. POND DESIGN. Sunco Corporation, d.b.a. Walden Pond Food. SN 289,727. Pub. 6-3-69. Filed 1-26-68.
- 875,260. BEEF STICK. Richard K. Ransom, d.b.a. Hickory Farms of Ohio. SN 290,646. Pub. 6-3-69. Filed 2-8-68.
- 875,261. CARACHEDDAR. Richard K. Ransom, d.b.a. Hickory Farms of Ohio. SN 290,647. Pub. 6-3-69. Filed 2-8-68.
- 875,262. YANKEE TRADER. Richard K. Ransom, d.b.a. Hickory Farms of Ohio. SN 294,659. Pub. 6-3-69. Filed 4-1-68.
- 875,263. QUIK SPRED. Carnation Company. SN 296,108. Pub. 6-3-69. Filed 4-22-68.
- 875,264. APPLE CRISP DELIGHT. Chicken Delight, Inc. SN 296,810. Pub. 6-3-69. Filed 4-29-68.
- 875,265. ZARTIC AND DESIGN. Zartic Frozen Meats, Inc., by change of name from Randy's Frozen Steaks, Inc. SN 302,445. Pub. 6-3-69. Filed 7-10-68.
- 875,266. MONKEY BAR. General Mills, Inc. SN 303,474. Pub. 6-3-69. Filed 7-24-68.
- 875,267. MRS. FRIDAY'S AND DESIGN. Fish King Processors, Inc. SN 303,668. Pub. 6-3-69. Filed 7-26-68.
- 875,268. SPRING & SUMMER SALAD. Delmonico Foods, Inc. SN 303,779. Pub. 6-3-69. Filed 7-29-68.
- 875,269. FOUR SEASONS DUMPLING-DINNER. Delmonico Foods, Inc. SN 303,781. Pub. 6-3-69. Filed 7-29-68.
- 875,270. WECHSLER. Ph. Wechsler & Son, Inc. SN 303,970. Pub. 6-3-69. Filed 7-31-68.
- 875,271. FRITO BANDITO. Frito-Lay, Inc. SN 304,683. Pub. 6-3-69. Filed 8-8-68.
- 875,272. OREGON BEAUTY. Stayton Canning Company, Co-operative. SN 304,981. Pub. 6-3-69. Filed 8-12-68.
- 875,273. VALLEY MAID. Stayton Canning Company, Co-operative. SN 304,982. Pub. 6-3-69. Filed 8-12-68.
- 875,274. CLAMATO. Duffy-Mott Company, Inc. SN 305,218. Pub. 6-3-69. Filed 8-15-68.
- 875,275. PACCOSEAL. Pacific Aromatics, Inc. SN 305,844. Pub. 6-3-69. Filed 8-16-68.
- 875,276. FRUIT FLIPS. Prince Butter Cookie Co., Inc. SN 305,346. Pub. 6-3-69. Filed 8-16-68.
- 875,277. NORSEA. Iceland Products, Inc. SN 305,741. Pub. 6-3-69. Filed 8-22-68.
- 875,278. PIZZA PUP AND DESIGN. Pizza Dog, Inc. SN 305,975. Pub. 6-3-69. Filed 8-26-68.
- 875,279. TON-HI. Regal Fruit Cooperative. SN 306,075. Pub. 6-3-69. Filed 8-27-68.
- 875,280. CRAB-IN-NET DESIGN. The Blue Channel Corporation. SN 306,426. Pub. 6-3-69. Filed 9-3-68.
- 875,281. CRABIAR. The Blue Channel Corporation. SN 306,453. Pub. 6-3-69. Filed 9-3-68.
- 875,282. RITE DELITE. Bakers Franchise Corp. SN 307,295. Pub. 6-3-69. Filed 9-13-68.

**Class 50—Merchandise Not Otherwise Classified**

- 875,283. FREE 'N EASY. Bonwit Laboratories, Inc. SN 307,416. Pub. 6-3-69. Filed 9-16-68.
- 875,284. E-Z SERV. Vroman Foods, Inc. SN 307,524. Pub. 6-3-69. Filed 9-16-68.
- 875,285. KIKA. Star Bakeries, Inc. SN 307,536. Pub. 6-3-69. Filed 9-17-68.
- 875,286. STALEY AND DESIGN. A. E. Staley Manufacturing Company. SN 307,684. Pub. 6-3-69. Filed 9-18-68.
- 875,287. MEAL-IN-A-GLASS. General Foods Corporation. SN 308,202. Pub. 6-3-69. Filed 9-25-68.
- 875,288. PROTEX. Riviana Foods Inc. SN 308,813. Pub. 6-3-69. Filed 10-3-68.
- 875,289. IT SINGS WITH FLAVOR. Southland Coffee Company. SN 308,928. Pub. 6-3-69. Filed 10-4-68.
- 875,290. FANCY FREE. Thompson's Dairy, Inc., d.b.a. Washington Dairy Foods and Thompson's Honor Dairy. SN 309,492. Pub. 6-3-69. Filed 10-11-68.
- 875,291. GOETZE AND DESIGN. Albert F. Goetze, Incorporated. SN 309,567. Pub. 6-3-69. Filed 10-14-68.
- 875,292. HIGH ON THE HOG AND DESIGN. Chambers-Godfrey Manufacturing Company, d.b.a. Marteen Country Hams. SN 309,659. Pub. 6-3-69. Filed 10-15-68.
- 875,293. RESOURCE. The Dietene Company. SN 309,849. Pub. 6-3-69. Filed 10-17-68.
- 875,294. HUMAN AND MACHINE DESIGN. Howard W. Niswonger. SN 310,245. Pub. 6-3-69. Filed 10-22-68.
- 875,295. POTATO FLUFF. Anderson, Clayton & Co. SN 310,532. Pub. 6-3-69. Filed 10-25-68.
- 875,296. WONDER. ITT Continental Baking Company. SN 310,663. Pub. 6-3-69. Filed 10-28-68.
- 875,297. CANDY DISH. Brock Candy Company. SN 310,846. Pub. 6-3-69. Filed 10-30-68.
- 875,298. UMBRELLA GIRL DESIGN. Morton International, Inc. SN 311,651. Pub. 6-3-69. Filed 11-8-68.
- 875,299. THE MORTON GIRL AND UMBRELLA GIRL DESIGN. Morton International, Inc. SN 311,652. Pub. 6-3-69. Filed 11-8-68.
- 875,300. SURPRISE POP. Standex Corporation. SN 312,269. Pub. 6-3-69. Filed 11-15-68.
- 875,301. ATLAS WE SERVE THE WORLD AND DESIGN. Ralston Purina Company. SN 313,477. Pub. 6-3-69. Filed 12-3-68.
- 875,302. G. General Mills, Inc. SN 318,000. Pub. 6-3-69. Filed 1-31-69.
- 875,035. (See Class 19 for this trademark.)
- 875,309. CRES-COR. Crescent Metal Products, Inc. SN 300,337. Pub. 6-3-69. Filed 6-13-68.
- 875,310. SILLY SIPPER. Barcar Enterprises, Inc. SN 302,382. Pub. 1-21-69. Filed 7-10-68.
- 875,311. "TRAIL-BLAZ-R." Carl F. Seitz. SN 302,529. Pub. 6-3-69. Filed 7-11-68.
- 875,312. BOND TWIST. Continental Can Company, Inc. SN 306,884. Pub. 6-3-69. Filed 9-9-68.
- 875,313. SHU MATE AND DESIGN. Mate Plastics Corp. SN 307,748. Pub. 6-3-69. Filed 9-19-68.
- 875,314. STA-PUT AND DESIGN. Sta-Put Enterprises Incorporated. SN 311,413. Pub. 6-3-69. Filed 11-5-68.
- 875,315. SURE-TWIST. Crown Cork & Seal Company, Inc. SN 312,228. Pub. 6-3-69. Filed 11-14-68.
- 875,316. ASSEMBLAGE. Jerard Les, Inc. SN 312,779. Pub. 6-3-69. Filed 11-21-68.
- 875,317. POLYTUBE. Polytup Corporation. SN 316,870. Pub. 6-3-69. Filed 1-17-69.
- 875,035. (See Class 19 for this trademark.)
- 875,318. SHALIMAR. Guerlain, Inc. SN 242,816. Pub. 6-3-69. Filed 4-6-66.
- 875,319. LOVERLY. Rawson Drug and Sundry Company, Inc. SN 269,100. Pub. 6-3-69. Filed 4-13-67.
- 875,320. CREME UNDERGLOW. Borden, Inc., by change of name from The Borden Company. SN 277,820. Pub. 4-16-68. Filed 8-8-67.
- 875,321. PIVERLORD. L. T. Piver S.A., by change of name from Parfumerie L. T. Piver. SN 282,474. Pub. 6-3-69. Filed 10-13-67.
- 875,322. SSK AND DESIGN. S. S. Kresge Company. SN 284,091. Pub. 6-3-69. Filed 11-3-67.
- 875,323. O DE LANCOME. Lancôme S.A. SN 285,559. Pub. 6-3-69. Filed 11-24-67.
- 875,324. FORTIFY. Max Factor & Co. SN 285,568. Pub. 6-3-69. Filed 11-24-67.
- 875,325. SHOCKING DE SCHIAPARELLI POWDER POUF. Parfums Schiaparelli, Inc. SN 287,827. Pub. 6-3-69. Filed 12-29-67.
- 875,326. MESMEREXES. Richard Hudnut. SN 288,954. Pub. 6-3-69. Filed 1-16-68.
- 875,327. HAPPY FACE AND DESIGN. The Gillette Company, d.b.a. The Toni Company. SN 290,281. Pub. 6-3-69. Filed 2-5-68.
- 875,328. TURSESA. Mardora, Inc. SN 290,504. Pub. 6-3-69. Filed 2-7-68.
- 875,329. MAR DORA. Mardora, Inc. SN 290,630. Pub. 6-3-69. Filed 2-8-68.
- 875,330. TAM O' SHANTER. Avon Products, Inc. SN 291,345. Pub. 6-3-69. Filed 2-19-68.
- 875,331. PUFF PUFF. Elizabeth Arden Sales Corporation, d.b.a. Elizabeth Arden. SN 299,334. Pub. 6-3-69. Filed 5-29-68.
- 875,332. MONTAGE. Lubin Parfums, Inc. SN 300,363. Pub. 6-3-69. Filed 6-13-68.
- 875,333. SUDDEN SET. American Home Products Corporation. SN 300,672. Pub. 6-3-69. Filed 6-18-68.
- 875,334. THOROUGHbred. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company. SN 301,001. Pub. 6-3-69. Filed 6-20-68.
- 875,335. PATRIOT. American Home Products Corporation. SN 304,749. Pub. 6-3-69. Filed 8-9-68.

**Class 47—Wines**

- 875,303. EAGLE CREST DESIGN. Contopoulos Brothers, Ltd. SN 275,836. Pub. 6-3-69. Filed 7-12-67.
- 875,304. SAINTE-ROSE. Remy-Pannier. SN 285,763. Pub. 6-3-69. Filed 11-28-67.

**Class 48—Malt Beverages and Liquors**

- 875,305. CULEMBORG AND DESIGN. Culemborg Exploitation Maatschappij N.V. SN 276,005. Pub. 6-3-69. Filed 7-14-67.

**Class 49—Distilled Alcoholic Liquors**

- 875,306. OLD BOURBON HOUSE AND DESIGN. Charles Jacquelin et Cie., Inc. SN 282,243. Pub. 3-26-68. Filed 10-11-67.
- 875,307. DARK FIRE. Edward Young & Company Limited. SN 305,775. Pub. 6-3-69. Filed 8-22-68.
- 875,308. TOUSSAINT L'OUVERTURE. Guild Wine Co., d.b.a. Guild Brandy Cellars. SN 317,798. Pub. 6-3-69. Filed 1-29-69.



- 875,336. FEMININETY. Consumer Products Inc. SN 306,342. Pub. 6-3-69. Filed 8-30-68.
- 875,337. KAN. The Mennen Company. SN 306,387. Pub. 6-3-69. Filed 8-30-68.
- 875,338. HORSE GLEAM. Ralston Purina Company. SN 308,069. Pub. 6-3-69. Filed 9-5-68.
- 875,339. CHIARO. Lanvin-Charles of the Ritz, Inc. SN 309,329. Pub. 6-3-69. Filed 10-10-68.
- 875,340. EYES OFF. The Sovera Company. SN 310,425. Pub. 6-3-69. Filed 10-24-68.

## Class 52—Detergents and Soaps

- 875,035. (See Class 19 for this trademark.)
- 875,341. SHOW CAR. Michigan Hot Rod Association. SN 285,439. Pub. 6-3-69. Filed 11-22-67.
- 875,342. MAGI-KLEEN. Roberts & Porter, Inc. SN 292,298. Pub. 6-3-69. Filed 3-1-68.
- 875,343. CLEVE-TEK FTC-6. Cleveland Technical Center, Inc. SN 295,309. Pub. 6-3-69. Filed 4-10-68.
- 875,344. FTC-6. Cleveland Technical Center, Inc. SN 295,310. Pub. 6-3-69. Filed 4-10-68.
- 875,345. WICKER. Chesebrough-Pond's Inc. SN 309,421. Pub. 6-3-69. Filed 10-11-68.
- 875,346. MERVILLE. Mercantile Stores Company, Inc. SN 311,790. Pub. 6-3-69. Filed 11-12-68.
- 875,347. STON-YL. Multi-Care Corporation. SN 318,007. Pub. 6-3-69. Filed 1-31-69.

## Service Marks

## Class 100—Miscellaneous

- 875,348. CULPEPPER'S PLANTATION PIT BARBECUE AND DESIGN. Edith Culpepper, executrix of the estate of Joseph Culpepper, deceased, assignee of Joseph Culpepper. SN 249,508. Pub. 6-3-69. Filed 7-5-66.
- 875,349. TREES BY WIRE ETC. AND DESIGN. Kirk M. Dodge. SN 282,065. Pub. 6-3-69. Filed 10-9-67.
- 875,350. TEEN CHALLENGE AND DESIGN. The General Council of the Assemblies of God. SN 291,316. Pub. 6-3-69. Filed 2-19-68.
- 875,351. BOSTROM. Universal Oil Products Company, d.b.a. UOP Bostrom Division. SN 291,452. Pub. 6-3-69. Filed 2-19-68.
- 875,352. AERO. American District Telegraph Company. SN 299,194. Pub. 6-3-69. Filed 5-28-68.
- 875,353. MILLOVER. Agway, Inc. SN 300,239. Pub. 6-3-69. Filed 6-12-68.
- 875,354. AMERICAN-ITALIAN HALL OF FAME. Michael G. Iacocca. SN 301,847. Pub. 6-3-69. Filed 7-2-68.
- 875,355. THE ONLY PLACE. The Only Place, Inc. SN 304,705. Pub. 6-3-69. Filed 8-8-68.
- 875,356. REDI-CARE. Redi-Care Corporation. SN 308,354. Pub. 6-3-69. Filed 9-27-68.
- 875,357. ALICE'S WONDERFUL KITCHEN AND DESIGN. Restaurant Associates Industries, Inc. SN 308,998. Pub. 6-3-69. Filed 10-7-68.
- 875,358. ALICE'S WONDERFUL KITCHEN. Restaurant Associates Industries, Inc. SN 309,208. Pub. 6-3-69. Filed 10-9-68.
- 875,359. BIG ALICE'S KITCHEN AND DESIGN. Restaurant Associates Industries, Inc. SN 312,696. Pub. 6-3-69. Filed 11-20-68.
- 875,360. BUCKAROO STEAK RANCH AND BULL DESIGN. Buckaroo Steak Ranches, Inc. SN 318,503. Pub. 6-3-69. Filed 2-6-69.

## Class 101—Advertising and Business

- 875,361. WHITE CROSS AND DESIGN. White Cross Stores, Inc., by change of name from A. Robinson & Co., Inc. SN 192,525. Pub. 10-19-65. Filed 5-1-64.
- 875,362. QUIK PRINT ETC. AND DESIGN. Quik Print, Incorporated. SN 254,628. Pub. 4-8-69. Filed 9-16-66.
- 875,363. FCP AND DESIGN. Foreign Car Parts Int. of New England. SN 265,058. Pub. 6-3-69. Filed 2-20-67.
- 875,364. HOLLY HOUSE AND DESIGN. Duane L. Gilliland, d.b.a. Holly House. SN 268,308. Pub. 6-3-69. Filed 4-4-67.
- 875,365. LINPRINTS. Linn Camera Shop, Inc. MULTIPLE CLASS (Classes 101 and 106). SN 273,084. Pub. 6-3-69. Filed 6-5-67.
- 875,366. CAC AND DESIGN. Computer Aid Companies, Inc. SN 276,789. Pub. 6-3-69. Filed 7-24-67.
- 875,367. BESTMART. Bestmart, Inc. SN 279,526. Pub. 6-3-69. Filed 9-1-67.
- 875,368. TWO GUYS. Vornado, Inc. SN 281,145. Pub. 6-3-69. Filed 9-25-67.
- 875,369. VORNADO. Vornado, Inc. SN 281,146. Pub. 6-3-69. Filed 9-25-67.
- 875,370. TWO GUYS AND DESIGN. Vornado, Inc. SN 282,153. Pub. 6-3-69. Filed 10-9-67.
- 875,371. STYLIZED W. Robert B. Horton, d.b.a. Wood-Lam Structures. SN 282,585. Pub. 6-3-69. Filed 10-16-67.
- 875,372. AMERICAN BOWLING SWEEPSTAKES AND DESIGN. American Bowling Sweepstakes, Inc. SN 282,664. Pub. 6-3-69. Filed 10-17-67.
- 875,373. DESIGN OF A HEXAGON ENCLOSING AN ARROWHEAD. Progress Heat Sealing Co., Inc. SN 287,830. Pub. 6-3-69. Filed 12-29-67.
- 875,374. HI MARK DESIGN. K-H Associates of Evansville, Inc., d.b.a. Great States Personnel System. SN 288,327. Pub. 6-3-69. Filed 1-8-68.
- 875,375. PS DESIGN. Pharmstat, Inc. SN 295,164. Pub. 6-3-69. Filed 4-8-68.
- 875,376. CHILD WORLD. Child World, Inc. SN 298,924. Pub. 6-3-69. Filed 5-23-68.
- 875,377. WELCOME CHECK. Telecredit, Inc. SN 299,386. Pub. 6-3-69. Filed 5-29-68.
- 875,378. DI AND GLOBE DESIGN. Drake International Services Limited. SN 300,692. Pub. 6-3-69. Filed 6-18-68.
- 875,379. PATHMAKERS. Margaret B. Lambie. SN 301,349. Pub. 6-3-69. Filed 6-25-68.
- 875,380. DUPLI-MATCH. Alan Drey Company, Inc. SN 301,824. Pub. 6-3-69. Filed 7-2-68.
- 875,381. SF AND DESIGN. Sales Force, Inc. SN 306,037. Pub. 6-3-69. Filed 8-27-68.
- 875,382. ICA. Information Company of America. SN 308,351. Pub. 6-3-69. Filed 9-27-68.
- 875,383. PET BAZAAR. Toledo Broadway Distributors, Inc. SN 308,754. Pub. 6-3-69. Filed 10-3-68.
- 875,384. FINANCIAL SEARCH ASSOCIATES. R.E.L. Enterprises, Inc. SN 313,386. Pub. 6-3-69. Filed 12-2-68.
- 875,385. MISCELLANEOUS DESIGN. All Tapes Distributing Inc. SN 315,001. Pub. 6-3-69. Filed 12-23-68.

## Class 102—Insurance and Financial

- 875,386. YOUR PROTECTION IS OUR PROFESSION. Merchants Mutual Agency, Inc. SN 271,818. Pub. 6-3-69. Filed 5-18-67.
- 875,387. FINANCIAL ARCHITECTURE AND DESIGN. M. J. Huber Corporation. SN 296,538. Pub. 6-3-69. Filed 4-25-68.
- 875,388. ALPHA AND DESIGN. Alpha Research Corporation. SN 301,811. Pub. 6-3-69. Filed 7-2-68.
- 875,389. TRIANGLE DESIGN WITH LETTER S. The Standard of America Life Insurance Company. SN 304,507. Pub. 6-3-69. Filed 8-6-68.

- 875,390. 1N. First National Bank of Toledo. SN 306,472. Pub. 6-3-69. Filed 9-3-68.
- 875,391. NATIONAL BANK OF NORTH AMERICA AND DESIGN. National Bank of North America. SN 307,124. Pub. 6-3-69. Filed 9-11-68.
- 875,392. FAMILY RESERVE CHECKING ACCOUNT. Broadway Bank and Trust Company. SN 308,183. Pub. 6-3-69. Filed 9-25-68.

## Class 103—Construction and Repair

- 875,393. GLOBAL MARINE. Global Marine Inc. SN 291,151. Pub. 6-3-69. Filed 2-15-68.
- 875,394. COLFORM. Omark Industries, Inc. SN 292,807. Pub. 6-3-69. Filed 3-8-68.
- 875,395. ORKINGUARD. Orkin Exterminating Company, Inc. SN 300,738. Pub. 6-3-69. Filed 6-18-68.
- 875,396. FIGURE OF MAN WITH MAGNIFYING GLASS AND TEST TUBE. Marvin H. Allred, d.b.a. Allred's Pool Supplies, assignee of Allred's Pool Supplies, Inc. SN 304,567. Pub. 6-3-69. Filed 8-7-68.

## Class 105—Transportation and Storage

- 875,397. SCANLAKE LINE. Great Lakes Overseas, Inc. SN 295,329. Pub. 6-3-69. Filed 4-10-68.
- 875,398. CF DESIGN. Consolidated Freightways Corporation of Delaware. SN 302,491. Pub. 6-3-69. Filed 7-11-68.
- 875,399. MISCELLANEOUS DESIGN. Continental Air Lines, Inc. SN 304,056. Pub. 6-3-69. Filed 8-1-68.
- 875,400. RED BALL INTERNATIONAL ETC. AND DESIGN. American Red Ball Transit Company, Inc. SN 307,611. Pub. 6-3-69. Filed 9-18-68.

## Class 106—Material Treatment

- 875,365. (See Class 101 for this trademark.)
- 875,401. THE FRANKLIN MINT. The Franklin Mint, Inc., by change of name from General Numismatics Corporation. SN 286,925. Pub. 6-3-69. Filed 12-14-67.

## SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

### SECTION 1

(Combined Certificates)

- 875,406. Ann L. Benson, d.b.a. A. L. Benson & Co., Omaha, Nebr. SN 284,329. Filed P.R. 11-8-67; Am. S.R. 12-19-68.



### Class 39—Clothing

For Scarves, Berets, Veils, Hair Nets, Night Caps and Golf Caps (Int. Cl. 25).

### Class 40—Fancy Goods, Furnishings, and Notions

For Head Bands, Hair Bows, Hair Ribbons, Barrettes, and Hair Jewelry and Tiaras of Non-Precious Metals and Non-Precious Stones (Int. Cl. 26).

First use at least as early as Sept. 12, 1967.

### SECTION 2

## Class 2—Receptacles

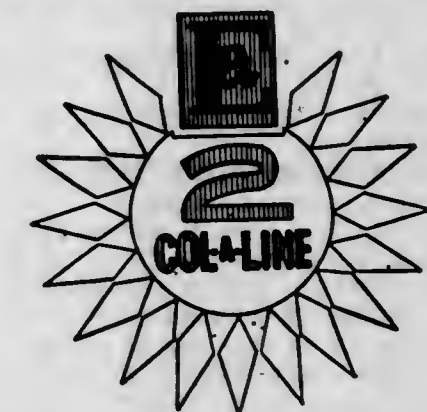
- 875,402. Boyertown Packaging Service Corp., Boyertown, Pa. SN 298,892. Filed P.R. 5-23-68; Am. S.R. 4-9-69.

# TUFF-BAGS

For Plastic Bags for Food and Utility Uses (Int. Cl. 20).  
First use Feb. 14, 1968.

## Class 11—Inks and Inking Materials

- 875,403. Eaton Allen Corp., Brooklyn, N.Y. SN 258,792. Filed P.R. 11-16-66; Am. S.R. 5-5-69.



The drawing is lined for the color red, but color is not claimed as part of the mark.

For Rubber Stamping Accessories—Namely, Stamp Pads, Stamp Pad Ink, and Combination Kits of Stamp Pads and Ink Therefor (Int. Cl. 16).

First use Sept. 29, 1966.



### Class 13—Hardware and Plumbing and Steam-Fitting Supplies

875,404. D & S Plug Corporation, North Bellmore, N.Y. SN 282,987. Filed P.R. 10-20-67; Am. S.R. 6-4-69.

### DRIPLESS STRIPLESS

For Plugs for Automobile Crankcases and Other Liquid Containers (Int. Cl. 12).  
First use July 1966.

### Class 39—Clothing

875,406. See Section 1 (Combined Certificate).  
875,405. Henson-Kickernick, Inc., Greenville, Tex. SN 277,047. Filed 7-28-67; Am. S.R. 6-5-69.

### STEP IN BRA

For Brassieres (Int. Cl. 25).  
First use Jan. 27, 1967.

875,407. The Berger Brothers Company, New Haven, Conn. SN 287,877. Filed P.R. 1-2-68; Am. S.R. 5-21-69.

*Designers*  
\*\*\* U.S.A.

For Women's Slips, Lingerie, Girdles, and Brassieres (Int. Cl. 25).  
First use Dec. 22, 1967.

875,408. Barrow Manufacturing Company, Winder, Ga. SN 295,503. Filed P.R. 4-12-68; Am. S.R. 5-14-69.

### 4-EVER-WEAR

For Boys' and Girls' Jeans and Outer Pants (Int. Cl. 25).  
First use Mar. 1, 1968.

## TRADEMARK REGISTRATIONS RENEWED

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| 32,516. "BLUE RIBBON" ETC. AND DESIGN. Cl. 46 (Int. Cl. 30). 2-21-1899.      | 258,073. FLEXLINED. Cl. 37 (Int. Cl. 16). 6-25-29.                       |
| 74,010. "MILL 630" AND ROPE KNOT DESIGN. Cl. 37 (Int. Cl. 16). 6-8-09.       | 258,376. DASH. Cl. 51 (Int. Cl. 3). 7-2-29.                              |
| 74,724. "POSLAM" AND DESIGN. Cl. 18 (Int. Cl. 5). 8-3-09.                    | 258,583. CNX (MONOGRAM). Cl. 33 (Int. Cl. 11). 7-8-29.                   |
| 74,832. "NESTLE'S CHOCOLAT" ETC. AND DESIGN. Cl. 46 (Int. Cl. 30). 8-10-09.  | 259,142. "THE FRUIT DOCTOR" AND DRAWING. Cl. 23 (Int. Cl. 7). 7-23-29.   |
| 75,545. ALBONE. Cl. 6 (Int. Cl. 3). 10-12-09.                                | 260,145. "NAPA GOAT" AND DRAWING. Cl. 39 (Int. Cl. 25). 8-20-29.         |
| 75,881. BO-CAR-AL. Cl. 18 (Int. Cl. 5). 11-23-09.                            | 260,554. AD-TYPE. Cl. 26 (Int. Cl. 1). 8-27-29.                          |
| 244,064. "FUL-LUMINA" ENCLOSED BY OVAL DESIGN. Cl. 16 (Int. Cl. 2). 7-10-28. | 260,622. "IRONCLAD" AND DESIGN. Cl. 42 (Int. Cl. 24). 8-27-29.           |
| 250,662. FULLER. Cl. 33 (Int. Cls. 19 and 21). 12-11-28.                     | 261,045. GLORY OF THE SUN. Cl. 51 (Int. Cl. 3). 9-3-29.                  |
| 252,487. HEXAGON (DESIGN). Cl. 6 (Int. Cl. 5). 2-12-29.                      | 262,256. "SINGER" AND DRAWING. Cl. 46 (Int. Cl. 31). 10-1-29.            |
| 255,121. BROOKWOOD. Cl. 39 (Int. Cl. 25). 4-16-29.                           | 262,598. TISHU-TIES. Cl. 7 (Int. Cl. 16). 10-15-29.                      |
| 258,610. GUSTAVE AUGUST FICKER. Cl. 36 (Int. Cl. 15). 5-21-29.               | 262,674. TANGITE. Cl. 6 (Int. Cl. 1). 10-22-29.                          |
| 258,633. OLD ANTIQUE. Cl. 45 (Int. Cl. 32). 5-21-29.                         | 262,781. WATERITE. Cl. 6 (Int. Cl. 1). 10-22-29.                         |
| 257,757. AMBERLITE. Cl. 1 (Int. Cl. 1). 6-18-29.                             | 262,930. "LA PALOMA" AND DESIGN. Cl. 46 (Int. Cls. 29 and 30). 10-29-29. |
| 258,058. JACQUELINE HOSIERY. Cl. 39 (Int. Cl. 25). 6-25-29.                  | 262,948. "ELEVETTE." Cl. 23 (Int. Cl. 7). 10-29-29.                      |
|  | 262,949. INCLIN-ATOR. Cl. 23 (Int. Cl. 7). 10-29-29.                     |
|  | 263,268. BUTTERFLY. Cl. 23 (Int. Cl. 8). 11-5-29.                        |

875,409. Block-Southland Sportswear, Inc., Wilmington, N.C. SN 309,838. Filed P.R. 10-17-68; Am. S.R. 5-23-69.

*Lord Benson*

"Lord Benson" is fanciful and is not the name of any known living individual.

For Men's, Women's, Boys', Girls' and Children's Outer Shirts, Pajamas, Undershirts, Undershorts, Jackets, Slacks, Night Shirts, Sport Shirts, Dress Shirts, Sweaters, Knit Shirts and Bathrobes (Int. Cl. 25).  
First use Apr. 18, 1966.

875,410. Red Wing Shoe Company, Inc., Red Wing, Minn. SN 313,978. Filed P.R. 12-9-68; Am. S.R. 4-23-69.

### WHERE FIT COMES FIRST

For Shoes (Int. Cl. 25).  
First use 1963.

### Class 40—Fancy Goods, Furnishings, and Notions

875,406. See Section 1 (Combined Certificate).

875,411. Ezidew Corp., New York, N.Y. SN 282,559. Filed P.R. 10-16-67; Am. S.R. 4-9-69.

### NEET GRIP

For Hair Fasteners (Int. Cl. 26).  
First use Sept. 2, 1967.

875,412. Scott/Franklin International, Hollywood, Calif. SN 294,415. Filed P.R. 3-28-68; Am. S.R. 5-2-69.

*Under-Lash*

For Artificial Eyelashes and Kits Containing Artificial Eyelashes and Adhesive and Cleanser Therefor (Int. Cl. 26).  
First use Mar. 1, 1968.

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|--|---|
| 442,672. GILBARCO. Cl. 23 (Int. Cl. 7). 5-10-49.                               | 514,131. BOTTICELLI. Cl. 51 (Int. Cl. 3). 8-23-49.                            |
| 502,813. A-N-L. Cl. 16 (Int. Cl. 2). 10-12-48.                                 | 514,258. ARDEN AND DESIGN. Cl. 51 (Int. Cl. 3). 8-23-49.                      |
| 504,742. FROZEN DRUMSTICK ETC. AND DESIGN. Cl. 46 (Int. Cl. 30). 12-14-48.     | 514,260. VOID. Cl. 51 (Int. Cl. 5). 8-23-49.                                  |
| 508,191. ATLAS. Cl. 42 (Int. Cl. 24). 4-5-49.                                  | 514,482. HANOVER. Cl. 39 (Int. Cl. 25). 8-30-49.                              |
| 508,193. DURO. Cl. 42 (Int. Cl. 24). 4-5-49.                                   | 514,586. UP AND UP. Cl. 38 (Int. Cl. 16). 8-30-49.                            |
| 508,194. FEDERAL. Cl. 42 (Int. Cl. 24). 4-5-49.                                | 515,241. SUPER VISIBLE AND DESIGN. Cl. 37 (Int. Cl. 16). 9-20-49.             |
| 508,195. IMPREGLIN. Cl. 42 (Int. Cl. 24). 4-5-49.                              | 515,264. SUNNEN. Cl. 23 (Int. Cls. 7 and 8). 9-20-49.                         |
| 508,196. PARCHMENT. Cl. 42 (Int. Cl. 24). 4-5-49.                              | 515,381. NO-HIKE. Cl. 39 (Int. Cl. 25). 9-20-49.                              |
| 508,197. VELLTEX. Cl. 42 (Int. Cl. 24). 4-5-49.                                | 515,382. SCOTTEDEL. Cl. 23 (Int. Cl. 7). 9-20-49.                             |
| 510,071. PUPPY LOVE. Cl. 46 (Int. Cl. 31). 5-24-49.                            | 515,738. INTER-PLAST. Cl. 16 (Int. Cl. 2). 9-27-49.                           |
| 510,689. DELVOL. Cl. 18 (Int. Cl. 5). 6-7-49.                                  | 515,739. INTER-TEK. Cl. 16 (Int. Cl. 2). 9-27-49.                             |
| 510,908. LAFAYETTE. Cl. 37 (Int. Cl. 16). 6-14-49.                             | 515,755. GARLAND. Cl. 27 (Int. Cl. 14). 9-27-49.                              |
| 511,078. C & O. Cl. 105 (Int. Cl. 39). 6-14-49.                                | 515,865. KLIX AND DESIGN. Cl. 52 (Int. Cl. 3). 10-4-49.                       |
| 511,079. SLEEP LIKE A KITTEN. Cl. 105 (Int. Cl. 39). 6-14-49.                  | 515,885. COLUMBIA. Cl. 19 (Int. Cl. 12). 10-4-49.                             |
| 511,080. CHESSIE. Cl. 105 (Int. Cl. 39). 6-14-49.                              | 515,959. KHAKI KRAFT. Cl. 2 (Int. Cl. 16). 10-4-49.                           |
| 511,081. SLEEPING KITTEN (DESIGN). Cl. 105 (Int. Cl. 39). 6-14-49.             | 515,971. DUPLICAST. Cl. 23 (Int. Cl. 6). 10-4-49.                             |
| 511,082. 3 KITTENS SLEEPING (DESIGN). Cl. 105 (Int. Cl. 39). 6-14-49.          | 516,002. SHADY-NOOK. Cl. 32 (Int. Cl. 24). 10-4-49.                           |
| 511,083. PICTURE OF A KITTEN. Cl. 105 (Int. Cl. 39). 6-14-49.                  | 516,129. "TOPS 'EM ALL." Cl. 45 (Int. Cl. 32). 10-4-49.                       |
| 511,127. STAN-TONE. Cl. 6 (Int. Cl. 2). 6-21-49.                               | 516,249. MANCHEX. Cl. 21 (Int. Cl. 9). 10-11-49.                              |
| 511,287. ETTICO. Cl. 21 (Int. Cl. 9). 6-21-49.                                 | 516,358. PIGGY AND DESIGN. Cl. 46 (Int. Cl. 31). 10-18-49.                    |
| 511,361. DUNCAN. Cl. 39 (Int. Cl. 25). 6-21-49.                                | 516,448. DURADYE. Cl. 39 (Int. Cl. 25). 10-18-49.                             |
| 511,410. SKINNER. Cl. 42 (Int. Cl. 24). 6-21-49.                               | 516,447. PERMA CHROME. Cl. 39 (Int. Cl. 25). 10-18-49.                        |
| 511,589. TDA IN A TRIANGLE. Cl. 19 (Int. Cl. 12). 6-28-49.                     | 516,448. PERMADYE. Cl. 39 (Int. Cl. 25). 10-18-49.                            |
| 511,691. DUNCAN. Cl. 26 (Int. Cl. 9). 6-28-49.                                 | 516,454. NO FROST. Cl. 6 (Int. Cl. 1). 10-18-49.                              |
| 511,867. "CHICAGO." Cl. 22 (Int. Cl. 28). 7-5-49.                              | 516,464. AMERICAN BRAKEBLOK. Cl. 35 (Int. Cl. 12). 10-18-49.                  |
| 512,080. LS AND STAR. Cl. 14 (Int. Cl. 1). 7-12-49.                            | 516,481. CHRISTY'S. Cl. 39 (Int. Cl. 25). 10-18-49.                           |
| 512,097. PLACERVILLE TAHOE AND DESIGN. Cl. 46 (Int. Cl. 31). 7-12-49.          | 516,495. BARCLAY. Cl. 39 (Int. Cl. 25). 10-18-49.                             |
| 512,111. SWP COVER THE EARTH AND DESIGN. Cl. 12 (Int. Cls. 2 and 19). 7-12-49. | 516,557. GARCREST AND DESIGN. Cl. 39 (Int. Cl. 25). 10-18-49.                 |
| 512,134. KENMORE. Cl. 15 (Int. Cl. 4). 7-12-49.                                | 516,584. KITCHEN KLENZER. Cl. 52 (Int. Cl. 3). 10-18-49.                      |
| 512,149. FASCUT. Cl. 23 (Int. Cl. 7). 7-12-49.                                 | 516,701. TALON. Cl. 22 (Int. Cls. 20 and 28). 10-25-49.                       |
| 512,345. TRIPLEYE. Cl. 13 (Int. Cl. 6). 7-19-49.                               | 516,712. ALPHA. Cl. 37 (Int. Cl. 16). 10-25-49.                               |
| 512,346. TWINEYE. Cl. 13 (Int. Cl. 6). 7-19-49.                                | 516,909. ARMAND. Cl. 51 (Int. Cl. 3). 10-25-49.                               |
| 512,429. AMERICAN-TREND. Cl. 32 (Int. Cl. 20). 7-19-49.                        | 516,918. SCHWEITZER. Cl. 37 (Int. Cl. 16). 10-25-49.                          |
| 512,459. PERFECT. Cl. 29 (Int. Cl. 16). 7-19-49.                               | 516,931. STARKIST. Cl. 42 (Int. Cl. 24). 10-25-49.                            |
| 512,531. "WHITE KNIGHT." Cl. 32 (Int. Cl. 20). 7-19-49.                        | 517,131. MINNESOTA VALLEY. Cl. 46 (Int. Cl. 29). 11-1-49.                     |
| 512,874. DESIGN SHOWING VALET. Cl. 39 (Int. Cl. 25). 7-26-49.                  | 517,144. STARR. Cl. 23 (Int. Cl. 21). 11-1-49.                                |
| 513,045. KING COTTON AND DESIGN. Cl. 39 (Int. Cl. 24). 8-2-49.                 | 517,324. DOUBLE GJ AND CROWN GEORG JENSEN INC. Cl. 42 (Int. Cl. 24). 11-8-49. |
| 513,232. COHOES CARRYBAGS. Cl. 2 (Int. Cl. 16). 8-9-49.                        | 517,335. TALON. Cl. 14 (Int. Cl. 6). 11-8-49.                                 |
| 513,783. MISS SWING. Cl. 39 (Int. Cl. 25). 8-16-49.                            | 517,394. WEDGE-ON. Cl. 21 (Int. Cl. 9). 11-8-49.                              |
| 513,975. ORBIT VALVES AND DESIGN. Cl. 13 (Int. Cl. 6). 8-23-49.                | 517,395. LOCKTITE. Cl. 21 (Int. Cl. 9). 11-8-49.                              |
| 514,000. CAMP. Cl. 44 (Int. Cl. 10). 8-23-49.                                  | 517,396. T & B ENGINEERED AND DESIGN. Cl. 21 (Int. Cls. 9 and 11). 11-8-49.   |
| 514,104. NITRAMEX. Cl. 9 (Int. Cl. 13). 8-23-49.                               | 517,408. SAF TO FUSE. Cl. 21 (Int. Cl. 9). 11-8-49.                           |
| 514,129. BCONCUT. Cl. 23 (Int. Cl. 8). 8-23-49.                                | 517,409. PUSHMATIC. Cl. 21 (Int. Cl. 9). 11-8-49.                             |
|  | 517,410. ELECTRO TRACK. Cl. 21 (Int. Cl. 9). 11-8-49.                         |
|  | 517,481. HOT-SHOT. Cl. 21 (Int. Cl. 9). 11-8-49.                              |
|  | 517,533. ADHES-ILLIN. Cl. 18 (Int. Cl. 5). 11-8-49.                           |
|  | 517,604. OLD HARDESTY. Cl. 49 (Int. Cl. 33). 11-15-49.                        |

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| 52,417. COLORED BAND (DESIGN). Cl. 37. 5-8-06.               | 751,899. REBEL. Cl. 7.                         |
| 168,855. REPRESENTATION OF A FISH (DESIGN). Cl. 37. 5-29-23. | 751,903. GRAPHMITE. Cl. 12.                    |
| 266,622. BLITZ. Cl. 4. 1-28-30.                              | 751,907. RIGIDRUG. Cl. 12.                     |
| 400,615. PHILCO. Cl. 2. 3-23-43.                             | 751,908. "ROYAL CORE" AND DESIGN. Cl. 12.      |
| 400,728. AIRLITE. Cl. 42. 3-30-43.                           | 751,911. MIGHTY-PATCH. Cl. 12.                 |
| 401,118. PHILCO. Cl. 7. 4-27-43.                             | 751,914. HI STYLE AND DESIGN. Cl. 12.          |
|  | 751,916. GREENKEEPER. Cl. 13.                  |
|  | 751,932. EL PASO PASTORQUE AND DESIGN. Cl. 15. |
|  | 751,933. CHATELAINE AND DESIGN. Cl. 15.        |
|  | 751,940. DIVARG. Cl. 18.                       |
|  | 751,942. HAEMAZOIDS. Cl. 18.                   |
|  | 751,943. SAVAC. Cl. 18.                        |
|  | 751,950. UTILITAB. Cl. 18.                     |
|  | 751,951. UTILICAP. Cl. 18.                     |
|  | 751,952. MANDETS. Cl. 18.                      |
|  | 751,954. THERA 12-M. Cl. 18.                   |
|  | 751,955. NUTRA-BLEND. Cl. 18.                  |
|  | 751,956. RATSEY VENTURI SPINNAKER. Cl. 19.     |
|  | 751,957. MISCELLANEOUS DESIGN. Cl. 19.         |
|  | 751,959. VESPA JET. Cl. 19.                    |
|  | 751,964. DC AND DESIGN. Cl. 19.                |
|  | 751,967. GEOMETRIC DESIGN. Cl. 19.             |
|  | 751,969. CONESTOGA. Cl. 19.                    |
|  | 751,970. ENCORE. Cl. 20.                       |

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| 751,868. POLY-THANE. Cl. 1.  |
| 751,870. KENRON. Cl. 1.  |
| 751,872. BROIL-ET. Cl. 1.  |
| 751,875. MARK/57. Cl. 2.   |
| 751,876. PEARLECRAFT. Cl. 2.   |
| 751,878. REPRESENTATION OF TWO MEN AND DESIGN. Cl. 3.                          |
| 751,881. SABCO THE QUALITY GOES IN BEFORE THE LABEL GOES ON AND DESIGN. Cl. 6. |
| 751,882. LUPLASTOL. Cl. 6.   |
| 751,884. PAX-CELL. Cl. 6.  |
| 751,894. GOTAN. Cl. 6.   |
| 751,897. HYDRIQUAT. Cl. 6.   |



751,971. POWERTRIM. Cl. 21.  
 751,973. TORNADO. Cl. 21.  
 751,977. DIAL-A-DOZEN. Cl. 21.  
 751,978. ITEK AND DESIGN. Cl. 21.  
 751,983. RAYTECH. Cl. 21.  
 751,982. CERWISTOR. Cl. 21.  
 751,993. CSC. Cl. 21.  
 751,996. VARTALIT AND DESIGN. Cls. 21 and 26.  
 751,999. CHRISTOPHER YORK. Cl. 21.  
 752,000. ECAQ AND DESIGN. Cl. 21.  
 752,001. ACRA SPLIT. Cl. 21.  
 752,006. MR. MIXIT AND DESIGN. Cl. 22.  
 752,007. WIZ-WORD. Cl. 22.  
 752,011. CAPTAIN ACE. Cl. 22.  
 752,014. EEEE. Cl. 23.  
 752,018. MAGNASTATIC AND DESIGN. Cl. 23.  
 752,020. WHISPER-CUT. Cl. 23.  
 752,037. EDVIEW. Cl. 26.  
 752,039. PROFITAKER. Cl. 26.  
 752,049. SIC. Cl. 26.  
 752,056. S & M. Cl. 28.  
 752,061. LR. Cl. 28.  
 752,066. DFJ (MONOGRAM). Cl. 28.  
 752,070. MOLE AND DESIGN. Cl. 28.  
 752,072. ORG. Cl. 28.  
 752,075. SEI. Cl. 28.  
 752,076. BJC AND DESIGN. Cl. 28.  
 752,077. DANC. Cl. 28.  
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 752,091. BIG 3. Cl. 31.  
 752,094. SCOTTY. Cl. 31.  
 752,100. KID-NIK SET. Cl. 32.  
 752,102. PRESTORAY. Cl. 34.  
 752,103. SKY-KOOL. Cl. 34.  
 752,109. KWIK-KLAMP. Cl. 34.  
 752,110. PERIMA-VENT. Cl. 34.  
 752,111. KWIK-VENT. Cl. 34.  
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 752,120. CANDIX. Cl. 36.  
 752,121. SCRAMBLED SING ALONG. Cl. 36.  
 752,122. SHOWCASE. Cl. 36.  
 752,123. KORDEX. Cl. 36.  
 752,126. PROCESS 70. Cl. 36.  
 752,133. GIBSON MEMORY BOOKS . . . DON'T FORGET. Cl. 38.  
 752,134. TRANSISTOR TIPS AND DESIGN. Cl. 38.  
 752,136. TALES OF THE OIL COUNTRY. Cl. 38.

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 752,143. PP AND DESIGN. Cl. 38.  
 752,146. GRID LEAKS. Cl. 38.  
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 752,161. MR. PIMA. Cl. 39.  
 752,162. SLIM-SUIT BY SLACK-EES. Cl. 39.  
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 752,226. PUP-VITA. Cl. 46.  
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 752,246. 3M. Cl. 50.  
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 752,258. NU-LUSTRE AUTOMAGIC SHAMPOO AND DESIGN. Cl. 52.  
 752,259. MAC D. Cl. 52.  
 752,260. POWER-GENT AND DESIGN. Cl. 52.  
 752,261. AVIVA. Cl. 52.  
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 835,953. LEBAN. Cl. 36. 9-26-67.

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AUGUST 19, 1969

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 Abex Corp.: See—  
 American Brake Shoe Co.  
 Accumulatoren-Fabrik Aktiengesellschaft: See—  
 Varta Aktiengesellschaft.  
 Ace Radio Control, Inc., d.b.a. Grid Leaks, Higginsville, Mo. 752,146, can. Cl. 38.  
 Acme Visible Records, Inc., Crozet, Va. 515,241, ren. 8-19-69, Cl. 37.  
 Ad-Kap, Downers Grove, Ill. 752,137, can. Cl. 38.  
 Adran Co., Inc., Dayton, Wash. 875,143, pub. 6-3-69, Cl. 35.  
 Agway, Inc., De Witt, N.Y. 875,353, pub. 6-3-69, Cl. 100.  
 Ahlstrom, A., Osaakeyhtio, Warkaus, Finland. 874,929, pub. 6-3-69, Cl. 2.  
 Air Reduction Co., Inc., New York, N.Y. 875,034, pub. 6-3-69, Cl. 18.  
 Air Reduction Co., Inc., New York, N.Y. 875,132, pub. 6-3-69, Cl. 34.  
 Aktiebolaget Installationsmateriel, Vimmerby, Sweden. 751-992, can. Cl. 21.  
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 Algin Products Corp., to Feedwaters, Inc., New York, N.Y. 262,674, ren. 8-19-69, Cl. 6.  
 Algin Products Corp., to Feedwaters, Inc., New York, N.Y. 262,731, ren. 8-19-69, Cl. 6.  
 All Tapes Distributing Inc., Chicago, Ill. 875,385, pub. 6-3-69, Cl. 101.  
 Allied Chemical Corp., New York, N.Y. 875,024, pub. 6-3-69, Multiple Class (Classes 18 and 46).  
 Allred, Marvin H., d.b.a. Allred's Pool Supplies, Santa Ana, from Allred's Pool Supplies, Inc., Garden Grove, Calif. 875,396, pub. 6-3-69, Cl. 103.  
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 Allred's Pool Supplies, Inc.: See—  
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 Alpha Metals, Inc., Jersey City, N.J. 874,955, pub. 2-25-69, Cl. 6.  
 Alpha Research Corp., Atlanta, Ga. 875,388, pub. 6-3-69, Cl. 102.  
 American Bilrite Rubber Co., Inc., Trenton, N.J. 875,037, pub. 6-3-69, Cl. 20.  
 American Bowling Sweepstakes, Inc., Los Angeles, Calif. 875-372, pub. 6-3-69, Cl. 101.  
 American Brake Shoe Co., to Abex Corp., New York, N.Y. 516,464, ren. 8-19-69, Cl. 35.  
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 American Cyanamid Co., Wayne, N.J. 751,952, can. Cl. 18.  
 American District Telegraph Co., New York, N.Y. 875,049, pub. 6-3-69, Cl. 21.  
 American District Telegraph Co., New York, N.Y. 875,352, pub. 6-3-69, Cl. 100.  
 American Enterprises, Inc., San Mateo, Calif. 752,011, can. Cl. 22.  
 American Home Products Corp., New York, N.Y. 874,998, pub. 6-3-69, Cl. 18.  
 American Home Products Corp., New York, N.Y. 875,020, pub. 6-3-69, Cl. 18.  
 American Home Products Corp., New York, N.Y. 875,333, pub. 6-3-69, Cl. 51.  
 American Home Products Corp., New York, N.Y. 875,335, pub. 6-3-69, Cl. 51.  
 American Hotel Assn. Directory, The, New York, N.Y. 875-167, pub. 6-3-69, Cl. 38.  
 American International Pictures, Los Angeles, Calif. 875,174, pub. 6-3-69, Cl. 88.  
 American Machine & Foundry Co., New York, N.Y. 875,057, pub. 6-3-69, Cl. 22.  
 American Plastics Co., Chicago, Ill. 875,050, pub. 6-3-69, Cl. 21.  
 American Products Co., The, Cincinnati, Ohio. 268,622, can. Cl. 4.  
 American Red Ball Transl. Co., Inc., Indianapolis, Ind. 875,400, pub. 6-3-69, Cl. 105.  
 American Saint Gobain Corp., Kingsport, Tenn. 875,130, pub. 6-3-69, Cl. 33.  
 American Sankyo Corp., New York, N.Y. 875,054, pub. 6-3-69, Cl. 22.  
 American Society of Medical Technologists, The, Houston, Tex. 875,160, pub. 6-3-69, Cl. 38.  
 American Toy & Furniture Co., Inc., Chicago, Ill. 875,063, pub. 6-3-69, Cl. 22.  
 American Uniform Co., Cleveland, Tenn. 875,120, pub. 6-3-69, Cl. 29.  
 Americanmade Plastics, Inc., Ringtown, Pa., from Ideal Toy Corp., Hollis, N.Y. 752,006, can. Cl. 22.  
 Anderson, Clayton & Co., Dallas, Tex. 875,295, pub. 6-3-69, Cl. 46.  
 Anger, Wilhelm, OHG., Traun, Austria. 875,094, pub. 1-21-69, Cl. 26.  
 Animex: See—  
 Animex Centrala Importowo-Eksportowa Artykulow I Przetworow Pochodzenia Zwierzeczego.  
 Animex Centrala Importowo-Eksportowa Artykulow I Przetworow Pochodzenia Zwierzeczego, d.b.a. Animex, Warsaw, Poland. 875,254, pub. 6-3-69, Cl. 46.  
 Ansil Chemical Co. of California, to Snowden Enterprises, Inc., Modesto, Calif. 259,142, ren. 8-19-69, Cl. 23.  
 Anthony Macaroni Co.: See—  
 Anthony Macaroni Co., Inc.  
 Anthony Macaroni Co., Inc., to Anthony Macaroni Co., Los Angeles, Calif. 262,930, ren. 8-19-69, Cl. 46.  
 Apache Powder Co., Benson, Ariz., from Coast Mfg. & Supply Co., Livermore, Calif. 874,969, pub. 1-3-67, Cl. 9.  
 Aquascutum, Ltd., London, England. 752,182, can. Cl. 39.  
 Arden, Elizabeth: See—  
 Arden, Elizabeth, Sales Corp.  
 Arden, Elizabeth, Sales Corp., New York, N.Y. 514,258, ren. 8-19-69, Cl. 51.  
 Arden, Elizabeth, Sales Corp., d.b.a. Elizabeth Arden, New York, N.Y. 875,331, pub. 6-3-69, Cl. 51.  
 Armand Co., The, to Evert D. Weeks, Des Moines, Iowa. 516-909, ren. 8-19-69, Cl. 51.  
 Armstrong Rubber Co., West Haven, Conn. 875,142, pub. 6-3-69, Cl. 35.  
 Army Times Publishing Co., Washington, D.C. 875,156, pub. 6-3-69, Cl. 38.  
 Atlantic Lures, Inc., Providence, R.I. 875,070, pub. 6-3-69, Cl. 22.  
 Atlas, Edward, d.b.a. Le Rose Hosiery, Bronx, N.Y. 875,188, pub. 6-3-69, Cl. 39.  
 Automation Devices, Inc., Fairview, Pa. 875,103-4, pub. 6-3-69, Cl. 26.  
 Automotive Devices Co. of Pennsylvania, Philadelphia, Pa. 875,047, pub. 6-3-69, Cl. 21.  
 Auto-Trap-Shoot, Inc., Champaign, Ill. 752,271, can. Cl. 107.  
 Avon Products, Inc., New York, N.Y. 875,330, pub. 6-3-69, Cl. 51.  
 B-C Mfg. Corp., d.b.a. Interior Fashions, Tacoma, Wash. 875-129, pub. 6-3-69, Cl. 32.  
 BGS Shoe Corp., Manchester, N.H. 752,190, can. Cl. 39.  
 Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 751,882, can. Cl. 6.  
 Bakers Franchise Corp., New York, N.Y. 875,282, pub. 6-3-69, Cl. 46.  
 Ball Co., The, Chicago, Ill. 515,755, ren. 8-19-69, Cl. 27.  
 Ball, Geo. J., Inc., d.b.a. Jiffy-Pot Co. of America, West Chicago, Ill. 874,930-1, pub. 6-3-69, Cl. 2.  
 Ball Industries, El Segundo, Calif. 874,963, pub. 6-3-69, Cl. 6.  
 Barcar Enterprises, Inc., Grand Rapids, Mich. 875,310, pub. 1-21-69, Cl. 50.  
 Bard, C. R., Inc., Murray Hill, N.J. 875,234, pub. 6-3-69, Cl. 44.  
 Barrow Mfg. Co., Winder, Ga. 875,408, Cl. 39.  
 Barwick, E. T., Industries, Inc., Chamblee, Ga. 875,224, pub. 6-3-69, Cl. 42.  
 Bayleysuit, Inc., Eureka, Calif. 875,059, pub. 6-3-69, Cl. 22.  
 Beacon Mfg. Co., Swannanoa, N.C. 752,199, can. Cl. 42.  
 Beaird-Poulan Inc., Shreveport, La. 875,076, pub. 6-3-69, Cl. 23.  
 Beatrix Jewelry Co., Providence, R.I. 752,076, can. Cl. 28.  
 Beckley-Cady Co.: See—  
 Weber Costello Co.  
 Benson, A. L., & Co.: See—  
 Benson, Ann L.  
 Benson, Ann L., d.b.a. A. L. Benson & Co., Omaha, Nebr. 875-406, Multiple Class (Classes 39 and 40).  
 Berens Associates: See—  
 Berens, Robin H.  
 Berens, Robin H., d.b.a. Berens Associates, Oakland, Calif. 875,011, pub. 9-26-67, Cl. 10.  
 Berger Brothers Co., The, New Haven, Conn. 875,407, Cl. 39.  
 Berman, Bud. Sportswear Inc., New York, N.Y. 752,165, can. Cl. 39.  
 Best, Richard, Pencil Co., Inc., Springfield, N.J. 510,908, ren. 8-19-69, Cl. 37.  
 Bestmart, Inc., Cleveland, Ohio. 875,367, pub. 6-3-69, Cl. 101.  
 Blitbeat Corp., St. Genevieve, Mo. 874,986, pub. 6-3-69, Cl. 12.  
 Bingham, Samuel, Co., Chicago, Ill. 875,073, pub. 6-3-69, Cl. 23.  
 Bixby Box Toe Co., Inc., Haverhill, Mass. 874,950, pub. 6-3-69, Cl. 5.  
 Black Clawson-Sumner, Inc., Everett, Wash. 875,096, pub. 6-3-69, Cl. 26.  
 Black Sivals & Bryson, Inc., Kansas City, Mo. 752,020, can. Cl. 23.  
 Blendall Synthetic Thread Co.: See—  
 Reisman, Lawrence.  
 Block Drug Co., Inc.: See—  
 Emergency Laboratories.  
 Poloris Co., Inc.  
 Block-Southland Sportswear, Inc., Wilmington, N.C. 875,409, Cl. 39.  
 Blue Channel Corp., The, Port Royal, S.C. 875,280-1, pub. 6-3-69, Cl. 46.  
 Blue Ribbon Coffee Co.: See—  
 Oakford & Fahnstock.



Blue Ribbon Products Co.: See—  
Oakford & Fahnestock.  
Blue Ridge Vitamin Co.: See—  
Kritium Laboratories, Inc.  
Blue Seal Extract Co., Inc., Cambridge, Mass. 256,833, ren. 8-19-69. Cl. 45.  
Blue Seal Extract Co., Inc.: See—  
Blue Seal Extract Co.  
Bonwit Laboratories, Inc., Bremen, Ind. 875,283, pub. 6-3-69. Cl. 46.  
Borden Co., The: See—  
Borden, Inc.  
Borden, Inc., from The Borden Co., New York, N.Y. 875,320, pub. 4-16-68. Cl. 51.  
Border Sunshine Novelty Co. Ltd., Albuquerque, N. Mex. 875,114, pub. 6-3-69. Cl. 28.  
Boston Battery Co.: See—  
Perrine Battery Corp.  
Bowmar Records, Inc., Glendale, Calif. 875,149, pub. 6-3-69. Multiple Class (Classes 36 and 38).  
Boyertown Packaging Service Corp., Boyertown, Pa. 875,402. Cl. 2.  
Bradley, Milton, Co., Springfield, Mass. 875,053, pub. 10-24-67. Cl. 22.  
Brauchli, Rolf, Inc.: See—  
La Maur, Inc.  
Breuss, W. F., Inc. West New York, N.J. 752,210, can. Cl. 42.  
Bri-Son Co., Inc., Los Angeles, Calif. 751,878, can. Cl. 3.  
British Chemotherapeutic Products Ltd., Bradford, England. 751,942, can. Cl. 18.  
Brittains Ltd., Leek, Staffordshire, England. 74,010, ren. 8-19-69. Cl. 37.  
Broadway Bank & Trust Co., Paterson, N.J. 875,392, pub. 6-3-69. Cl. 102.  
Brock Candy Co., Chattanooga, Tenn. 875,297, pub. 6-3-69. Cl. 46.  
Brown Mfg. Co., Inc., Newport News, Va. 517,144, ren. 8-19-69. Cl. 23.  
Bruner Corp., Milwaukee, Wis. 752,094, can. Cl. 31.  
Brunswick Converters: See—  
Flexsteel Industries, Inc.  
Buckaroo Steak Ranches, Inc., St. Louis, Mo. 875,360, pub. 6-3-69. Cl. 100.  
Bulldog Electric Products Co., Detroit, Mich., to I-T-E Imperial Corp., Philadelphia, Pa. 517,408-10, ren. 8-19-69. Cl. 21.  
Bureau of National Affairs, Inc., The, Washington, D.C. 875,176, pub. 6-3-69. Cl. 38.  
Burger Family, Inc., Boise, Idaho. 875,247, pub. 1-19-65. Cl. 46.  
Burgess Publishing Co., Minneapolis, Minn. 875,126, pub. 6-3-69. Multiple Class (Classes 32, 36, and 38).  
Byrd, Harold F., San Ysidro, Calif. 752,039, can. Cl. 26.  
California Auto Radio: See—  
Maniaci, Robert.  
Camp & McInnes, Inc., Reading, Pa. 875,181, pub. 12-6-66. Cl. 39.  
Camp, S. H., & Co., Jackson, Mich. 514,000, ren. 8-19-69. Cl. 44.  
Canada Dry Corp., New York, N.Y. 875,245-6, pub. 6-3-69. Cl. 45.  
Candix Enterprises, Inc., Hollywood, Calif. 752,120, can. Cl. 36.  
Cannon Mills Co., Kannapolis, N.C. 752,203, can. Cl. 42.  
Careers Inc., New York, N.Y. 875,179, pub. 6-3-69. Cl. 38.  
Carey, Philip, Corp., Cincinnati, Ohio. 874,992, pub. 6-3-69. Cl. 12.  
Carle, Inc., to E. D. Weeks, Des Moines, Iowa. 261,045, ren. 8-19-69. Cl. 51.  
Carnation Co., Los Angeles, Calif. 875,263, pub. 6-3-69. Cl. 46.  
Carolina Mfg. Co.: See—  
Niven, Mack P.  
Carrier Corp., Syracuse, N.Y. 875,123, pub. 6-3-69. Cl. 31.  
Chambers-Godfrey Mfg. Co., d.b.a. Marten Country Hams, Martin, Tenn. 875,292, pub. 6-3-69. Cl. 46.  
Chance, A. B., Co., Centralia, Mo. 512,345-6, ren. 8-19-69. Cl. 13.  
Chandler, Roman T., d.b.a. Old Reliable Cartridge Co., Milwaukee, Wis. 874,970, pub. 6-3-69. Cl. 9.  
Chapman Chemical Co., Memphis, Tenn. 874,962, pub. 6-3-69. Cl. 6.  
Charlesgate Clothes, Inc., Newton, Mass. 875,189, pub. 6-3-69. Cl. 39.  
Cherkezian, William, & Son, New York, N.Y. 875,220, pub. 6-3-69. Cl. 42.  
Cherrybrook Co., Fairborn, Ohio. 874,958, pub. 6-3-69. Cl. 6.  
Chesapeake & Ohio Railway Co., The, Cleveland, Ohio. 511,078-83, ren. 8-19-69. Cl. 105.  
Chesebrough-Pond's Inc., New York, N.Y. 875,345, pub. 6-3-69. Cl. 52.  
Chicago Roller Skate Co., to The Chicago Roller Skate Co., Chicago, Ill. 511,867, ren. 8-19-69. Cl. 22.  
Chicago Roller Skate Co., The: See—  
Chicago Roller Skate Co.  
Chicken Delight, Inc., Des Plaines, Ill. 875,264, pub. 6-3-69. Cl. 46.  
Child World, Inc., Dedham, Mass. 875,376, pub. 6-3-69. Cl. 101.  
Chocolate Products Co., Chicago, Ill. 752,230, can. Cl. 46.  
Christy & Co., Ltd., London, England. 516,481, ren. 8-19-69. Cl. 39.  
Ciba Ltd., Basle, Switzerland. 875,175, pub. 6-3-69. Cl. 38.  
Cincinnati Industries, Inc.: See—  
Paper Service Co., The.  
Clairol Inc., New York, N.Y. 875,045, pub. 6-3-69. Cl. 21.

Clairol Inc., New York, N.Y. 875,280, pub. 6-3-69. Cl. 44.  
Clark, J. R., Co., The, Spring Park, Minn. 875,137, pub. 6-3-69. Cl. 34.  
Clark, James A., Houston, Tex. 752,136, can. Cl. 38.  
Cleveland Technical Center, Inc., Cleveland, Ohio. 875,343-4, pub. 6-3-69. Cl. 52.  
Cluett, Peabody & Co., Inc., Troy, N.Y. 511,361, ren. 8-19-69. Cl. 39.  
Coast Mfg. & Supply Co.: See—  
Apache Powder Co.  
Cochran Co., Inc.: See—  
Cochran, Robert T., & Co.  
Cochran, Robert T., & Co., San Francisco, Calif., and New York, N.Y., to Cochran Co., Inc., Tracy, Calif. 262,256, ren. 8-19-69. Cl. 46.  
Cohoes Envelope Co., Inc., to Market Masters Industries, Inc., Cohoes, N.Y. 513,232, ren. 8-19-69. Cl. 2.  
Collectron Corp., New York, N.Y. 875,099, pub. 6-3-69. Cl. 26.  
Colt's Inc., Hartford, Conn. 875,194, pub. 6-3-69. Cl. 39.  
Columbia Mfg. Co., The: See—  
Westfield Mfg. Co., The.  
Comet Packaging Corp., Bronx, N.Y. 874,940-1, pub. 6-3-69. Multiple Class (Classes 2 and 37).  
Commercial Carpet Corp., New York, N.Y. 875,209, pub. 6-3-69. Cl. 42.  
Compak-O-Matic, Inc., Worth, Ill. 875,136, pub. 6-3-69. Cl. 34.  
Computer Accessories Corp., Inc., Huntington, N.Y. 875,093, pub. 7-11-67. Cl. 26.  
Computer Aid Companies, Inc., Dallas, Tex. 875,366, pub. 6-3-69. Cl. 101.  
Computicket Corp., New York, N.Y. 875,166, pub. 6-3-69. Cl. 38.  
Computicket Corp., New York, N.Y. 875,180, pub. 6-3-69. Cl. 38.  
Concord Mobile Homes, Inc., Elkhart, Ind. 751,969, can. Cl. 19.  
Consolidated Freightways Corp. of Delaware, Menlo Park, Calif. 875,398, pub. 6-3-69. Cl. 105.  
Consolidated Systems Corp., Monrovia, Calif. 751,993, can. Cl. 21.  
Consumer Products Inc., Los Angeles, Calif. 875,336, pub. 6-3-69. Cl. 51.  
Continental Air Lines, Inc., Los Angeles, Calif. 875,399, pub. 6-3-69. Cl. 105.  
Continental Can Co., Inc., New York, N.Y. 875,312, pub. 6-3-69. Cl. 50.  
Continental Coatings Corp., Brooklyn, N.Y. 874,979, pub. 6-3-69. Cl. 12.  
Continental Copper & Steel Industries, Inc., New York, N.Y. 875,002, pub. 6-3-69. Cl. 13.  
Continental Grain Co., New York, N.Y. 875,249, pub. 1-10-67. Cl. 44.  
Contopoulos Brothers, Ltd., New York, N.Y. 875,303, pub. 6-3-69. Cl. 47.  
Corning Glass Works, Corning, N.Y. 258,583, ren. 8-19-69. Cl. 33.  
Corporate World: See—  
Heermance, James.  
Countess Mara, Inc., New York, N.Y. 875,207-8, pub. 6-3-69. Cl. 41.  
Crawford Associates, Inc., Palo Alto, Calif. 751,872, can. Cl. 1.  
Crawford Mfg. Co., Inc., Richmond, Va. 516,002, ren. 8-19-69. Cl. 32.  
Crescent Metal Products, Inc., Cleveland, Ohio. 875,309, pub. 6-3-69. Cl. 50.  
Cris Lab, Inc., Pratt, Kans. 752,276, can. Cl. 34.  
Crown Cork & Seal Co., Inc., Philadelphia, Pa. 875,315, pub. 6-3-69. Cl. 50.  
Crucible Steel Co. of America, Pittsburgh, Pa. 752,014, can. Cl. 23.  
Culemborg Exploitatie Maatschappij N.V., Amsterdam-C. Holland. 875,305, pub. 6-3-69. Cl. 48.  
Culpepper, Edith, Executrix of the Estate of Joseph Culpepper, deceased, from Joseph Culpepper, Opa-Locka, Fla. 875,348, pub. 6-3-69. Cl. 100.  
Culpepper, Joseph: See—  
Culpepper, Edith.  
Curtis Helene Industries, Inc., Chicago, Ill. 875,203-4, pub. 6-3-69. Cl. 40.  
Curtis Noll Corp., Cleveland, Ohio. 875,092, pub. 4-8-69. Cl. 25.  
D.F. Jewelry: See—  
Felberbaum, David.  
D & S Plug Corp., North Bellmore, N.Y. 875,404. Cl. 13.  
D. S. Safety Helmet Corp., Los Angeles, Calif. 875,195, pub. 6-3-69. Cl. 39.  
Daltronics Co.: See—  
Mendelsohn, David.  
Daniels Jewelry Co., Lansing, Mich. 752,077, can. Cl. 28.  
Dart Drug Corp., Washington, D.C. 751,954, can. Cl. 18.  
Davis, Richard L., Topeka, Kans., to The Jim Dandy Co., Birmingham, Ala. 510,071, ren. 8-19-69. Cl. 46.  
Deady Chemical Co., Kansas City, Kans. 875,076, pub. 6-3-69. Cl. 23.  
Del Russo, J., Inc., Fort Lauderdale, Fla. 514,131, ren. 8-19-69. Cl. 51.  
Delmonico Foods, Inc., Hershey, Pa. 875,268-9, pub. 6-3-69. Cl. 46.  
Denison Cotton Mill Co., Denison, Tex. 752,215, can. Cl. 42.  
Dentists' Supply Co. of New York, The, York, Pa. 875,239, pub. 6-3-69. Cl. 44.  
Deutsch Co. Electronic Components Division, The, Banning, Calif. 875,039, pub. 4-16-68. Cl. 21.

Diamond Crystal Salt Co., St. Clair, Mich. 875,127, pub. 6-3-69. Cl. 32.  
Die Supply Corp., Cleveland, Ohio. 875,078, pub. 6-3-69. Cl. 23.  
Dietene Co., The, Minneapolis, Minn. 875,293, pub. 6-3-69. Cl. 46.  
Dixie Fish Net & Twine Co., Shelby, Tenn. 751,899, can. Cl. 7.  
Dodge, Kirk M., Overland Park, Kans. 875,349, pub. 6-3-69. Cl. 100.  
Double Rotary Sprinkler Co., Kansas City, Mo. 751,916, can. Cl. 13.  
Dow Badische Co., Williamsburg, Va. 874,927, pub. 6-3-69. Cl. 1.  
Drake International Services Ltd., Toronto, Ontario, Canada. 875,378, pub. 6-3-69. Cl. 101.  
Draper Products, Inc., Appleton, Wis. 875,191, pub. 6-3-69. Cl. 39.  
Drey, Alan, Co., Inc., Chicago, Ill. 875,380, pub. 6-3-69. Cl. 101.  
Duffy-Mott Co., Inc., New York, N.Y. 875,274, pub. 6-3-69. Cl. 46.  
Duncan Electric Co., Inc.: See—  
Duncan Electric Mfg. Co.  
Duncan Electric Mfg. Co., to Duncan Electric Co., Inc., Lafayette, Ind. 511,691, ren. 8-19-69. Cl. 26.  
Du Pont de Nemours, E. I., & Co.: See—  
Roessler & Hasselacher Chemical Co., The.  
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 514,104, ren. 8-19-69. Cl. 9.  
Dura Corp., Oak Park, Mich. 751,964, can. Cl. 19.  
Dura Fiber Inc., Costa Mesa, Calif. 875,066, pub. 6-3-69. Cl. 22.  
Duracote Corp., Ravenna, Ohio. 751,907, can. Cl. 12.  
Durham Pharmacal Corp., Durham, N.Y. 875,015, pub. 6-3-69. Cl. 18.  
E.K. Helmet Mfg. Co., Westminster, Calif. 875,187, pub. 6-3-69. Cl. 39.  
ESB Inc.: See—  
Electric Storage Battery Co., The.  
Eagle Drugists Supply Co., Inc., New York, N.Y. 875,231, pub. 6-3-69. Cl. 44.  
Eastern Tube & Tool Co., Inc., Brooklyn, to Etico Wire & Cable Corp., Ridgewood, N.Y. 511,287, ren. 8-19-69. Cl. 21.  
Eastman Kodak Co., to Eastman Kodak Co., Rochester, N.Y. 260,554, ren. 8-19-69. Cl. 26.  
Eaton Allen Corp., Brooklyn, N.Y. 875,403. Cl. 11.  
Eaton Yale & Towne Inc., Cleveland, Ohio. 875,083, pub. 6-3-69. Cl. 23.  
Eberhard Faber, New York, N.Y. 52,417, can. Cl. 37.  
Eberhard Faber Pencil Co., Brooklyn, N.Y. 168,855, can. Cl. 37.  
Economics Laboratory, Inc., St. Paul, Minn. 875,043, pub. 6-3-69. Cl. 21.  
Edison Giocattoli Societa per Azioni, Firenze, Italy. 875,055, pub. 6-3-69. Cl. 22.  
Electric Auto-Lite Co., The, Toledo, Ohio. 752,102, can. Cl. 34.  
Electric Game Co., The, West Springfield, Mass. 875,067, pub. 6-3-69. Cl. 22.  
Electric Storage Battery Co., The, to ESB Inc., Philadelphia, Pa. 516,249, ren. 8-19-69. Cl. 21.  
Electronics Corp. of America, Cambridge, Mass. 752,000, can. Cl. 21.  
Elgeet Optical Co., Inc., Rochester, N.Y. 752,037, can. Cl. 26.  
Ellis, Fred, Jr., d.b.a. Scientific Instruments Co., Berkeley, Calif. 752,049, can. Cl. 26.  
El Paso Natural Gas Products Co., El Paso, Tex. 751,932, can. Cl. 15.  
Emergency Laboratories, New York, N.Y., to Block Drug Co., Inc., Jersey City, N.J. 74,724, ren. 8-19-69. Cl. 18.  
Enro Shirt Co., The: See—  
Wilson Bros.  
Entron, Inc., Bladenburg, Md. 752,001, can. Cl. 21.  
Eplett, Samuel L., d.b.a. Mid-West Chemical Co., Houston, Tex. 752,258, can. Cl. 52.  
Etacol International Ltd., Zurich, Switzerland. 875,210, pub. 6-3-69. Cl. 42.  
Etico Wire & Cable Corp.: See—  
Eastern Tube & Tool Co., Inc.  
Evan-Picone, Inc., New York, N.Y. 752,211, can. Cl. 42.  
Ezidew Corp., New York, N.Y. 875,411. Cl. 40.  
FWI, Inc., Tulsa, Okla. 875,003, pub. 6-3-69. Cl. 13.  
Factor, Max, & Co., Hollywood, Calif. 875,324, pub. 6-3-69. Cl. 51.  
Fairchild Hiller Corp., Germantown, Md. 874,971, pub. 6-3-69. Cl. 9.  
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany. 875,255, pub. 6-3-69. Cl. 46.  
Fay, Arthur M., d.b.a. Meritcraft Co., Chicago, Ill. 752,007, can. Cl. 22.  
Feedwaters, Inc.: See—  
Algin Products Corp.  
Felberbaum, David, d.b.a. D.F. Jewelry, Spring Valley, N.Y. 752,066, can. Cl. 28.  
Fendrich Industries, Inc.: See—  
Niven, Mack P.  
Ferguson, Martin J., Greenwich, Conn. 875,258, pub. 6-3-69. Cl. 46.  
Fieldcrest Mills, Inc., Eden, N.C. 875,212-13, pub. 6-3-69. Cl. 42.  
First National Bank of Toledo, National Banking Assn., Toledo, Ohio. 875,890, pub. 6-3-69. Cl. 102.  
Fish King Processors, Inc., Los Angeles, Calif. 875,267, pub. 6-3-69. Cl. 46.  
Fitzpatrick Bros., Inc., Oak Brook, Ill. 516,584, ren. 8-19-69. Cl. 52.

Fleischer Mills, Inc., The, Cincinnati, Ohio. 515,865, ren. 8-19-69. Cl. 52.  
Flexatell Industries, Inc., d.b.a. Brunswick Converters, Dubuque, Iowa. 875,125, pub. 4-1-69. Cl. 32.  
Flexees International, Inc.: See—  
United Mills Corp.  
Flo-Lok, Inc., Houston, Tex. 875,000, pub. 6-3-69. Cl. 13.  
Florian, Inc., Detroit, Mich., to E. D. Weeks, Des Moines, Iowa. 258,376, ren. 8-19-69. Cl. 51.  
Flow-A-Matic Corp., Columbus, Ohio. 875,081, pub. 6-3-69. Cl. 23.  
Fontillados, Enrique Bernat, Barcelona, Spain. 875,248, pub. 6-3-69. Cl. 46.  
Forbes Labeltape Co., Grand Rapids, Mich. 875,084, pub. 6-3-69. Cl. 23.  
Foreign Car Parts Inc. of New England, Allston, Mass. 875,363, pub. 6-3-69. Cl. 101.  
Frank, J. P., Chemical & Plastic Corp., New York, N.Y. 752,200, can. Cl. 42.  
Franklin Mint, Inc., from General Numismatics Corp., Yeadon, Pa. 875,401, pub. 6-3-69. Cl. 106.  
Friedman, Leon, d.b.a. Mole Jewelers, New York, N.Y. 752,070, can. Cl. 28.  
Frito-Lay, Inc., Dallas, Tex. 875,271, pub. 6-3-69. Cl. 46.  
Frost, George, Co., Shirley, Mass. 512,874, ren. 8-19-69. Cl. 39.  
Frostmaster Co., Tyler, Tex. 752,089, can. Cl. 31.  
Fuller Laboratories, Inc., Eden Prairie, Minn. 874,965, pub. 6-3-69. Cl. 6.  
Fuller-O'Brien Corp.: See—  
Fuller, W. E., & Co.  
Nason, R. V., & Co.  
Fuller, W. E., & Co., San Francisco, to Fuller-O'Brien Corp., Menlo Park, Calif. 244,064, ren. 8-19-69. Cl. 16.  
Fuller, W. E., & Co., San Francisco, to Fuller-O'Brien Corp., Menlo Park, Calif. 250,662, ren. 8-19-69. Cl. 33.  
Fundicator Inc., Mountain Lakes, N.J. 875,172, pub. 6-3-69. Cl. 38.  
GAF Corp., New York, N.Y. 875,100, pub. 6-3-69. Cl. 26.  
G.K.N. Bolts & Nuts Ltd., Darlaston, England. 875,005, pub. 6-3-69. Cl. 18.  
GRI Club: See—  
White, Nancy S.  
Gad-Jets, Inc., Dayton, Ohio. 875,060, pub. 6-3-69. Cl. 23.  
Gardner Mfg. Co., d.b.a. Speed Clean Division of Gardner Mfg. Co., Horicon, Wis. 875,044, pub. 6-3-69. Cl. 21.  
Garron Co., The: See—  
Morris, Ronald L.  
Gelgy Chemical Corp., Ardsley, N.Y. 874,960, pub. 6-3-69. Multiple Class (Classes 6 and 10).  
Gelgy Chemical Corp., Ardsley, N.Y. 875,028, pub. 6-3-69. Cl. 18.  
Genco Mfg., Inc.: See—  
Mechon-Genco Corp.  
General Council of the Assemblies of God, The, Springfield, Mo. 875,350, pub. 6-3-69. Cl. 100.  
General Foods Corp., White Plains, N.Y. 875,287, pub. 6-3-69. Cl. 46.  
General Mills, Inc., Minneapolis, Minn. 875,266, pub. 6-3-69. Cl. 46.  
General Mills, Inc., Minneapolis, Minn. 875,302, pub. 6-3-69. Cl. 46.  
General Numismatics Corp.: See—  
Franklin Mint, Inc., The.  
General Time Corp., New York, N.Y. 763,468, can. Cl. 27.  
Gibson, C. R., & Co., Norwalk, Conn. 752,133, can. Cl. 38.  
Gibson Greeting Cards, Inc., Cincinnati, Ohio. 875,154, pub. 6-3-69. Cl. 37.  
Gilbert & Barker Mfg. Co., West Springfield, Mass., to Gilbert & Barker Mfg. Co., New York, N.Y. 442,672, ren. 8-19-69. Cl. 23.  
Gillette Co., The: See—  
Probak Corp.  
Gillette Co., The, d.b.a. The Toni Co., Boston, Mass. 875,327, pub. 6-3-69. Cl. 51.  
Gilliland, Duane L., d.b.a. Holly House, Fort Wayne, Ind. 875,364, pub. 6-3-69. Cl. 101.  
Gilmann Paper Co., New York, N.Y. 751,875, can. Cl. 2.  
Global Marine Inc., Los Angeles, Calif. 875,393, pub. 6-3-69. Cl. 103.  
Goetze, Albert F., Inc., Baltimore, Md. 875,291, pub. 6-3-69. Cl. 46.  
Gold Seal Rubber Co., Boston, Mass. 875,193, pub. 6-3-69. Cl. 39.  
Gold-Master Corp., New York, N.Y. 875,118, pub. 6-3-69. Cl. 28.  
Grace, W. R., & Co., Cambridge, Mass. 874,990, pub. 6-3-69. Cl. 12.  
Granite Research Industries, Inc., Somerville, Mass. 874,985, pub. 6-3-69. Cl. 12.  
Graphic Research, Inc., Wichita, Kans. 875,165, pub. 6-3-69. Cl. 38.  
Graphics, Inc., Kearny, N.J. 751,903, can. Cl. 12.  
Gratten Marine Research Corp., Yonkers, N.Y. 874,991, pub. 6-3-69. Cl. 12.  
Great Lakes Overseas, Inc., Chicago, Ill. 875,397, pub. 6-3-69. Cl. 105.  
Great States Personnel System: See—  
K-H Associates of Evansville, Inc.  
Green Giant Co.: See—  
Minnesota Valley Canning Co.  
Grid Leaks: See—  
Ace Radio Control, Inc.  
Group & Advertising Specialties, Ltd.: See—  
Meyer, Fred, Inc.  
Grumbacher, M., Inc., New York, N.Y. 512,459, ren. 8-19-69. Cl. 29.



Guerlain, Inc., New York, N.Y. 875,318, pub. 6-3-69. Cl. 51.  
 Guild Brandy Cellars: See—  
 Guild Wine Co.  
 Guild Wine Co., d.b.a. Guild Brandy Cellars, Lodi, Calif. 875,308, pub. 6-3-69. Cl. 49.  
 Gulf States Paper Corp., Tuscaloosa, Ala. 515,959, ren. 8-19-69. Cl. 2.  
 Gulf States Paper Corp., Tuscaloosa, Ala. 874,938, pub. 6-3-69. Cl. 2.  
 Habitat, Inc., New York, N.Y. 875,051, pub. 6-3-69. Cl. 21.  
 Hand, Peter, Foundation, Inc., Waukegan, Ill. 875,022, pub. 6-3-69. Multiple Class (Classes 18 and 48).  
 Hanover Shoe, Inc., The, Hanover, Pa. 514,482, ren. 8-19-69. Cl. 39.  
 Hanson-Kane, Inc., Dayton, Ohio. 874,946, pub. 6-3-69. Cl. 4.  
 Hardtmuth, L. & C., Bloomsbury, N.J., from Gunther Wagner Pelikan-Werke, Hannover, Germany. 874,976, pub. 2-4-69. Multiple Class (Classes 11 and 37).  
 Harsco Corp., Wormleysburg, Pa. 874,994, pub. 6-3-69. Cl. 12.  
 Harwick Standard Chemical Co., Akron, Ohio. 511,127, ren. 8-19-69. Cl. 6.  
 Haymaker Sports, Inc., New York, N.Y. 875,199, pub. 4-8-69. Cl. 39.  
 Heaters, Inc., Webster, Ind. 875,124, pub. 6-3-69. Cl. 31.  
 Heavenly Creations, Inc., Norfolk, Va. 875,205, pub. 6-3-69. Cl. 40.  
 Heermance, James, d.b.a. Corporate World, Washington, D.C. 875,178, pub. 6-3-69. Cl. 38.  
 Henson-Kickernick, Inc., Greenville, Tex. 875,405. Cl. 39.  
 Hi Style Inc., Miami, Fla. 751,914, can. Cl. 12.  
 Hickory Farms of Ohio: See—  
 Ransom, Richard K.  
 Highcroft Orchards, Talent, Oreg. 516,358, ren. 8-19-69. Cl. 46.  
 Highway Trailer Industries, Inc., Edgerton, Wis. 875,036, pub. 6-3-69. Multiple Class (Classes 19 and 23).  
 Hochschild Kohn & Co., Inc., Baltimore, Md. 875,035, pub. 6-3-69. Multiple Class (Classes 19, 22, 28, 32, 37, 38, 39, 40, 42, 50, 51, and 52).  
 Hoffmann-La Roche Inc., Nutley, N.J. 875,029, pub. 6-3-69. Cl. 18.  
 Hokko Chemical Industry Co., Ltd., Kanda, Chiyoda-Ku, Tokyo, Japan. 874,957, pub. 6-3-69. Cl. 6.  
 Holly House: See—  
 Gilliland, Duane L.  
 Hollymatic Corp., Park Forest, Ill. 875,089, pub. 5-6-69. Cl. 23.  
 Hollywood School Photo Assn., Los Angeles, Calif. 752,156, can. Cl. 38.  
 Honeycomb Products, Inc., Miami, Fla. 874,983, pub. 6-3-69. Cl. 12.  
 Horton, Robert B., d.b.a. Wood-Lam Structures, Oklahoma City, Okla. 875,371, pub. 6-3-69. Cl. 101.  
 Hot-Shot Products Co., Inc., Savage, Minn. 517,481, ren. 8-19-69. Cl. 21.  
 Huber, M. J., Corp., New York, N.Y. 875,387, pub. 6-3-69. Cl. 102.  
 Hudnut, Richard, Morris Plains, N.J. 875,326, pub. 6-3-69. Cl. 51.  
 Hudson Pulp & Paper Corp., New York, N.Y. 874,932, pub. 6-3-69. Cl. 2.  
 Hudson Pulp & Paper Corp., New York, N.Y. 874,949, pub. 6-3-69. Cl. 5.  
 Hussmann Refrigerator Co., St. Louis, Mo. 752,091, can. Cl. 31.  
 Hynes Electric Heating Co., Kenilworth, N.J. 875,134, pub. 6-3-69. Cl. 34.  
 I-T-E Imperial Corp.: See—  
 Bulldog Electric Products Co.  
 ITT Continental Baking Co., Rye, N.Y. 875,296, pub. 6-3-69. Cl. 46.  
 Iacocca, Michael G., Allentown, Pa. 875,354, pub. 6-3-69. Cl. 100.  
 Iceland Products, Inc., Camp Hill, Pa. 875,277, pub. 6-3-69. Cl. 46.  
 Ideal Toy Corp.: See—  
 Americanmade Plastics, Inc.  
 Imperial Shirt Corp., New York, N.Y. 752,189, can. Cl. 39.  
 Inclinator Co. of America, Harrisburg, Pa. 262,948-9, ren. 8-19-69. Cl. 23.  
 Indian Head Inc.: See—  
 Skinner, William, & Sons.  
 Stifel, J. L., & Sons.  
 Industrial Brush Co., Pomona, Calif. 875,119, pub. 6-3-69. Cl. 29.  
 Industrial Pattern Works: See—  
 Jacobson, Harry J.  
 Industrial Pattern & Mfg. Co. Inc.: See—  
 Jacobson, Harry J.  
 Information Co. of America, Philadelphia, Pa. 875,382, pub. 6-3-69. Cl. 101.  
 Institute for Scientific Information, Inc., Philadelphia, Pa. 875,171, pub. 6-3-69. Cl. 38.  
 Institute for Scientific Information, Inc., Philadelphia, Pa. 875,177, pub. 6-3-69. Cl. 38.  
 Interior Fashions: See—  
 B-C Mfg. Corp.  
 International Sauna Corp., New York, N.Y. 751,908, can. Cl. 12.  
 International Paint Co., Inc., New York, N.Y. 515,738-9, ren. 8-19-69. Cl. 16.  
 Invar Electronics Corp., Santa Monica, Calif. 751,971, can. Cl. 21.  
 Itek Corp., Cambridge, Mass. 751,978, can. Cl. 21.  
 J & R Root Beer: See—  
 Legg, James V.  
 Jacobson, Harry J., d.b.a. Industrial Pattern Works, to Industrial Pattern & Mfg. Co. Inc., Chicago, Ill. 515,971, ren. 8-19-69. Cl. 23.  
 Jacquin, Charles, Et. Cie., Inc., Philadelphia, Pa. 875,306, pub. 6-3-69. Cl. 49.  
 Jay-Dee, Inc., Hopkins, Minn. 875,196, pub. 6-3-69. Cl. 39.  
 Jefcor Industries, Inc., Valley Stream, N.Y. 875,060, pub. 6-3-69. Cl. 22.  
 Jensen, George, Inc., New York, N.Y. 517,324, ren. 8-19-69. Cl. 42.  
 Jersey Paper Co., New Brunswick, N.J. 874,939, pub. 6-3-69. Cl. 2.  
 Jiffy-Pot Co. of America: See—  
 Ball, Geo. J., Inc.  
 Jim Dandy Co., The: See—  
 Davis, Richard L.  
 Jintan Terumo Co., Ltd., Tokyo, Japan. 875,236, pub. 6-3-69. Cl. 44.  
 Joanna Western Mills Co., Chicago, Ill. 508,191, ren. 8-19-69. Cl. 42.  
 Joanna Western Mills Co., Chicago, Ill. 508,193-7, ren. 8-19-69. Cl. 42.  
 Jobst Institute, Inc., Toledo, Ohio. 875,288, pub. 6-3-69. Cl. 44.  
 Johnson & Johnson, New Brunswick, N.J. 875,237, pub. 6-3-69. Cl. 44.  
 Jomac-North, Inc., Warrington, Pa. 875,200, pub. 6-3-69. Cl. 39.  
 K-H Associates of Evansville, Inc., d.b.a. Great States Personnel System, Evansville, Ind. 875,374, pub. 6-3-69. Cl. 101.  
 Kay Laboratories, Inc., Newport Beach, Calif. 875,240, pub. 6-3-69. Cl. 44.  
 Kayser-Roth Corp.: See—  
 Roth, Chester H., Co., Inc.  
 Kayser-Roth Corp., New York, N.Y. 875,197, pub. 6-3-69. Cl. 39.  
 Keim-Diat G.m.b.H., Augsburg, Germany. 875,021, pub. 6-3-69. Cl. 18.  
 Kelly-Springfield Tire Co., The, Cumberland, Md. 875,138, pub. 6-3-69. Cl. 35.  
 Kelly-Springfield Tire Co., The, Cumberland, Md. 875,144, pub. 6-3-69. Cl. 35.  
 Kendall Co., The, Walpole, Mass. 875,222, pub. 6-3-69. Cl. 42.  
 Kendon Mfg. Co.: See—  
 Sportsman's Den, Inc.  
 Kennametal Inc., Latrobe, Pa. 875,072, pub. 6-3-69. Cl. 23.  
 Kenney-Cripps: See—  
 Kenney-Cripps, Inc.  
 Kenney-Cripps, Inc., from Kenney-Cripps, Wallingford, Conn. 752,260, can. Cl. 52.  
 Kid-Nik Mfg. Co.: See—  
 McIntosh, William M.  
 Kimberly-Clark Corp.: See—  
 Schweltzer, Peter J., Inc.  
 King, Kenneth, d.b.a. King Mfg. Co., Weston, Mass. 875,095, pub. 6-3-69. Cl. 26.  
 King Mfg. Co.: See—  
 King, Kenneth.  
 King's Specialty Co., Fort Wayne, Ind. 875,026-7, pub. 6-3-69. Cl. 18.  
 Kingfisher Corp., The, Rockville, Conn. 875,068, pub. 6-3-69. Cl. 22.  
 Kleinert, I. B., Rubber Co., New York, N.Y. 400,728, can. Cl. 42.  
 Kleinert, I. B., Rubber Co., New York, N.Y. 875,190, pub. 6-3-69. Cl. 39.  
 Klopman Mills, Inc., Rockleigh, N.J. 875,218, pub. 6-3-69. Cl. 42.  
 Kohnert Bros., Inc., East Paterson, N.J. 875,056, pub. 6-3-69. Cl. 22.  
 Koracorp Industries, Inc., d.b.a. Koret of California, Inc., San Francisco, Calif. 875,192, pub. 6-3-69. Cl. 99.  
 Koret of California, Inc.: See—  
 Koracorp Industries, Inc.  
 Kracke, Don, d.b.a. Rickie Tickle Stickles, Long Beach, Calif. 875,161, pub. 6-3-69. Cl. 38.  
 Krause Milling Co., Milwaukee, Wis. 874,953, pub. 6-3-69. Cl. 5.  
 Kresge, S. S., Co., Detroit, Mich. 875,016, pub. 9-17-68. Cl. 18.  
 Kresge, S. S., Co., Detroit, Mich. 875,102, pub. 6-3-69. Cl. 26.  
 Kresge, S. S., Co., Detroit, Mich. 875,155, pub. 6-3-69. Cl. 37.  
 Kresge, S. S., Co., Detroit, Mich. 875,322, pub. 6-3-69. Cl. 51.  
 Kroehler Mfg. Co., Naperville, Ill. 512,429, ren. 8-19-69. Cl. 32.  
 Kroger Co., The, Cincinnati, Ohio. 875,250, pub. 6-3-69. Cl. 46.  
 Laboratoires Labaz, from Societe Francaise des Laboratoires Labaz, Paris, France. 875,023, pub. 6-3-69. Cl. 18.  
 Lafayette Radio Electronics Corp., Jamaica, N.Y. 752,123, can. Cl. 36.  
 La Maur, Inc., d.b.a. Modart, Inc., Minneapolis, Minn. 772,543, can. Cl. 51.  
 La Maur, Inc., Minneapolis, Minn., from Rolf Brauchli Inc., Chicago, Ill. 875,183, pub. 9-12-67. Cl. 39.  
 Lambie, Margaret B., Portland, Oreg. 875,379, pub. 6-3-69. Cl. 101.  
 Lancome S.A., Paris, France. 875,328, pub. 6-3-69. Cl. 51.  
 Lantz, Walter, Productions, Inc., Hollywood, Calif. 752,223-4, can. Cl. 46.  
 Lanvin-Charles of the Ritz, Inc., New York, N.Y. 875,339, pub. 6-3-69. Cl. 51.  
 Lear Siegler Inc., from The Siegler Corp., Olean, N.Y. 752,109-11, can. Cl. 34.  
 Leban Imports, Inc., Baltimore, Md. 835,958, can. Cl. 38.

Lee, H. D., Co., Inc., The, Shawnee Mission, Kans. 875,201, pub. 6-3-69. Cl. 39.  
 Lee, Raymond, Organization, Inc., The, New York, N.Y. 875,163, pub. 6-3-69. Cl. 38.  
 Legg, James V., d.b.a. J & R Root Beer & Rocketburger Drive-In, Abilene, Tex. 875,244, pub. 3-4-69. Cl. 45.  
 Leo Pharmaceutical Products Ltd., Ballerup, Denmark. 875,243, pub. 6-3-69. Cl. 44.  
 Le Rose Hoglery: See—  
 Atlas, Edward.  
 Les, Jerard, Inc., New York, N.Y. 875,316, pub. 6-3-69. Cl. 50.  
 Lewis, William, & Son, Lincolnwood, Ill. 256,610, ren. 8-19-69. Cl. 36.  
 Lindy Pen Co., Inc., North Hollywood, Calif. 875,152, pub. 6-3-69. Cl. 37.  
 Linn Camera Shop, Inc., Lansing, Mich. 875,365, pub. 6-3-69. Multiple Class (Classes 101 and 106).  
 Little Squire, Inc., Kansas City, Mo. 752,194, can. Cl. 39.  
 Lodal, Inc., Kingsford, Mich. 875,077, pub. 6-3-69. Cl. 23.  
 Lubin, Parfums, Inc., Norwich, N.Y. 875,332, pub. 6-3-69. Cl. 51.  
 Lucky Stores, Inc., San Leandro, Calif. 875,202, pub. 6-3-69. Cl. 39.  
 Luzier Inc., Kansas City, Mo. 875,168, pub. 6-3-69. Cl. 38.  
 Lyndamar Enterprises, Inc., New York, N.Y. 875,106, pub. 6-3-69. Cl. 27.  
 Magnastatic Corp., Dover, N.J. 752,018, can. Cl. 23.  
 Magnavox Co., The, Fort Wayne, Ind. 875,042, pub. 6-3-69. Cl. 21.  
 Magnetics, Inc., East Butler, Pa. 875,007, pub. 6-3-69. Cl. 14.  
 Maniaci, Robert, d.b.a. California Auto Radio, Downey, Calif. 875,041, pub. 4-30-68. Multiple Class (Classes 21 and 36).  
 March Mfg. Co., Glenview, Ill. 875,088, pub. 6-3-69. Cl. 23.  
 Mardora, Inc., West Palm Beach, Fla. 875,328-9, pub. 6-3-69. Cl. 51.  
 Marine Engine Specialties Corp., New York, N.Y. 875,135, pub. 6-3-69. Cl. 34.  
 Mark VII Industries, Inc., Sarasota, Fla. 875,235, pub. 6-3-69. Cl. 44.  
 Market Masters Industries, Inc.: See—  
 Cohoes Envelope Co., Inc.  
 Market Publications, Inc., New Canaan, Conn. 875,158, pub. 6-3-69. Cl. 38.  
 Marketing & Motivation Inc., New York, N.Y. 874,944, pub. 6-3-69. Cl. 3.  
 Marler, James E., Sr., Colfax, La. 875,169, pub. 6-3-69. Cl. 38.  
 Mars Broadcasting, Inc., Stamford, Conn. 752,121, can. Cl. 36.  
 Marten Country Hams: See—  
 Chambers-Godfrey Mfg. Co.  
 Mate Plastics Corp., New York, N.Y. 875,313, pub. 6-3-69. Cl. 50.  
 McHale Pharmaceutical, Inc., Wilmington, Del. 751,940, can. Cl. 18.  
 McIntosh, William M., d.b.a. Kid-Nik Mfg. Co., Anaheim, Calif. 752,100, can. Cl. 32.  
 Mead Johnson & Co., Evansville, Ind. 875,033, pub. 3-25-69. Cl. 18.  
 Mechtron-Genco Corp., from Genco Mfg., Inc., Alliance, Ohio. 875,133, pub. 6-3-69. Cl. 34.  
 Medical Supply Co., from Medical Supply Co., Rockford, Ill. 875,228, pub. 6-3-69. Cl. 44.  
 Memory Master Corp., Cleveland, Ohio. 875,145, pub. 6-3-69. Cl. 36.  
 Mendelsohn, David, d.b.a. Daltronics Co., Providence, R.I. 875,038, pub. 6-3-69. Cl. 21.  
 Mennen Co., The, Morristown, N.J. 875,337, pub. 6-3-69. Cl. 51.  
 Mercantile Stores Co., Inc., New York, N.Y. 875,346, pub. 6-3-69. Cl. 52.  
 Merchants Mutual Agency, Inc., Grand Rapids, Mich. 875,386, pub. 6-3-69. Cl. 102.  
 Merck & Co., Inc.: See—  
 Sharp & Dohme.  
 Merck & Co., Inc., Rahway, N.J. 875,025, pub. 6-3-69. Cl. 18.  
 Meritcraft Co.: See—  
 Fay, Arthur M.  
 Metal Hydrides, Inc., Beverly, Mass. 751,897, can. Cl. 6.  
 Metro-Goldwyn-Mayer Inc., New York, N.Y. 875,150, pub. 6-3-69. Cl. 36.  
 Meyer, Fred, Inc., Portland, Oreg., from Group & Advertising Specialties, Ltd., Toronto, Ontario, Canada. 875,052, pub. 7-18-67. Cl. 22.  
 Michaels of Oregon Co., Portland, Oreg. 874,972, pub. 6-3-69. Cl. 9.  
 Michigan Hot Rod Assn., Centerline, Mich. 875,341, pub. 6-3-69. Cl. 52.  
 Mid-Continent Supply Co., Fort Worth, Tex. 875,164, pub. 6-3-69. Cl. 38.  
 Mid-West Chemical Co.: See—  
 Eplett, Samuel L.  
 Mighty-Mix Co.: See—  
 Valsepar Corp., The.  
 Minneapolis-Moneywell Regulator Co., Minneapolis, Minn. 752,184, can. Cl. 38.  
 Minnesota Mining & Mfg. Co., St. Paul, Minn. 752,246, can. Cl. 50.  
 Minnesota Valley Canning Co., to Green Giant Co., Le Sueur, Minn. 517,131, ren. 8-19-69. Cl. 46.  
 Mobat Tire & Rubber Co., Inc., Livermore, Calif. 875,140, pub. 4-1-69. Cl. 35.  
 Mobil Oil Corp., New York, N.Y. 874,978, pub. 6-3-69. Cl. 12.  
 Modart, Inc.: See—  
 La Maur, Inc.  
 Modern Products Co.: See—  
 Pincus, Sidney L.  
 Mole Jewelers: See—  
 Friedman, Leon.  
 Molnlycke Sytrad Aktiebolag, Goteborg, Sweden. 875,225, pub. 6-3-69. Cl. 43.  
 Montrose Products, Inc., Chicago, Ill. 875,121, pub. 6-3-69. Cl. 29.  
 Monumental News-Review, Inc., Buffalo, N.Y. 752,151, can. Cl. 38.  
 Morris, Ronald L., d.b.a. The Garron Co., Mesa, Ariz. 875,065, pub. 6-3-69. Cl. 22.  
 Morrison, A. F., Co., Wilton, Conn. 875,242, pub. 6-3-69. Cl. 44.  
 Morton International, Inc., Chicago, Ill. 875,298-9, pub. 6-3-69. Cl. 46.  
 Mosler Safe Co., The, Hamilton, Ohio. 874,989, pub. 6-3-69. Cl. 12.  
 Mount Vernon Mills, Inc., Baltimore, Md. 875,216-17, pub. 6-3-69. Cl. 42.  
 Movado Watch Agency, Inc., New York, N.Y. 875,107, pub. 6-3-69. Cl. 27.  
 Movado Watch Agency, Inc., New York, N.Y. 875,109, pub. 6-3-69. Cl. 27.  
 Multi-Care Corp., Scarsdale, N.Y. 875,347, pub. 6-3-69. Cl. 52.  
 NVF Co., Wilmington, Del. 874,925, pub. 6-3-69. Cl. 1.  
 Nashoba Products Co., Inc., The, West Acton, Mass. 752,218, can. Cl. 45.  
 Nason, R. N., & Co., San Francisco, to Fuller-O'Brien Corp., Menlo Park, Calif. 502,813, ren. 8-19-69. Cl. 16.  
 Natrix Corp., The, New York, N.Y. 875,108, pub. 6-3-69. Cl. 27.  
 National Bank of North America, West Hempstead, N.Y. 875,391, pub. 6-3-69. Cl. 102.  
 National Federation of Coffee Growers of Colombia, New York, N.Y. 875,256, pub. 6-3-69. Cl. 46.  
 National Glove Co., The, Columbus, to National Glove, Inc., Coshocton, Ohio. 260,145, ren. 8-19-69. Cl. 39.  
 National Glove, Inc.: See—  
 National Glove Co., The.  
 National Lead Co., New York, N.Y. 512,080, ren. 8-19-69. Cl. 14.  
 National Lumber Co.: See—  
 Rosner, Arthur A.  
 National Press, Inc., Waukegan, Ill. 875,151, pub. 3-25-69. Cl. 37.  
 National Twist Drill & Tool Co.: See—  
 Staples Tool Co., The.  
 National Union Electric Corp., Jersey City, N.J. 875,046, pub. 6-3-69. Cl. 21.  
 National Vitamin Products Co., Minneapolis, Minn. 752,226, can. Cl. 46.  
 Nationwide Chemical Corp., Fort Myers, Fla. 874,964, pub. 6-3-69. Cl. 6.  
 Nelson, John W., Inc., Bryn Mawr, Pa. 751,977, can. Cl. 21.  
 Neptune World-Wide Moving, Inc., New Rochelle, N.Y. 752,270, can. Cl. 105.  
 Nestle & Anglo, Swiss Condensed Milk Co., Cham and Vevey, Switzerland, and London, England, to The Nestle Co., Inc., White Plains, N.Y. 74,832, ren. 8-19-69. Cl. 46.  
 Nestle Co., Inc.: See—  
 Nestle & Anglo, Swiss Condensed Milk Co.  
 Nettleton, A. E., Co., Syracuse, N.Y. 516,495, ren. 8-19-69. Cl. 39.  
 New England Aquarium Corp., Boston, Mass. 875,157, pub. 6-3-69. Cl. 38.  
 Niagara Blower Co., New York, N.Y. 516,454, ren. 8-19-69. Cl. 6.  
 Nina Footwear Co., Inc., Long Island City, N.Y. 875,184, pub. 1-21-69. Cl. 39.  
 Niswonger, Howard W., Colorado Springs, Colo. 874,294, pub. 6-3-69. Cl. 46.  
 Niven, Mack P., d.b.a. Carolina Mfg. Co., assor. to Carolina Mfg. Co., Greenville, S.C., to Fendrich Industries, Inc., Evansville, Ind. 513,045, ren. 8-19-69. Cl. 39.  
 Norac Co., Inc., The, Azusa, Calif. 874,956, pub. 6-3-69. Cl. 6.  
 Norcross, to Norcross, Inc., New York, N.Y. 262,598, ren. 8-19-69. Cl. 7.  
 Norcross, Inc.: See—  
 Norcross.  
 Oakford & Fahnstock, Peoria, Ill., to Blue Ribbon Coffee Co., d.b.a. Blue Ribbon Products Co., San Francisco, Calif. 32,516, ren. 8-19-69. Cl. 46.  
 Old Boone Distillery Co.: See—  
 Pendergast, T. J., Wholesale Liquor Co., Inc.  
 Old Reliable Cartridge Co.: See—  
 Chandler, Roman T.  
 Omark Industries, Inc., Portland, Oreg. 875,394, pub. 6-3-69. Cl. 103.  
 Omco Inc., Worcester, Mass. 875,001, pub. 6-3-69. Cl. 13.  
 Onelda Ltd., Onelda, N.Y. 875,082, pub. 6-3-69. Cl. 23.  
 Only Place, Inc., The, Canyon, Tex. 875,355, pub. 6-3-69. Cl. 100.  
 Optotechnik G.m.b.H., Kientaleta, Upper Bavaria, Germany. 875,229, pub. 6-3-69. Cl. 44.  
 Orbit Valve Co., Tulsa, Okla., to Orbit Valve Co., Little Rock, Ark. 513,975, ren. 8-19-69. Cl. 13.  
 Orgel, B., Co.: See—  
 Orgel, Benjamin.  
 Orgel, Benjamin, d.b.a. B. Orgel Co., New York, N.Y. 752,072, can. Cl. 28.  
 Orkin Exterminating Co., Atlanta, Ga. 875,895, pub. 6-3-69. Cl. 103.



Osborn Mfg. Co., The, to The Sherwin-Williams Co., Cleveland, Ohio, 512,149, ren. 8-19-69, Cl. 23.  
 Pacific Aromatics, Inc., Los Angeles, Calif. 875,275, pub. 6-3-69, Cl. 46.  
 Paeo, Inc., Perth Amboy, N.J. 874,995, pub. 6-3-69, Cl. 12.  
 Pageant Press, Inc., New York, N.Y. 752,143, can. Cl. 38.  
 Pan American Trade Development Corp., New York, N.Y. 875,009, pub. 6-3-69, Cl. 14.  
 Paper Service Co., The, Lockland, to Cincinnati Industries, Inc., Lockland, Cincinnati, Ohio, 258,073, ren. 8-19-69, Cl. 37.  
 Parfumerie L. T. Piver: See—  
 Piver, L. T., S.A.  
 Parfums Schiaparelli, Inc., New York, N.Y. 875,325, pub. 6-3-69, Cl. 51.  
 Parker, I. C., Fort Worth, Tex. 504,742, ren. 8-19-69, Cl. 46.  
 Park-O Corp.: See—  
 ALD, Inc.  
 Pax-Products, Des Moines, Iowa, 751,884, can. Cl. 6.  
 Pearlcraft, Birmingham, Ala. 751,876, can. Cl. 2.  
 Pecora Chemical Corp., Philadelphia, Pa. 874,954, pub. 6-3-69, Cl. 5.  
 Pelron Corp., Lyons, Ill. 751,868, can. Cl. 1.  
 Pendergast, T. J., Wholesale Liquor Co., Inc., Kansas City, Mo., to Old Boone Distillery Co., Louisville, Ky. 517,604, ren. 8-19-69, Cl. 49.  
 Perfect Parts, Inc., Carlstadt, N.J. 875,098, pub. 6-3-69, Cl. 26.  
 Perrine Battery Corp., d.b.a. Boston Battery Co., Waltham, Mass. 751,973, can. Cl. 21.  
 Pfizer, Chas., & Co., Inc., New York, N.Y. 874,968, pub. 6-3-69, Cl. 6.  
 Pharmstat, Inc., Los Angeles, Calif. 875,375, pub. 6-3-69, Cl. 101.  
 Philco Corp., Philadelphia, Pa. 400,615, can. Cl. 2.  
 Philco Corp., Philadelphia, Pa. 401,118, can. Cl. 7.  
 Piaggio & C. Società per Azioni, Genoa, Italy. 751,959, can. Cl. 19.  
 Pickwick International Inc., Long Island City, N.Y. 752,122, can. Cl. 36.  
 Pincus, Sidney L., d.b.a. Modern Products Co., Brooklyn, N.Y. 874,952, pub. 6-3-69, Cl. 5.  
 Piver, L. T., S.A., from Parfumerie L. T. Piver, Paris, France. 875,321, pub. 6-3-69, Cl. 51.  
 Pizza Dog, Inc., Detroit Mich. 875,278, pub. 6-3-69, Cl. 46.  
 Placerville Fruit Growers Association, Placerville, Calif. 512,007, ren. 8-19-69, Cl. 46.  
 Plastape, Inc., New York, N.Y. 875,146, pub. 6-3-69, Cl. 36.  
 Polaris Co., Inc., to Block Drug Co., Inc., Jersey City, N.J. 517,533, ren. 8-19-69, Cl. 18.  
 Polystop Corp., Slattersville, R.I. 875,317, pub. 6-3-69, Cl. 50.  
 Pomerantz, A., & Co., Philadelphia, Pa. 514,586, ren. 8-19-69, Cl. 38.  
 Pomerantz, A., & Co., Philadelphia, Pa. 874,977, pub. 6-3-69, Cl. 11.  
 Precision Mfg. Co., Inc., The, Clearwater, Fla. 875,090, pub. 6-3-69, Cl. 23.  
 Prince Butter Cookie Co., Inc., Brooklyn, N.Y. 875,276, pub. 6-3-69, Cl. 46.  
 Probak Corp., Jersey City, N.J., and New York, N.Y., to The Gillette Co., Boston, Mass. 263,268, ren. 8-19-69, Cl. 23.  
 Procter & Gamble Co., The, Cincinnati, Ohio. 874,966-7, pub. 6-3-69, Cl. 6.  
 Progress Heat Sealing Co., Inc., New York, N.Y. 875,373, pub. 6-3-69, Cl. 101.  
 Pullmax Aktiebolag, Goteborg, Sweden. 875,074-5, pub. 6-3-69, Multiple Class (Classes 23 and 34).  
 Pyle, Howard S., Mercer Island, Wash. 875,170, pub. 6-3-69, Cl. 38.  
 Quik Print, Inc., Wichita, Kans. 875,362, pub. 4-8-69, Cl. 101.  
 R.E.L. Enterprises, Inc., Los Angeles, Calif. 875,384, pub. 6-3-69, Cl. 101.  
 Rainbow Mealworms, Cudahy, Calif. 874,928, pub. 6-10-69, Cl. 1.  
 Ralston Purina Co., St. Louis, Mo. 875,301, pub. 6-3-69, Cl. 46.  
 Ralston Purina Co., St. Louis, Mo. 875,338, pub. 6-3-69, Cl. 51.  
 Rancho California, Newport Beach, Calif. 875,252, pub. 6-3-69, Cl. 46.  
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 Ransom, Richard K., d.b.a. Hickory Farms of Ohio, Toledo, Ohio. 875,260-2, pub. 6-3-69, Cl. 46.  
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 Rawson Drug & Sundry Co., Inc., Oakland, Calif. 875,319, pub. 6-3-69, Cl. 51.  
 Raytech Equipment Co.: See—  
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 Red Wing Shoe Co., Inc., Red Wing, Minn. 875,410, Cl. 39.  
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 Reed & Carnrick, Kenilworth, N.J. 875,031-2, pub. 6-3-69, Cl. 18.  
 Regal Fruit Cooperative, Tonasket, Wash. 875,279, pub. 6-3-69, Cl. 46.  
 Regal Mfg. Co., Providence, R.I. 875,112, pub. 6-3-69, Cl. 28.  
 Reisman, Lawrence, d.b.a. Biendall Synthetic Thread Co., New York, N.Y. 752,216, can. Cl. 43.  
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 Republic Molding Corp., Chicago, Ill. 874,934, pub. 6-3-69, Multiple Class (Classes 2, 5, and 37).  
 Republic Steel Corp., Cleveland, Ohio. 875,008, pub. 6-3-69, Cl. 14.  
 Resinous Products & Chemical Co., The, to Rohm & Haas Co., Philadelphia, Pa. 257,757, ren. 8-19-69, Cl. 1.  
 Restaurant Associates Industries, Inc., New York, N.Y. 875,357-9, pub. 6-3-69, Cl. 100.  
 Rexall Drug & Chemical Co., d.b.a. Vanda Cosmetics Co., Los Angeles, Calif. 875,334, pub. 6-3-69, Cl. 51.  
 Richelle Corp., The, Holbrook, N.Y. 875,116, pub. 6-3-69, Cl. 28.  
 Rickie Tickle Stickies: See—  
 Kracke, Don.  
 Ridgewood Instrument Co., Grandview, Mo. 874,999, pub. 6-3-69, Cl. 13.  
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 Rimar Mfg., Inc., Manheim, Pa. 874,906, pub. 6-3-69, Cl. 12.  
 Riviana Foods Inc., Houston, Tex. 875,288, pub. 6-3-69, Cl. 46.  
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 Schulmerich Carillons, Inc., Sellersville, Pa. 875,105, pub. 6-3-69, Cl. 26.  
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 Scott/Franklin International, Hollywood, Calif. 875,412, Cl. 40.  
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 Seltz, Carl F., Phoenix, Ariz. 875,311, pub. 6-3-69, Cl. 50.  
 Serval Products Co., Inc., College Point, N.Y. 752,259, can. Cl. 52.  
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 Sextant Systems, Inc., Milwaukee, Wis. 875,173, pub. 6-3-69, Cl. 38.  
 Sharp & Dohme, Baltimore, Md., to Merck & Co., Inc., Rahway, N.J. 75,881, ren. 8-19-69, Cl. 18.  
 Shell Oil Co., New York, N.Y. 874,926, pub. 6-3-69, Cl. 1.  
 Sherwin-Williams Co., The, Cleveland, Ohio. 512,111, ren. 8-19-69, Cl. 12.  
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 Shinn Industries, Inc., Santa Ana, Calif. 751,957, can. Cl. 19.

Shoe Form Co., Inc., Auburn, N.Y. 874,948, pub. 6-3-69, Cl. 2.  
 Stangelis Associates, Inc., New York, N.Y. 751,894, can. Cl. 6.  
 Sieber & McIntyre, Inc., Chicago, Ill. 875,162, pub. 6-3-69, Cl. 38.  
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 Skinner, William, & Sons, Holyoke, Mass., to Indian Head Inc., New York, N.Y. 516,931, ren. 8-19-69, Cl. 42.  
 Skogsviks Licens Aktiebolag, Taby, Sweden. 875,128, pub. 6-3-69, Cl. 32.  
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 Solar Laboratories, Inc., Inglewood, Calif. 875,232, pub. 6-3-69, Cl. 44.  
 South Shore Tool & Development Corp., Irwin, Pa. 875,091, pub. 6-3-69, Cl. 23.  
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 Southwestern Drug Corp., Dallas, Tex. 875,153, pub. 6-3-69, Cl. 37.  
 Sovera Co., The, Winter Haven, Fla. 875,340, pub. 6-3-69, Cl. 51.  
 Spalding, A. G., & Bros. Inc., Chicopee, Mass. 875,061, pub. 6-3-69, Cl. 22.  
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 Sportsman's Den, Inc., d.b.a. Kendon Mfg. Co., Ooltewah, Tenn. 875,071, pub. 6-3-69, Cl. 22.  
 Staley, A.E., Mfg. Co., Decatur, Ill. 875,286, pub. 6-3-69, Cl. 46.  
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 Standard Oil Co., The, Cleveland, Ohio. 875,010, pub. 6-3-69, Cl. 15.  
 Standex Corp., Chicago, Ill. 875,300, pub. 6-3-69, Cl. 46.  
 Staples Tool Co., The, Cincinnati, Ohio, to National Twist Drill & Tool Co., Rochester, Mich. 514,129, ren. 8-19-69, Cl. 23.  
 Sta-Put Enterprises Inc., Massapequa Park, N.Y. 875,314, pub. 6-3-69, Cl. 50.  
 Star Bakeries, Inc., Miami, Fla. 875,285, pub. 6-3-69, Cl. 46.  
 Star Case Co., The, New York, N.Y. 875,101, pub. 6-3-69, Cl. 28.  
 Status Shoe Corp., The, New York, N.Y. 875,186, pub. 6-3-69, Cl. 39.  
 Stayton Canning Co., Cooperative, Stayton, Ore. 875,272-3, pub. 6-3-69, Cl. 46.  
 Sternco Industries, Inc., Harrison, N.J. 874,951, pub. 6-3-69, Cl. 5.  
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 Stevens, J. P., & Co., Inc., New York, N.Y. 752,209, can. Cl. 42.  
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 Straus Findings, Inc., New York, N.Y. 752,075, can. Cl. 28.  
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 Sunbell Corp., Albuquerque, N. Mex. 875,113, pub. 6-3-69, Cl. 28.  
 Sunco Corp., d.b.a. Walden Pond Food, Forest City, Iowa. 875,259, pub. 6-3-69, Cl. 46.  
 Sunnen Products Co., to Sunnen Products Co., St. Louis, Mo. 515,264, ren. 8-19-69, Cl. 23.  
 Sure-Seal Equipment Co., Portland, Ore. 752,119, can. Cl. 35.  
 Swiss-Tech, Inc., Delavan, Wis. 875,058, pub. 6-3-69, Cl. 22.  
 Sybron Corp., Rochester, N.Y. 875,241, pub. 6-3-69, Cl. 44.  
 Sylvester's Jewelers, New York, N.Y. 875,117, pub. 6-3-69, Cl. 28.  
 Talon, Inc., Meadville, Pa., to Textron Inc., Providence, R.I. 518,701, ren. 8-19-69, Cl. 22.  
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 Tanner of North Carolina, Inc., Rutherfordton, N.C. 875,185, pub. 6-3-69, Cl. 39.  
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 Tetragrammaton Records, Beverly Hills, Calif. 875,147-8, pub. 6-3-69, Cl. 36.  
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 United Industrial Syndicate, Inc., Portland, Maine. 875,086, pub. 6-3-69, Cl. 23.  
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 Florian, Inc.  
 Weeks & Leo Co., Inc., Des Moines, Iowa. 514,260, ren. 8-19-69. Cl. 51.  
 Well, Gabe B., Dallas, Tex. 752,261-2, can. Cl. 52.  
 Westchester Timber Corp., New York, N.Y. 874,982, pub. 6-3-69. Cl. 12.  
 Westfield Mfg. Co., The, to The Columbia Mfg. Co., Inc., Westfield, Mass. 515,885, ren. 8-19-69. Cl. 19.  
 Wheeling Machine Products Co., Wheeling, W. Va. 875,004, pub. 6-3-69. Cl. 13.  
 White Cross Stores, Inc., from A. Robinson & Co., Inc., Monroeville, Pa. 875,361, pub. 10-19-69. Cl. 101.  
 White Dairy Co., Birmingham, Ala. 875,257, pub. 6-3-69. Cl. 46.  
 White, Nancy S., d.b.a. GRR! Club, Northfield, Ill. 875,115, pub. 6-3-69. Cl. 28.  
 Wigwam, Inc., The, Portland, Oreg. 874,933, pub. 6-3-69. Multiple Class (Classes 2 and 37).  
 Wilson Brothers, Chicago, Ill., to The Enro Shirt Co., Inc., Louisville, Ky. 255,121, ren. 8-19-69. Cl. 39.  
 Wilson Sporting Goods Co., River Grove, Ill. 875,069, pub. 6-3-69. Cl. 22.  
 Winterizer, The: See—  
 Walcutt, Carl O.  
 Wohl Shoe Co., St. Louis, Mo. 258,058, ren. 8-19-69. Cl. 39.  
 Wood-Lam Structures: See—  
 Horton, Robert B.  
 Work Wear Corp., Cleveland, Ohio. 875,228, pub. 6-3-69. Cl. 42.  
 Wyandotte Paint Products Co., Wyandotte, Mich. 875,012, pub. 3-4-69. Cl. 16.  
 Wyo-Ben Products, Inc., Billings, Mont. 874,973, pub. 6-3-69. Cl. 10.  
 Xttrium Laboratories, Inc., d.b.a. Blue Ridge Vitamin Co., Chicago, Ill. 752,254, can. Cl. 51.  
 York, Christopher, Lighting, Inc., Chicago, Ill. 751,999, can. Cl. 21.  
 Young, Edward, & Co., Ltd., London, England. 875,307, pub. 6-3-69. Cl. 49.  
 Young Fire Equipment Corp., Lancaster, N.Y. 874,935, pub. 6-3-69. Cl. 2.  
 Zartic Frozen Meats, Inc., from Randy's Frozen Steaks, Inc., Plainfield, Ill. 875,265, pub. 6-3-69. Cl. 46.  
 Zytron Industries, Inc., South Hackensack, N.J. 875,097, pub. 6-3-69. Cl. 26.

U.S. GOVERNMENT PRINTING OFFICE: O—1969

## U.S. DEPARTMENT OF COMMERCE OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE August 26, 1969 Volume 865 Number 4

### PATENTS NOTICES

Board of Appeals Decisions Rendered in the Month of July 1969		Certificates of Correction for the Week of Aug. 26, 1969		
Examiner affirmed	114	Re. 26,606	3,375,735	3,436,348
Examiner affirmed in part	19	3,204,794	3,375,924	3,436,400
Examiner reversed	33	3,307,660	3,376,267	3,437,645
		3,327,590	3,377,291	3,442,878
		3,328,373	3,378,209	3,443,003
Total	166	3,333,922	3,379,305	3,443,026
		3,345,146	3,390,284	3,443,817
		3,345,688	3,396,619	3,444,074
		3,362,926	3,399,649	3,444,079
		3,364,833	3,404,007	3,445,357
<b>Disclaimers</b>		3,364,998	3,411,906	3,445,526
3,223,338.—Sho Takeuchi, Yokohama-shi, Japan. TAPE DRIVE MECHANISM. Patent dated Dec. 14, 1965. Disclaimer filed July 8, 1969, by the assignee, Fujitsu Limited.		3,367,944	3,412,136	3,445,585
Hereby enters this disclaimer to claims 5 and 6 of said patent.		3,373,180	3,424,558	3,446,679
		3,373,333	3,431,249	3,446,849
		3,374,841	3,433,821	3,447,927
		3,375,598	3,434,051	3,448,009

3,250,792.—Albert Wettstein, Riehen, and Georg Anner, Karl Heusler, Jaroslav Kalvoda, and Peter Wieland, Basel, Switzerland. 19-NOR-STERIODS AND PROCESS FOR THEIR MANUFACTURE. Patent dated May 10, 1966. Disclaimer filed July 10, 1969, by the assignee, Ciba Corporation.  
 Hereby enters this disclaimer to claims 1, 11 and 13 of said patent.

#### Erratum

In the OFFICIAL GAZETTE, issue of Aug. 19, 1969, vol. 865, page 663, under the heading "Vacancy Announcement," lines 1 and 2, for "Deputy Assistant Commissioner for Patent Examining, GS-1220-17" read *Deputy Assistant Commissioner for Patent Examining, GS-1220-16*.

New Applications Received During June 1969		Issue—August 26, 1969	
Patents	8543	Patents	1300—No. 3,462,763 to No. 3,464,062, incl.
Designs	562	Designs	31—No. 215,046 to No. 215,076, incl.
Plant Patents	4	Reissues	7—No. 26,649 to No. 26,655, incl.
Reissues	46		
Total	9455	Total	1338



# PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

## CONDITION OF PATENT APPLICATIONS AS OF AUGUST 11, 1969

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
*Denotes oldest new application.	
<b>CHEMICAL EXAMINING GROUPS</b>	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director.....	8-01-67
Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director.....	*12-14-66
Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director.....	2-23-67
Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director....	1-06-67
Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director....	1-23-67
Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	
<b>ELECTRICAL EXAMINING GROUPS</b>	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director.....	1-04-68
Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	
SECURITY, GROUP 220—S. BOYD, Director.....	*10-31-66
Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director.....	1-05-67
Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director.....	6-07-67
Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	
PHYSICS, GROUP 280—R. L. EVANS, Director.....	11-16-67
Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	
DESIGNS, GROUP 290—S. BOYD, Director.....	11-27-68
Industrial Arts; Household, Personal and Fine Arts.	
<b>MECHANICAL EXAMINING GROUPS</b>	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director.....	4-03-68
Conveyors; Helix; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director.....	*12-01-67
Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director.....	1-03-68
Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletary; Printing; Typewriters; Stationery; Information Dissemination.	
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director.....	7-01-68
Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director.....	4-26-68
Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUH, Director.....	2-08-68
Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	
Total number of pending applications (excluding Designs).....	184,690
Total number of Design applications pending.....	2,960
Expiration of patents: The patents within the range of numbers indicated below expire during August 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.	
Patents.....	Numbers 2,005,466 to 2,008,686, inclusive
Plant Patents.....	Numbers 1,117 to 1,123, inclusive

# DECISIONS IN PATENT AND TRADEMARK CASES

## U.S. Court of Customs and Patent Appeals

MARRIOTT-HOT SHOPPES, INC. v. BURGER FAMILY, INC.

No. 8129. Decided April 3, 1969

[56 CCPA —; 408 F.2d 474; 161 USPQ 227]

### 1. TRADEMARK—CONFUSING SIMILARITY—"TEEN BURGER" AND "TEEN TWIST" FOR SANDWICHES.

In determining whether there was a likelihood of confusion between appellant-opposer's mark "TEEN TWIST" and appellee-applicant's mark "TEEN burger," both for sandwiches, Held that "Finding it highly dubious from the record than Teen per se was ever selected or promoted to identify any of appellant's sandwiches, and considering the marks in their entirety, we fail to see any likelihood of confusion."

APPEAL from Patent Office. Opposition No. 44,826.

AFFIRMED.

(Francis C. Browne, Richard G. Kline, of counsel) Browne, Schuyler & Beveridge for appellant.

Marlin Ralph Shaffer for appellee.

Before WORLEX, Chief Judge, and Judges RICH, ALMOND, BALDWIN and McGUIRE<sup>1</sup>

ALMOND, J., delivered the opinion of the court.

Marriott-Hot Shoppes, Inc., appeals from the decision of the Trademark Trial and Appeal Board, 152 USPQ 838, dismissing its opposition to the application of Burger Family, Inc.,<sup>2</sup> seeking registration on the Principal Register of the mark

**TEEN  
burger**

(with "burger" being disclaimed) for "Hamburger Type Sandwiches," asserting use in interstate commerce on or before August 26, 1963.

Appellant alleged below and contends here that the mark for which registration is sought so resembles the mark TEEN allegedly used previously by it for sandwiches as to be likely to cause confusion or mistake or to deceive within the purview of section 2(d) of the Trademark Act of 1946 (15 U.S.C. 1052(d)).

The record discloses that appellant operates a chain of family type drive-in restaurants dispersed throughout this country, and that since 1958 its menus have continuously featured the term TEEN TWIST as a designation for a sandwich on a twisted roll intended to appeal to teenagers. TEEN TWIST has been advertised on occasion through the media of newspapers and radios. It was stipulated that one of appellant's restaurants located in Maryland sold 669 TEEN TWIST sandwiches in the week of July 27, 1964.

The Board observed that while appellant had pleaded the use of the term Teen as a trademark for sandwiches, the record disclosed that the term had been used by it *only* as a part of the mark TEEN TWIST.

The record further discloses that appellee is the owner of subsisting registrations of the marks THE BURGER FAMILY, MAMA BUR-

<sup>1</sup> Senior Judge, United States District Court for the District of Columbia, sitting by designation.  
<sup>2</sup> Serial No. 195,203 filed June 9, 1964.



GER, PAPA BURGER, and BABY BURGER, and that through the facilities of drive-in type restaurants, it has used those marks and the mark TEEN BURGER in connection with the sale of hamburger sandwiches.

The Board held that:

Since it thus appears that opposer is here the prior user, and the marks of the parties are both applied to sandwiches, this case turns solely on a comparison of the marks.

In this regard, "TEEN TWIST" and "TEEN BURGER" are both suggestive of sandwiches appealing to teenagers. Considering the nature of these marks, and the differences between them when considered in their entirety, it is our opinion that their contemporaneous use is not reasonably likely to cause confusion or mistake or to deceive.

Our review of the record and the briefs and arguments of counsel are not persuasive of error in the decision of the Board. We deem it pertinent to point out more precisely than did the Board that the actual sandwich designations employed by appellant were TEEN TWIST SANDWICH and TEEN TWIST. The letters and words designating the sandwich in appellant's menu exhibit are all of standard, bold block form. The descriptive contents of the sandwich have no reference to burger or hamburger. The words TEEN TWIST SANDWICH appear conjointly in a single line comprised of letters of the same size and type. The Teen element thereof is not distinguished by space, position, type or style from the remainder of the phrase. In the menu exhibit appellant's hamburger sandwich is designated by the registered mark MIGHTY MO. Other burger sandwiches offered thereon are identified by the description "Hot Shoppe's" and "Grilled Cheeseburger." It is of interest to note that appellant's witness, Mrs. Haney, described the Teen Twist sandwich as being wrapped with paper bearing the mark MIGHTY MO on the inside of the wrapping.

[1] Finding it highly dubious from the record that Teen per se was ever selected or promoted to identify any of appellant's sandwiches, and considering the marks in their entirety, we fail to see any likelihood of confusion. In our opinion the record fairly supports the decision of the Board, which is accordingly affirmed.

AFFIRMED.

### U.S. Court of Customs and Patent Appeals

IN RE CHARLES H. FUCHSMAN

No. 8044. Decided January 16, 1969

[56 CCPA —; 405 F.2d 892; 160 USPQ 404]

#### 1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"FERROUS SINTERED ARTICLE AND METHOD THEREFOR."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Ferrous Sintered Article and Method Therefor" as unpatentable over the prior art, is reversed as to some of the claims and affirmed as to the others.

APPEAL from Patent Office. Serial No. 474,185.

MODIFIED.

Milton L. Simmons for appellant.

Joseph Schimmel (Fred W. Sherling, of counsel) for the Commissioner of Patents.

Before WORLEY, Chief Judge, and Judges RICH, ALMOND, BALDWIN, and KIRKPATRICK<sup>1</sup>

KIRKPATRICK, J., delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals<sup>2</sup> affirming the Examiner's rejection of all the claims (1 through 20) of application Serial No. 474,185, filed July 22, 1965, for "Ferrous Sintered Article and Method Therefor."

The invention relates to the production of articles formed of sintered, iron powder. A mixture is provided of relatively pure powdered iron with about 0.1 to about 0.9 part by weight of elemental powdered copper and about 0.1 to about 0.6 part by weight of elemental powdered sulphur. The mixture is compacted into a formed article at about 50,000 p.s.i. and sintered in a substantially non-oxidizing atmosphere. Particular significance is attached to the fact that the proportion of copper in the mixture is less than 1% by weight and appellant's application states:

Although it has been proposed that elemental sulfur provides greatly improved strength at relatively low compaction pressures, and that copper is compatible with sulfur in this respect, it is believed that no one has recognized heretofore that in combinations involving less than 1% each, respectively, copper and sulfur, with powdered iron sintered articles there is thus provided an unexpected, greatly improved effect unpredictable from the activity of either sulfur or copper alone. Although copper has been used for various reasons in powdered iron mixes, it has always been used in quantities in excess of one percent.

Claims 5, 10, 15 and 20 are product claims while the remaining claims are method claims. A more significant grouping of the claims from the viewpoint of our subsequent discussion, is that claims 1-10 and 16-20 recite a proportion of copper in the mixture in the range 0.1% to about 0.9% (or in some of these claims up to 1%) while claims 11-15 recite a proportion of copper in the mixture in the range 0.1% to 0.7% by weight.

Only one reference, Russo, U.S. Patent No. 3,120,699, issued Feb. 11, 1964, has been cited. Russo discloses the production of sintered articles from powdered iron admixed with sulfur in the range 0.1%-2% by weight. Russo also refers to the addition of copper to such a mixture, stating:

When copper powder is used as a strength-inducing additive, the effects of the sulfur and the copper are not additive. At concentrations substantially in excess of 1% copper, the sulfur addition produces no significant improvement in the strength of the sintered iron part, sulfur performing essentially independently of copper. Although, while copper is not helpful to the achievement of strength through my invention, it of course could be tolerated to enhance some property of the system, other than strength.

The Examiner rejected all the claims 1-20 under 35 U.S.C. 103 as obvious in view of Russo, stating:

The reference further discusses copper as a strength-inducing additive, but indicates that, if the copper is in excess of 1%, then the sulfur addition produces no significant improvement. This is a clear teaching that less than 1% of copper would be used with the sulfur to achieve the optimum strengthening characteristics \* \* \*. Since the patent teaches the addition of copper and sulfur to iron powder prior to sintering, to use such a combination to achieve the results achieved by applicants is obvious from the reference.

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.  
<sup>2</sup> The board consisted of Dracopoulos and Lidoff, Examiners-in-Chief, and Stone, Acting Examiner-in-Chief. Mr. Stone wrote the opinion of the board.



The Board agreed with the Examiner that the previously quoted portion of the Russo reference constituted a teaching of the use of less than 1% of copper, saying:

Appellant construes this language as to mean the reference has not used less than 1% of copper. We do not so consider it and we are in accord with the Examiner's view that this teaching would suggest to one skilled in the art that a proportion of less than 1% of copper may be used in conjunction with sulfur. \* \* \*

Then the Board proceeded to affirm the Examiner's rejection of the claims.

On appeal, appellant contests the Board's finding that Russo inferentially teaches a proportion of copper less than 1% and emphasizes the unexpected nature of the results obtained by addition of copper and sulphur in the proportion claimed. To provide a visual indication of these advantages, appellant, in his brief, includes a graphical presentation of certain strength data of record, namely Table I of the patent application, as follows:

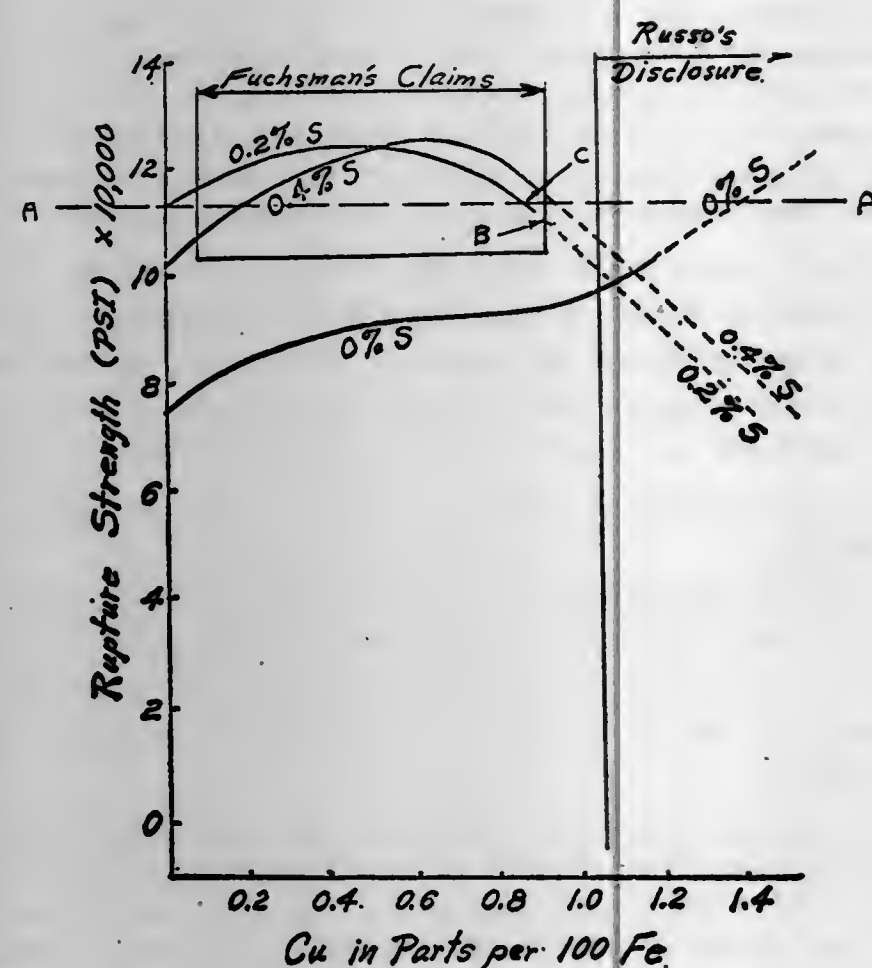


Fig. 1

What we find interesting about appellant's graph is the portion of the plot for the mixture having 0.2% sulphur, lying between the points which we have marked as C and B. The point B represents the 0.2% S; 0.9% Cu point of Table I. The point C is represented by the intersection of the 0.2% S plot with a horizontal line A—A we have provided, which passes through a point on the vertical axis intersected by the 0.2% S plot and which represents the rupture strength of the 0.2% sulphur mixture with no copper at all present.

It will be seen that the portion C-B of the 0.2% sulphur plot, which lies within the claimed range of copper recited in claims 1-10 and 16-20, represents a range in which the addition of copper to the 0.2%

sulphur mixture reduces its rupture strength to less than what it would be if no copper were added to the 0.2% sulphur at all. Stated alternatively, it is clear that in the range C-B the effect of the added copper to the 0.2% sulphur mixture is not additive to the effect of the sulphur alone in strengthening the material. However, it is the teaching of Russo that above 1% of copper, the effects of the copper and sulphur are not additive, and one skilled in the art might naturally expect it to be obvious that the effects would not be additive below 1% either.<sup>3</sup> Thus, in the range C-B of the 0.2% sulphur plot, which lies within the range of copper recited in claims 1-10 and 16-20, appellant's mixture is behaving in accordance with what would be obvious from the teachings of Russo.<sup>4</sup> As to these claims, therefore, the rejection under 35 U.S.C. 103 is affirmed.

As to claims 11-15 which recite a proportion of copper in the range 0.1%-0.7%, a different situation prevails. Within this entire range, as may be seen from the graph, the strength of the mixture with copper and sulphur is greater than with just sulphur alone,<sup>5</sup> which would be contrary to what would be expected from the obvious teaching of Russo. Therefore as to claims 11-15, we reverse the decision of the Board.

#### Conclusion

[1] The decision of the Board is affirmed as to the rejection of claims 1-10 and 16-20; the Board's affirmance of the rejection of claims 11-15 is reversed.

#### MODIFIED.

<sup>3</sup> Although this conclusion as to what would reasonably be an "obvious" expectation to draw from Russo concerning results with less than 1% copper is contrary to that drawn by the Board, it is in accordance with what appellant himself apparently considers to be the obvious result to be expected from Russo, as indicated by the following passage from his brief:

It is appellant's position, as previously set forth, that in view of the teaching of Russo, the results obtained by using copper in the range disclosed and claimed by the instant application, does yield an unexpected result, since in all cases an additive effect is obtained, and frequently more than an additive effect is realized. This, in spite of the teaching from the patent to Russo that the effect of sulphur and copper will not be additive. [Emphasis added.]

On this point we feel that it is more reasonable to believe that the "obvious" teaching to be drawn from Russo for the effects contributed by the copper and sulphur is that they are not additive in the range below 1% copper either.

<sup>4</sup> A generally similar argument is made in the Solicitor's brief with regard to the 0.9% copper; 0.2% sulphur point of Table I, as follows: Assuming arguendo that appellant has correctly ascertained the teachings of the reference, it appears that appellant has shown that a combination of 0.3-0.6% copper with 0.2-0.4% sulfur does unexpectedly and significantly improve strength as compared to the use of such amounts of sulfur alone. However, the combination of 0.9% copper with 0.2% sulfur significantly decreases strength as compared to the use of 0.2% sulfur alone. According to appellant's view of the teachings of the reference, this decrease would be expected. Therefore, claims 1-10 and 16-20 which cover the use of 0.9% copper with 0.2 sulfur would be obvious even from appellant's view of the teachings of the reference.

<sup>5</sup> The Solicitor's brief takes a contrary view on this point by comparing the rupture strength of a 0.7% copper, 0.25% sulphur mixture, given in Table III as 90,000 p.s.i., with the rupture strength of a mixture containing 0.2% sulphur alone, given in Table I as 113,000 p.s.i. We feel, however, that these results from different tables cannot be properly compared as the examples used in Table I were compacted at a higher pressure, 64,000 p.s.i. than those for Table III, 50,000 p.s.i. and, hence, could be expected to be in some degree mechanically stronger due to the different compaction pressure.

#### U.S. Court of Customs and Patent Appeals

INDEPENDENT GROCERS' ALLIANCE DISTRIBUTING Co. v. POTTER-MCCUNE COMPANY

No. 8073. Decided December 19, 1968

[56 CCPA —; 404 F.2d 622; 160 USPQ 46]

1. TRADEMARK—CONFUSING SIMILARITY—"MASTER CHEF" FOR DIFFERENT TYPES OF FOOD PRODUCTS.

"Appellee's priority being unquestioned, the sole issue is whether there is a likelihood of confusion between appellant's Master Chef for fresh meat and appellee's Master Chef for canned fruits and vegetables, coffee and tomato juice. The Board found that there is a likelihood of confusion, and we agree."



## 2. SAME—SAME—EVIDENCE—THIRD PARTY REGISTRATIONS.

"Appellant introduced below a number of third party registrations for the purpose of showing that appellee's mark is weak and, therefore, only entitled to a narrow scope of protection. However, if the mark, when applied to applicant's goods, is likely to cause confusion, third-party registrations of the same or similar marks on related goods are not controlling. *Chicago Pharmaceutical Co. v. American Home Products Corp.*, 47 CCPA 1149, 280 F.2d 148, 126 USPQ 388 (1960). Third-party registrations are but one factor to be considered in determining likelihood of confusion; and the existence on the register of similar marks on the same goods or the same mark on similar goods will not aid an applicant if the mark, when applied to the goods, will nevertheless create a likelihood of confusion. *Lilly Pulitzer, Inc. v. Lilli Ann Corp.*, 54 CCPA 1295, 376 F.2d 324, 153 USPQ 406 (1967). Appropriation of a prior user's mark cannot be sanctioned solely on the basis of third party registrations. *Clinton Detergent Co. v. The Procter & Gamble Co.*, 49 CCPA 1146, 302 F.2d 745, 133 USPQ 520 (1962)."

## 3. SAME—SAME—"MASTER CHEF" FOR FOOD PRODUCTS.

"Appellant argues that appellee is not entitled to monopolize the mark Master Chef for all food items regardless of their specific differences. However, in the case at bar, appellee is not claiming such broad 'monopoly' rights; rather, appellee asserts a likelihood of confusion between the mark as applied to its own goods [canned fruits and vegetables, coffee, and tomato juice] and to fresh meat. As the Board found, 'The goods here involved are all staple food products which are sold in the same retail outlets to the same average purchasers, and they may be used conjointly in the preparing of meals.' We believe that the use of the same mark on the goods here is likely to cause confusion notwithstanding the differences in the goods."

APPEAL from Patent Office. Serial No. 146,291.

AFFIRMED.

Lloyd C. Root, Daniel V. O'Keeffe, Marzall, Johnston, Cook & Root for appellant.

S. Stephen Baker for appellee.

Before WORLEY, Chief Judge, RICH, ALMOND and BALDWIN,  
Associate Judges

BALDWIN, J., delivered the opinion of the court.

This appeal is from the decision of the Trademark Trial and Appeal Board sustaining an opposition by Potter-McCune Company to Independent Grocers' Alliance Distributing Co.'s application<sup>1</sup> to register the trademark Master Chef for goods described as "fresh meat," asserting use since April 23, 1962. Appellee, Potter-McCune Company, opposed on the ground of likelihood of confusion, based upon its registered trademark Master Chef<sup>2</sup> for "canned fruits and vegetables, coffee, and tomato juice," asserting use since 1933.

[1] Appellee's priority being unquestioned, the sole issue is whether there is a likelihood of confusion between appellant's Master Chef for fresh meat<sup>3</sup> and appellee's Master Chef for canned fruits and vegetables, coffee and tomato juice. The Board found that there is a likelihood of confusion, and we agree.

<sup>1</sup> Serial No. 146,291, filed June 8, 1962.

<sup>2</sup> Registration No. 637,805, issued November 27, 1956. Appellee's registered trademark includes a design as shown below, but the design is inconsequential here.

**MASTER CHEF**

<sup>3</sup> Appellant's remarks and arguments concerning fresh gourmet cuts of meat and the use of Master Chef with another mark, is irrelevant since appellant seeks to register only Master Chef for "fresh meat," broadly.

[2] Appellant introduced below a number of third party registrations<sup>4</sup> for the purpose of showing that appellee's mark is weak and, therefore, only entitled to a narrow scope of protection. However, if the mark, when applied to applicant's goods, is likely to cause confusion, third-party registrations of the same or similar marks on related goods are not controlling. *Chicago Pharmaceutical Co. v. American Home Products Corp.*, 47 CCPA 1149, 280 F.2d 148, 126 USPQ 388 (1960). Third-party registrations are but one factor to be considered in determining likelihood of confusion; and the existence on the register of similar marks on the same goods or the same mark on similar goods will not aid an applicant if the mark, when applied to the goods, will nevertheless create a likelihood of confusion. *Lilly Pulitzer, Inc. v. Lilli Ann Corp.*, 54 CCPA 1295, 376 F.2d 324, 153 USPQ 406 (1967). Appropriation of a prior user's mark cannot be sanctioned solely on the basis of third party registrations. *Clinton Detergent Co. v. The Procter & Gamble Co.*, 49 CCPA 1146, 302 F.2d 745, 133 USPQ 520 (1962).

[3] Appellant argues that appellee is not entitled to monopolize the mark Master Chef for all food items regardless of their specific differences. However, in the case at bar, appellee is not claiming such broad "monopoly" rights; rather, appellee asserts a likelihood of confusion between the mark as applied to its own goods and to fresh meat. As the Board found, "The goods here involved are all staple food products which are sold in the same retail outlets to the same average purchasers, and they may be used conjointly in the preparing of meals." We believe that the use of the same mark on the goods here is likely to cause confusion notwithstanding the differences in the goods. See *B. Fischer & Co., Inc. v. Monroe Turkey Processing Plant, Inc.*, 115 USPQ 295 (1957), involving Astor for frozen turkeys and for herbs and seasoning used in preparing turkeys for roasting; *Anderson, Clayton & Co. v. The Quaker Oats Company*, 128 USPQ 296 (1961), involving Lift for breakfast cereal and for salad oil, vegetable oil shortening and margarine; for *Forst Packing Co., Inc. v. Antrim & Sons*, 28 CCPA 1005, 118 F.2d 576, 49 USPQ 64 (1941), involving applicant's Mansion Brand for beef, bacon, bologna, frankfurters and meat loaves consisting of a mixture of beef and pork and opposer's Old Mansion for coffee, spices and rice.

Appellant advises us that the Patent Office has registered Master Chef for sugar wafers and had no objection to the appellant's registration of that mark, when limited to fresh meat, in both instances over appellee's registration. Presumably, appellant urges both that it is "Patent Office policy" to register Master Chef for different foods and that the Patent Office, having special expertise in this field, is of the view that Master Chef, applied to different foods, would not be likely to cause confusion. Whatever inference appellant would prefer us to thus draw is somewhat dispelled by the present board decision and by *Potter-McCune Company v. C & T Refinery, Incorporated*, 140 USPQ 689 (1963), wherein the Board refused registration of Master Chef for vegetable oils and all purpose oil over Potter-McCune's registered mark asserted here.

The decision of the Board is affirmed.

AFFIRMED.

WORLEY, Chief Judge, concurs in the result.

<sup>4</sup> Of the 27 third party registrations in the record, 25 merely include either the word "Master" or the word "Chef." No. 625,114 is Chefmaster for "food colors," and only No. 692,531 is Master Chef for "sugar wafers."



## U.S. Court of Customs and Patent Appeals

FERRO CORPORATION v. QUAKER CHEMICAL CORPORATION

No. 8023. Decided December 19, 1968

[56 CCPA —; 404 F.2d 619; 160 USPQ 41]

## 1. TRADEMARK—CONFUSING SIMILARITY—"FERROCOTE" FOR RUST PREVENTING OILS AND "FERRO" FOR ENAMELLING AND OTHER MATERIALS.

"We are \* \* \* led back to consideration of the significance of the syllable 'ferro,' and we agree with the Board that to the average purchaser the term is more likely to have an association with iron than with appellant. As the mark FERROCOTE [for rust preventing oils] does not otherwise so resemble appellant's mark FERRO [for enamelling and other materials] as to cause likelihood of confusion, we therefore affirm the decision of the Board."

APPEAL from Patent Office. Opposition No. 44,858.

AFFIRMED.

Milton L. Simmons for appellant.

Joseph Rossman for appellee.

Before WORLEY, Chief Judge, RICH, SMITH, ALMOND, and BALDWIN, Associate Judges

ALMOND, J., delivered the opinion of the court.

Ferro Corporation appeals from the decision of the Trademark Trial and Appeal Board, 150 USPQ 685, dismissing its opposition to the application<sup>1</sup> of the Quaker Chemical Corporation to register "FERROCOTE" for rust preventative of oil, grease, varnish-like, and waxy character, applied as films on metals, asserting use since January 1936.

Appellant (opposer) is the registrant of the mark "FERRO" for glazed and enameled frit and clay;<sup>2</sup> for inorganic cobalt compounds, plastic stabilizers, and fungicides;<sup>3</sup> for fertilizer material comprising friable glass-like substances in finely divided form containing essential plant foods;<sup>4</sup> for organic and inorganic colorants and pigments for use in ceramics, plastics, organic paints and finishes, vitreous enamels, inks, glazes and building materials, screening oils, pastes, wetting compounds, and color concentrates suspended in plastic resin vehicles;<sup>5</sup> and for glass fibers in bulk and variously assembled for use in fabricating molded and other products wherein such fibers are incorporated;<sup>6</sup> of "FERROLITE COMPOUND" in association with a design for cleaning compounds for general use, particularly adapted for all railroad maintenance cleaning;<sup>7</sup> and of "FERRO PICKLE PILLS" for chemicals for chemical quantitative analysis of acids, alkalies, and elements in solutions in pickling baths.<sup>8</sup>

The Board considered the evidence of two of appellant's witnesses, each of whom was employed by a large producer of household appliances and each of whom held a responsible position and was familiar with the process of enameling and with opposer's enamel frit. Each of these witnesses was asked a similar question to wit "could you state \* \* \* what your initial impression would be as to the probable supplier of a proprietary product you happened to see in your finishing department which was characterized by the mark "FERROCOTE"? Each of the witnesses indicated that he would assume that

<sup>1</sup> Serial No. 198,493, filed July 24, 1964.  
<sup>2</sup> Reg. No. 545,912, issued July 31, 1951.  
<sup>3</sup> Reg. No. 549,848, issued Oct. 23, 1951.  
<sup>4</sup> Reg. No. 628,518, issued June 12, 1956.  
<sup>5</sup> Reg. No. 634,616, issued Sept. 8, 1959.  
<sup>6</sup> Reg. No. 755,244, issued Oct. 15, 1963.  
<sup>7</sup> Reg. No. 319,895, issued Dec. 11, 1934.  
<sup>8</sup> Reg. No. 614,665, issued Oct. 25, 1955.

it would be a product of Ferro Corporation. The Board, however, pointed out that appellee's goods would not ordinarily be found in the particular industrial environment in which the witnesses practiced, namely, an enamel finishing department and discounted their testimony, stating:

\* \* \* We do not find the testimony of these witnesses as to likelihood of confusion persuasive.

The Board then discussed the probability that the term "ferro" would be more likely to lead a prospective purchaser to associate the term with iron rather than to a connection with the Ferro Corporation, stating:

The term "ferro" constitutes a combining form indicating iron. See: Webster's Third New International Dictionary. Said term, as indicated by the record has been adopted many times as part of trademarks and trade names. As stated by the court in *Ferro Corporation v. Ronco Laboratories, Inc.*, 148 USPQ 497 (CCPA, 1966): "It is not believed that appellant [opposer here] is, by virtue of prior registrations, entitled to the sole possession of the term 'ferro.'" Considering the well known meaning of "ferro" we believe that any prospective purchaser of a rust preventative will comprehend the connotation of "FERROCOTE" and relate the initial part of said mark to iron rather than assume a connection with opposer. \* \* \*

Finally, the Board concluded:

\* \* \* We conclude that applicant's mark does not so resemble opposer's mark "FERRO" as to be likely when applied to applicant's goods to cause confusion or mistake or deception.

In commencing our review of this appeal, we are struck by the resemblance of this situation to that presented before this court in *Ferro Corporation v. Ronco Laboratories, Inc.*, 53 CCPA 913, 356 F.2d 122, 148 USPQ 497 (1966). In that proceeding *the same opposer, Ferro Corporation*, relying on the *same trademark registrations* as are presently relied upon, sought to oppose registration of the mark "FERROGARD" for rust preventative oils, conceded by appellant in this appeal to be *the same product*. This court affirmed the decision of the Trademark Trial and Appeal Board dismissing the opposition, stating:

Considering the many dissimilarities between appellant's marks and the mark sought to be registered, we agree with appellee's argument and the Board's holding. It is not believed that appellant is, by virtue of prior registrations, entitled to the sole possession of the term "ferro."

In assessing the persuasive weight to be given to the *Ronco* case, we take note of certain factual distinctions in that case. Most obvious of these distinctions is, of course, the difference between the marks FERROCOTE involved in the present appeal and FERROGARD involved in *Ronco*. In *Ronco* the mark "FERROGARD" sought to be registered included a design. As a result, there was a greater visual distinction between the marks in *Ronco* than in the present situation in which the mark "FERROCOTE" is not accompanied by a design. Appellant, however, has attached no legal significance to this distinction and neither do we in the particular situation before us.

Instead appellant seeks to distinguish the *Ronco* situation from that before us, by a different reasoning. Appellant quotes the following portion from the decision of the Board reproduced in our *Ronco* opinion:

Opposer's products, while specifically different from an oil to prevent rust and corrosion, nevertheless are compounds which are used in the treatment of metals or metal products or as a protective coating therefor. The products of both parties are sold to the same industrial users, and insofar as the record discloses, they may, at times, be distributed through the same trade channels.



Under the circumstances, the respective products are considered to be so related that a likelihood of confusion could occur were they to be marketed under the same or confusingly similar marks.

Appellant then argues that as he has taken more extensive testimony (than was produced in *Ronco*) to show that the products of the parties could originate from a single source, a different result should be reached. As we understand the Board in *Ronco*, they were saying that (1) the products may be from the same source hence (2) if the marks are confusingly similar, then (3) there may be a likelihood of confusion by purchasers that the goods originate from a common source. Appellant has incorrectly blurred the steps of reasoning thus set forth and appears to pass in one swift non sequitur from a position that as he has provided additional testimony, which *arguendo* shows the goods could have a common source, then it follows there is a likelihood of confusion.

While on the subject of the additional testimony provided by appellant, we decide that the Board was correct in finding the testimony of the witnesses Pfeiffer and Fighter not to be persuasive on the issue of likelihood of confusion. Each of these witnesses had been a customer of appellant for enameling materials for many years and used appellant's products extensively for enameling. Each of these witnesses on being asked what his initial impression would be on seeing a drum marked FERROCOTE in his department, indicated that he would assume it was a product of Ferro Corporation.

It seems to us open to considerable doubt, however, whether this reaction would be typical of prospective purchasers for rust preventing oils, a material not commonly found in an enameling department. Furthermore, some purchasers are unaware of the existence of Ferro Corporation (which appellee remarks in his brief is one of at least nine corporations having the syllable "ferro" in their name) or its products and would therefore be as unlikely to associate FERROCOTE with Ferro Corporation as the witnesses Pfeiffer and Fighter would be to do to the contrary.

[1] We are thus led back to consideration of the significance of the syllable "ferro," and we agree with the Board that to the average purchaser the term is more likely to have an association with iron than with appellant. As the mark FERROCOTE does not otherwise so resemble appellant's mark FERRO as to cause likelihood of confusion, we therefore affirm the decision of the Board.

**AFFIRMED.**

Judge Smith participated in the hearing of this case but died before a decision was reached.

#### U.S. Court of Customs and Patent Appeals

THE CHUN KING CORPORATION v. GENII PLANT LINE, INC.

No. 8037. Decided November 27, 1968

[56 CCPA —; 403 F.2d 274; 159 USPQ 649]

##### 1. TRADEMARK—USE AS TRADEMARK—JOINT USE WITH ANOTHER MARK.

"Appellee sold at least \$400,000 of its products in bag containers, all of which bore the designation LIVING EARTH. The record supports the conclusion that it was the purpose and intention of the appellee to use the designation, prominently displayed, as a trademark. Certainly there is no evidence of record upon which to predicate a contrary conclusion. The mere fact that LIVING EARTH was displayed in print smaller than 'GENII' and jointly therewith is not in deprecation of the fact that it was used as a trademark."

##### 2. SAME—CANCELLATION—LACHES—IDENTICAL MARKS AND GOODS.

"\* \* \* we are not persuaded of error on the part of the Board that: '\* \* \* where, as here, the marks and goods involved are identical, laches, even if established, will not avoid a judgment in favor of the prior user \* \* \*'."

##### 3. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—ABANDONMENT OF ISSUE.

"With reference to appellant's contention \* \* \* relating to appellee's assignment of any cause of action it may have had involving trademark infringement and unfair competition which it might possess against appellant, we have reviewed the facts of record relative thereto. However, inasmuch as appellant's brief does not deal with this issue, even though it is embraced in its reasons of appeal, it may therefore properly be assumed to have been abandoned."

APPEAL from Patent Office. Cancellation No. 8,180.

**AFFIRMED.**

Keith J. Kulie (*Spencer B. Michael*, of counsel) for appellant.

John P. Scholl, Kendrick, Subkow & Stolzy for appellee.

Before WORLEY, Chief Judge, RICH, SMITH, ALMOND, and BALDWIN,  
Associate Judges

ALMOND, J., delivered the opinion of the court.

The Chun King Corporation appeals from the decision of the Trademark Trial and Appeal Board, 150 USPQ 705, granting cancellation of its registration of "LIVING EARTH" for packaged compost-enriched soil,<sup>1</sup> and registration of the same mark in association with certain merely ancillary design matter for similar goods.<sup>2</sup> The petitioner-appellee, Genii Plant Line, Inc., alleged that it had continuously used the mark LIVING EARTH for planter mixes and soil conditioners since prior to appellant's first use thereof, and that by reason of such use, its rights in the mark are superior to those of appellant.

The Board found from the record before it that there was no dispute as to the material facts, in that it appeared from the testimony, and exhibits adduced, that appellee is a producer of a varied line of planter mixes and soil conditioners for household plants; that these commodities are packaged in polyethylene bags and marketed through supermarkets, variety stores, nurseries and like outlets. It further found that since at least August 1956 appellee had continuously applied the mark LIVING EARTH and the mark GENII to the bag containers for its goods and that its sales thereunder had approximated \$400,000 through 1964.

With respect to appellant, the Board found it had commenced using the mark LIVING EARTH in May 1959 for a packaged planter mix for house plants which it markets through the same trade channels to the same average purchasers as the like goods of the appellee. It further appears that through December 1963 appellant's sales under this mark were in excess of \$750,000, and it had spent in excess of \$150,000 in sales promotion of its product through various news media with widespread circulation.

Our review of the record is productive of the conclusion that it amply sustains the factual finding of the Board as above set forth. There is no doubt that priority of use of the mark LIVING EARTH resides with appellee; that the goods are substantially similar; the intended use and application are the same; the sales outlets are the same and sales appeal is directed and responded to by the same class of purchasers.

<sup>1</sup> Reg. No. 692,649, issued February 9, 1960.

<sup>2</sup> Reg. No. 706,865, issued November 8, 1960.



Appellant's contention before the Board, and substantially here, that it is entitled to maintain its registrations is predicated mainly on three grounds: (1) the manner and form of appellee's use of LIVING EARTH has been such that it would not be regarded by purchasers as a trademark for its goods; (2) appellee is estopped by reason of laches from asserting that it would be damaged by appellant's registrations; and (3) appellee has assigned to others not parties to this proceeding whatever proprietary rights it may have once had in the mark LIVING EARTH.

Addressing our attention to (1), the record discloses that on or about November 16, 1949 appellee's predecessor (Howard & Smith, Inc.) obtained a California state trademark registration consisting of a lamp from which issues smoke in an elliptical shape, with decorations emanating therefrom, surrounding the words Georgia Peat, Genii Brand, with the figure of a Genii in the center of the smoke and a small figure alongside \* \* \*.

However, thereafter, appellee developed a new package design. This design featured the word "genii" in large red letters appearing above the head of a genii with smoke emanating from a lamp. Across the top of the package in smaller but prominent letters appear the words "living earth." Appellee's witness, Ralph Worthington, with ample corroboration emanating from witnesses and numerous exhibits, testified that he put the mark LIVING EARTH on appellee's bags after discussing the matter with principals of the corporation; that it was inked in the art work and that all bags from the time the design was adopted carry the inscription LIVING EARTH. The witness specifically stated " \* \* \* that all bags from the time these first were used, in July of '56, to the present time carry this statement 'LIVING EARTH,' this trademark," and that the term LIVING EARTH was utilized as an "additional product identification and as a trademark."

[1] Appellee sold at least \$400,000 of its products in bag containers, all of which bore the designation LIVING EARTH. The record supports the conclusion that it was the purpose and intention of the appellee to use the designation, prominently displayed, as a trademark. Certainly there is no evidence of record upon which to predicate a contrary conclusion. The mere fact that LIVING EARTH was displayed in print smaller than "GENII" and jointly therewith is not in deprecation of the fact that it was used as a trademark.

With reference to appellant's contention (1), we are in agreement with the Board that:

\* \* \* this defense is based essentially on the fact that on the containers for petitioner's goods the term "LIVING EARTH" is displayed in much smaller print than the mark "GENII," but this does not warrant any inference that it does not serve to identify and distinguish petitioner's goods. Cf. *In re The Singer Manufacturing Co.* [45 CCPA 1002, 255 F.2d 939], 118 USPQ 310 \* \* \*. As stated by the court \* \* \*

" \* \* \* No authority has been cited, and none has been found to the effect that a trademark use requires a display of a design of any particular size or prominence. The important question is not how readily the mark will be noticed but whether, when it is noticed it will be understood as indicating origin of the goods."

And considering that "LIVING EARTH" is wholly arbitrary and has always been a separable and distinct, albeit subservient, feature of petitioner's containers, it is our opinion that it would be regarded as a trademark by purchasers of petitioner's goods.

As to appellant's contention (2) relating to laches, we are not persuaded that this record is sufficient to support the invocation of that

doctrine. As has been noted, the marks are identical, applied to the same goods, sold through the same channels to the same purchasers for the same use. We have, therefore, no debatable issue as to likelihood of confusion. Moreover, appellant has failed to adequately show its lack of knowledge and good faith in the adoption of the mark of a competitor. While not imputing bad faith on the part of appellant, the facts and circumstances of record tend strongly to show that appellant must have known of appellee's use of LIVING EARTH prior to its adoption of that mark. Without refutation, the record shows that there were only two other companies besides appellant and appellee which supplied products such as those identified by the marks in issue in the trade channels utilized by the parties hereto. Among those trade channels were the nationally known Woolworth, Kress and Newberry stores. In certain of these stores, the products were displayed side by side. It would seem that as a result of everyday business activities appellant would be aware of competing products and the outlets for same, as well as by what trade marks they were designated. Certainly those who solicited orders for appellant's product and called on customers must have been aware of the side-by-side display of similar competing goods. [2] However, we are not persuaded of error on the part of the Board that:

\* \* \* where, as here, the marks and goods involved are identical, laches, even if established, will not avoid a judgment in favor of the prior user [citations omitted].

[3] With reference to appellant's contention (3) relating to appellee's assignment of any cause of action it may have had involving trademark infringement and unfair competition which it might possess against appellant, we have reviewed the facts of record relative thereto. However, inasmuch as appellant's brief does not deal with this issue, even though it is embraced in its reasons of appeal, it may therefore properly be assumed to have been abandoned.

In view of the foregoing, we are not persuaded of reversible error in the decision of the board holding that appellee's rights in the mark LIVING EARTH are superior to those of appellant.

The decision of the Board is affirmed.

**AFFIRMED.**

Judge Smith participated in the hearing of this case but died before a decision was reached.

### U.S. Court of Customs and Patent Appeals

THE DRACKETT CO. v. H. KOHNSTAMM & Co., INC.

No. 8051. Decided January 16, 1969

[56 CCPA —; 404 F.2d 1399; 160 USPQ 407]

#### 1. TRADEMARK — CONFUSING SIMILARITY — SUGGESTIVENESS — "ENDUST" AND "DUSTOP" FOR DUST CLOTHS AND MOPS.

"The Board correctly found that appellee's mark ENDUST does not resemble appellant's mark DUSTOP and that there is no likelihood that purchasers would attribute the goods sold thereunder to the same source. There is very little resemblance in appearance or sound; the only common feature from this standpoint is the inclusion of the word 'dust' in which appellant can have no exclusive right in connection with products for disposing of dust. Concerning resemblance in meaning, appellant argues that 'END and STOP are synonymous terms' and that '[b]oth marks, therefore, have identical meanings, that is, to end or stop dust or dusting.' However, if the marks have any significance as argued by appellant, it must be the highly suggestive meaning



found by the Board, and thus ENDUST is a weak mark which is entitled to only a limited scope of protection. Although ENDUST may not be *descriptive* in the sense that the product actually *ends* dust or dusting, the mark is suggestive. The scope of protection afforded such highly suggestive marks is necessarily narrow and confusion is not likely to result from the use of two marks carrying the same suggestion as to the use of closely similar goods."

APPEAL from Patent Office. Opposition No. 44,650.

AFFIRMED.

*F. M. De Rosa, Watson, Cole, Grindle & Watson* for appellant.

*Francis J. Sullivan, Liddy, Sullivan, Hart, Daniels & Baxley* (Joe E. Daniels, of counsel) for appellee.

Before WORLEY, *Chief Judge*, and Judges RICH, ALMOND, BALDWIN, and KIRKPATRICK<sup>1</sup>

BALDWIN, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Trademark Trial and Appeal Board dismissing an opposition by The Drackett Company to H. Kohnstamm & Co., Inc.'s application<sup>2</sup> to register the trademark DUSTOP for goods described as "An oil for impregnating dust cloths and oil mops for use as an aid in cleaning," asserting use since November 12, 1963. Appellant, The Drackett Company, opposed on the ground of likelihood of confusion, based upon its registered trademark ENDUST<sup>3</sup> for a "Dust absorbing composition for application to dust mops and dust cloths as an aid in cleaning," asserting use since April 25, 1952.

Neither party took testimony, the opposer relying upon a certified copy of its trademark registration and certain advertising material appearing in periodical publications. There was no evidence as to the extent of any use of appellant's mark, the channels of trade, or the specific nature of appellant's product. Although both products are cleaning aids for use with dust cloths and mops and thus are presumably of a competitive character, appellee's product is an oil and appellant's product is a dust absorbing composition of unspecified consistency. Appellant's priority of adoption and use are not in question.

Based on this factual background, the basic issue is whether appellee's mark DUSTOP so resembles appellant's registered mark ENDUST as to be likely to cause confusion or mistake as to source when applied to the involved goods.

We believe that the Board correctly decided there was no likelihood of confusion and properly dismissed the opposition. The Board stated:

The marks "ENDUST" and "DUSTOP" are highly suggestive terms which were obviously adopted to indicate that the products sold thereunder are intended to end or stop dust or dusting. It is well settled that the scope of protection afforded marks of this character must necessarily be narrow, and the opposer, as the prior user and registrant, cannot preclude the registration by others of similarly suggestive but otherwise distinguishable notations or trademarks for similar goods. \* \* \* Accordingly, although the designations "DUSTOP" and "ENDUST" may have similar meanings, the differences between them in both sound and appearance are sufficient, in view of the nature of such marks, to obviate any likelihood that purchasers would attribute the goods sold thereunder to the same source.

[1] The Board correctly found that appellee's mark ENDUST does not resemble appellant's mark DUSTOP and that there is no likelihood that purchasers would attribute the goods sold thereunder

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

<sup>2</sup> Application Serial No. 183,603, filed December 20, 1963.

<sup>3</sup> Registration No. 585,415, issued February 9, 1954, to a predecessor.

to the same source. There is very little resemblance in appearance or sound; the only common feature from this standpoint is the inclusion of the word "dust" in which appellant can have no exclusive right in connection with products for disposing of dust. Concerning resemblance in meaning, appellant argues that "END and STOP are synonymous terms" and that "[b]oth marks, therefore, have identical meanings, that is, to end or stop dust or dusting." However, if the marks have any significance as argued by appellant, it must be the highly suggestive meaning found by the Board, and thus ENDUST is a weak mark which is entitled to only a limited scope of protection. Although ENDUST may not be *descriptive* in the sense that the product actually *ends* dust or dusting, the mark is suggestive. The scope of protection afforded such highly suggestive marks is necessarily narrow and confusion is not likely to result from the use of two marks carrying the same suggestion as to the use of closely similar goods. *Sure-Fit Products Company v. Saltzon Drapery Company*, 45 CCPA 856, 254 F.2d 158, 117 USPQ 295 (1958), *E. L. Bruce Co. v. American Termicide Co., Inc.*, 48 CCPA 762, 285 F.2d 462, 128 USPQ 341 (1960).

The decision of the Board is affirmed.

AFFIRMED.

### U.S. Court of Customs and Patent Appeals

IN RE UNITED BISCUIT COMPANY OF AMERICA

No. 8045. Decided December 19, 1968

[56 CCPA —; 404 F.2d 997; 160 USPQ 44]

#### 1. TRADEMARK—CONFUSING SIMILARITY—"OPERA" FOR COOKIES AND WHEAT FLOUR.

"Granted, as appellant points out, the specific differences between cookies as a finished product on the one hand, and raw wheat flour on the other, we do not think those differences are necessarily controlling. The fact remains that they are foodstuffs, over the counter items, sold to the same type of purchasers and presumably through the same channels of trade. Under such circumstances, we think the average purchaser, on seeing the instant trademarks ["OPERA" and "OPERA" with musical design matter] on the involved goods, would likely assume a common origin. We have not overlooked appellant's allegations dealing with lack of actual confusion. That is, of course, an element to be considered but, on the facts here, not controlling."

APPEAL from Patent Office. Serial No. 187,827.

AFFIRMED.

*Bair, Freeman & Molinare, A. W. Molinare* (Robert C. Williams, of counsel) for appellant.

*Joseph Schimmel* (Raymond E. Martin, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, ALMOND, BALDWIN, and KIRKPATRICK<sup>1</sup>

WORLEY, *Chief Judge*, delivered the opinion of the court.

The sole question here is whether an application to register "OPERA" as a trademark for cookies was properly refused by the Trademark Trial and Appeal Board<sup>2</sup> on prior use and registration of "OPERA," with musical design matter, for use on wheat flour. We think it was.

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

<sup>2</sup> Result reported at 150 USPQ 834.



That the two marks are virtually identical, there can be no doubt, and, since applicant concedes that " \* \* While the channels of trade for applicant's goods and the goods of said registration might likely be the same, that is, sold in the same stores \* \* " we turn to the nature of the goods involved.

[1] Granted, as appellant points out, the specific differences between cookies as a finished product on the one hand, and raw wheat flour on the other, we do not think those differences are necessarily controlling. The fact remains that they are foodstuffs, over the counter items, sold to the same type of purchaser and presumably through the same channels of trade. Under such circumstances, we think the average purchaser, on seeing the instant trademarks ["OPERA" and "OPERA" with musical design matter] on the involved goods, would likely assume a common origin. We have not overlooked appellant's allegations dealing with lack of actual confusion. That is, of course, an element to be considered but, on the facts here, not controlling.

The decision is affirmed.

**AFFIRMED.**

### U.S. Court of Customs and Patent Appeals

KRAMER TRENTON CO. v. CARL O. WALCUTT, DOING BUSINESS AS  
THE WINTERIZER COMPANY

No. 8136. Decided April 3, 1969

[56 CCPA — ; 408 F.2d 479; 161 USPQ 228]

#### 1. TRADEMARK—OPPOSITION—INTENT IN SELECTING MARK NOT CONTROLLING.

" \* \* appellant appears to be taking a position that the appellee is really seeking to appropriate the goodwill associated with appellant's mark. In this connection, appellant points to his prior entry into the field by some ten years accompanied by a considerable advertising expenditure in that period devoted to promoting the mark WINTERSTAT, and to appellee's admitted knowledge of appellant's mark prior to filing the application now before us. Further pursuing this approach, appellant draws particular attention to appellee's refusal to accept a registered letter (of record) mailed by appellant attempting to place appellee on notice of trademark infringement. These matters, even if *arguendo* given the construction appellant asserts, would bear only upon appellee's intent in selecting his mark and, as has been indicated in other cases, intent is not necessarily controlling in an opposition proceeding."

#### 2. SAME—CONFUSING SIMILARITY—"WINTERIZER" AND "WINTERSTAT" FOR REFRIGERATOR SYSTEMS.

" \* \* all we are required to consider here is the likelihood of confusion, mistake, or deception as to the origin of the goods arising from the resemblance of the marks themselves, WINTERIZER and WINTERSTAT [for refrigerator systems]. Bearing in mind that the goods here involved are purchased by discriminating purchasers and that there is no similarity in the marks other than the use of the suggestive prefix winter- we agree with the Board that there is an insufficient likelihood of confusion to justify sustaining the opposition."

APPEAL from Patent Office. Opposition No. 45,330.

**AFFIRMED.**

W. Saxton Seward (Robert I. Dennison, Donald L. Dennison, of counsel) for appellant.

Mahoney, Miller & Rambo, Eugene J. Mahoney for appellee.

Before WORLEY, Chief Judge, and Judges RICH, ALMOND, BALDWIN,  
and McGUIRE<sup>1</sup>

BALDWIN, J., delivered the opinion of the court.

<sup>1</sup> Senior Judge, United States District Court for the District of Columbia, sitting by designation.

This appeal is from the decision<sup>2</sup> of the Trademark Trial and Appeal Board dismissing an opposition by Kramer Trenton Company to the application<sup>3</sup> of Carl O. Walcutt, doing business as The Winterizer Company, to register the trademark WINTERIZER for goods described as "refrigerator system" asserting use since December 31, 1963. Appellant, Kramer Trenton Company, opposed on the ground of likelihood of confusion, based upon its registered trademark WINTERSTAT<sup>4</sup> for "evaporative refrigeration system designed automatically to maintain constant head pressure," asserting use since February 3, 1954.

In its opinion the Board noted certain testimony of appellant-opposer's witness that the marks were used on competitive goods. The Board then stated:

Since applicant does not dispute that opposer is here the prior user, or that the goods of the parties are competitive, the sole issue to be determined in this proceeding is whether or not the resemblances between applicant's mark and that of opposer are such as to be likely to cause confusion or mistake or deceive.

In this regard, the resemblances between "WINTERIZER" and "WINTERSTAT" reside solely in the fact that each thereof includes the word "WINTER" which, in our opinion, would be likely to suggest to purchasers the fact that the goods of both parties will perform efficiently under all winter conditions when the condensing systems thereof are placed outdoors. Considering the suggestiveness of these marks, and the differences between them, when considered in their entirety, it is concluded that there is no reasonable likelihood of purchasers being confused, mistaken, or deceived as to the origin thereof.

[1] On appeal, appellant appears to be taking a position that the appellee is really seeking to appropriate the goodwill associated with appellant's mark.<sup>5</sup> In this connection, appellant points to his prior entry into the field by some ten years accompanied by a considerable advertising expenditure in that period devoted to promoting the mark WINTERSTAT, and to appellee's admitted knowledge of appellant's mark prior to filing the application now before us. Further pursuing this approach, appellant draws particular attention to appellee's refusal to accept a registered letter (of record) mailed by appellant attempting to place appellee on notice of trademark infringement. These matters, even if *arguendo* given the construction appellant asserts, would bear only upon appellee's intent in selecting his mark and, as has been indicated in other cases, intent is not necessarily controlling in an opposition proceeding. *Shoe Corp. of America v. The Juvenile Shoe Corp. of America*, 46 CCPA 868, 266 F.2d 793, 121 USPQ 510 (1959); *Lever Brothers Co. v. Riodela Chemical Co.*, 17 CCPA 1272, 41 F.2d 408, 5 USPQ 152 (1930); *The Scholl Mfg. Co., Inc. v. Principle Business Enterprises, Inc.*, 150 USPQ 217 (TTAB 1966). Therefore, we believe the determinative issue here was correctly stated by the Board in the earlier-quoted portion of their opinion.

[2] Thus, all we are required to consider here is the likelihood of confusion, mistake, or deception as to the origin of the goods arising from the resemblance of the marks themselves, WINTERIZER and WINTERSTAT. Bearing in mind that the goods here involved are purchased by discriminating purchasers and that there is no similarity in the marks other than the use of the suggestive prefix Winter-

<sup>2</sup> Abstracted, 152 USPQ 839.

<sup>3</sup> Serial No. 199,645, filed August 10, 1964.

<sup>4</sup> Registration No. 605,149, registered April 26, 1955.

<sup>5</sup> Thus appellant, in his brief, states: "The justifiable legal inference from the shown and proven facts in the record and from applicant's inability to contradict, or even weaken, the same, is that applicant was a deliberate commercial poacher seeking to invade opposer's territory on a broad scale \* \* \*"



we agree with the Board that there is an insufficient likelihood of confusion to justify sustaining the opposition.

The decision of the Board is affirmed.

**AFFIRMED.**

Worley, *Chief Judge*, took no part in the decision of this case.

### U.S. Court of Customs and Patent Appeals

IN RE UNITED BISCUIT COMPANY OF AMERICA

No. 8046. Decided December 19, 1969

[56 CCPA —; 404 F.2d 998; 160 USPQ 45]

#### 1. TRADEMARK—CONFUSING SIMILARITY—"CHERIE" FOR COOKIES AND "CHERRY CHERIE" FOR ICE CREAM.

Upon considering the decision of the Trademark Trial and Appeal Board that there was confusing similarity between appellant-applicant's mark "CHERIE" for cookies and the prior registration of "CHERRY CHERIE" for ice cream, *Held* that " \* \* \* we think the facts of record here amply support the Board's action, which is hereby affirmed."

APPEAL from Patent Office. Serial No. 187,826.

**AFFIRMED.**

Bair, *Freeman & Molinare, A. W. Molinare* (Robert C. Williams, of counsel) for appellant.

Joseph Schimmel (Jere W. Sears, of counsel) for the Commissioner of Patents.

Before Worley, *Chief Judge*, and Judges RICH, ALMOND, BALDWIN, and KIRKPATRICK<sup>1</sup>

Worley, *Chief Judge*, delivered the opinion of the court.

United Biscuit seeks registration of "CHERIE" for cookies, specifically sugar wafers. The Examiner and Trademark Trial and Appeal Board<sup>2</sup> refused registration, holding that mark to be likely, when applied to applicant's goods, to cause confusion, or to cause mistake, or to deceive in view of the prior use and registration of "CHERRY CHERIE"<sup>3</sup> for ice cream.

In support of its argument here that the Board committed reversible error, appellant stresses that its cookies are a "dry bakery" product while ice cream is a refrigerated and perishable product, and that there are decided differences in the manufacture, distribution and display of the respective products.

Granted the truth of the allegations dealing with the production, distribution or display of the sugar wafers and ice cream, respectively, the Board held that:

\* \* \* Regardless of these distinctions, it appears to be well settled that when food items of the type here involved are sold under the substantially identical marks there would [be] a likelihood of confusion as to source. See: *Goldenrod Ice Cream Company v. Louisville Pecan Company*, 134 USPQ 255 (CCPA, 1962); *Roman Meal Company v. Roman Crest Foods, Inc.*, 133 USPQ 202 (CCPA, 1962); and *Drake Bakeries Incorporated v. Carnation Company*, 136 USPQ 555 (TTAB, 1963). \* \* \*

We have examined the *H. P. Hood & Sons, Inc. v. United Biscuit Company*, 121 USPQ 45 (TTAB, 1959) decision relied on by appellant, but agree with the Board that that holding is hardly controlling in view of the cited decisions of this court to the contrary

<sup>1</sup> Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

<sup>2</sup> Reported at 150 USPQ 696.

<sup>3</sup> Reg. No. 716,585, issued June 6, 1961.

relied on by the Board. See also *Shawnee Milling Co. v. Sidney Wanzer & Sons, Inc.*, 55 CCPA 957, 390 F.2d 1002, 157 USPQ 57.

[1] Even aside from those decisions, we think the facts of record here amply support the Board's action, which is hereby affirmed.

**AFFIRMED.**

## PATENT SUITS

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2,417,384, R. C. Switzer, DAYLIGHT FLUORESCENT SIGNALING AND DISPLAY DEVICES; 2,475,529, Switzer and Switzer, FLUORESCENT DEVICE AND METHOD OF MAKING THE SAME, filed June 5, 1952, D.C., N.D. Ill. (Chicago), Doc. 52c1198, *Switzer Brothers, Inc. et al. v. Chicago Card-board Co. et al.* Judgment for counter-plaintiff granting injunction. Counterclaim against intervenors dismissed, Aug. 12, 1960.

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2,612,159, J. G. Collison, TROCHANTERIC PLATES FOR BONE SURGERY, filed Apr. 24, 1967, D.C. Ind. (South Bend), Doc. 3984, *Collison Surgical Engineering Co. v. Orthopedic Equipment Co.* Defendant's motion for summary judgment granted, Apr. 23, 1969.

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2,949,590. (See 3,227,981.)

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3,139,213. (See 3,061,139.)

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cate report to show present title of court), June 2, 1969.

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3,218,589. (See 3,227,981.)

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3,227,981, M. L. Welgel, HIGH FREQUENCY TUNER;  
3,227,193, same, COIL WINDING MACHINE; 3,337,949, same,  
METHOD OF MAKING A COIL ASSEMBLY FOR A TUNER;  
2,909,934, S. R. Meadows, TELEVISION TUNER; 2,949,580,  
R. C. A. Eland, NEUTRALIZING CIRCUITS; 3,218,589, W. G.  
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68c80, *Sarkes Tarzian, Inc. v. Standard Kollsman Industries,*  
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3,305,763. (See 3,028,538.)

3,307,306. (See 3,121,649.)

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*Wash Equipment Company v. Grand Car Wash, Inc.* Defend-  
ant's counterclaim dismissed with prejudice, May 16, 1969.

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3,406,306. (See 3,076,768.)

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69c738, *Union Carbide Corporation v. National Soda Straw*  
*Company.*



# REISSUES

AUGUST 26, 1969

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,649

## LINTER CLEANER

John A. Reddick, Houston, Tex., assignor to Anderson, Clayton & Co., Houston, Tex., a corporation of Delaware

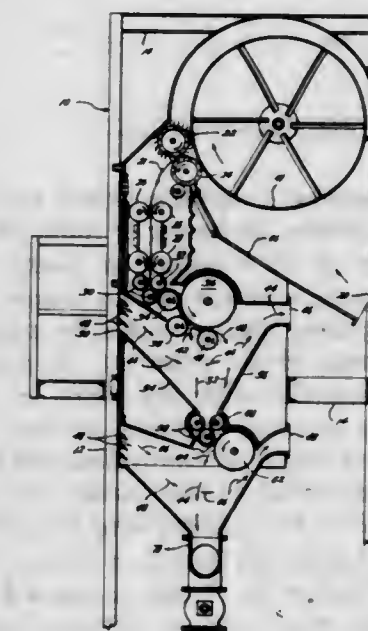
Original No. 3,355,776, dated Dec. 5, 1967, Ser. No. 514,210, Dec. 16, 1965. Application for reissue Feb. 29, 1968, Ser. No. 710,444

Int. Cl. D01b 1/02

U.S. Cl. 19—202

2 Claims

between a path of forward advance of carton travel along which the conveyor mechanism moves the cartons successively in spaced apart relation. Along this path is located a flap folding and sensing station where each carton is caused to pause for folding inwardly by suitable mechanism the extending flaps. A pair of opposed, longitudinally-extending, carton clamping and guiding members are arranged along the carton travel path to receive each carton therebetween. Fluid driven mechanism moves this pair of members to opposite sides of each carton at the station to clamp it strongly therebetween for holding its securely during the flap folding operation



The present invention relates to an improved method and device for cleaning cotton linters and more particularly to an improved method and device wherein cotton lint containing trash particles in finely dispersed and the lint fibers are pneumatically conveyed from the trash particles.

26,650

## CARTON CLAMPING AND GUIDING MEANS IN AN AUTOMATIC CARTON CLOSING MACHINE

Winton Loveland, Freeport, and Saul Warshaw, New York, N.Y., assignors to The Loveshaw Corporation, Farmingdale, N.Y., a corporation of New York

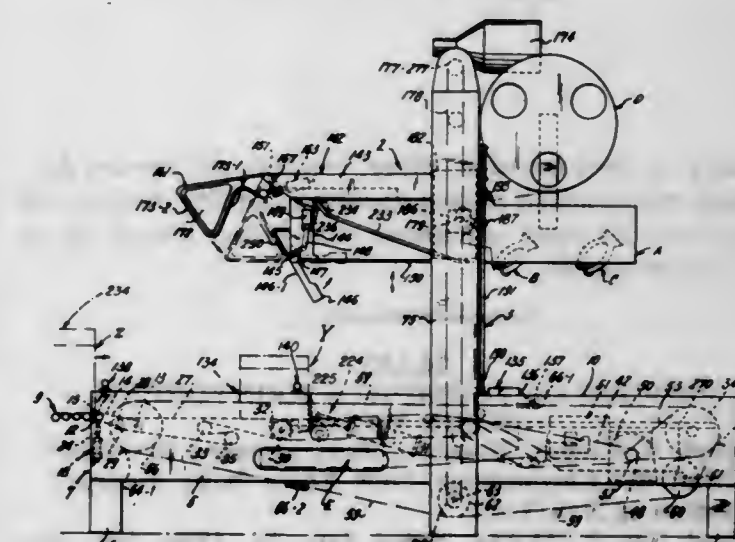
Original No. 3,382,645, dated May 14, 1968, Ser. No. 514,943, Dec. 20, 1965, which is a continuation-in-part of application Ser. No. 219,212, Aug. 24, 1962. Application for reissue July 5, 1968, Ser. No. 747,045

Int. Cl. B65b 57/02; B65g 47/24

U.S. Cl. 53—75

23 Claims

The present invention pertains to automatic carton closing machines. This machine folds down and inward the upwardly-extending front and rear flaps of a series of successive open-top cartons of random size to closed lateral positions so as to be lapped by downwardly and inwardly folded side flaps for securing the folded flaps together in carton closing positions. Such automatic machine embodies a lateral conveyor mechanism having an entrance end and a discharge end and defining there-



and then eases off the clamping action to convert the pair of members to guides. Such pair of clamping members may carry elevating carton side engaging shoes which will be moved out of the way of the conveyor mechanism when the latter travels. The conveyor mechanism is driven by alternate low and high power driving means so that when each carton is clamped at the station the conveyor mechanism will not apply crushing force to the clamped carton and when the clamping action is converted to guiding action the released carton may be further advanced by the conveyor mechanism. Other features of the invention appear in the following specification and accompanying drawings.

26,651

## ELECTRONIC FREQUENCY ERROR DETECTOR

Alan B. Blackburn, Troy, Ohio, assignor to Hobart Brothers Company, Troy, Ohio, a corporation of Ohio

Original No. 3,244,937, dated Apr. 5, 1966, Ser. No. 493,997, Oct. 8, 1965, which is a continuation of application Ser. No. 226,209, Sept. 26, 1962. Application for reissue Apr. 1, 1968, Ser. No. 719,790

Int. Cl. H02h 3/28

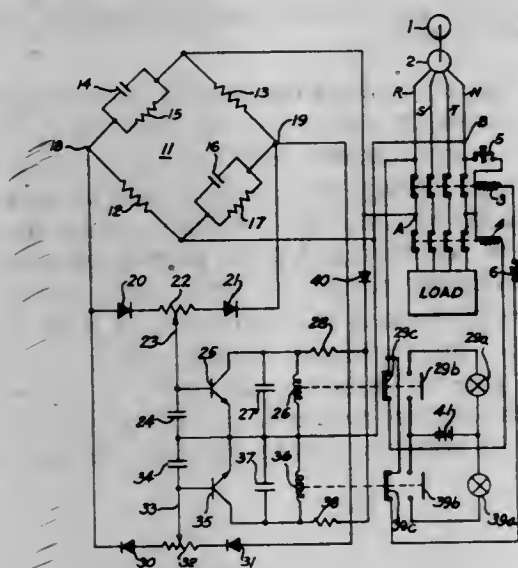
U.S. Cl. 317—27

9 Claims

A frequency error detector includes an impedance bridge to which is connected a pair of voltage divider circuits, each including a potentiometer and a pair of diodes. The voltage at the adjustable slider of one potentiometer is



proportional to the frequency of the input voltage to the bridge while the voltage at the slider of the other potentiometer is inversely proportional to the input frequency. A pair of transistors, each having its base element con-



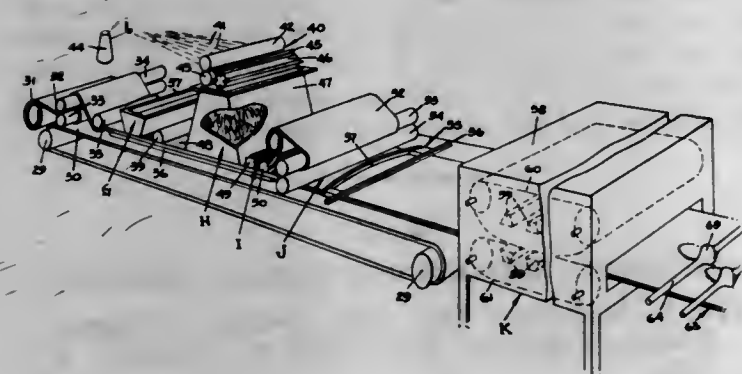
nected to a corresponding slider, controls the current flow through relays which in turn operate signalling devices and which may be used to control the output circuit of an A.C. power supply.

#### 26,652 PROCESS OF FORMING A REINFORCED RESIN PANEL

Joseph S. Finger, Houston, Tex., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Original No. 3,231,654, dated Jan. 25, 1966, Ser. No. 478,695, Aug. 10, 1965, which is a division of application Ser. No. 235,599, Oct. 29, 1962, now abandoned, which in turn is a continuation of application Ser. No. 581,545, Apr. 30, 1956, now abandoned. Application for reissue June 11, 1968, Ser. No. 758,635  
Int. Cl. B29d 3/02; B32b 17/00  
U.S. Cl. 264—261

10 Claims



A fiber reinforced resin panel is formed by pressing a support or cover sheet containing a multiplicity of protuberances into the resin to keep the fibers out of the protuberances. The resin is then cured to a hard state.

#### 26,653 METHOD AND MEANS FOR PATCHING ASSEMBLED PLYWOOD PANELS

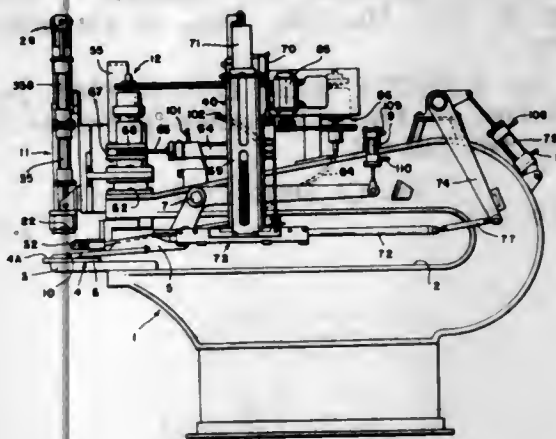
Per O. Skoog, Vancouver, Wash., assignor to The Coe Manufacturing Company, Painesville, Ohio, a corporation of Ohio

Original No. 3,273,614, dated Sept. 20, 1966, Ser. No. 119,978, June 27, 1961. Application for reissue Sept. 19, 1967, Ser. No. 675,260

Int. Cl. B27h 1/06, 5/00

U.S. Cl. 144—310

21 Claims



Apparatus for repairing a surface defect in a plywood panel comprising a frame including a table-like support for a plywood panel to be repaired, a clamp to secure the panel on the support, a power-driven router operatively connected to the frame and movable by power in opposite directions normal to the plane of the panel and in opposite directions parallel with the plane of the panel for routing out at a selected position in the surface of the panel an elongated recess of controlled size and depth, a punch member connected to the frame and located at the side of the panel to be repaired and adapted to hold a patch on its end facing the panel, a patch cutting die member also connected to the frame, a patch blank magazine connected to the frame, power actuated patch blank feeder for feeding a patch blank to the punch side of the die member, power-actuated means for producing relative movement in opposite directions parallel to the plane of the plywood panel between the punch and die members and the plywood panel to locate the punch and die members over the routed out recess in the panel, power-actuated means for producing relative movement between the punch and die members and the panel to cut a patch and to insert the cut patch in the routed out recess in the panel, and control mechanism for effecting operation of the various elements of the apparatus in timed relation to one another to automatically produce the elongated recess in the panel, position the blank of patch material at the punch side of the die member, cut the patch, apply adhesive to the patch, position the patch over the recess, and insert the patch in the recess.

#### 26,654 FLUID METERS

Winston F. Z. Lee, Verona, Harry W. Fisher, Pittsburgh, and Richard L. Crumley, Southampton, Pa., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Original No. 3,256,736, dated June 21, 1966, Ser. No. 236,019, Nov. 7, 1962. Application for reissue Jan. 24, 1968, Ser. No. 706,198

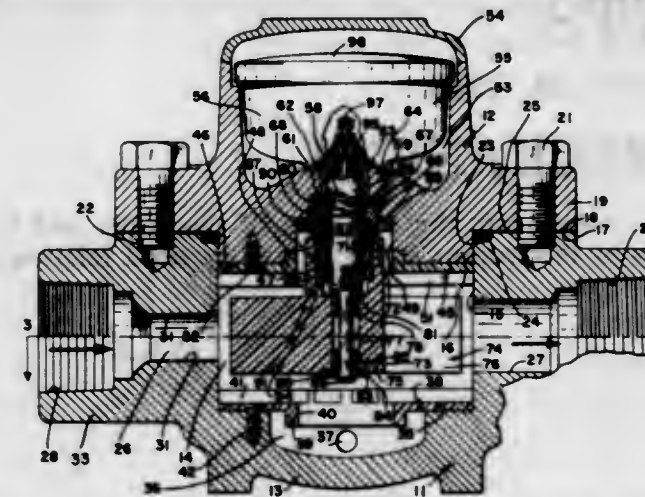
Int. Cl. G01f 1/00

U.S. Cl. 73—229

19 Claims

A fluid flow meter having a fluid driven metering rotor rotatably supported by bearing members which engage a bearing surface that is formed rigid with a wall of non-magnetic material. The well projects into a rotor-receiving metering chamber along an axis that is substantially normal to flow of fluid through the chamber. A drive

magnet carried by the rotor is magnetically coupled to a shaft-mounted driven magnet within the well to trans-



mit rotation of the rotor for actuating a register or the like.

26,655

#### CERTAIN ANILINO NICOTINIC ACID DERIVATIVES

Margaret H. Sherlock, Bloomfield, and Nathan Sperber, North Caldwell, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Original No. 3,337,570, dated Aug. 22, 1967, Ser. No. 504,125, Oct. 23, 1965. Application for reissue Sept. 12, 1968, Ser. No. 765,705

Int. Cl. C07d 31/36, 31/42; A61k 27/00

U.S. Cl. 260—295.5

4 Claims

This invention relates to certain substituted 2-anilino nicotinic acids and their use as analgesic and anti-inflammatory agents. The compounds are prepared by condensation of the appropriate 2-halo nicotinic acid with an appropriately substituted aniline.



# PATENTS

GRANTED AUGUST 26, 1969

## GENERAL AND MECHANICAL

3,462,763

### IMPACT ABSORBING PROTECTIVE HEADGEAR

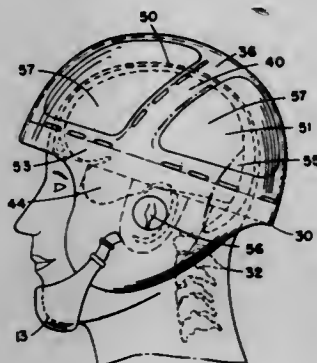
Richard C. Schneider, 2110 Hill St. 48104, and Elwyn R. Gooding, 98 Valhalla Drive 48103, both of Ann Arbor, Mich.

Filed Oct. 3, 1967, Ser. No. 672,561

Int. Cl. A42b 1/08

U.S. Cl. 2-3

8 Claims



A protective headgear assembly consisting of an impact absorbing and distributing outer shell and a multicellular inflatable inner support crown therefor positioned in surface-to-surface engagement with and secured to the outer shell. The inner support crown is formed of a yieldable resilient material and consists of a plurality of air or inert gas filled chambers which engage selected areas of the wearer's head. The inner support crown is positioned between the outer shell and the wearer's head so that forces applied to the outer shell are transmitted to the head only through the yieldable inner support crown. The outer shell has relatively firm sections which function like a frame and cover critical brain areas and more resilient sections which cover less critical brain areas and will yield to an impact force so as to absorb and distribute the force before it is transmitted to the wearer's head. An impact absorbing inflatable chin cup with an adjustable and self-retractable chin strap, all formed of a yieldable resilient material is secured with suitable fasteners to the above protective headgear.

3,462,764

### AUXILIARY POCKET FOR GARMENTS

Eldred E. Caster, Rte. 1, Box 26, Scotts Mills, Oreg. 97375

Filed Nov. 8, 1967, Ser. No. 681,412

Int. Cl. A41d 27/20

U.S. Cl. 2-252

1 Claim

An auxiliary trouser leg pocket comprising a vertically disposed panel stitched along both of its sides and across its bottom edge to the trouser leg material. The top free edge of the panel which provides an access opening to the pocket is upwardly and rearwardly inclined relative to the trouser leg and is provided with a parallel closure flap of elasticized material stitched along its top

edge superjacent the top edge of the panel and to both sides of the trouser leg in laterally spaced relation to the



sides of the panel thereby providing a closure for normally maintaining the pocket access opening closed.

3,462,765

### SURGICALLY IMPLANTABLE PROSTHETIC JOINT

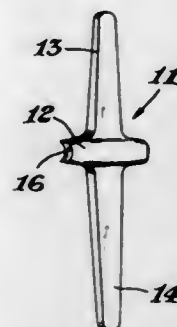
Alfred B. Swanson, Grand Rapids, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

Filed Jan. 6, 1967, Ser. No. 607,810

Int. Cl. A61f 1/00, 5/04; E05d 7/00

U.S. Cl. 3-1

4 Claims



One piece surgically implantable prosthetic joint of molded silicone rubber. Prosthesis consists of enlarged center portion with pair of oppositely projecting stem portions. Joint is amputated and stem portions implanted into bone ends. Center portion has width which is large compared to thickness to allow substantially only unidirectional bending. Bending action is obtained solely from inherent flexibility of the material.

3,462,766

### HYGIENIC SPRAY DEVICE FOR TOILETS

Henry Mynderse Merkel, Jr., Boynton Beach, Fla., assignor to Mentor Inc., Boynton Beach, Fla., a corporation of Florida

Filed Nov. 17, 1966, Ser. No. 595,211

Int. Cl. A47k 3/22

U.S. Cl. 4-7

7 Claims

A flush device associated with a commode and a water flush tank including a water discharge device affixed to the seat of the commode, a pump in the flush tank, a hot water

AUGUST 26, 1969

GENERAL AND MECHANICAL

1043

tank mounted on the flush tank, and connected to the outlet of the pump by a conduit which has an anti-siphon aperture therein within the flush tank and also connected to the water discharge device, a heater element for the

3,462,768

### FLUSH VALVE ACTUATING DEVICE

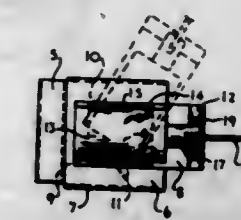
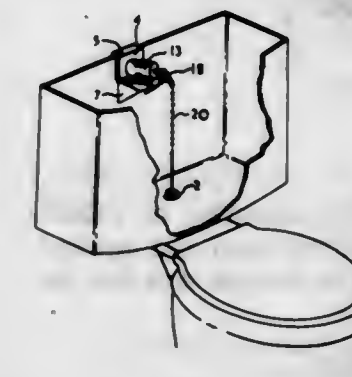
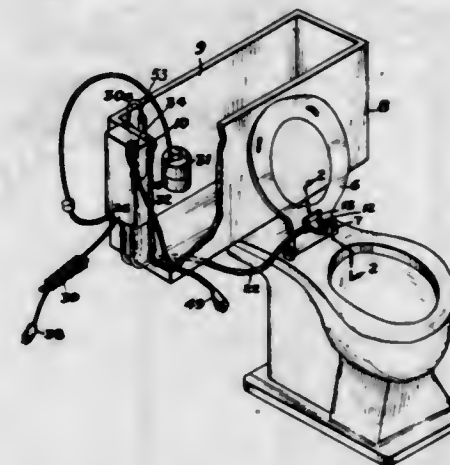
Palma Adrien Lefebvre, Cornwall, Ontario, and Willy Otto Gelhar, Montreal, Ontario, Canada, assignors to Pallean Electronics Limited, Cornwall, Ontario, Canada, a corporation of Canada

Filed Aug. 9, 1967, Ser. No. 659,435

Int. Cl. E03d 1/34, 5/02, 5/10

U.S. Cl. 4-67

6 Claims



hot water tank, and electrical means including a manually actuated electrical switch operable to energize the pump and force cold water into the hot water tank to be heated and discharged through the water discharge device.

3,462,767

### FLUSH VALVE DEVICE

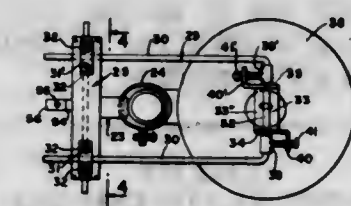
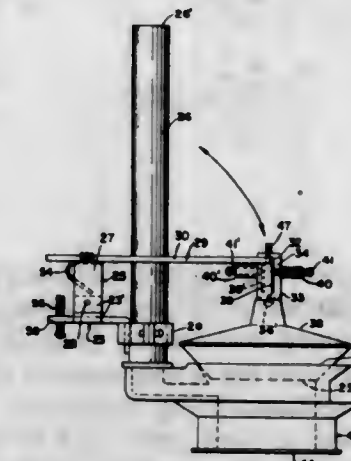
Robert L. Schultz, Box 961, Jamestown, N. Dak. 58401, and Harold F. Larson, 798 1st St. S., Carrington, N. Dak. 58421

Filed Aug. 24, 1967, Ser. No. 663,099

Int. Cl. E03d 1/34

U.S. Cl. 4-57

3 Claims



The invention comprises a toilet tank, valve seat in said toilet tank and a flush valve comprising a tank ball adapted to seat upon said valve seat via linkage means pivotally mounted about a first horizontal axis and disposed between the overflow pipe and said tank ball. The tank ball is disposed below the outer end of said linkage means and pivotally mounted about a second horizontal axis to the outer end of said linkage means. Adjustment means to adjust the tank ball about said second horizontal axis for better seating of the tank ball upon said valve seat.

A flush valve actuating device having a solenoid supporting bracket designed for easy hook-on attachment at any place along the top edge of the rear wall of a toilet tank. A cam lever, pivotally connected by one end to the solenoid's movable core and attached by a flexible member running from its other end to the flush valve, has sliding movement over a cam directly translating the horizontal retraction of the solenoid core into a vertical valve lifting pull. The degree of vertical valve lifting pull on the setting of the lifting end of the cam lever so that it be directly over the tank's valve are both adjustable.

3,462,769

### APPARATUS FOR AUTOMATIC WASHING OF A FLUSH LAVATORY

Masuo Ichimori and Tadayuki Ishikawa, Kyoto-fu, Japan, assignors to Tateisi Electronics Co., Kyoto-shi, Japan, a corporation of Japan

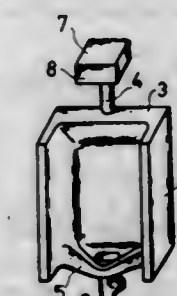
Filed Nov. 15, 1966, Ser. No. 594,491

Claims priority, application Japan, Nov. 27, 1965, 72,717/65

Int. Cl. E03d 5/10

U.S. Cl. 4-100

5 Claims



When an electrostatic capacity detecting apparatus detects the approach of a user to a toilet fixture, a valve is opened a predetermined time and a preliminary flushing of water is effected. When the apparatus detects departure of the user from the fixture, the valve is again opened another predetermined time to make a further flushing of water.

3,462,770

### CUSHIONED BEDPAN COVER

Edith F. M. Smith, Little Falls, N.J. 07424  
Continuation-in-part of application Ser. No. 447,138, Apr. 12, 1965. This application Dec. 4, 1967, Ser. No. 725,241

Int. Cl. A61g 9/00

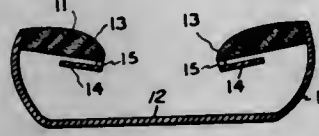
U.S. Cl. 4-113

4 Claims

A washable bedpan over which is wholly nonmetallic and is designed for easy insertion and removal of a bed-



pan, includes a flexible, yielding cushion seat of horseshoe shape having side walls attached to it at the outer edge, and a base which slips under the bedpan, and a semiflexible flap attached to the cushion underneath and along its inner edge. This flap can be progressively turned down-



ward so that it does not hinder the mounting of a bedpan therein, and can then be turned outward and upward so as to clasp the inner margin of the bedpan and thus be held securely in place.

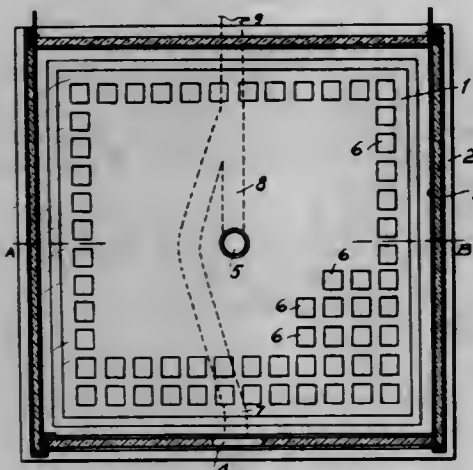
**3,462,771**  
**SHOWER BATH SYSTEM APPLICABLE BOTH IN BATHROOMS AND OUTDOORS, WITH BASIN PROVIDED WITH SEATS FOR PROTECTIVE, RIGID AND WATERTIGHT WALLS**

Giuseppe Moretti, Via Stromboli 9, Milan, Italy  
Filed Nov. 3, 1966, Ser. No. 591,795  
Claims priority, application Italy, May 21, 1966, 11,649/66

U.S. Cl. 4-146

Int. Cl. A47k 3/23

4 Claims



Portable shower bath system which may be installed either indoors or outdoors and that comprises a shower bath basin, in a single piece of sheet material, having a wide peripheral edge with an upwardly open groove running all along the edge and having a hole as overflow outlet for the basin, said groove constituting a seat for rigid, watertight protective walls, one of said walls being a hinged access door, one of the fixed walls carrying the shower bath sprinklers, the mixing valve and the cocks controlling the water supply to the sprinklers.

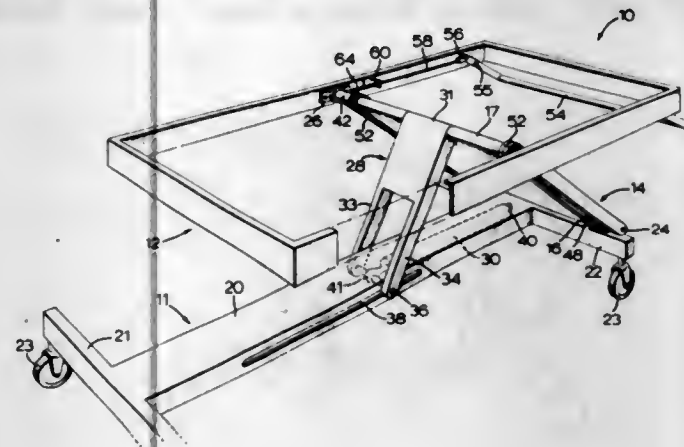
**3,462,772**  
**CENTER-PIVOTING BED**  
Earle A. Morrison, 3490 Cypress St., Vancouver 9, British Columbia, Canada  
Filed Aug. 11, 1967, Ser. No. 659,920  
Int. Cl. A61g 7/00

U.S. Cl. 5-63

6 Claims

A bed having a base and a vertically displaceable mattress-supporting frame which is pivoted at its mid-point to one end of a connecting arm of which the other end is pivoted to the base. Means are provided for keeping

the frame in a horizontal position while being lowered or raised, but this means can be selectively disconnected

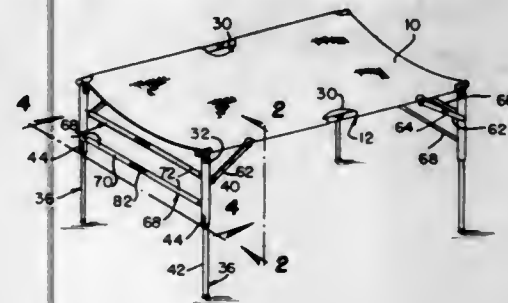


from the frame to allow the latter to assume an angular orientation.

**3,462,773**  
**DIAPER CHANGING TABLE**  
Vesta L. Triplett, Bonanza, Oreg. (Rte. 2, Box 2710, % Jibber, Vacaville, Calif. 95688)  
Filed Oct. 31, 1967, Ser. No. 679,301  
Int. Cl. A47d 5/00

U.S. Cl. 5-111

1 Claim



A flexible, generally horizontal, baby-supporting top is secured at its longitudinal edges to parallel supporting bars formed of hinged sections to facilitate folding and normally opened so that the sections are in alignment with each other, such sections being supported at their ends by legs so connected to each other and to the section referred to as to facilitate the complete folding of the table for storage in a tote bag or the like. The folded device takes up a minimum of space and the device is intended for use particularly while travelling.

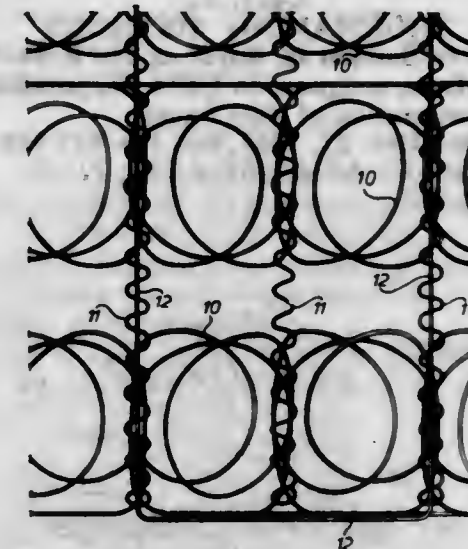
**3,462,774**  
**MATTRESSES, SEATS AND THE LIKE**  
Leslie Thomas Docker, Chadwick End, England, assignor to Slumberland Group Limited, Tyseley, England, a British company  
Filed Jan. 6, 1967, Ser. No. 607,746  
Claims priority, application Great Britain, Jan. 8, 1966, 980/66

U.S. Cl. 5-260

5 Claims

In a mattress, seat, or like article for lying or sitting on and incorporating an assembly of interconnected load-supporting springs an edge or border of the spring assembly is stiffened by fitting to the assembly one or a plurality of stiffening members each comprising a length of stiff wire bent to U form, the members when applied

lying in the plane of the top or bottom of the assembly and the limbs of the members being secured to the spring assembly, whereby the stiffening members distribute the



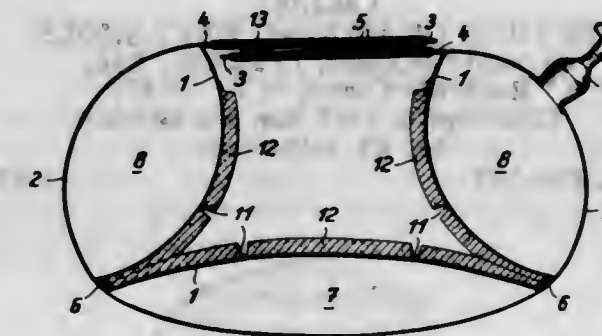
load over a number of springs and prevent or reduce localized deflection of the assembly.

**3,462,775**  
**SUPPORTING MEANS TO PREVENT PARTS OF THE BODY FROM CONTRACTING BED-SORES**  
Bernhard Markwitz, 9-10 Brodersweg, Hamburg 13, Germany, and Horst Pomp, 33 Curschmannstr., Hamburg 20, Germany

Filed June 1, 1967, Ser. No. 642,864  
Claims priority, application Germany, Feb. 24, 1967, M 72,892  
Int. Cl. A47c 21/00; A61g 7/06

U.S. Cl. 5-327

5 Claims



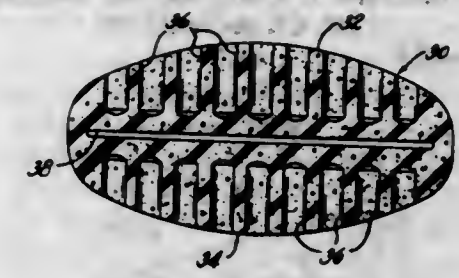
The supporting device for supporting the body or a part thereof of a bedridden patient serves to prevent formation of bed-sores at the mainly pressed areas of the body part. The supporting device is an inflatable tubular sheet closed at the ends and subdivided into several air cushions by transverse welding seams. The sheet is placed around the body parts, i.e. the calves, and after inflation its end portions are connected, i.e. by a Velco-type closure.

**3,462,776**  
**CORED PILLOW AND METHOD OF MAKING SAME**  
Alvon R. Cox, Ashland, Ohio, assignor to Abbott Laboratories, Chicago, Ill., a corporation of Illinois  
Filed July 6, 1967, Ser. No. 651,443  
Int. Cl. A47g 9/00

U.S. Cl. 5-337

9 Claims

A deformable object with top and bottom portions having holes extending thereinto is provided and it has a slot

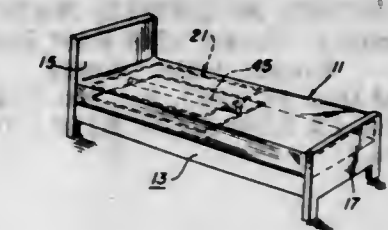


turning it inside out to provide the ultimate article is disclosed.

**3,462,777**  
**MATTRESS**  
Sidney Lutsky, 3465 Walnut Grove Road, Memphis, Tenn. 38111  
Filed Nov. 7, 1967, Ser. No. 681,142  
Int. Cl. A47c 23/00, 25/00, 27/00

U.S. Cl. 5-345

5 Claims

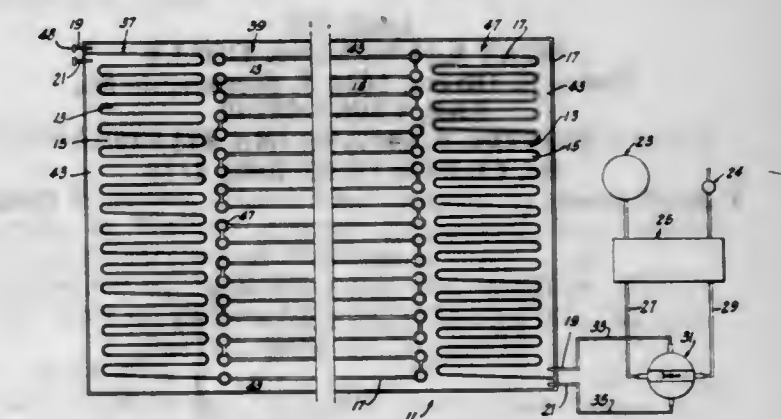


A bed mattress of a size for sleeping one person and having mechanism substantially embedded in the mattress for providing a laterally tiltable sleeper-supporting surface. The sleeper-supporting surface being normally arranged horizontally and being resiliently urged to a normal horizontal arrangement but tiltable under the weight of a person sleeping on the mattress. The function of the mattress being to cause a person to sleep on his stomach or side and not on his back. Sleeping not on his back causes the person not to snore.

**3,462,778**  
**INFLATABLE MATTRESS AND PRESSURE SYSTEM**  
John K. Whitney, Orchard Park, N.Y., assignor to Gaymar Industries Inc., a corporation of New York  
Filed Feb. 25, 1966, Ser. No. 530,164  
Int. Cl. A47c 27/08

U.S. Cl. 5-347

4 Claims



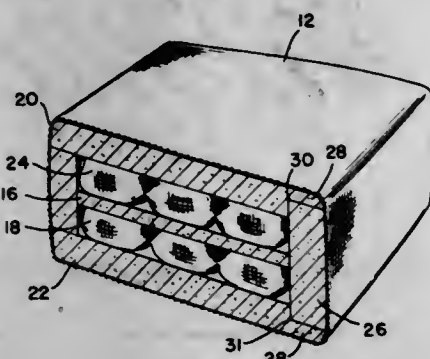
A multiple cell, fluid pressure system utilizing a valve which substantially fills one set of cells before exhausting the other set of cells whereby movement of a patient thereon is held to a minimum in a horizontal plane.



**3,462,779**  
**CUSHION**  
Lloyd W. Thompson, P.O. Box 1877,  
High Point, N.C. 27261  
Filed June 7, 1967, Ser. No. 644,138  
Int. Cl. A47c 23/00

U.S. Cl. 5—353

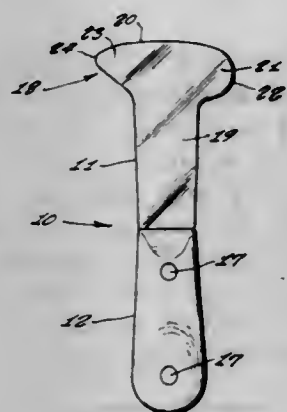
9 Claims



The present invention relates to cushion articles and more particularly to a cushion having a plurality of isolated spring layers, each layer containing a number of individual coils which are separately encapsulated to prevent wear and provide a dual cushioning effect.

**3,462,780**  
**ALL-PURPOSE MULTIPLE HAND TOOL**  
Frank C. Greco, 1318 Root Road,  
Lorain, Ohio 44052  
Filed Dec. 18, 1967, Ser. No. 691,566  
Int. Cl. B26b 11/00; B25d 3/00  
U.S. Cl. 7—14.1

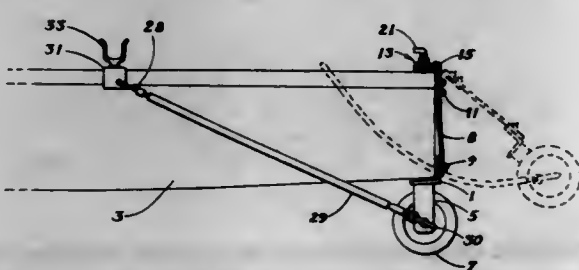
1 Claim



A bladed tool incorporating a flat blade at the end of a handle, the blade being used principally for prying purposes, such as removing line linoleum, prying out ceramic blocks of floor or wall tile, prying upwardly a door during hanging operation and which can be used as a chisel for breaking rocks or the like.

**3,462,781**  
**BOAT LAUNCHING DOLLY**  
Henry R. Olivera, 1636 S. Sacramento St.,  
Lodi, Calif. 95240  
Filed Oct. 5, 1967, Ser. No. 673,049  
Int. Cl. B63c 13/00; B60p 3/10  
U.S. Cl. 9—1

7 Claims

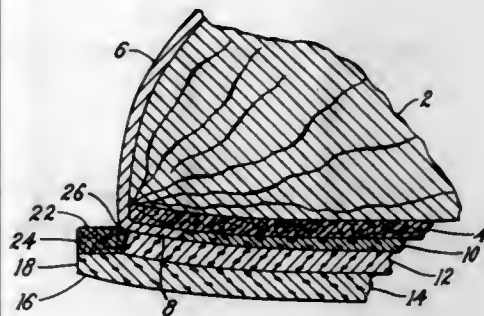


A dolly for detachable mounting on the transom of a relatively small boat; the dolly being arranged so that it

aids in the manual handling and ground transport of such boat preparatory to, and during, launching of the same, and does not need to be detached from the boat when the latter is being operated in the water.

**3,462,782**  
**SHOEMAKING METHODS**  
Karl D. Reeve, Sumner H. Boynton, and Robert D. Berry,  
Beverly, Mass., assignors to USM Corporation, Boston,  
Mass., a corporation of New Jersey  
Filed Dec. 22, 1967, Ser. No. 692,998  
Int. Cl. A43d 9/00, 11/00, 21/00  
U.S. Cl. 12—142

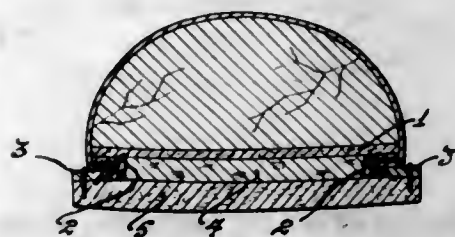
6 Claims



A method for the construction of a shoe for display purposes comprising the permanent affixing of an insole and a lasted upper to a footform, securing a midsole to the overlaid margin of the upper, securing an outsole to the midsole, the outsole having an extension providing an upper-facing surface of the said outsole extending outwardly from the edge of the midsole, and affixing a welt member to the upper surface of the outsole, the welt being of varying thicknesses as desired to establish the biteline of a mold assembly subsequently to be made from the display shoe to reproduce the sole of the display shoe by injection molding.

**3,462,783**  
**METHOD OF MAKING WELT SHOES**  
Arnold Glickman, 73 Jackson Ave.,  
Rockville Centre, N.Y. 11570  
Filed Sept. 6, 1967, Ser. No. 665,868  
Int. Cl. A43d 9/00  
U.S. Cl. 12—142

2 Claims

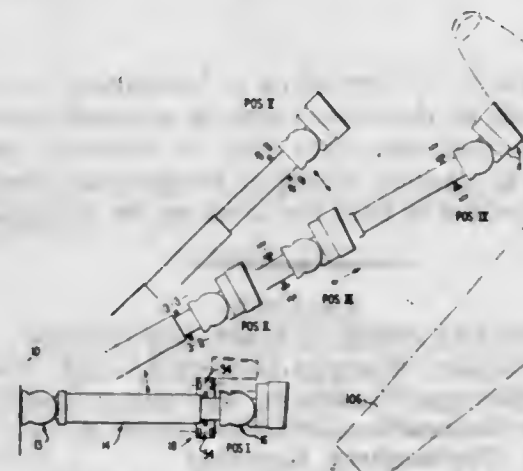


A method of making Goodyear welt shoes which consists in placing a shoe upper on a last, supporting the assembly with an insole positioned under the last, the insole carrying a marginal downwardly-projecting rib disposed inwardly of the edge of the insole, providing a wiper-resistance member as an element of said support, the resistance member generally conforming with the contour of the last at its lower base-edge, said resistance member entering the area of the insole inwardly of said rib and closely adjacent thereto, and having an inwardly tapered edge, pulling the margins of the upper over the insole edge and outwardly of the rib, previously applying cement intermediate the outer face of the insole rib and the area of the upper margins pulled thereover, and on at least one of the two, exerting inwardly directed action of a wiper, edge conformed with the resistance member,

against the upper and forcing an intermediate area of its margins under the outer edge of the insole and against the outer face of the rib, while said action is opposed by the resistance member with time-heat interval of the wiper to form a bond, removing the last, and stitching the assembly through the welt, through the inwardly directed bonded formation of the upper margin, and through the rib close to its apex, to be followed by assembling a filler and outsole to the assembly.

**3,462,784**  
**EXTENSIBLE AND SWINGABLE CONVEYANCE LOADER**  
Andrew G. Selpos, Miami, Fla., assignor, by mesne assignments, to Wollard Aircraft Equipment Inc., Miami, Fla., a corporation of Washington  
Filed Oct. 17, 1966, Ser. No. 587,085  
Int. Cl. B65g 11/00; B60k 17/30  
U.S. Cl. 14—71

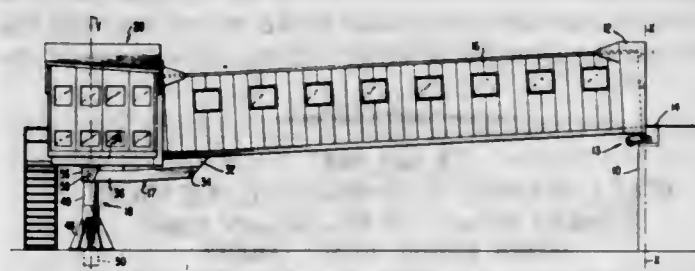
9 Claims



An extensible and swingable conveyance loader pivoted at one end near a terminal building component and having an undercarriage supporting the extensible portion at a point spaced from the pivotal mounting, the undercarriage including ground engaging pivotally mounted wheels which have coordinated pivotal movement to support the extensible portion for inward and outward movement in one arrangement and to support the extensible portion for horizontal swinging movement in another arrangement, the undercarriage mobilizing structure permitting only longitudinal movement of the extensible portion in approaching the conveyance.

**3,462,785**  
**CONVEYANCE LOADER**  
Andrew G. Selpos, Miami, Fla., assignor, by mesne assignments, to Wollard Aircraft Equipment Inc., Miami, Fla., a corporation of Washington  
Continuation-in-part of application Ser. No. 469,546,  
July 6, 1965. This application Aug. 24, 1967, Ser. No. 662,988  
Int. Cl. B65g 11/14, 69/28  
U.S. Cl. 14—71

8 Claims



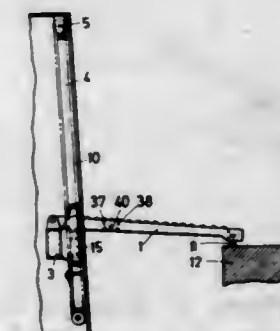
A conveyance loader having a terminal building portion, a connecting passageway portion mounted for vertical swinging movement at the terminal portion, a conveyance end portion supported at a single point on an

elevating mechanism which is movable in a straight vertical line, pivotal connections at each end of the connecting passageway portion between the terminal building portion and the conveyance end portion, the pivotal connections serving to brace the conveyance end portion against rotation around the single point of support on elevating mechanism while permitting longitudinal movement of the connecting passageway portion relative to one of the pivotal connections to accommodate the vertical swinging movement of the connecting passageway portion and the straight line vertical movement of the elevating mechanism.

A specific compact associated with the said one pivotal connection of a passageway portion for accommodating the vertical swinging movement of this passageway portion to the straight line vertical movement of the elevating mechanism.

**3,462,786**  
**LOADING RAMP**  
Johan Bertil Olsson, Goteborg, Sweden, assignor to Associated Cargo Gear AB, Goteborg, Sweden, a corporation of Sweden  
Filed Apr. 29, 1968, Ser. No. 724,954  
Claims priority, application Sweden, May 10, 1967, 6,528/67  
Int. Cl. B65g 11/12  
U.S. Cl. 14—71

4 Claims



A loading ramp for an opening, for instance in the side plating of a ship's hull, is maintained at a certain inclination—towards or away from the opening—irrespective of changes in relative position in the vertical direction between the opening and the fixed support towards which the ramp is leading by means of electrically governed motor means. Primarily this is obtained by raising and lowering a cross beam to which inner end of the ramp proper is attached. Final adjustment may be brought about by a ram working between the cross beam and the ramp to alter the angle at the hinge connection between said parts.

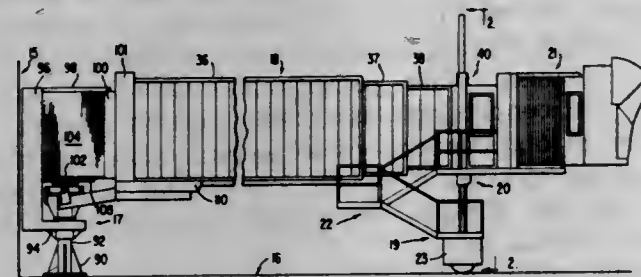
**3,462,787**  
**SWINGABLE AND ELEVATABLE CONVEYANCE LOADER SYSTEM**  
Andrew G. Selpos, Miami, Fla., assignor, by mesne assignments, to Wollard Aircraft Equipment, Inc., Miami, Fla., a corporation of Washington  
Continuation of application Ser. No. 587,086, Oct. 17, 1966. This application May 22, 1968, Ser. No. 732,493  
Int. Cl. B65g 11/14, 69/28  
U.S. Cl. 14—71

11 Claims

An elevatable and swingable conveyance loader having a vertical pivot near a terminal building component and a supporting structure for the swingable portion at a point spaced from the pivot, the supporting structure comprising an undercarriage including widely spaced ground engaging wheels and elevating mechanism for raising the swingable portion to a considerable height



above the ground. The present invention also relates to specific elevating mechanism for the aforementioned combination and novel components thereof. Additionally, the



present invention relates to an elevatable and swingable loader having a universal joint pivot at one end near a terminal building component.

3,462,788

MOP WRINGER

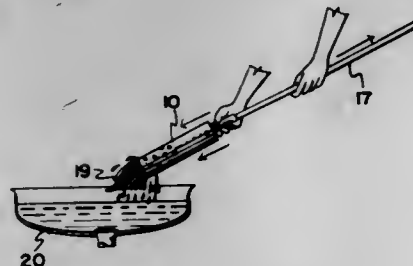
Tom L. Abbott, P.O. Box 155,  
Whiteface, Tex. 79379

Filed Apr. 19, 1968, Ser. No. 722,669

Int. Cl. A47i 13/14, 13/12, 13/58

U.S. Cl. 15-119

1 Claim



A perforated sleeve is mounted for sliding up and down a mop handle. The mop head fits loosely within the sleeve when the mop head is drawn thereinto. To wring, the mop handle is pushed down, the water being removed from the mop head by pressure.

3,462,789

PAINT BRUSH DRIP PROTECTOR

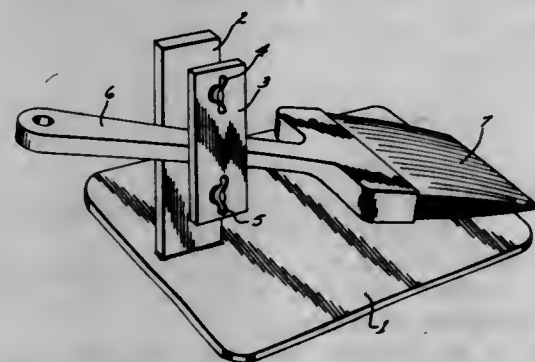
Edgar L. Seal, 10246 Rosewood Ave.,  
Southgate, Calif. 90280

Filed Apr. 1, 1968, Ser. No. 717,733

Int. Cl. A46b 17/00

U.S. Cl. 15-166

1 Claim



To prevent paint from dripping off of a paint brush, a flat metal strip is mounted so that the brush is positioned above the metal strip, and with the tip of the brush at the outer edge of the metal strip so that the drippings from the brush are caught by the metal strip, and additionally the paint brush is guided in a straight line by the edge of the metal strip.

3,462,790

MOP

Ruth Lingle, 1124 N. 10th St.,  
Lafayette, Ind. 47904

Filed Mar. 4, 1968, Ser. No. 710,408

Int. Cl. A47i 13/00

U.S. Cl. 15-247

1 Claim



A terry cloth for converting a broomhead to a mophead, the ends of the cover being in gathered stretchable condition so that the cover can be doubled over and stretched to fit various widths of broomheads. Snap fasteners are provided to hold the cover on the broomhead.

3,462,791

DOOR CLOSER FOR SWING DOORS

Reinhold Voester, Stuttgart-Degerloch, and Wolfgang  
Schmid, Stuttgart-Fieberbach, Germany, assignors to  
Vereinigte Baubeschlagfabriken Gretsch & Co. GmbH  
Leonberg, Wurttemberg, Germany

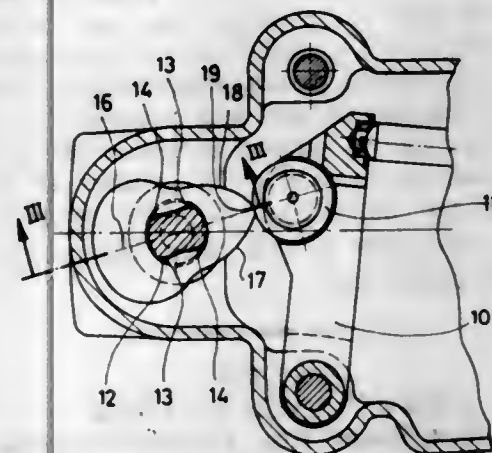
Filed Nov. 1, 1967, Ser. No. 679,787

Claims priority, application Germany, Nov. 12, 1966,  
V 32,345

Int. Cl. E05f 3/20

U.S. Cl. 16-55

10 Claims



In a door closer for swing doors including a closer spindle and a cam for controlling damping means of the closer and mounted on the spindle for limited turning movement with respect thereto about the spindle axis, the provision of elastically yieldable brake means between the spindle and the cam for braking relative movement of the same.

3,462,792

WALL PANEL SUSPENDING DEVICE

Michael Greco, 14 Woodlands Lane,  
White Plains, N.Y. 10607

Filed May 17, 1968, Ser. No. 730,048

Int. Cl. E05d 15/06

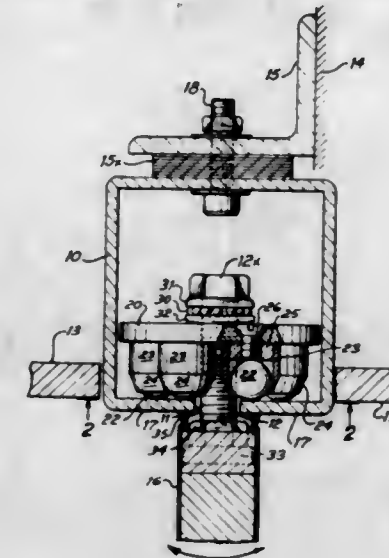
U.S. Cl. 16-88

1 Claim

This invention relates to a device for moving suspended by a wall panel from a longitudinal ceiling track, said device being adapted to effectuate a selective rotation of

said panel to permit storage at a right angle to said track. The device comprises a plurality of captively held balls

by a porous capillary applicator contacting the casing after leaving the storage reel and prior to the point where the shirred product is discharged from the shirring apparatus. In one preferred embodiment, the fluid is applied to the



disposed in a circular manner and adapted to engage said ceiling track.

3,462,793

APPARATUS FOR PROVIDING STUFFED FOOD  
CASINGS HAVING FLATTENED ENDS

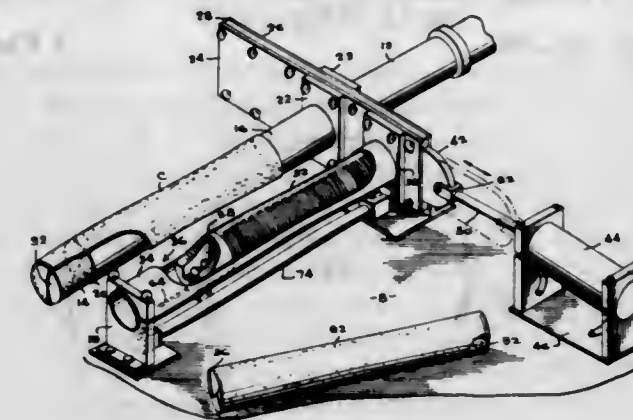
Richard F. Sumption, Portsmouth, Va., assignor to Gwaltney Incorporated, Smithfield, Va., a corporation of Virginia

Filed June 6, 1967, Ser. No. 643,906

Int. Cl. A22c 7/00, 11/00; B60b 55/00

U.S. Cl. 17-32

10 Claims



An apparatus and method for forming stuffed food products by insertion of pairs of separator elements in a tubular extrusion mold to separate ground food products being extruded from the mold into discrete batches in elongated form with flattened ends for insertion into discrete casings.

3,462,794

FLUID APPLICATOR FOR SHIRING MACHINE

Thomas W. Martinek, Danville, Ill., assignor to Tee-Pak, Inc., a corporation of Illinois

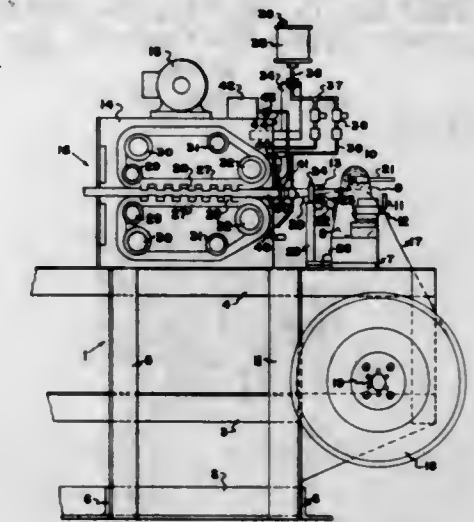
Filed Dec. 29, 1966, Ser. No. 605,669

Int. Cl. A22c 11/00, 15/00

U.S. Cl. 17-42

9 Claims

In the shirring of synthetic sausage casings, e.g. regenerated cellulose, amylose, alginate, collagen casings, etc., wherein a flattened tubular casing is fed from a storage reel, inflated, and shirred mechanically, metered amounts of fluid, such as water, are applied uniformly to the casing



casing by applicators which are moved out of contact with the casing when the shirring apparatus is stopped. In other embodiments, the shirring apparatus may be operated continuously and the applicators maintained in continuous contact with the casing.

3,462,795

DOUBLE BELT FOR MANUFACTURE OF  
PANELS AND THE LIKE

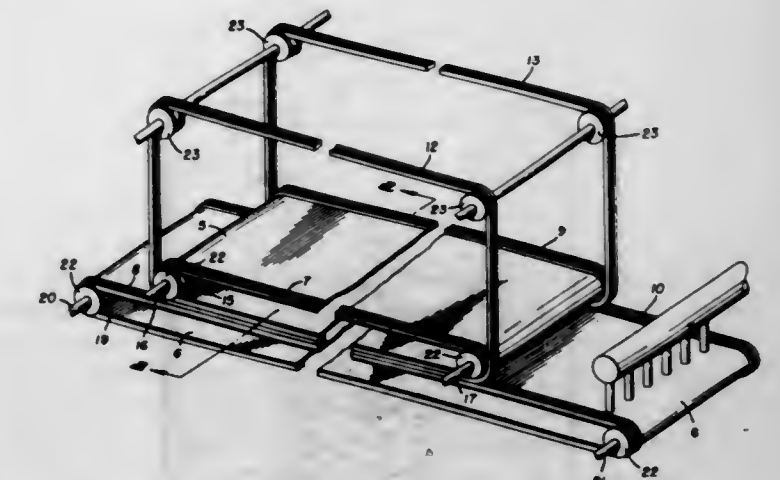
Alfred Hans Hermanns, Akron, Ohio, assignor to Admiral Equipment Corp., Akron, Ohio, a corporation of Ohio

Filed Sept. 18, 1967, Ser. No. 668,442

Int. Cl. B29c 15/00

U.S. Cl. 18-4

7 Claims



The side edges of the space between the belts of a double-belt conveyor for forming a panel or the like from a settable foam, are defined by thickness separators attached to the edges of both belts. These have mating serrated faces, and continuous spacing belts with mating serrated faces are located between them. Spacing belts of different thickness are used to provide spaces of different thicknesses between the conveyor belts. Or the separators may be omitted and the edges of the conveyor belts may be serrated to mate the serrations in the faces of the spacing belts. If separators are used, the means for attaching the separators to the conveyor belts is preferably such that the width of the space between the separators at opposite edges of the conveyor belts may be adjusted.



3,462,796

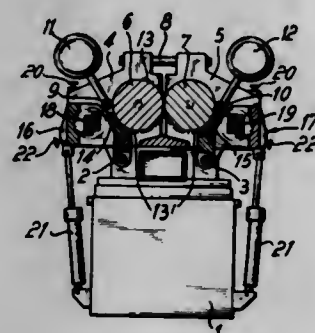
**APPARATUS FOR GRANULATING TOUGH PLASTIC MATERIAL COMPOUNDS**  
 Heinz Koch, Ludwigsburg, and Harald Hugo Paul, Kornwestheim, Germany, assignors to Werner & Pfleiderer, Stuttgart-Feuerbach, Baden-Württemberg, Germany, a corporation of Germany

Filed Jan. 13, 1967, Ser. No. 609,164  
 Claims priority, application Germany, Jan. 22, 1966, W 40,783

U.S. Cl. 18—9

Int. Cl. B02c 18/06

7 Claims



A cutting device is arranged relative to working rollers for ease of cleaning and disassembly of the machine, by providing a fixed cutter bar and a revolving cutter, together as a unit, and arranging the unit to be readily displaceable relative to the roller, thus maintaining a pre-set cutting distance.

3,462,797

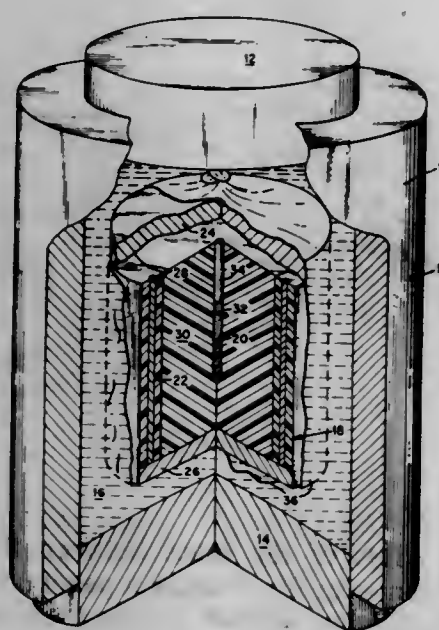
**FABRICATION OF ELONGATED PRODUCTS**  
 Joseph J. Asbury, Knoxville, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 9, 1966, Ser. No. 593,598

U.S. Cl. 18—34

Int. Cl. B29c 1/00

3 Claims



The fabrication of an elongated product from particulate material is accomplished by using a mold in an isostatic pressing assembly that is capable of neutralizing the powder-compacting force directed along planes parallel to the length of the elongated product. The mold comprises a tubulation of resilient material and relatively rigid end caps with the latter being prevented from displacement towards one another by supporting structure associated with the tubulation.

3,462,798

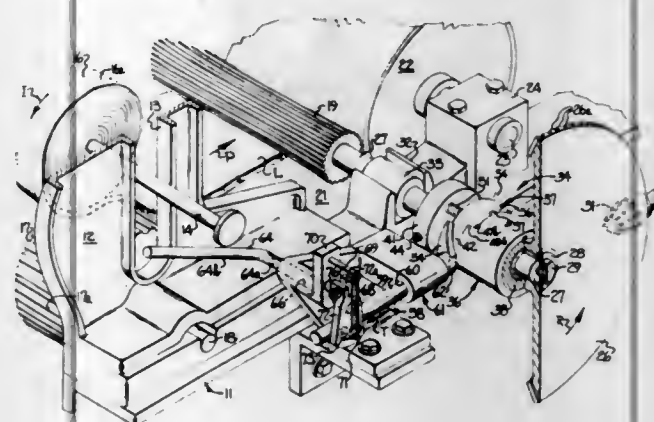
**LAP STOP MOTION APPARATUS**  
 Homer W. Groce, 115 Wellford Road, Lyman, S.C. 29365

Filed Jan. 29, 1968, Ser. No. 701,397

Int. Cl. D01g 31/00

U.S. Cl. 19—25

9 Claims



Stop motion apparatus for the lap in a carding machine which includes a clutch normally connecting the lap feed means to driving means together with sensing means actuated by the lap rod for controlling the actuation of the movement of an actuating member between an inoperative position and an operative position in which the clutch is disengaged by a camming action for disconnecting the lap feed means from the driving means.

3,462,799

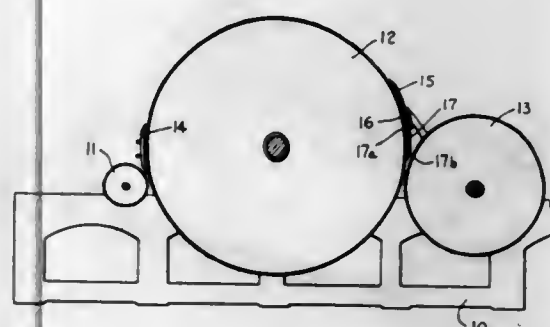
**CARDING MACHINE PLATE**  
 Olin S. Elliott, Jr., 2011 Cleveland St. Ext., Greenville, S.C. 29607

Continuation of application Ser. No. 684,290, Nov. 20, 1967. This application Nov. 20, 1968, Ser. No. 778,029

Int. Cl. D01g 15/74

U.S. Cl. 19—98

3 Claims



A composite card plate is provided which includes a curved metal backing plate and a frangible inner liner facing a card cylinder. The inner liner is constructed of phenolic impregnated paper and the like, and is bonded to the metal backing plate.

3,462,800

**TEXTILE SLIVER COILING APPARATUS**  
 James Brooks, 15 Whitcroft View, Baxenden, near Accrington, Lancashire, England; Kenneth Thomas Duncan Heap, 8 Church St., Haslingden, Lancashire, England; and Robert Harry Woodhead, 6 The Grove, Station Road, Whalley, Lancashire, England

Continuation-in-part of application Ser. No. 400,847, Oct. 1, 1964. This application June 20, 1967, Ser. No. 655,258

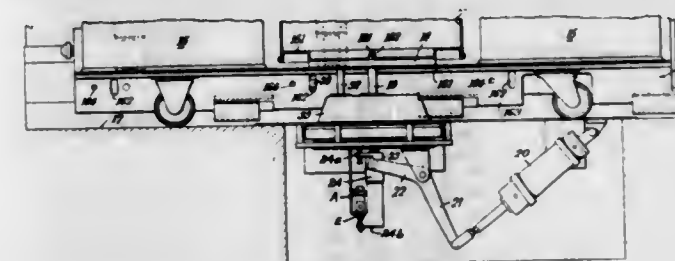
Int. Cl. D04h 11/00

U.S. Cl. 19—159

5 Claims

Apparatus for coiling textile slivers successively into a multiplicity of cans. A mechanism for rotating each of the cans is located directly under each can in operative

position, and a wheeled carriage which is moved linearly for placing an empty can in the operative position in the



**FASTENER FOR HOLDING FLEXIBLE SHEET MATERIAL AND METHOD FOR RETAINING SUCH MATERIAL**

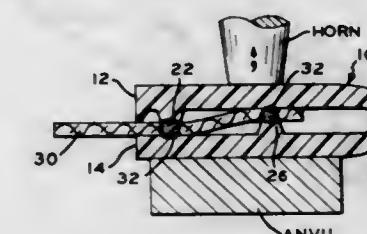
Robert C. Horton, Rochester, N.Y., assignor to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware

Filed Apr. 22, 1968, Ser. No. 723,200

Int. Cl. A44b 21/00

U.S. Cl. 24—150

4 Claims



filling station and removing the preceding full can. All the actions are accomplished automatically.

3,462,801

**WALLET LOSS PREVENTION DEVICE**

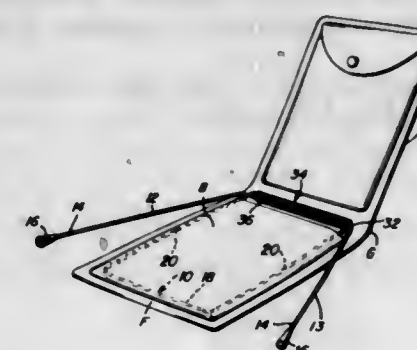
William J. Bortle, 4911 Grand Ave., Pittsburgh, Pa. 15225

Filed Oct. 16, 1967, Ser. No. 675,601

Int. Cl. A45f 5/02; A41d 27/20

U.S. Cl. 24—3

4 Claims



An accessory which lends itself to acceptable use primarily, but not necessarily, in conjunction with one of the half sections of a center-folding hip pocket wallet. It is uniquely formed from a single length of resilient wire bent between its ends to provide a pair of divergent guard fingers having like converging ends joined by return bends to corner portions of a coplanar adapter. This adapter is slid telescopically and is removably contained in the pouch portion of an interior card pocket. The yieldable guard fingers are sprung apart and the free tip-equipped ends stay put in the upper corners of the hip pocket lining.

3,462,802

**CONNECTOR FOR HOLDING ARTICLES TOGETHER**

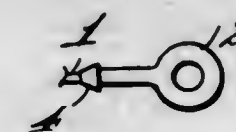
Francis G. Merzer, Framingham, Mass., assignor to Denison Manufacturing Company, Framingham, Mass., a corporation of Nevada

Continuation of application Ser. No. 684,685, Nov. 21, 1967. This application Apr. 15, 1968, Ser. No. 721,365

Int. Cl. B65d 63/16

U.S. Cl. 24—16

4 Claims



A connector comprising a filament having a socket and a series of heads distributed along the filament to snap through the socket to form loops of different sizes.

3,462,804

**FASTENING CLAMP**

Fernand Renaudin, Gray, Haute-Saone, France, assignor to Societe Industrielle du Metal Usine, Arc-les-Gray, Haute-Saone, France, a French body corporate

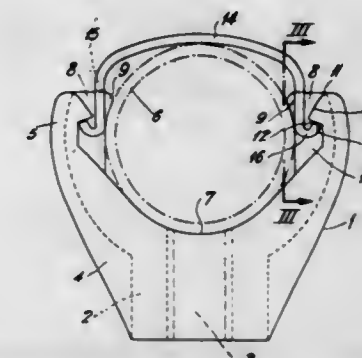
Filed Apr. 30, 1968, Ser. No. 725,409

Claims priority, application France, May 26, 1967, 107,981

Int. Cl. A44b 21/00

U.S. Cl. 24—257

9 Claims



A fastening clamp for a tube, pipe or other similar elongated object, of the kind comprising a resilient gripping means intended to grip the tube round more than one half of its periphery and a locking arch capable of being fitted on the gripping means, is characterized in that the resilient gripping means has, at the end of each of its branches, a median rib flanked by two oblique, inwardly-directed ramps terminating in bearing surfaces for the arch, and in that the arch terminates in forked ends, the fingers of these forked ends having outwardly-directed portions provided with bearing surfaces intended to enter into hooking engagement with the bearing surfaces of the gripping means.

3,462,805

**INTEGRAL FASTENER**

Sverre Quisling, 1240 Sherman Ave., Madison, Wis. 53703

Filed Oct. 6, 1966, Ser. No. 584,853

Int. Cl. A44b 19/00, 17/00

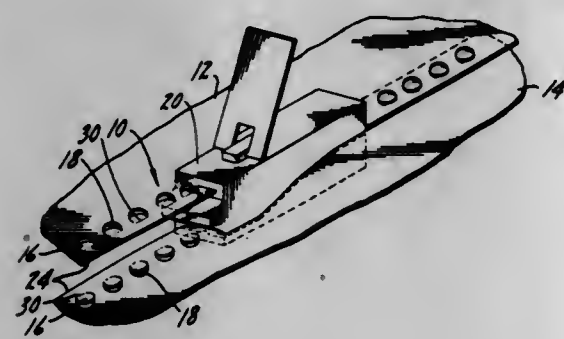
U.S. Cl. 24—204

7 Claims

An integral fastener having overlapping flat members wherein each of the flat members has a row of integral tabs extending outwardly therefrom to form a row of



openings in each member. The tabs extend in a substantially perpendicular relation from the side of their resulting opening and extend through the respective opening in the overlapping member whereby each tab inter-

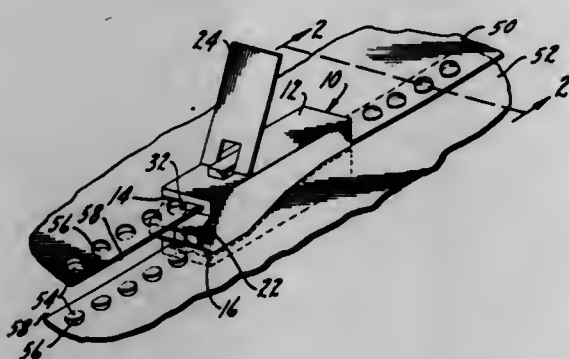


locks in an independent manner to form an interference fit. A support having rigid fingerlike projections extending into the openings formed by the interlocked tabs prevents the members from buckling.

**3,462,806**  
**SLIDER FOR INTEGRAL FASTENER**  
Sverre Quisling, 1240 Sherman Ave.,  
Madison, Wis. 53703  
Filed Oct. 17, 1966, Ser. No. 587,225  
Int. Cl. A44b 19/00

U.S. Cl. 24-205.12

1 Claim



A slider for engaging and disengaging the tabs of a pair of flat sheet-like members. The slider has a pair of grooves passing into opposite sides of the housing and extending the length of the housing for receiving the edges of the flat members in spaced overlapping relation. Raised ridges are provided in each of the grooves at the forward end of the housing for flexing the flat members to extend the tabs for pickup in a pair of channels communicating with each of the grooves. Cam surfaces are provided in the channels for flexing the tabs into a perpendicular relation with the flat members while the flat members are brought closer together in the rearward portion of the housing by the grooves whereby the tabs of each flat member inserted into the corresponding openings in the other flat member to form an interlocking fit.

**3,462,807**  
**CLASP CONSTRUCTION**  
Max Marquardt, West Warwick, R.I., assignor to Marquardt-Hudes, Inc., Providence, R.I., a corporation of Rhode Island

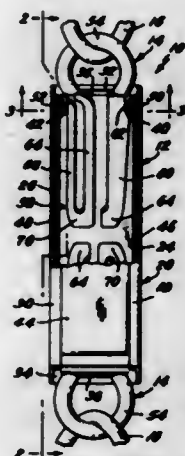
Filed Jan. 15, 1968, Ser. No. 697,907  
Int. Cl. A44b 11/25; A44c 5/18

U.S. Cl. 24-230

7 Claims

A clasp construction for use with an ornamental chain and including a housing having a slot formed in at least

one end thereof into which a lock member is inserted for interconnecting an end of the chain to the housing,



the lock member having spaced legs that are resiliently movable for interlocking the lock member interiorly of the housing.

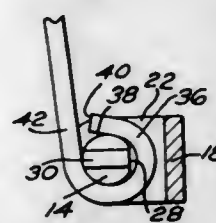
**3,462,808**  
**EAR CLIP**

Anthony R. Saccoccio, 30 St. Mary's Drive, Cranston, R.I. 02920, and Henry P. Huserl, Providence, R.I.; said Henry P. Huserl assignor to Anthony R. Saccoccio, Cranston, R.I.

Filed Aug. 22, 1968, Ser. No. 754,547  
Int. Cl. A44b 21/00

U.S. Cl. 24-248

2 Claims



An ear clip for use in earrings and the like comprising a bracket having a shaft fixed against rotation and a clamping arm having a rolled portion surrounding said shaft, whereupon said arm may be swung with respect to said shaft, said shaft and said rolled portion being configured and dimensioned so that a frictional drag is imparted as said arm is swung with respect to said shaft, said frictional drag serving to maintain said clamping arm in any desired position of adjustment.

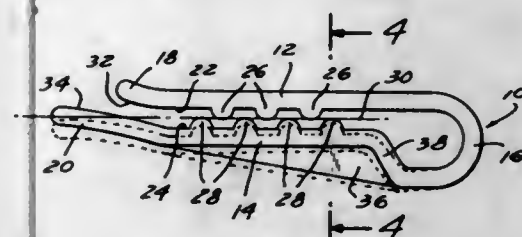
**3,462,809**  
**GARMENT CLIP**

Monroe Froehlich, Jr., Truesdale Lake, South Salem, N.Y., assignor to DHJ Industries, Inc., New York, N.Y., a corporation of New York

Filed Feb. 9, 1968, Ser. No. 704,470  
Int. Cl. A44b 21/00

U.S. Cl. 24-255

2 Claims



A garment clip for gripping and holding garments or portions thereof in position which can be inexpensively produced by molding of plastic or other suitable material.

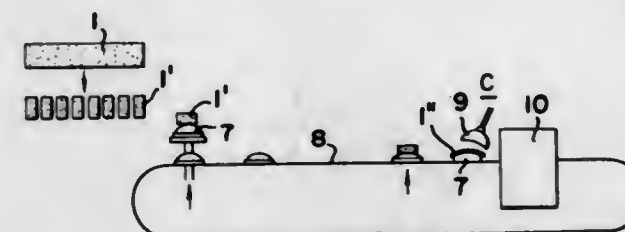
**3,462,810**  
**CONTINUOUS POTTERY FORMING MACHINE OF TABLEWARES**

Isao Matsushima, Nagoya-shi, Japan, assignor to Nippon Toki Kabushiki Kaisha, Nagoya-shi, Japan, a corporation of Japan

Filed Jan. 3, 1967, Ser. No. 606,905  
Int. Cl. B28b 15/00

U.S. Cl. 25-2

3 Claims



This disclosure relates to a continuous pottery forming machine of tablewares, and more particularly to a continuous pottery forming machine of plates, dishes, bowls and other pottery tablewares whereby, in the shaping of greenwares, predetermined amounts of clay are fed to molds, shaped by former tools, and then are dried, unloaded, edge-toward and piled in an entirely automatic operation.

**3,462,811**  
**METHOD AND APPARATUS FOR CRIMPING YARN**

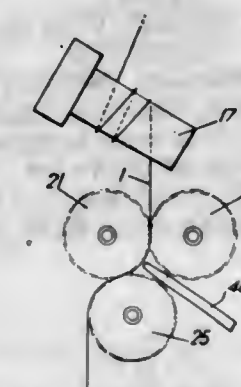
John Llewellyn Burgess, Pontypool, Barrie Daniels, Cwmbran, and William Edward Whale, Pontypool, England, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain

Filed July 28, 1966, Ser. No. 568,531  
Claims priority, application Great Britain, Aug. 6, 1965, 33,733/65

Int. Cl. D02g 1/00

U.S. Cl. 28-1.3

10 Claims



Yarn is gear-crimped by passing it from nip rolls over a heated snubbing pin to two meshing zones defined by three gear wheels. The resulting crimp consists of a primary, high-frequency crimp and a secondary, low-frequency crimp. Enhanced secondary crimp is imparted by cooling the yarn between the meshing zones and by pulling the yarn through the second meshing zone, as with a draw roll, under sufficient tension to effect drawing of the yarn.

**3,462,812**  
**TEXTILE CRIMPING**

Donald A. Ross, Cullingworth, near Bradford, England, assignor to I.W.S. Nominee Company Limited, London, England

Filed Aug. 16, 1967, Ser. No. 661,051  
Claims priority, application Great Britain, Aug. 26, 1966, 38,440/66

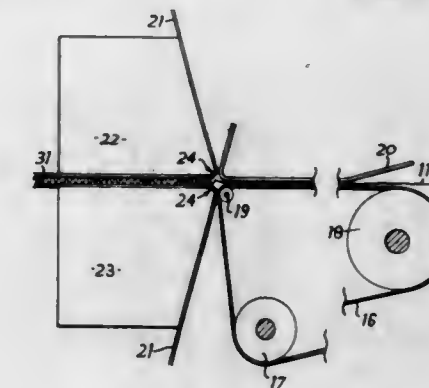
Int. Cl. D02g 1/12

U.S. Cl. 28-1.6

8 Claims

Textile fibres are folded by continuously holding and advancing unfolded fibres, for example in the form of a sliver, into a small folding zone and continuously holding

and conveying the folded fibres at a lower speed away from the folding zone, between a pair of spaced surfaces, the folding zone being so small that the strand of fibres is folded at the intake to the spaced surfaces into simple folds or waves having an amplitude determined by the spacing between the spaced surfaces. The folds can be set to provide a permanent crimp. The method avoids excessive back pressure and consequent fibre damage, and is

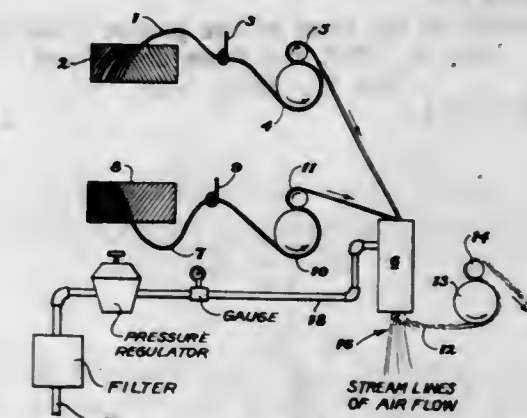


therefore valuable for fibres such as wool. The invention also provides a folding device specially adapted to carrying out the above method. However, it has also been found that this device can be used to treat yarn, and thereby achieve new properties and effects which are quite different from the properties of yarns made up from fibres crimped by the method described herein, or the effects achieved in treating slivers of fibres.

**3,462,813**  
**METHOD OF PRODUCING VOLUMIZED YARN**  
Richard F. Dyer, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Nov. 4, 1955, Ser. No. 544,888  
Int. Cl. D04h 3/08; D05c 15/00; D02g 3/02  
U.S. Cl. 28-72

17 Claims



A process for manufacturing a volumized yarn comprises feeding two multifilament yarns into an air jet where they are combined, and withdrawing them together therefrom as a composite volumized yarn. One of the yarns, the effect yarn is fed into the jet at a rate much greater than the composite yarn is removed, and the second yarn, the core yarn, is fed into the jet at a rate much slower than the effect yarn but sufficiently faster than the withdrawal rate of the composite yarn by an amount sufficient to cause the filaments of the core yarn to open and separate to permit penetration by the looping excess yarn and filaments thereof. The excess or effect yarn thus is caused to interweave back and forth through the core yarn and extend through the core yarn at random points, and to extend from the core yarn in the form of loops. The core yarn acts as a stress-bearing member and stabilizes the resulting composite yarn.



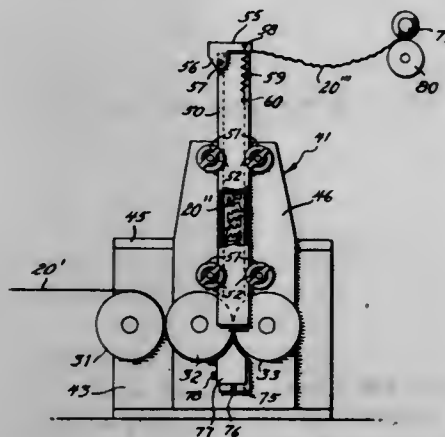
3,462,814

**STRAND TREATMENT**

Robert K. Stanley, Media, Pa., assignor to Techniservice Corporation, Kennett Square, Pa.  
Continuation-in-part of application Ser. No. 302,758, July 31, 1963. This application Oct. 26, 1967, Ser. No. 678,428  
The portion of the term of the patent subsequent to Apr. 9, 1985, has been disclaimed  
Int. Cl. E02g 1/08

U.S. Cl. 28—72.14

12 Claims



This invention relates to treatment of textile strands, concerning especially crimping thereof by successive extension and compression along the strand axis. In particular, such strands are drawn to increased length and then are stuffer crimped. The drawn strands are preferably underfed to the stuffer crimper and often are drawn further at the input thereto.

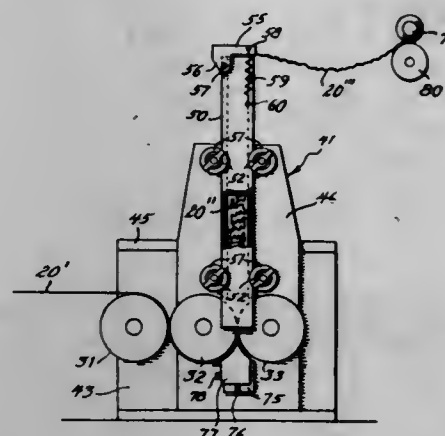
3,462,815

**STRAND TREATMENT**

Robert K. Stanley, Media, Pa., assignor to Techniservice Corporation, Kennett Square, Pa., a corporation of Pennsylvania  
Continuation-in-part of application Ser. No. 302,758, July 31, 1963. This application Nov. 20, 1967, Ser. No. 684,230  
The portion of the term of the patent subsequent to Apr. 9, 1985, has been disclaimed  
Int. Cl. E02g 1/08

U.S. Cl. 28—72.14

13 Claims



This invention relates to treatment of textile strands, concerning especially crimping thereof by successive extension to permanently increased length, or "drawing," and compression along the strand axis to buckle it into characteristic stuffer-crimped configuration. The strand is treated in essentially dry condition, and the drawing and crimping are accomplished in essentially continuous manner by means of a succession of rolls over which the strand passes in essentially non-slipping contact and into a temporarily confining chamber.

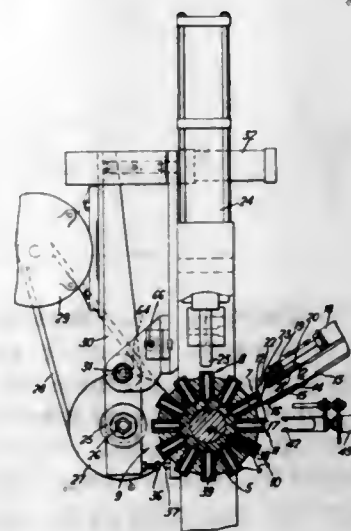
3,462,816

**MACHINES FOR USE IN MANUFACTURING STUDS**

Ronald Frank Simpson and Frank Robert Slater, Farnham, England, assignors to Dzus Fastener Co., Inc., West Islip, N.Y., a corporation of New York  
Filed Sept. 11, 1967, Ser. No. 666,665  
Int. Cl. B23p 23/04; B23g 9/00

U.S. Cl. 29—33

17 Claims



A machine for applying a screw driver slot and an identification mark to the head of a stud, such as a fastener or a fastener blank of the type having a shank and a head. The machine has a carrier with holders mounted thereon adapted to grip the shanks of the studs. The carrier is rotated stepwise or intermittently to sequentially bring the holders into adjacent relationship with a loading station for loading the studs on the holders, with a press for applying the identification marks to the heads, with a milling head for forming the screw driver slots, and with an ejecting station for ejecting the studs from the holders.

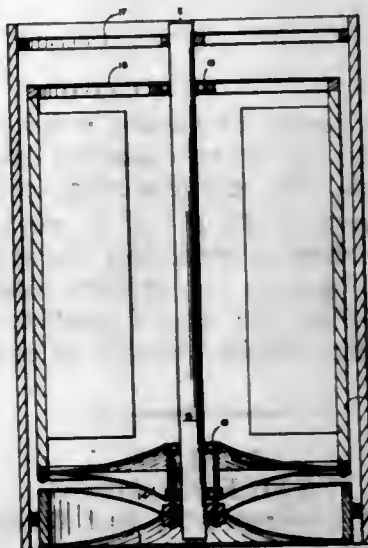
3,462,817

**PRESTRESSED SHEETS FOR SUPPORTING MEMBERS**

Robert B. Horsfall, Placentia, William A. Farrand, Fullerton, and Norman E. Marcum, Laguna Beach, Calif., assignors to North American Rockwell Aviation Corporation, a corporation of Delaware  
Filed Mar. 31, 1967, Ser. No. 627,392  
Int. Cl. B21h 1/02; B21k 1/32

U.S. Cl. 29—116

14 Claims



Supports composed of sheets of relatively thin material prestressed in tension between comparatively rigid central and peripheral members. Sheets or discs of conoidal form singly or in pairs provide support in the direction of the conoidal axis in addition to providing radial support. The optimum shaping of these discs departs from a simple cone for any finite hub diameter.

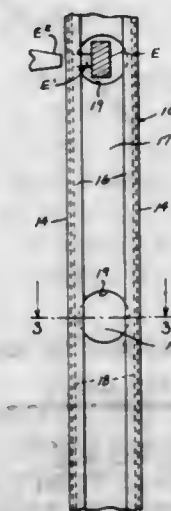
3,462,818

**MANUFACTURING METAL LEGS OR THE LIKE WITH ORNAMENTAL FACINGS**

Herbert J. Moon, Milwaukee, Wis., assignor to Lakeside Manufacturing, Inc., Milwaukee, Wis., a corporation of Wisconsin  
Filed June 5, 1967, Ser. No. 646,793  
Int. Cl. B23p 17/00

U.S. Cl. 29—155

3 Claims



A method of making a hollow metal leg of rectangular cross-section having spaced front flanges, there being a metal backing channel welded within each leg in a position spaced inwardly a distance from the front flanges to provide a slot for slidably receiving a strip of laminated decorative plastic sheet material, the backing channel having spaced access openings through which one of the electrodes of a spot welder may be inserted for spot welding the flanges of the backing channel in position prior to sliding the ornamental laminated strip in place.

3,462,819

**SHEET PANEL WALL ASSEMBLY**

Resta S. Gregoire, Newport, Pa., assignor to Gregoire Engineering and Development Co., Adelphi, Md.  
Original application July 12, 1965, Ser. No. 475,305, now Patent No. 3,376,679, dated Apr. 9, 1968. Divided and this application Nov. 17, 1967, Ser. No. 684,576  
Int. Cl. B23p 17/00; E04b 2/00

U.S. Cl. 29—155

2 Claims



The present invention comprises the method of forming a triangular channel strip of resilient material having a prescribed normal gap at the open apex thereof smaller than the spring-back gap which could be obtained by normal break-forming so that the strip could be used as a lock strip with the gap edges resiliently pressing on opposite sides of a double thickness of sheet material over which they are mounted, as in the case of such lock strip holding the channel flanges at the two edges of adjacent sheet panels joined together in sealing relation, the double thickness of this sheet material being less than said spring-back gap. The method includes a step for reducing the spring-back gap, by bending the bottom of the channel outwardly by pressing a plate die against the middle of said bottom, the plate having a maximum thickness of said double thickness of sheet material, whereby the required normal gap which is less than said double thickness after spring-back, may be obtained.

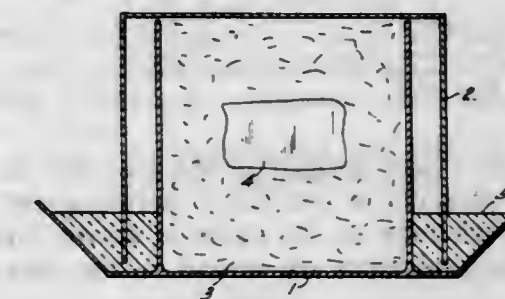
3,462,820

**COATED COBALT ALLOYS**

Douglas H. Maxwell, North Palm Beach, and Frank Suyama, West Palm Beach, Fla., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware  
Original application Oct. 21, 1964, Ser. No. 405,532, now Patent No. 3,343,982, dated Sept. 26, 1967. Divided and this application Aug. 9, 1967, Ser. No. 678,123  
Int. Cl. B23p 3/00; C23c 9/00

U.S. Cl. 29—197

3 Claims



The invention provides an article resistant to oxidation at elevated temperatures, such as a gas turbine rotor vane or stator blade formed of a cobalt alloy base containing 35% or more cobalt which is enclosed within an outer diffusion coating comprising chromium, aluminum and magnesium up to 5% by weight of the aluminum, the coating being produced from a powder pack in which the magnesium was present in an amount up to 15% by weight of the aluminum.

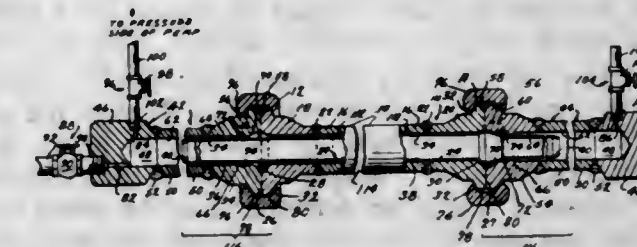
3,462,821

**PIPE LINING APPARATUS**

Donald V. Cours, John K. McGee, and Harold L. Lafferty, Houston, Tex., assignors to Gray Tool Company, Houston, Tex., a corporation of Texas  
Original application Nov. 29, 1965, Ser. No. 510,274, now Patent No. 3,359,624, dated Dec. 26, 1967. Divided and this application Aug. 22, 1967, Ser. No. 678,125  
Int. Cl. B23p 19/02

U.S. Cl. 29—200

4 Claims



There is disclosed apparatus for lining the bore of a pipe by outwardly deforming an inserted liner into contact with the pipe bore. The apparatus includes end closures for closing off both ends of the pipe bore and for receiving the initially protruding ends of the liner. Circumferential seals are provided between both end closures and the liner and one of the end closures has a port for admitting liner deforming pressurized fluid to the bore of the liner.

3,462,822

**MACHINE FOR MANUFACTURING LOW-NOISE CABLE**

Norman P. Roe, El Monte, Calif., assignor, by mesne assignments, to Consolidated Products Corp., Gardena, Calif., a corporation of California  
Filed Nov. 9, 1967, Ser. No. 681,820  
Int. Cl. B23p 19/04; H01r 43/00

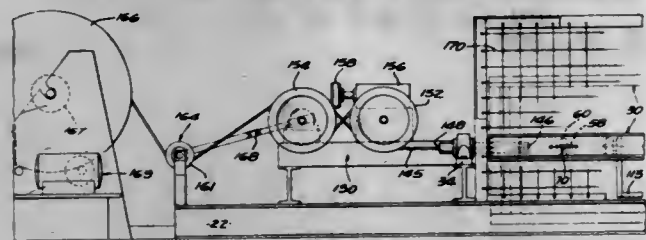
U.S. Cl. 29—202.5

13 Claims

A machine for assembling a plurality of insulated conductors wound about a cable core, to form a low-noise



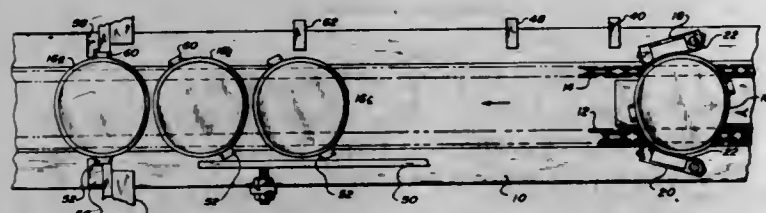
cable. The machine includes a frame rotatably mounted on a base; and a wrapping die carried by said frame for simultaneously winding the plurality of insulated conductors nearly perpendicular to the longitudinal axis of the core. Means are provided for feeding the cable



core through a port formed in the die, and for feeding each of the plurality of conductors across angled surfaces of the die; whereby as the cable is drawn through the machine the conductors are wound on the core at a low lay ratio.

**3,462,823**  
**EARED CONTAINERS METERING FEED AND ACCUMULATING APPARATUS**  
Raymond A. Heisler, 657 Dakota Trail, Franklin Lakes, N.J. 07417  
Filed Nov. 8, 1967, Ser. No. 681,505  
Int. Cl. B23p 19/04; B65g 47/24  
U.S. Cl. 29—208

11 Claims



A metering feed and accumulating apparatus adapted to receive eared containers from a conveyor and to precisely space these containers as they are fed onto an orienting conveyor. The containers as they are carried forwardly on their bottoms are also rotated by means of a differential in speed of two conveying strands. The metering gate includes two specially positioned proximity switches adapted to regulate the flow of containers through the gate to provide a determined spacing. Subsequent to the gate an ear-engaging means is adapted to orient the container as it is advanced and in an oriented state the eared containers are fed past a third proximity switch positioned a determined distance from a bail-applying apparatus. This third proximity switch is spaced and is connected to actuating means of the bail-applying apparatus so that a determined quantity of eared containers are brought into contiguous relationship to each other and the apparatus before the bail-apparatus is actuated.

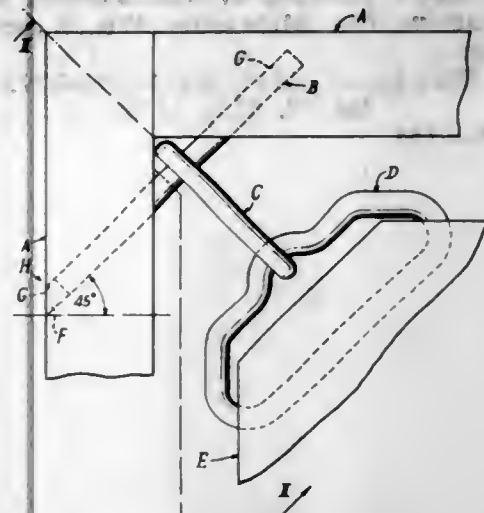
**3,462,824**  
**METHOD OF MOUNTING UPHOLSTERY SUPPORTS**

Charles Damiano, London, England, assignor to Pirelli Limited, London, England, a British company  
Original application Mar. 28, 1966, Ser. No. 537,846, now Patent No. 3,333,841, dated Aug. 1, 1967. Divided and this application Feb. 3, 1967, Ser. No. 643,748  
Claims priority, application Great Britain, Apr. 9, 1965, 15,073/65  
Int. Cl. B23p 11/00, 19/04  
U.S. Cl. 29—448

7 Claims

An upholstery support and the method of assembly wherein adjacent frame elements of an article of furniture have axially aligned passageways therein, a rod the ends

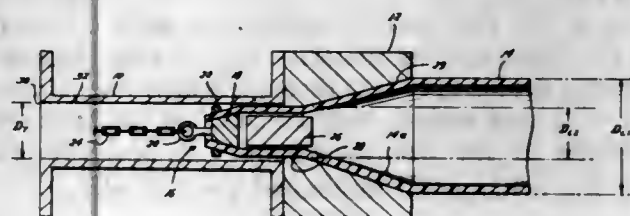
of which extend into each of the passageways and the support having means associated therewith to engage the



rods and connect the support to and within the frame under tension.

**3,462,825**  
**METHOD OF LINING TUBULAR MEMBERS**  
Gerald R. Pope and William R. Lott, Houston, Tex., assignors to John L. Dore Co., Houston, Tex., a corporation of Texas  
Filed July 11, 1967, Ser. No. 656,623  
Int. Cl. B23p 11/02, 19/00  
U.S. Cl. 29—451

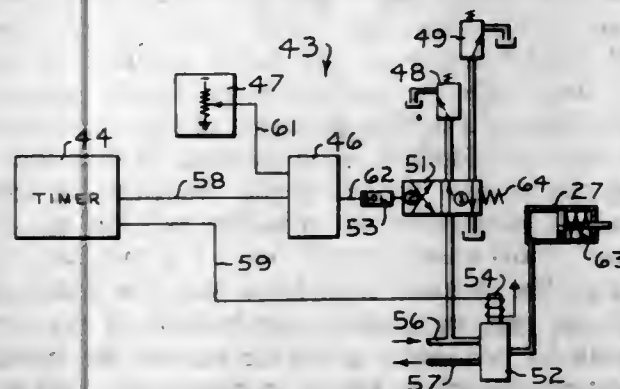
2 Claims



An interiorly jacketed tubular member, particularly a flexible tube, wherein the jacket is a fluorocarbon liner having an initial outside diameter 10 to 15% greater than the inside diameter of the tubular member. The liner is placed in the tubular member by gripping one end of the liner and pulling it without application of heat through a reduction die and into the tubular member, releasing the liner, and then allowing the liner to expand into tight engagement with the inner wall of the tubular member.

**3,462,826**  
**METHOD OF SPEED PROGRAMMED WELDING**  
Charles G. Farmer, Edelstein, Calvin D. Loyd, Peoria, Robert G. Miller, Princeville, and Theodore L. Oberle, Washington, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California  
Filed July 29, 1966, Ser. No. 568,920  
Int. Cl. B23k 27/00, 31/02  
U.S. Cl. 29—470.3

9 Claims



The drive for a friction welder is controlled to produce a programmed speed of rotation throughout the weld cycle.

**3,462,827**  
**PROCESS FOR OBTAINING A COMPOSITE ARTICLE**  
Joseph Winter, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia  
No Drawing. Application Oct. 1, 1965, Ser. No. 492,312, now Patent No. 3,381,366, dated May 7, 1968, which is a continuation-in-part of application Ser. No. 229,262, Oct. 2, 1962. Divided and this application Nov. 29, 1967, Ser. No. 686,706  
Int. Cl. B23k 31/02; B21b 3/00  
U.S. Cl. 29—472.3

8 Claims

This disclosure teaches a process for obtaining a composite article having a core of an aluminum base alloy clad with a dissimilar metal. The process is characterized by heating the core and rolling together the core and cladding at a speed of at least 25 feet per minute in one pass at the reduction between 35 and 80%, with the core and cladding coming together for the first time in the bite of the rolls.

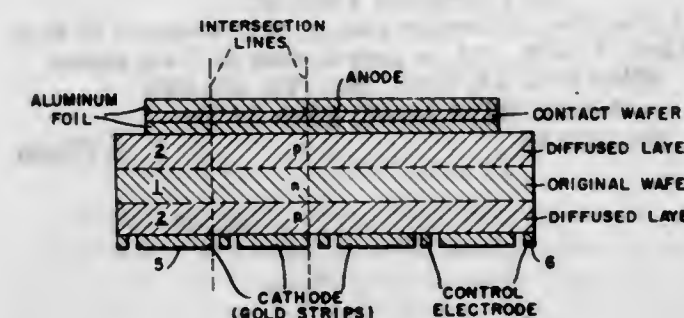
**3,462,828**  
**PROCESS FOR OBTAINING A COMPOSITE ARTICLE**  
Joseph Winter, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia  
No Drawing. Application June 18, 1965, Ser. No. 465,156, now Patent No. 3,381,365, dated May 7, 1968, which is a continuation-in-part of application Ser. No. 229,262, Oct. 2, 1962. Divided and this application Nov. 29, 1967, Ser. No. 686,730  
Int. Cl. B23k 31/02; B21b 3/00  
U.S. Cl. 29—472.3

8 Claims

The instant disclosure teaches a process for obtaining a composite article having a core of an iron base alloy clad with a dissimilar metal. The process is characterized by heating the core and rolling together the core and cladding at a speed of at least 100 feet per minute in one pass at a reduction between 35 and 75%, with the core and cladding coming together for the first time in the bite of the rolls.

**3,462,829**  
**METHOD FOR PRODUCING A SEMICONDUCTOR ELEMENT**  
Edgar Lutz, Pflizhausen, Johann Haserer, Munich, and Claus Pöhlau, Nuremberg, Germany, assignors to Semikron Gesellschaft für Gleichrichterbau und Elektronik m.b.H., Nuremberg, Germany  
Filed Sept. 7, 1966, Ser. No. 577,755  
Claims priority, application Germany, Sept. 8, 1965, S 99,297  
Int. Cl. H01j 7/00, 1/14; B01j 17/00  
U.S. Cl. 29—589

8 Claims

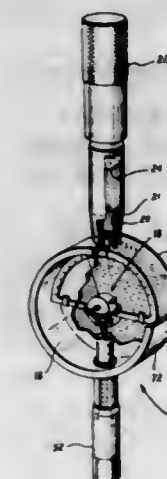


A method of making a large surface semiconductor element which can be divided into a plurality of small surface semiconductor elements, such as thyristors or the like, without damage to its layer structure. The method includes the steps of diffusing impurities into the two major surfaces of a semiconductor wafer having a first

conductivity to form external layers having a second conductivity; placing, consecutively, a first aluminum foil, an anode contact wafer and a second aluminum foil on one of the major surfaces; placing cathode material strips having the first conductivity on the other of the major surfaces; and, in a single step, simultaneously alloying the first aluminum foil, the contact wafer and the second aluminum foil onto the one major surface, as well as the cathode material strips onto the other major surface.

**3,462,830**  
**METHOD OF MAKING A MAGNETOMETER**  
Edgar J. Sharpe, Willowdale, Ontario, Canada, assignor to Edgar Sharpe & Associates Limited, Toronto, Ontario, Canada  
Filed Oct. 29, 1964, Ser. No. 407,317  
Int. Cl. G01r 3/00, 33/00  
U.S. Cl. 29—592

2 Claims



1. A method of making a magnetic search instrument having a chamber, a search magnet system mounted for pivotal movement in said chamber, said search magnet system having a search magnet therein adapted to respond to a magnetic field to be explored, a damping liquid solution in said chamber having an instrument specific gravity such that the mass of the liquid displaced by said search magnet system is substantially equal to the mass of said search magnet system, including the steps of mechanically balancing said search magnet system, floating the balanced search system in a contained first damping liquid having a greater specific gravity than said balanced search system, adding and mixing with said first damping liquid a second miscible damping liquid having a specific gravity less than said balanced search system until said balanced search system changes its condition from floating to complete submersion to thereby render said damping solution, removing the balanced search system from said solution and pivotally mounting same in said chamber, and filling said chamber with said solution for completely submerging the mounted balanced search system.

**3,462,831**  
**DEVICE FOR AND METHOD OF MAKING A COIL CONSTRUCTION**  
Benton A. Whiteman, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware  
Filed Sept. 29, 1967, Ser. No. 671,708  
Int. Cl. B23p 19/00, 21/00  
U.S. Cl. 29—605

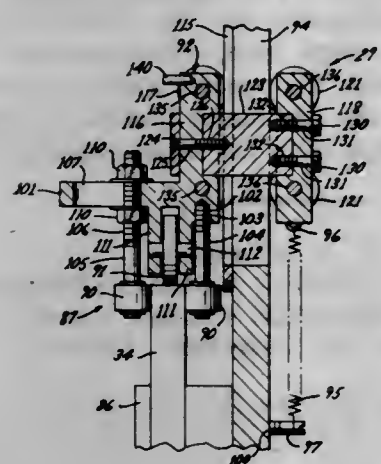
12 Claims

This disclosure relates to a device which controls the unwinding of an elongated strip of material from a supply roll thereof during the coiling of such strip to define



a coil construction wherein the device has control means which acts directly against the outer periphery of such

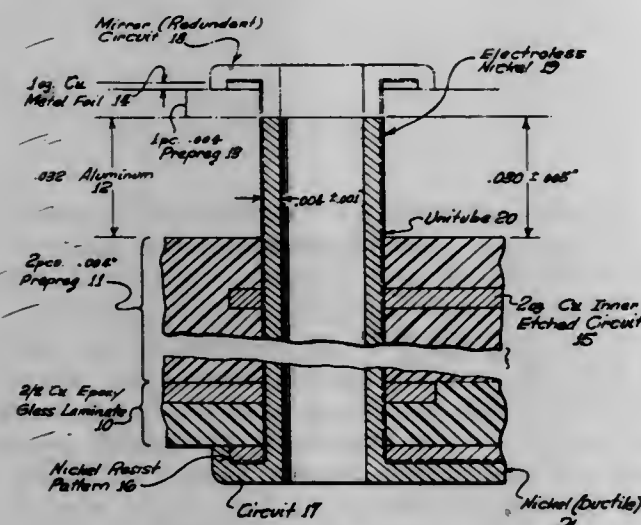
a sleeve defining a receiving chamber, and a bolt reciprocating in the sleeve. A spring is disposed in the sleeve and charges the bolt. One end of the spring is supported



supply roll to provide control unwinding of the elongated strip.

### 3,462,832 PROCESS FOR FABRICATING HIGH DENSITY MULTILAYER ELECTRICAL INTERCONNECTIONS

James R. Kubik, Upland, Calif., assignor to General Dynamics Corporation, a corporation of Delaware  
Filed Oct. 24, 1966, Ser. No. 589,039  
Int. Cl. B41m 3/08; H05k 3/00  
U.S. Cl. 29—625 5 Claims



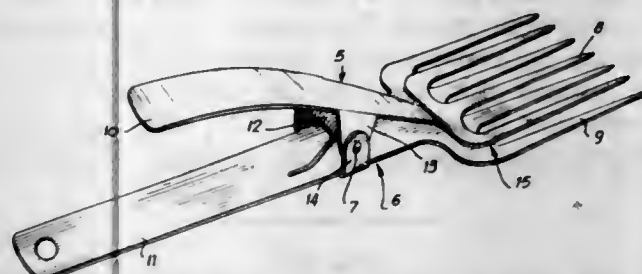
A method of making multilayer printed circuit boards having perpendicularly extending tube-like nickel interconnectors which are molecularly integral with associated interconnecting nickel plated circuits, the tube-like interconnectors being adapted to receive electronic component leads which may then be soldered or welded within the interconnectors.

3,462,833  
**DRIVE PIN ASSEMBLY FOR THE CUTTER  
BLOCK OF AN ELECTRIC RAZOR**  
Kurt Baumann, Solingen-Merscheld, Germany, assignor to Robert Krups, Solingen-Wald, Germany, a corporation of Germany  
Original application June 9, 1966, Ser. No. 556,510, now Patent No. 3,389,467, dated June 25, 1968. Divided and this application Jan. 19, 1968, Ser. No. 699,230  
Claims priority, application Germany, June 10, 1965, K 56,343  
Int. Cl. B26b 19/38  
U.S. Cl. 30—43.92 2 Claims

A swinging lever for reciprocation of a cutter block of a shearing head for dry electric razors, which comprises

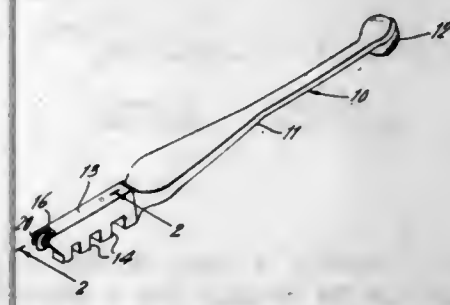
by the cutter block, and the sleeve is adapted for releasable connection with the cutter block and the sleeve includes an abutment means for limiting the displacement of the bolt.

3,462,834  
**FORK FOR OPENING MUFFINS**  
Emile A. Rivard, 70 Morningside Drive,  
New York, N.Y. 10027  
Filed Oct. 27, 1967, Ser. No. 678,712  
Int. Cl. A47j 43/28  
U.S. Cl. 30—137 1 Claim



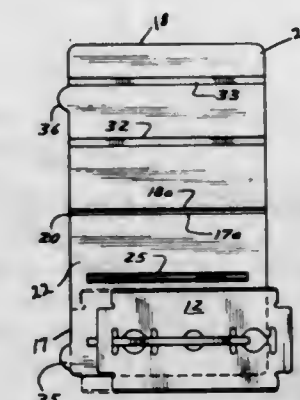
Companion forks in overlying relation pivoted together intermediate their ends, with intermeshing tines at one end, and gripping handles at the opposite end and a spring acting on the handles for holding the forks with the tines convergent to a common plane at the tips and the handles spaced for gripping engagement to effect a spreading separation of the tines.

3,462,835  
**GLASSCUTTER WITH PLASTIC WHEEL  
RETAINING INSERT**  
Leland J. Fancher, Mountain Lakes, N.J., assignor to Red Devil Inc., Union, N.J., a corporation of New Jersey  
Filed Feb. 17, 1967, Ser. No. 616,808  
Int. Cl. B23d 21/06; B26b 25/00  
U.S. Cl. 30—164.95 1 Claim



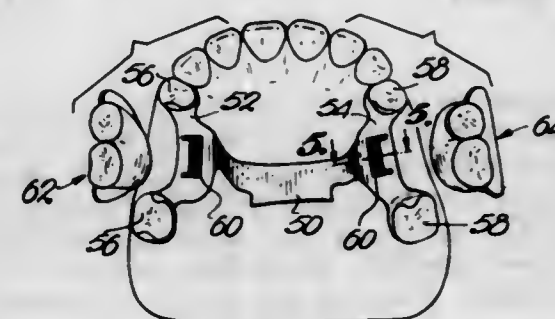
A hand tool for cutting glass with an insert of low friction plastic carried by the handle, the circular glass cutting wheel being journaled within and supported by the insert.

3,462,836  
**RAZOR BLADE TOOL DEVICE**  
John V. Knight, 3201 St. Margaret Drive, and Frederick E. Jones, 5905 Westbrook Road, both of Minneapolis, Minn. 55422  
Filed Nov. 8, 1967, Ser. No. 681,395  
Int. Cl. B26b 1/00  
U.S. Cl. 30—331 5 Claims



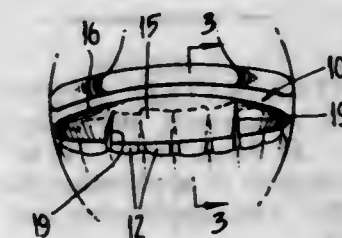
A device for utilizing as a scraper and a cutting tool, a safety razor blade having a central slot therein, said device comprising a pair of hinged superposed covers, one of said covers having a pair of ribs at the inner side thereof and the other having a pair of grooves cooperating with said ribs to receive and hold said razor blade therebetween positioning said blade in storage position, or in the alternative, positioning said blade in operating position.

3,462,837  
**DENTURE SECURING MEANS**  
James A. Andrews, Amlite, and Glenn A. Bahm, Independence, La., and Riley B. Dodson and John N. Walker, Dallas, Tex., assignors to Institute of Cosmetic Dentistry, Incorporated, parish of Tangipahoa, La., a corporation of Louisiana  
Filed June 8, 1967, Ser. No. 644,514  
Int. Cl. A61c 13/22  
U.S. Cl. 32—5 10 Claims



A dental appliance comprises two separable sections, a removable framework or plate and a bridge. The framework is placed in position by lingual insertion and engages natural teeth in the undercut formed thereby. The bridge is locked on the framework by a bar and sleeve interconnection, and can be placed in position only after installation of the framework. Either labial insertion or insertion by a lateral, cheek-to-cheek movement is employed to install the bridge on the framework, the separate paths of insertion of the framework and bridge cooperating to preclude inadvertent loosening of the appliance during use since installation of the appliance, and thus the removal thereof, cannot be effected with the framework and bridge interconnected as a unit.

3,462,838  
**PROSTHETIC DEVICE FOR ANIMAL TEETH**  
Martin Robert MacDonald Alstergren, 11 Millicent Ave., Toorak, Victoria, Australia  
Filed Mar. 23, 1967, Ser. No. 625,340  
Claims priority, application Australia, Mar. 25, 1966, 3,440/66; Sept. 12, 1966, 10,922/66  
Int. Cl. A61c 13/22 9 Claims

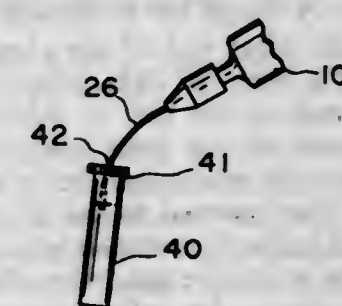


A prosthetic device for animal teeth which can assist or replace the action of any defective or missing teeth, comprising at least one curved member extending over a distance corresponding to a plurality of teeth, said member having a hollow underside part of its surface formed for engagement with and over a plurality of said teeth for fixture thereto and having an outer part of its surface formed as a biting surface on or near an apex of the member, wherein said member is formed in the shape of a crescent having an inwardly curved upper surface and an outwardly curved frontal surface, said curved surfaces meeting at an acute angle to provide a ridge along said biting surface and having a mechanical positioning and securing attachment for initially securing the device in position until permanent fixing is effected by a hard setting cement which is applied between the teeth and the device.

3,462,839  
**DENTAL COMPOSITIONS AND PROCESS**  
Raymond F. Boyer and Dallas G. Grenley, Midland, and Robert H. Ansbaugh, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed June 10, 1966, Ser. No. 556,567  
Int. Cl. A61k 5/02; A61c 5/00 10 Claims

This invention is directed to improved dental cement compositions and methods of significantly enhancing the adhesion of conventional dental cements to tooth structures. More particularly, it is directed to the use of certain vinylidene chloride interpolymers in conjunction with conventional dental cements whereby unexpected improved adherence of such cements to tooth structures is achieved.

3,462,840  
**DENTAL DISPENSER WITH CALCIUM  
HYDROXIDE PASTE**  
Irving A. Ellman, Valley Stream, N.Y.  
(1 Auerbach Lane, Lawrence, N.Y. 11559)  
Filed June 3, 1965, Ser. No. 460,952  
Int. Cl. A61c 5/04 3 Claims



A device for dispensing a controlled amount of a calcium hydroxide paste for lining a cavity. It includes an



air-tight applicator with a micrometer screw feed. The paste includes a hydroxyethyl cellulose binder which reduces the tendency of the paste to harden in the container, and also includes barium sulphate as a radiographic opacifying agent to make the liner radiographically visible. An auxiliary container also containing a calcium hydroxide paste is used for receiving the needle of the applicator between times of use to prevent needle clogging.

**3,462,841**  
**DENTAL MATRIX EQUIPMENT**  
Ira V. Almsworth, 3009 Titanic St.,  
El Paso, Tex. 79904

Continuation-in-part of application Ser. No. 654,122,  
July 18, 1967. This application Jan. 16, 1968, Ser.  
No. 701,810

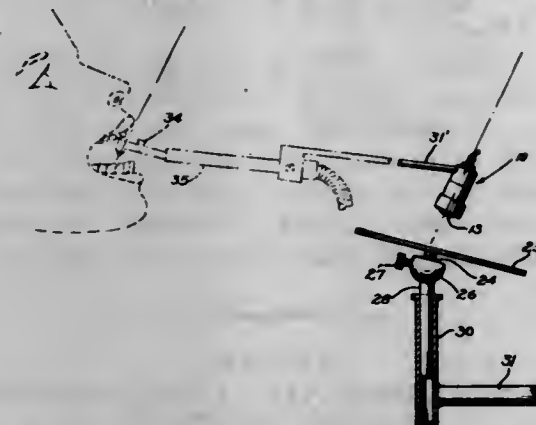
U.S. Cl. 32—63 Int. Cl. A61c 5/12 3 Claims



Matrix band retainer incorporating reciprocable parts for tightening and loosening a matrix band, with the reciprocable parts enclosed within a tubular body shielding or protecting the lips from contact with the reciprocable parts, and matrix band having end enlargements, or alternatively being in the form of a loop, providing for fastening of the band in the retainer.

**3,462,842**  
**DENTAL SENSING DEVICE**  
Martin Greenberg and Leonard S. Wagner, both of 326 N.  
Geneva St., Ithaca, N.Y. 14850  
Filed July 10, 1967, Ser. No. 652,072  
Int. Cl. A61c 3/00

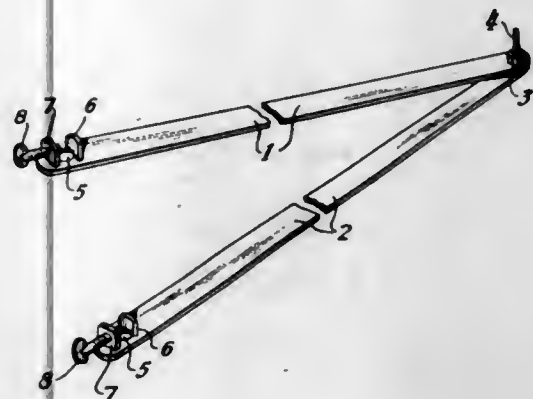
U.S. Cl. 32—67 9 Claims



This sensing device is for use with the usual dental drill having a hand piece and a bur extending at an angle to the hand piece. A clamp bar is secured at one end to the hand piece. The other end of the clamp bar is secured to a source of a beam of light, which beam is directed at the same angle as the bur. A reflecting mirror is located in the path of the light beam and is adjustably mounted so that the mirror can be secured in a position with the light beam normal to the mirror, when the bur is at the desired angle. A photocell is secured to the clamp bar in a position to receive light when the light is reflected back along the beam. An indicator lamp located on the hand piece is connected to the photocell. Deviation of the bur from the proper angle is indicated by the indicator lamp.

**3,462,843**  
**DEVICES FOR USE IN THE MARKING OUT OF BUILDING SITES**  
George T. Blake, Orchard Dene, Station Road, Padworth,  
Reading, Berkshire, England  
Filed Dec. 16, 1966, Ser. No. 602,226  
Claims priority, application Great Britain, Dec. 30, 1965,  
55,207/65  
Int. Cl. G01b 3/14, 5/24

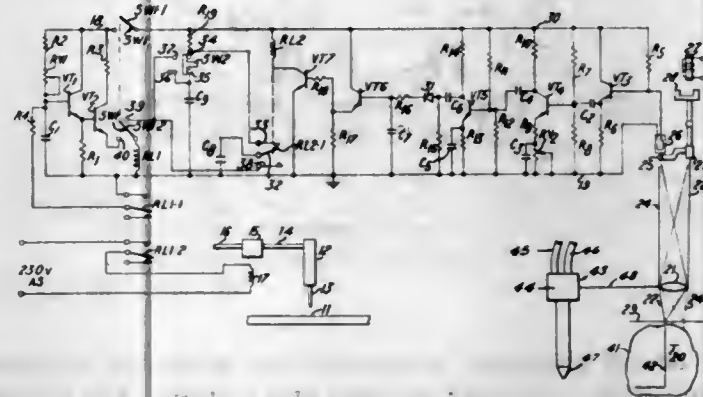
U.S. Cl. 33—1 3 Claims



A device for setting up building sites in respect of corner datum points thereof, comprises two pivotally connected rigid arms engageable at their free ends with fixing members driven into the ground. When the pivot point is disposed at the desired corner point, and the arms are spread apart and are engaged with the fixing members in the ground, the arms may be removed from the fixing members and the fixing members left in the ground. The corner datum point can then be re-established by the pivot point simply by applying the arms again to the fixing members.

**3,462,844**  
**AUTOMATIC PUNCH CONTROL CIRCUIT**  
Derek Harry Redman, Croydon, England, assignor to  
Hancock & Co. (Engineers) Limited, Croydon, Eng-  
land, a British company  
Filed Nov. 28, 1966, Ser. No. 597,298  
Claims priority, application Great Britain, Dec. 1, 1965,  
51,003/65  
Int. Cl. B43I 13/10; B23k 7/10; B26d 9/00

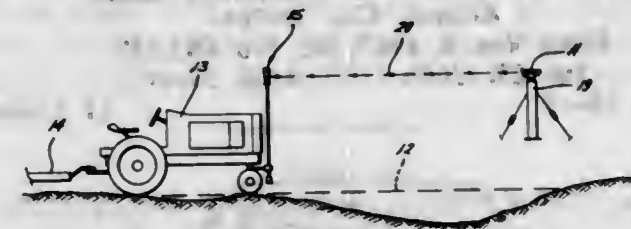
U.S. Cl. 33—18 5 Claims



An automatic punch control apparatus for use in an oxygen jet cutting machine having a cutting torch for automatically cutting a workpiece to the shape of an outline which is followed by a photoelectric line follower, in which a marking punch is mounted for movement with the cutting torch and means actuated by control circuitry are provided for causing the punch to make marks on the workpiece while it is being cut, either at regular timed intervals or in accordance with marks on the substrate carrying the outline.

**3,462,845**  
**APPARATUS FOR MAINTAINING AN ELEVATION**  
Sarazon P. Matthews, Rte. 2, Box 168,  
Sulphur, La. 70663  
Filed Apr. 29, 1966, Ser. No. 546,444  
Int. Cl. G01c 21/04, 21/10

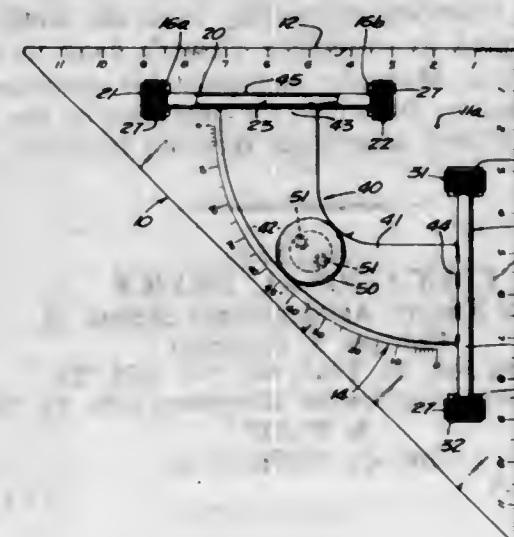
U.S. Cl. 33—46 4 Claims



Apparatus for surveying a grade elevation such as a contour line. A pendulously leveled rigidly securable support mounts a laser beam source which is rotated in a horizontal datum plane. To follow the contour line, a receiver is pendulously carried by a vehicle and is responsive to the laser beam during its rotation to detect whether the receiver is above or below the datum plane, and actuates indicating means accordingly.

**3,462,846**  
**DRAFTING MACHINE**  
Arthur A. Goetz, 2708 W. 75th St.,  
Los Angeles, Calif. 90043  
Filed May 6, 1968, Ser. No. 726,862  
Int. Cl. B43I 13/02

U.S. Cl. 33—109 7 Claims

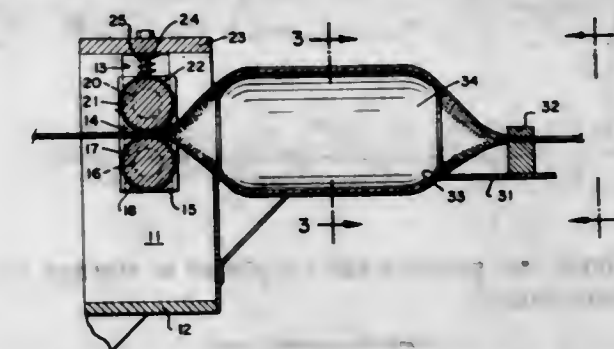


A drafting machine which includes a horizontally slidable member having a side edge which forms a guiding surface, an opening through the member spaced away from the guiding surface, a cylindrical guide roller having a high-friction surface located above the opening with its axis of rotation horizontally disposed, and a spring support normally maintaining the guide roller in its elevated position but depressible to permit the guide roller to pass partially through the opening for engaging a sheet of drafting paper upon which the member is supported, while still maintaining contact between the member and the paper.

**3,462,847**  
**MECHANISM FOR MEASURING STRETCHABLE KNIT TUBING**  
Caley A. Foreman, Grenada, Miss., assignor to U.S.  
Industries, Inc., New York, N.Y., a corporation  
of Delaware  
Filed July 28, 1967, Ser. No. 656,756  
Int. Cl. G01b 5/04

U.S. Cl. 33—127 8 Claims  
A device for measuring flexible knit tubing, such as raschel knit fishnet tubing, consisting of a pair of pressure rollers having a brake adjustable to predetermine

the effort needed to draw tubing between the rollers. A sphere or cylinder is placed within the tubing adjacent the bight of the pressure rollers, the sphere or cylinder, as the case may be, having a diameter such that the fabric will



be stretched, thus assuring that the tubing will enter the rolls in a flat double layer and can be measured accurately with a predetermined degree of stretching force applied during measurement.

**3,462,848**  
**DRY COATING THICKNESS GAGE**  
Maynard R. Euverard, 305 De Soto Drive,  
Richmond, Va. 23229  
Filed Mar. 12, 1968, Ser. No. 712,521  
Int. Cl. G01b 3/22

U.S. Cl. 33—169 7 Claims



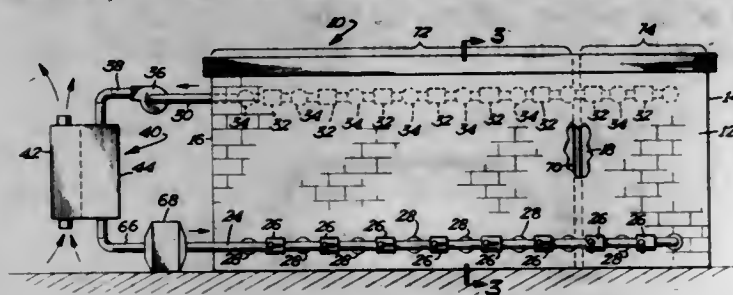
A dry coating thickness gage comprises a barrel having its lower end cut off at a slight angle to the barrel axis and a shaft supported within and co-axial with the barrel. A cutter element is secured to the lower end of the shaft and makes a progressively deeper arcuate cut into the coating as the shaft is rotated through 180° when the barrel is held with its lower end pressed firmly against the coating surface.

**3,462,849**  
**FREEZE-DRYING OF POROUS MATERIALS DURING STORAGE**  
Rolf G. Gidlow, North St. Paul, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware  
Filed Oct. 9, 1967, Ser. No. 673,593  
Int. Cl. F26b 5/00, 21/14

U.S. Cl. 34—5 20 Claims  
A process for freeze-drying substances such as foods while in storage within a refrigerated warehouse by chilling the products to a temperature between -20° F. and +30° F. and circulating chilled air through the warehouse and through a dryer for reducing the humidity level of the air to maintain its dew point at a temperature below the temperature of the chilled product. The air is maintained at a low enough temperature to prevent melting of the product. Drying is continued for a period of days or



weeks throughout the normal storage period of the frozen product. When the moisture content has reached the desired level, the product can be placed in storage at ambient temperatures.



desired level, the product can be placed in storage at ambient temperatures.

3,462,850

## HEAT EXCHANGER

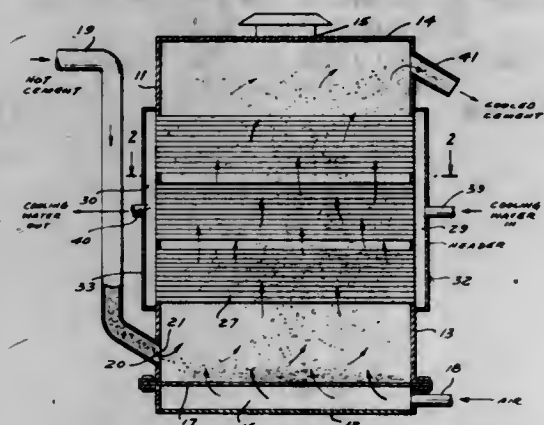
Richard E. Galer, Alpena, Mich., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware

Filed Aug. 16, 1966, Ser. No. 572,728

Int. Cl. F26b 17/10; F28f 19/02, 13/18

U.S. Cl. 34-57

7 Claims



This invention is directed to apparatus for cooling pulverulent material by introducing the material into a container in which there is a pressure differential between the point of introduction and that of exit. The pulverulent material is caused to flow around cooling tubes or the like through which a coolant is directed, with the cooling tubes being of such character as to have an external low wetting coefficient thereby substantially to preclude adherence of the pulverulent material thereupon as it passes through the container and about the tubes through which the coolant is flowing.

3,462,851

## WEB TREATING APPARATUS

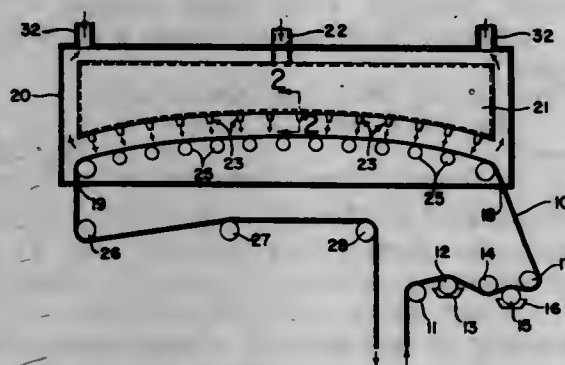
John C. Urbas, Bridgewater Township, Somerville Borough, and Walter J. Elnicki, Spotswood, N.J., assignors to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Dec. 9, 1966, Ser. No. 600,480

Int. Cl. B26b 13/00

U.S. Cl. 34-160

2 Claims



A web-wide air distributing nozzle is provided with a segmented valve element designed to occlude about half

the nozzle opening for more efficient application of air volumes at improved heat transfer rates.

3,462,852

## TELEVISION VIEWER-PARTICIPATION DEVICE

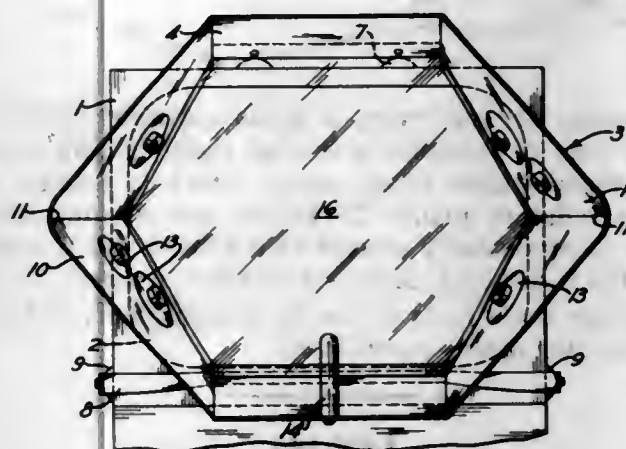
Paul H. Emerson, 1349 Briarcliff Road, Atlanta, Ga. 30306

Filed Nov. 8, 1967, Ser. No. 681,417

Int. Cl. G09b 1/00; A63h 33/00

U.S. Cl. 35-8

11 Claims



A vision-limiting shield has means for detachably connecting it to a television receiver, with the tubular front portion of the shield close to the television screen and surrounding the major area thereof. The shield also has side portions extending rearwardly from the tubular portion and adapted to straddle a viewer's head to restrict his lateral vision. Manually manipulatable simulated controls are carried by the shield for operation by the viewer in response to oral commands received from the television receiver.

3,462,853

## EDUCATIONAL DEVICE

Heinz Kunert, Agidienberger Strasse 16, Cologne 5, Germany

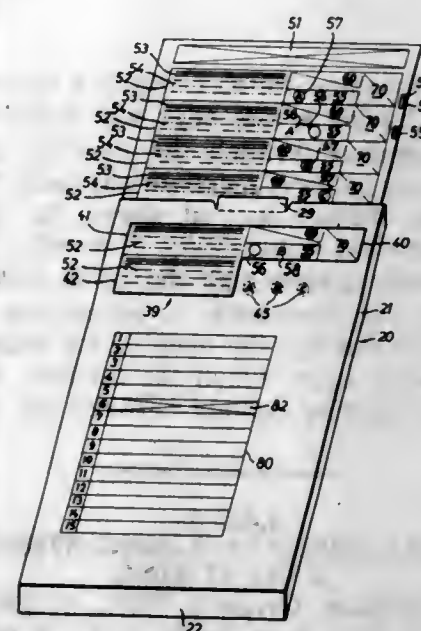
Filed July 20, 1967, Ser. No. 655,725

Claims priority, application Germany, July 19, 1966, K 59,815

Int. Cl. G09b 3/06

U.S. Cl. 35-9

24 Claims



A sleeve has a major surface and a side provided with a slot. At least one program sheet is arranged within the sleeve for withdrawal through the slot in a predetermined direction. The sheet has outlined thereon at least one problem field and at least one reply field which is spaced

from the problem field transversely as well as in a direction opposite to said predetermined direction. Window means in the major surface exposes the problem field and is arranged to expose the reply field only in response to movement of the sheet in the predetermined direction. Marking means is provided on the sleeve spaced from the window means and is operative for producing markings on the reply field. Blocking means is provided on the sleeve and is operative for preventing movement of the sheet in a direction opposite the predetermined direction.

3,462,854

## MULTIBASE COUNTER AND CALCULATOR

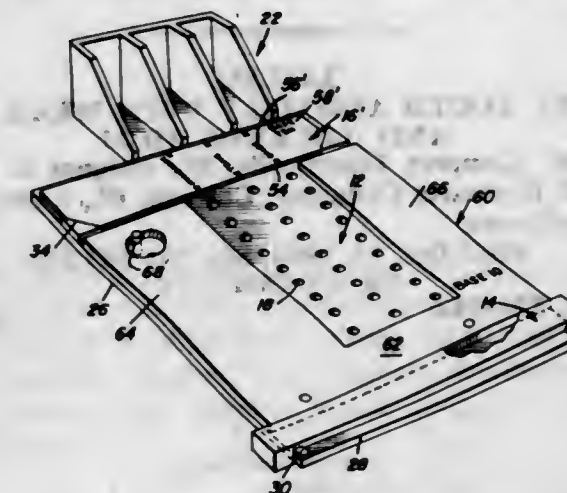
Ronald C. Schwartz, 60 Penn St., East Stroudsburg, Pa. 18301

Filed June 13, 1967, Ser. No. 645,823

Int. Cl. G09b 23/02, 19/02

U.S. Cl. 35-32

5 Claims



An educational training device for teaching arithmetic in different numeral base systems by insertion and withdrawal of pegs on a face board. Peg-receiving holes are arranged in rows on the face board and aligned in columns labelled by a replaceable card positioned on the face board. A slide is moved to a position covering one of the rows to leave a number of rows of holes on one side into which pegs may be inserted, these rows corresponding to the numerals in the base system to which the replaceable card pertains. A plate is provided to cover selected rows and columns between the replaceable card and the slide.

3,462,855

## TEACHING CABINET

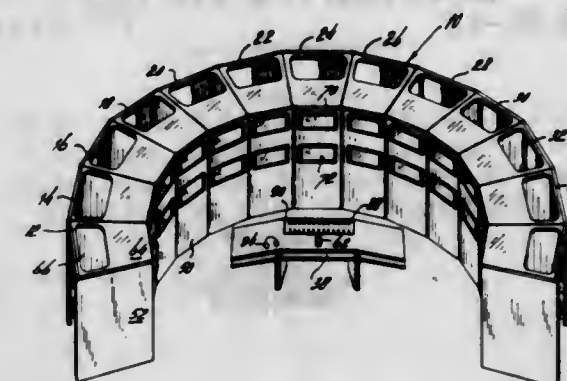
Judson E. Cornish, 3211 Tallywood Drive, Apt. 1, Fayetteville, N.C. 28303

Filed Oct. 14, 1968, Ser. No. 767,288

Int. Cl. G09b 1/00

U.S. Cl. 35-60

8 Claims



An educational teaching aid, particularly a cabinet structure facilitating teaching of Morse code, languages, or like sciences using tape recorders and including access windows above tables permitting instructor monitoring of student activity within the cabinet.

3,462,856

## BASEBALL TRAINING GUIDE

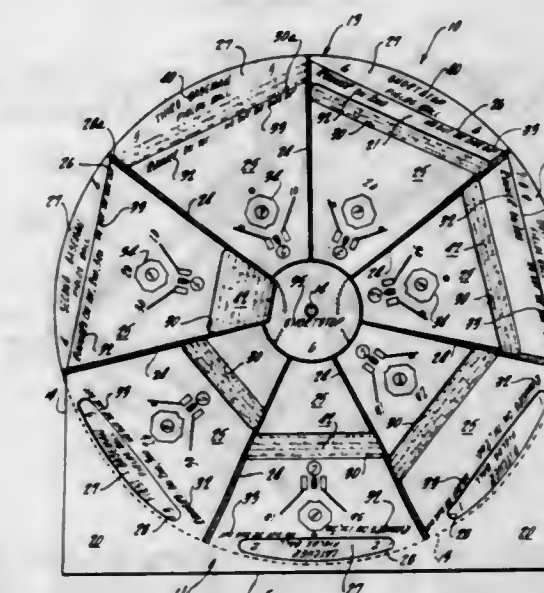
Ernest N. Oeland, Jr., 1707 E. Idaho St., West Covina, Calif. 91790

Filed June 15, 1967, Ser. No. 646,216

Int. Cl. G09b 19/22, 19/00

U.S. Cl. 35-74

3 Claims



A baseball training guide having a disk disposed between and rotatably secured to a pair of cover plates. Each cover plate is divided into seven radially extending sectors, each sector corresponding to a particular base-runner condition in a baseball game. Each face of the disk is similarly divided into seven radially extending sectors which display optimum strategy information for specific game conditions. Each of the cover-plate sectors has a window therethrough, the windows being arranged in the general form of a spiral. The cover plates are secured together along their lower edges to form a convenient grip while the disk is being rotated.

3,462,857

## TOY

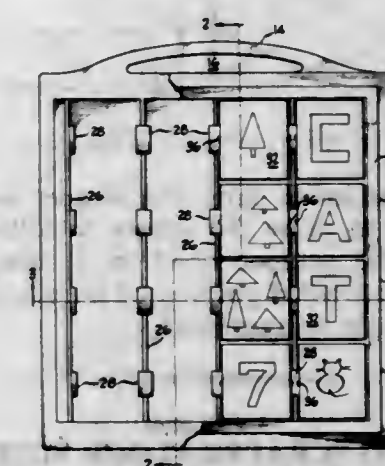
Marvin I. Glass, Chicago, and Gordon A. Barlow, Evanston, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership

Continuation of application Ser. No. 595,261, Nov. 17, 1966. This application Nov. 21, 1968, Ser. No. 784,516

Int. Cl. G09b 1/20

U.S. Cl. 35-77

1 Claim



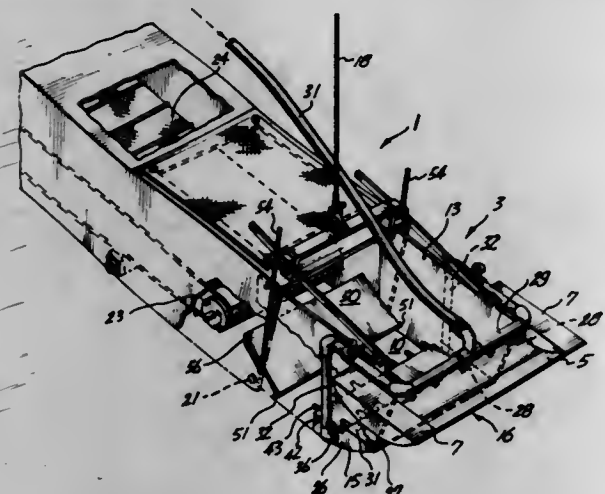
A toy including a generally rectangular frame having spaced partition members and a plurality of circular bearing members projecting on each side of the partition members. Detents on the circular members cooperate with end openings in blocks having three indicia bearing flat faces.



**3,462,858**  
**SHELLFISH HARVESTING MACHINE**  
 Gilbert W. Francklyn, Rte. 2, Box 614,  
 Poulisbo, Wash. 98370  
 Filed Aug. 12, 1968, Ser. No. 751,828  
 Int. Cl. E02f 5/00, 3/88; A01d 45/08

U.S. Cl. 37-55

7 Claims

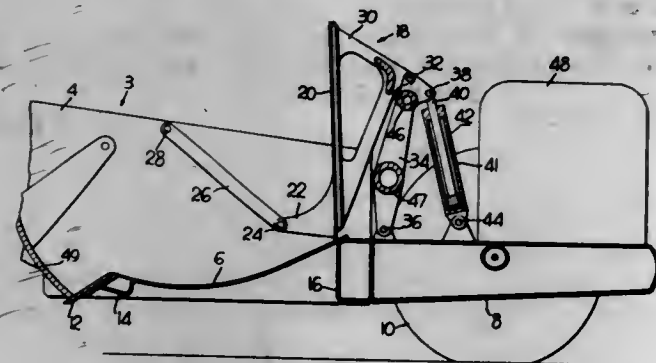


The capacity of a shellfish harvesting machine is significantly increased by directing flow-assisting fluid jets rearwardly from the blade of the scoop. Many rocks and unneeded material entering the scoop fall through apertures formed in the bottom of the scoop between the rear edge of the blade and the conveyor with the lighter shellfish material carried by the fluid jets across the apertures and onto the conveyor. A deflector plate inclined between the apertures and conveyor presents another barrier for the rocks causing them to tumble forwardly through the apertures while the shellfish transit the plate and fall onto the conveyor.

**3,462,859**  
**EJECTOR MECHANISM FOR EARTHMOVING SCRAPER**  
 Dale W. Hawk, Springfield, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.  
 Filed Oct. 17, 1966, Ser. No. 587,262  
 Int. Cl. E02f 3/76, 3/84

U.S. Cl. 37-126

5 Claims



The upper and lower parts of a scraper ejector are supported by links to cause the ejector to follow an arcuate path through the scraper bowl in a relatively upright manner. In the retracted position of the ejector it becomes the rear wall of the scraper bowl.

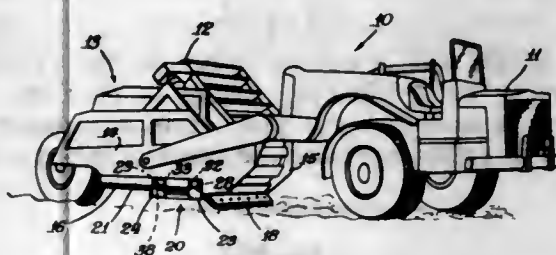
**3,462,860**  
**SLIDING SCRAPER FLOOR SUPPORT**  
 Ramiz Y. Hermiz, Addison, and Edward D. Duke, Chicago, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware  
 Filed Oct. 20, 1966, Ser. No. 588,192  
 Int. Cl. E02f 7/02, 9/28

U.S. Cl. 37-129

2 Claims

An earthmoving scraper having a bowl including side walls and track means secured to the exterior of the

walls. A floor movable between closed and opened positions is suspended beneath the bowl by means of rollers engageable with the track means, which means is pro-

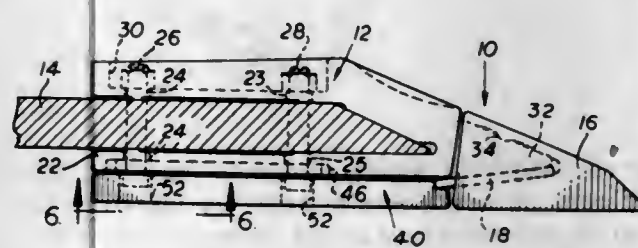


vided with cutouts to permit disengagement of the rollers from the track means in either of the positions, and pads secured to the floor and engageable with the track means whenever the rollers register with the cutouts.

**3,462,861**  
**BUCKET TOOTH ASSEMBLY WITH WEAR PLATE AND LOCKING SHIM**  
 Keith W. Kampert, Libertyville, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware  
 Filed Oct. 11, 1966, Ser. No. 585,844  
 Int. Cl. E02f 3/14

U.S. Cl. 37-142

6 Claims

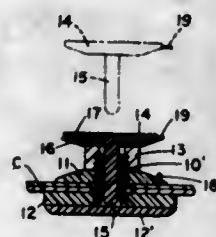


A bucket tooth assembly having an adaptor member with a shank, the shank having a transverse groove, a point having an internal ridge complementary with and engageable in the groove, a locking shim insertable between the point and the shank, a wear plate engageable with the locking shim and bolts insertable through the wear plate and the adaptor to both secure the tooth assembly on the bucket and to exert a force upon the locking shim to retain the point in place on the shank.

**3,462,862**  
**GOLF BALL MARKER AND HOLDER**  
 Wilford G. Chase, 307 S. Madala St., Baltimore, Md. 21231  
 Filed Jan. 11, 1968, Ser. No. 697,128  
 Int. Cl. G09f 3/08; A45f 5/02

U.S. Cl. 40-1.5

7 Claims

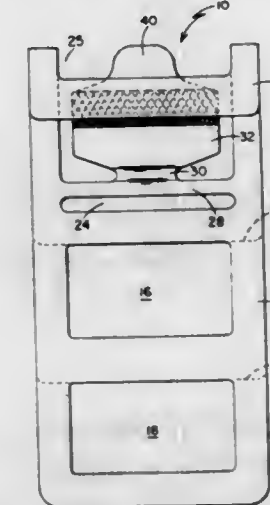


A golf ball marker and holder in which the marker is in the form of a disc with an axially extending turf penetrating stem and the holder is attachable to the hat or other article of apparel of the golfer and has a socket for receiving the stem of the marker, the latter being held in the holder by magnetic attraction.

**3,462,863**  
**MOUNTING INSIGNIA**  
 Robert J. Reeves, Attleboro, Mass., assignor to Reeves Company, Inc., Attleboro, Mass., a corporation of Massachusetts  
 Filed June 5, 1967, Ser. No. 643,600  
 Int. Cl. A44c 3/00; G09f 3/18

U.S. Cl. 40-1.5

10 Claims

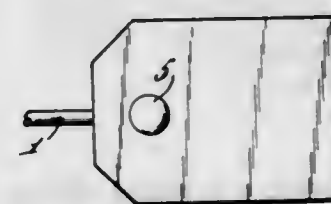


Insignia mounting device in which a clamping member is biased against a locating member by a narrow torsion bar arranged for twisting flexure about the axis of flexure of the clamping member, the members defining an adjustable downwardly opening wedge shaped fabric receiving space.

**3,462,864**  
**TAG AND ATTACHING MEANS**  
 Francis G. Messer, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada  
 Filed Apr. 26, 1967, Ser. No. 633,783  
 Int. Cl. G09f 3/08

U.S. Cl. 40-2

4 Claims



A tag having an opening and a filament of expansible material for attaching the tag to an article, the end of the filament extending through the tag and being expanded to form a head which prevents withdrawal of the filament from the opening.

**3,462,865**  
**WRAP-AROUND BAND FOR NECKTIES**  
 Aubrey L. Gouner, Metairie, La., assignor to Wembley, Inc., New Orleans, La., a corporation of Louisiana  
 Filed July 21, 1967, Ser. No. 655,064  
 Int. Cl. G09f 3/04

U.S. Cl. 40-21

3 Claims



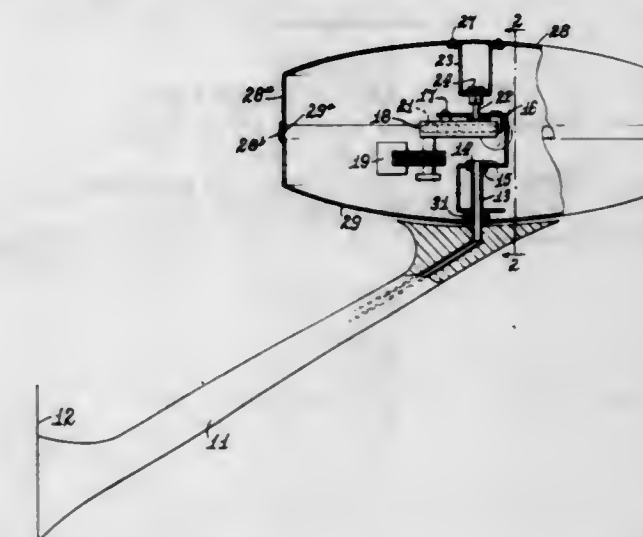
A band which surrounds the large end of a folded four-in-hand necktie while it is displayed for sale, the front face of the band being intended to display a trademark, the name of the maker, the price, or the like, the band

having a preferably pointed tab extending outwardly from one end of the band to be positioned between adjacent stitches of the longitudinal line of stitching which closes the folded necktie at the rear face thereof, to prevent movement of the band with respect to the necktie, particularly longitudinally thereof.

**3,462,866**  
**BARBER SHOP ADVERTISING DISPLAY**  
 Richard E. Denson, 15715 Myrtle Ave., Harvey, Ill. 60426  
 Filed Oct. 23, 1967, Ser. No. 677,180  
 Int. Cl. G09f 13/04, 11/02

U.S. Cl. 40-33

5 Claims

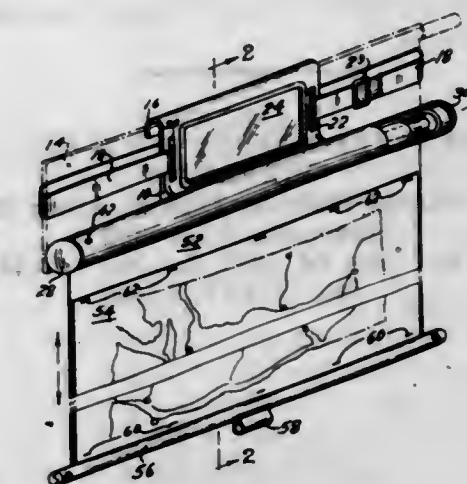


An illuminated barber shop advertizing display comprised of a support arm upon which is mounted for rotation a light transmitting globular housing and wherein all components of the drive assembly are mounted on a frame and the whole is enclosed within said housing.

**3,462,867**  
**AUTOMOBILE VISOR MOUNTED ROAD MAP**  
 Edward E. Pinkman, 17115 Midvale Ave. N., Seattle, Wash. 98133, and Keith A. Elder, 7125 176th St. SW., Edmonds, Wash. 98020  
 Filed Nov. 13, 1967, Ser. No. 682,404  
 Int. Cl. G09f 11/29; G02b 7/18

U.S. Cl. 40-85

2 Claims



This invention relates to a spring loaded, rotatably mounted, road map carrying web, detachably mounted on the sun visor of an automobile, the visor being disposed within the automobile and adjacent the top marginal portion of the windshield thereof. Characteristics of this invention include such features, in combination, as: a base member detachably secured to the visor by hook means, carried by the base member, and detachable strap means



spanning around the visor and connected with marginal portions of the base means; a tubular member housing a spring loaded roller having a helically wound web thereon, the web detachably mounting road map sheets, and with the tubular member having a web exit slot at its lower marginal portion and adjacent the base member; a mirror mounted on said base member, positioned above said tubular member and at a mid portion between the side marginal portions of the base member; and cap members removably mounted in the end portions of the tubular member, which cooperate with shaft end portions of a spring loaded roller to permit a web carrying map wound on said roller to be unwound and held in desired road map viewing positions or wound and held in such relation on said roller.

3,462,868

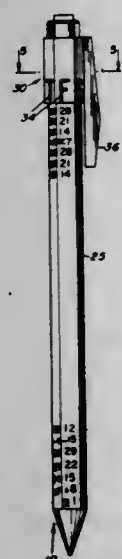
## TUBULAR CALENDAR

Ernest Barnard Arnett, 57 E. Cedar,  
Chicago, Ill. 60611

Filed May 11, 1967, Ser. No. 638,709

Int. Cl. G09d 3/06; B43k 29/14

U.S. Cl. 40—114



A tubular calendar having positioned thereon a complete calendar year beginning with March 1 and ending with February 28 or 29. The numbers are helically arranged in seven longitudinal columns and an indexable indicator ring bearing the seven days of the week is positioned on the tubular member and is adapted to cooperate with the columns of numbers, thereby rendering the calendar perpetual. The indicator ring also functions as a pocket clip.

3,462,869

## KEY OPERATED SAFETY LOCK DEVICE FOR FIREARMS

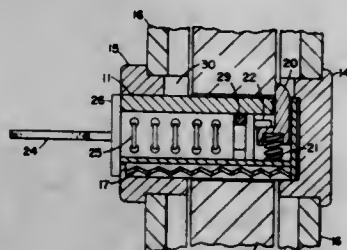
Charles Coleman Wallace, 2210 E. Arbor Drive, NE.,  
Huntsville, Ala. 35811

Filed Aug. 14, 1967, Ser. No. 660,406

Int. Cl. F41c 17/00

U.S. Cl. 42—70

1 Claim

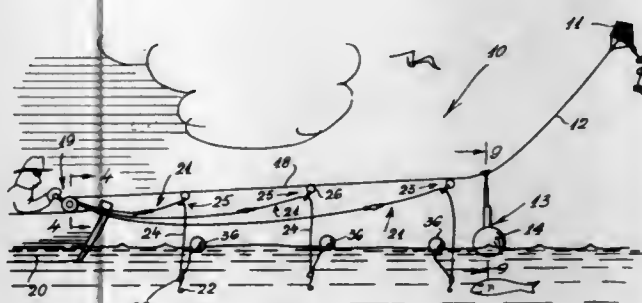


A firearm including a hammer and key-operated safety lock wherein the hammer of the firearm can only be operated when a key is inserted in the lock and the key operated.

3,462,870  
AERIAL FISHING SYSTEM  
Emil B. Terilli, 3750 Hudson Manor Terrace,  
Riverdale, N.Y. 10463  
Filed Oct. 26, 1966, Ser. No. 589,676  
Int. Cl. A01k 69/00, 79/00, 73/04

U.S. Cl. 43—4

6 Claims



Kite fishing apparatus for use with a boat having a reel assembly. A buoy line is attached to the reel assembly and independent fishing lines are releasably attached to the buoy line. A buoy is connected to the buoy line and a kite line with a kite is attached to the buoy. Means is provided for releasing the fishing lines from the buoy line.

3,462,871

## FISHING LURE

Raymon McVay, 717 W. Morgan, Denison, Tex. 75020

Filed Nov. 15, 1967, Ser. No. 683,341

Int. Cl. A01k 85/00

U.S. Cl. 43—42.47

1 Claim



A fishing lure having a forward diving plate with a concave forwardly extended portion producing a diving action upon retrieve. The extended portion has longitudinally extending side edges with tapered planar side wings along the rear portion of the edges, to resist the tendency of the lure to wobble and to produce a synchronous, sinusoidal path of travel. The extended portion is inclined relative to, and the side wings are in line with, the longitudinal axis of symmetry of the lure.

3,462,872

## TRAP SETTER

Floyd D. Hall and Charles A. Hall, both of  
R.R. 2, Creston, Iowa 50801

Filed Sept. 29, 1967, Ser. No. 671,692

Int. Cl. A01m 23/28

U.S. Cl. 43—97

5 Claims

A device for setting traps which includes a hollow tube open at its upper end and having a vertical slot, and a rod which is slidably received within the tube. The tube has a hook at its upper end, above the slot, and a foot ring secured to its opposite end. The rod has a handle at one end and a hook rotatably connected to the other end, the hook extending through the slot for sliding movement therein. The rod has spaced, vertically aligned

notches intermediate its ends, which are engaged by lock means carried by the tube. The device can be manually operated to compress and hold the spring of animal traps

lowering movement. A control lever pivoted to the body has a sliding connection with the boom to effect such raising and lowering and catch means are provided on



and the like in order that the jaws of the trap can be easily moved into position to set the trap with complete safety and minimum effort.

3,462,873

## TV TOY MAGNAVISION

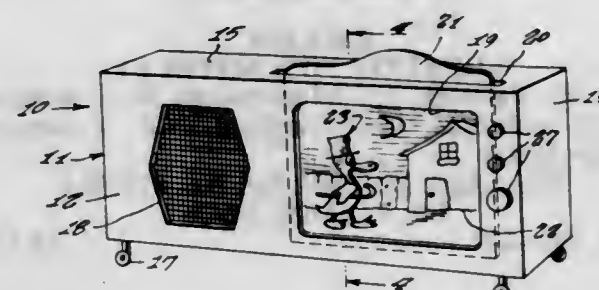
Joseph G. Moreci, San Francisco, Calif.  
(9 Muirwood Drive, Daly City, Calif. 94015)

Filed Sept. 6, 1966, Ser. No. 577,251

Int. Cl. A63h 33/30, 33/26

U.S. Cl. 46—13

1 Claim



A toy television receiver including a cabinet with a window on a front side thereof, a background screen in spaced relation within the window and rearward thereof, and figures carrying a magnetic responsive metal being movable across the front of the background screen by means of a permanent magnet moved across the rear of the screen so to simulate animation. The spacing of the background screen rearward of the window permits introduction of the figures from within the cabinet into the space between the front side of the cabinet and the background screen.

3,462,874

## TOY LOADER

Ronald R. Pauly, Mound, and Theodore H. Zbikowski,  
Plymouth, Minn., assignors to Tonka Corporation,  
Mound, Minn., a corporation of Minnesota

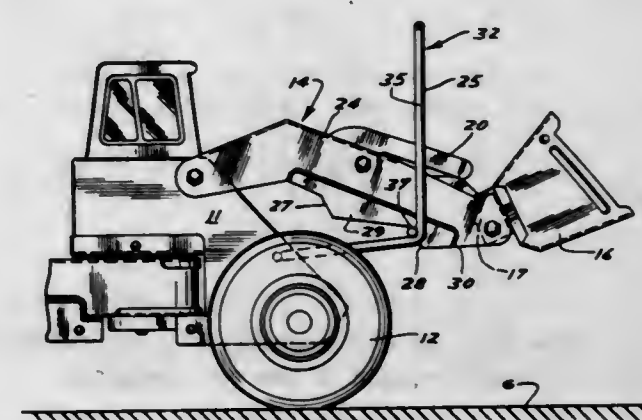
Filed Jan. 17, 1968, Ser. No. 698,540

Int. Cl. A63h 17/12, 17/00

U.S. Cl. 46—40

4 Claims

A toy loader having a body mounted on ground wheels and a scoop bucket supported at the outer end of a boom having its inner end pivoted to the body for raising and



the boom along the sliding connection and engageable by a latch on the lever to releasably lock the boom in different positions.

3,462,875

## MOVING-EYE, WALKING FIGURE TOY

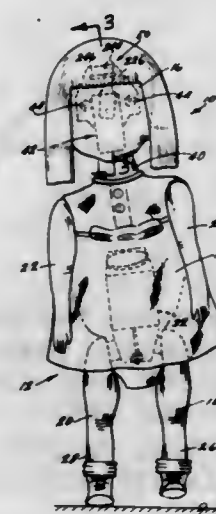
Richard L. May, Manhattan Beach, Calif., assignor to  
Mattel, Inc., Hawthorne, Calif., a corporation of  
California

Filed May 23, 1967, Ser. No. 640,525

Int. Cl. A63h 3/22, 3/40

U.S. Cl. 46—120

5 Claims



A walking doll of the type which is rocked from side-to-side is provided with eyes which are caused to move through simulated, realistic eye-sweeping movements by a driving arrangement which includes a pair of gears each imparting a different output motion to a crank pin. The crank pins are connected to the doll's eyes by a connector which combines the separate output motions of the gears into a single, composite output motion. The gears are automatically rotated when the doll is rocked during walking action by a weight moving from side-to-side in operative association with the gears.

3,462,876

## MECHANISM FOR WINKING DOLL EYES

Harold Kirschenmann, 98—39 65th Road, Rego Park,  
New York, N.Y.

Filed Apr. 13, 1967, Ser. No. 630,588

Int. Cl. A63h 3/40

U.S. Cl. 46—135

4 Claims

This invention relates to a mechanism to produce a selective winking action to the conventional eye or eyes



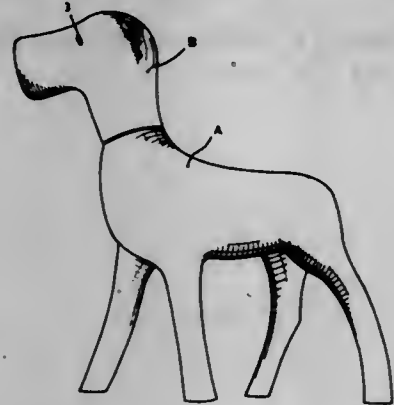
of the conventional sleeping eye dolls. More specifically, an air sac in the doll's resilient body is compressed to force



air up a tube into the eye assembly at a critical location to upset the counterweight of the eye assembly.

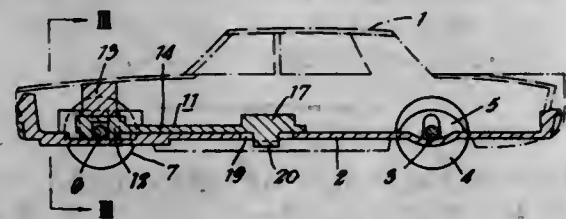
### 3,462,877 FABRIC COVERED FIGURE TOY HAVING PIVOTING HEAD

René Lang, Divonne-les-Bains, France  
Filed May 27, 1966, Ser. No. 553,423  
Claims priority, application Switzerland, Dec. 29, 1965,  
18,015/65  
Int. Cl. A63h 3/02, 3/36  
U.S. Cl. 46-159 2 Claims



This disclosure concerns a toy having an inner shell which has at least two distinct pieces pivoted to one another, a covering of elastic plush material having dimensions slightly smaller than those of said shell stretched over the shell and gripping the shell elastically and concealing the pivoting of the pieces thereby giving continuity to the toy.

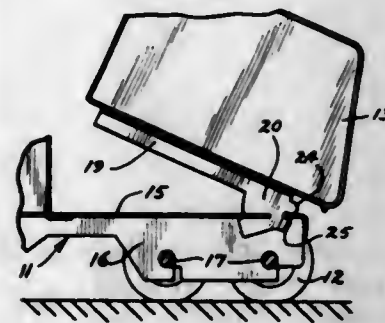
3,462,878  
**TOY AND MODEL VEHICLES**  
Ronald Thomas Perryman and Frederick Noel Rix, Essex, England, assignors to Lesney Products & Co. Limited, London, England, a British company  
Filed Nov. 15, 1966, Ser. No. 594,482  
Claims priority, application Great Britain, Nov. 19, 1965,  
49,235/65  
Int. Cl. A63h 17/38, 17/00  
U.S. Cl. 46-201 8 Claims



A toy land vehicle having a chassis and at least two wheel-carrying axles supported in the chassis. One of the axles is angularly displaceable about a point located approximately centrally of its own length and in a plane

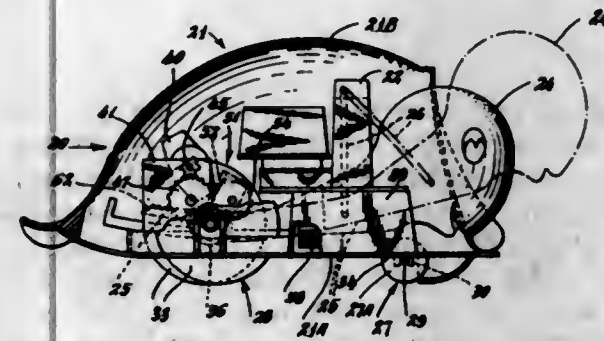
extending substantially parallel to the general plane of the chassis. The toy vehicle also includes a manually operable adjusting device engaging the angularly displaceable axle in such a way that its own setting determines the angular setting of such axle about said point and thereby the angular settings of the wheels carried by such axle relative to the remainder of the vehicle.

3,462,879  
**TOY DUMP TRUCK**  
Curtis H. Fahrendorff, Minneapolis, Minn., assignor to Tonka Corporation, Mound, Minn., a corporation of Minnesota  
Filed June 12, 1968, Ser. No. 736,307  
Int. Cl. A63h 17/06, 17/26  
U.S. Cl. 46-214 3 Claims



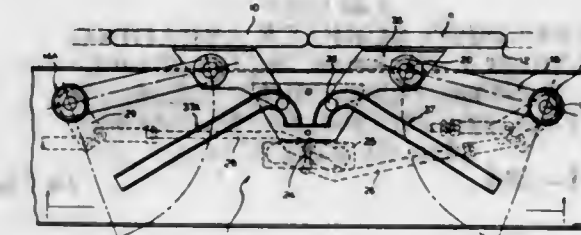
A toy truck with a box or the like hingedly connected to the truck bed for movement between transport and dumping positions, the hinge connection being formed by a pair of transversely spaced hinge plates integrally depending from the rear portion of the box and extending through slots in the rear portion of the chassis and being bent after insertion through the slots to prohibit removal thereof.

3,462,880  
**WHEELED TOY NOVELTY**  
Patrick M. Tomaro, Jr., Maplewood, N.J., assignor to Remco Industries, Inc., Harrison, N.J., a corporation of New Jersey  
Filed Sept. 26, 1967, Ser. No. 670,593  
Int. Cl. A63h 33/26  
U.S. Cl. 46-247 24 Claims



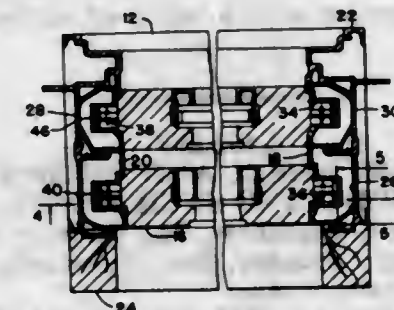
This invention is directed to a toy novelty comprising a frame or housing simulating an animated or inanimate thing mounted on wheels and driven by an electric drive for effecting the movement of the toy novelty over a supporting surface. The toy novelty includes a projecting means which is automatically extended to a projected position and maintained in the projected position as the novelty is moving over a supporting surface. Cooperatively associated with the drive is an actuator which effects the protraction of the projecting means as the drive of the toy novelty is actuated. The actuator further permits the projecting means to be retracted under the influence of gravity immediately upon the cessation of the drive or movement of the novelty over a supporting surface.

3,462,881  
**SLIDE-GLIDE-PLUG DOOR MECHANISM**  
Robert J. Lynn, Morton Grove, and Kristupas Daugirdas, Wilmette, Ill., assignors to Vapor Corporation, Chicago, Ill., a corporation of Delaware  
Filed Mar. 14, 1968, Ser. No. 713,224  
Int. Cl. E05f 17/00, 7/06  
U.S. Cl. 49-111 7 Claims



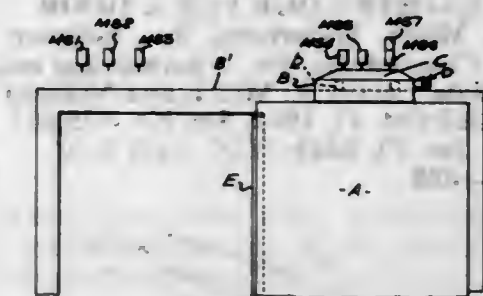
Mechanism for driving a door through compound movement between open and closed positions including imparting to the door a slide-glide-plug action by actuation of a shaft and lever assembly and guidance from a track unit.

3,462,882  
**WINDOW STRUCTURE**  
John M. Brown, Jr., Owensboro, Ky., assignor to V. E. Anderson Mfg. Co., Owensboro, Ky., a corporation of Kentucky  
Filed Apr. 27, 1967, Ser. No. 634,170  
Int. Cl. E05d 15/22  
U.S. Cl. 49-181 4 Claims



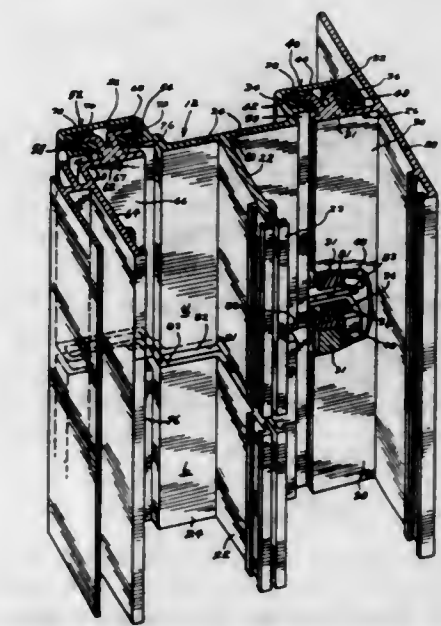
Tilting double hung window structure having a resilient guide between a window frame and window sash and a pivot member secured to the sash between the sash and guide including means for holding the sash in a predetermined vertical position relative to the frame on tilting of the sash. The means for holding the sash, in a preferred embodiment of the invention, includes a camming head having a major axis extending vertically and longitudinally of the window frame and a minor axis extending transversely of the window frame with the sash in a closed position in the window frame which camming head is rounded at the sides and at the ends and the sides of which are tapered at each end toward each other whereby initial tilting of the window sash in the frame produces no camming action between the camming head and resilient guide and additional tilting of the sash with respect to the window frame will provide camming action to lock the sash in a predetermined vertical position with respect to the frame. Modifications of the invention include an elliptical head on the pivot member cooperable with arcuate recesses in the guide and an inclined recess in the guide operable to receive the head of the pivot member on tilting of the sash to similarly prevent vertical movement of the sash at the pivot member on tilting of the sash.

3,462,883  
**MEANS FOR AUTOMATICALLY OPERATING AND CONTROLLING RECIPROCATING MOTION**  
Christopher George Reeks, Barrow-upon-Soar, and Anthony Walter Davey, Long Wharton, England, assignors to Herbert Morris Limited, Loughborough, Leicestershire, England, a company of Great Britain  
Filed Jan. 10, 1966, Ser. No. 519,675  
Claims priority, application Great Britain, Jan. 14, 1965,  
1,762/65  
Int. Cl. E05f 11/54, 15/14; B66b 13/14  
U.S. Cl. 49-360 6 Claims



A sliding door or like member is mounted for reciprocation on a stationary support. A linear induction motor has relatively movable motor members mounted on the support and reciprocable member. The motor control circuit includes a plurality of switches on the support located to be sequentially actuated by the reciprocable member moving in either direction for effecting variable deceleration of said reciprocable member. Speed sensing means produces an electrical signal responsive to movement of the reciprocable member in either direction, and the signal is connected into the circuit for modifying the deceleration control.

3,462,884  
**INSULATED METAL FRAME AND SLIDING CLOSURE**  
Robert L. La Bissoniere, Golden Valley, Minn., assignor to Alpana Aluminum Products, Inc., Minneapolis, Minn., a corporation of Minnesota  
Filed Apr. 30, 1968, Ser. No. 725,328  
Int. Cl. E06b 3/44, 7/23  
U.S. Cl. 49-404 12 Claims



The disclosure relates to windows and includes a frame having two parallelly disposed ways or tracks. The ways are formed with an elongated center portion common to both ways and a spaced elongated side portion on either



side of the center portion insulated therefrom and parallel thereto. An inner closure having insulated inner and outer frame portions is slidable along one of the ways and an outer closure having insulated inner and outer frame portions is slidable along the other way. With the closures in closed positions the same have overlapping frame parts, and the center portion of the frame is divided transversely at the overlap of the closures which forms two sections. Insulating means is positioned between the sections.

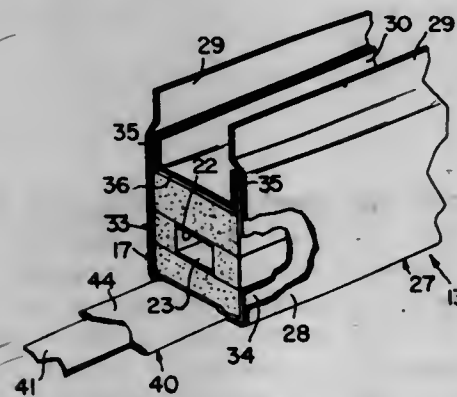
3,462,885

**SAFETY EDGE FOR A DOOR**

Norman K. Miller, Havertown, Pa., assignor to Miller Brothers, Concordville, Pa., a partnership composed of Karl K. Miller, Arsen K. Miller, and Norman K. Miller  
Filed Oct. 17, 1967, Ser. No. 675,805  
Int. Cl. E06b 7/16; A47f 3/04

U.S. Cl. 49—488

5 Claims



A safety edge for a door wherein a resiliently compressible structure is enclosed by a flexible, impervious sheet covering, and an electric heater is associated with the compressible structure interiorly of the cover.

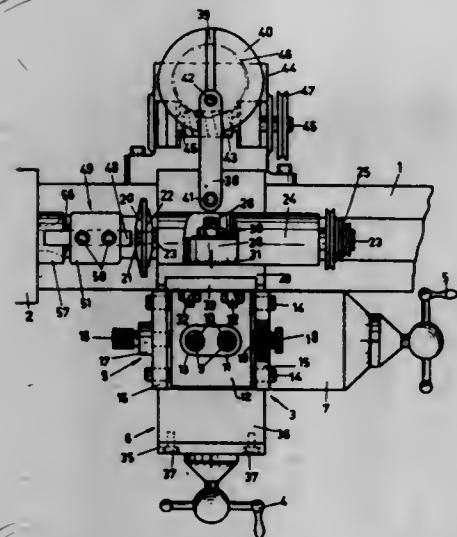
3,462,886

**APPARATUS FOR GRINDING DIAMOND OR HARD METAL**

Francois Grobety, Bienne, Switzerland, assignor to Cadral S.A., Bienne, Switzerland  
Filed Mar. 27, 1967, Ser. No. 626,104  
Claims priority, application Switzerland, Apr. 1, 1966, 4,882/66  
Int. Cl. B24b 7/16, 9/16

U.S. Cl. 51—54

7 Claims



The present invention has for object a device for grinding diamond or hard metal comprising a frame having an adjustable support on which is secured a tool, a honing device driven by a motor; elastic means pressing extremity of this tool against the grinding wheel and wherein the grinding wheel has at least one working surface the angle of which respect to its axis of rotation is different from

90°, with means permitting to produce relative movements of a variable amplitude between the axis of the tool and the axis of the grinding wheel parallel to itself in a plane and wherein the extremity of the tool is constantly in contact with the active surface of the grinding wheel in such a way that the shape of this extremity varies in function of the amplitude given to these movements.

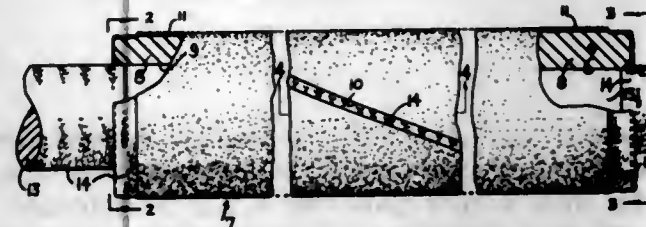
3,462,887

**PRECISION SURFACE ABRADING**

Arthur J. Hackman, Jr., 611 Rivard,  
Grosse Pointe, Mich. 48236  
Filed Apr. 25, 1966, Ser. No. 544,940  
Int. Cl. B24d 5/14

U.S. Cl. 51—206

14 Claims



A precision surface abrading lap is disclosed for surface finishing continuous peripheral surfaces on workparts comprising an annular body having a peripheral lap surface thereon, a diamond abrasive coating of diamond grits bonded to said lap surface, and through slot means through the annular wall of said body to change the radial dimensions of said lap, said lap surface circumferentially continuous except for said through slots means, said lap capable of changing its radial dimensions so as to hold said diamond abrasive coated lap surface precisely in a predetermined radial position in concentric frictional engagement with a workpart surface to be surface finished.

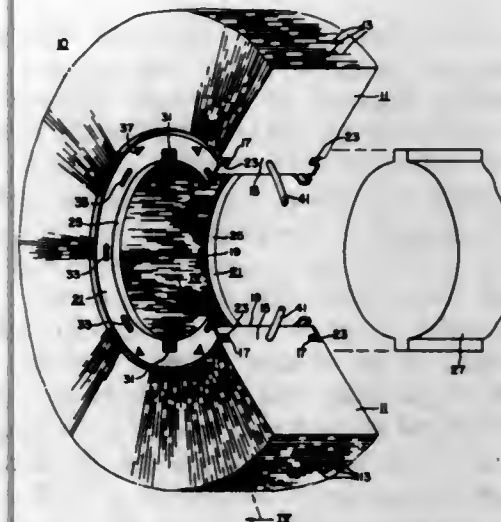
3,462,888

**POLISHING WHEEL AND METHOD FOR PRODUCING SUCH WHEEL**

Donald R. Yokel, Glenshaw, Pa., assignor to Schaffner Manufacturing Company, Inc., Emsworth, Pa., a corporation of Pennsylvania  
Filed Jan. 24, 1967, Ser. No. 611,286  
Int. Cl. B24b 9/02, 29/00

U.S. Cl. 51—336

5 Claims



A polishing wheel 10 including an annulus 11 of leaves 13 having a core 15 formed by injecting an adhesive between the leaves 13. End plates 21 are secured to the core by tabs 35 which penetrate between the leaves 13.

A method of making the wheel 10 in the practice of which the end-plates 21 are placed on the core 15 with the tabs 35 between the leaves and then the adhesive is cured.

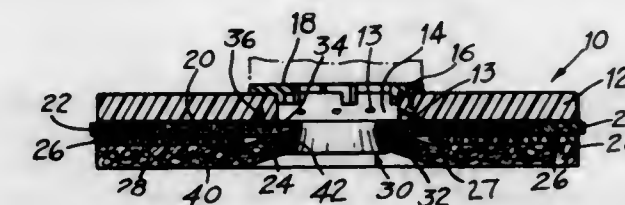
3,462,889

**PAD HOLDER AND DRIVER**

Harry W. Erickson, Albany, N.Y., assignor to Norton Company, Troy, N.Y., a corporation of Massachusetts  
Filed Oct. 12, 1967, Ser. No. 674,802  
Int. Cl. B24d 17/00; B05c 1/00

U.S. Cl. 51—380

4 Claims



An attachment for a floor maintenance machine comprising a rotatable backing plate having a fixed member centering and holding a removable floor pad stretched thereover with a preferably resilient, foam-backed carpet material fixed relative to the plate and having the carpet pile in driving engagement with the pad.

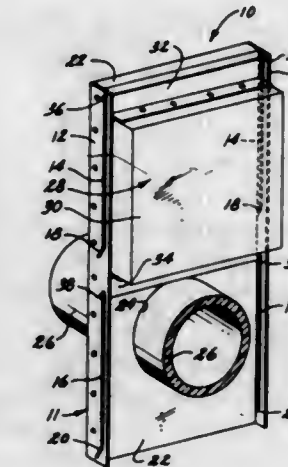
3,462,890

**PLASTIC ARTICLE SEVERING AND INSULATING APPARATUS**

James J. Blumenkranz, Hollywood, and Eugene H. Wise, Saugus, Calif., assignors to The Susquehanna Corporation, Fairfax County, Va., a corporation of Delaware  
Filed Jan. 25, 1968, Ser. No. 700,528  
Int. Cl. F16k 13/00, 17/00

U.S. Cl. 52—1

6 Claims



Apparatus for severing and insulating a plastic article such as a pipe section extending through a fire-resistant wall or floor to prevent the spread of fire by the progressive burning of the pipe section. The apparatus generally comprises a slidably movable, fire-resistant blade or baffle assembly which cuts through the plastic pipe section to interrupt it when it softens in the presence of fire and before it ignites, and baffles or screens the open pipe section end, thereby insuring against the spread of fire via the pipe section from the hot side to the cold side of the fire-resistant wall or floor.

3,462,891

**EXPANDABLE BUILDING STRUCTURE**

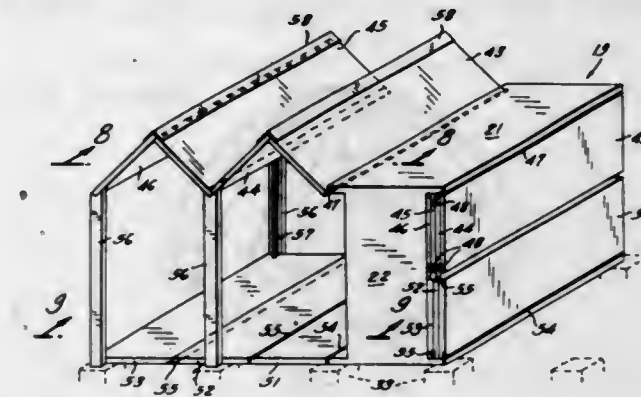
Ving Smith, 2 Agar Ave., New Rochelle, N.Y. 10801  
Filed Aug. 25, 1967, Ser. No. 663,425  
Int. Cl. E04b 7/00

U.S. Cl. 52—18

3 Claims

Housing core adapted to be permanently affixed to ground contains kitchen and bathroom facilities and is permanently closed on bottom, top, and ends. One or

both sides open and temporarily covered by at least two superposed roof panels hinged to upper edge of core side. Panels may be hinged together or telescopically arranged. When expanded, panels form roof extension joined to



core. Roof panels may cover upper portion of core side, and superposed floor panels hinged to lower edge of core side cover remainder of core side, floor panels being expandable to form floor extension joined to core.

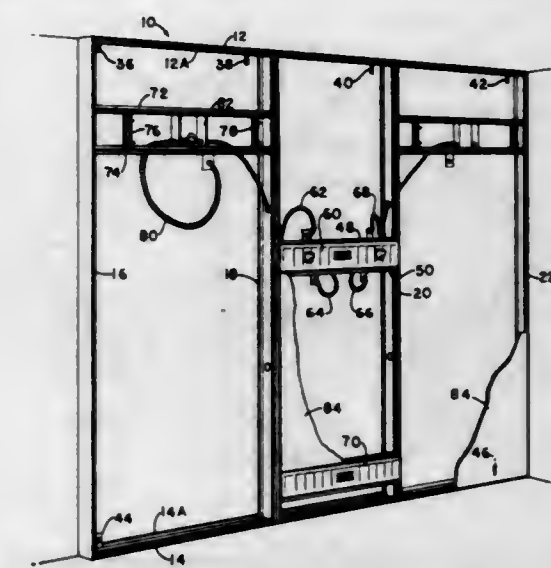
3,462,892

**ADAPTER WALL**

Ronald K. Meyer, 171 Minna St.,  
San Francisco, Calif. 94105  
Filed Jan. 22, 1968, Ser. No. 699,585  
Int. Cl. E04h 14/00; E04b 5/48; E06b 3/54

U.S. Cl. 52—28

6 Claims



An adapter wall for covering a room wall having service outlets thereon, the adapter wall having a framework made up of horizontal and vertical members adapted to be hung on the room wall, a pair of spaced channel members interconnecting a pair of vertical members, a service outlet console disposed between the channel members and fixed to the pair of vertical members, panel means mounted on the framework about the service outlet console, and conduit means connecting the wall outlets and console outlets.

3,462,893

**DOMES WITH CONNECTED FRAME MEMBERS AND FRAME CONNECTING MEMBER**

Ewald Kaiser, Chicago, Ill., assignor to Ickes-Braun Glasshouses, Inc., Chicago, Ill., a corporation of Illinois  
Filed May 20, 1965, Ser. No. 457,337  
Int. Cl. E04b 7/10

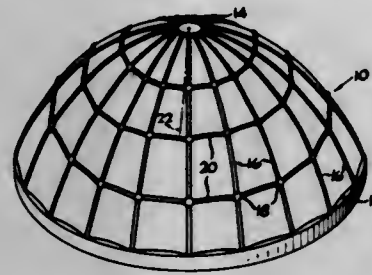
U.S. Cl. 52—80

7 Claims

A building structure is disclosed having the form of a surface of revolution which includes meridian frame members located on selected meridian curves of the surface,

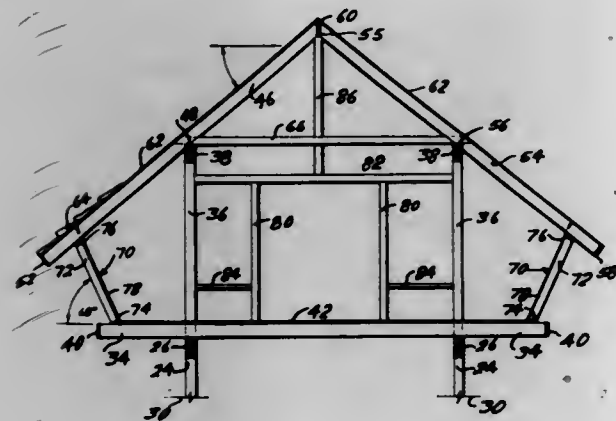


ring frame members located on geodesic lines of the surface and each extending between the intersections of two of the selected meridian curves and a plane perpendicular to the surface's axis, and connecting members at such



intersections joining the meridian and ring members. The frame members have hollow ends and the connecting members include portions adapted to be moved into the hollow ends of the frame members and engage them.

**3,462,894**  
**BUILDING CONSTRUCTION AND METHOD OF ERECTION**  
Einar Svensson, 2248 NW. 190 Place, Seattle, Wash. 98177  
Filed Sept. 7, 1965, Ser. No. 485,150  
Int. Cl. E04b 7/02; E04g 21/14; E04h 1/02  
U.S. Cl. 52—90 9 Claims

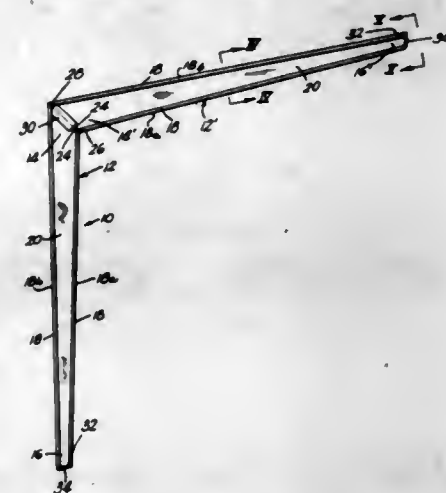


This invention relates to improvements in the use of cantilever building construction in houses. The house has upwardly directed and outwardly inclined walls so as to have additional space at shoulder level. The house has two longitudinal roof girders. These roof girders carry approximately 85% of the roof load. This load is transmitted through posts to the foundation.

**3,462,895**  
**SYMMETRICAL SHELTER TRUSS**  
Robert S. Wormser, Hillsdale, Mich., assignor to Game-Time, Inc., Litchfield, Mich., a corporation of Michigan  
Filed Oct. 6, 1966, Ser. No. 584,697  
Int. Cl. E04b 1/32; E04c 3/38  
U.S. Cl. 52—93 2 Claims

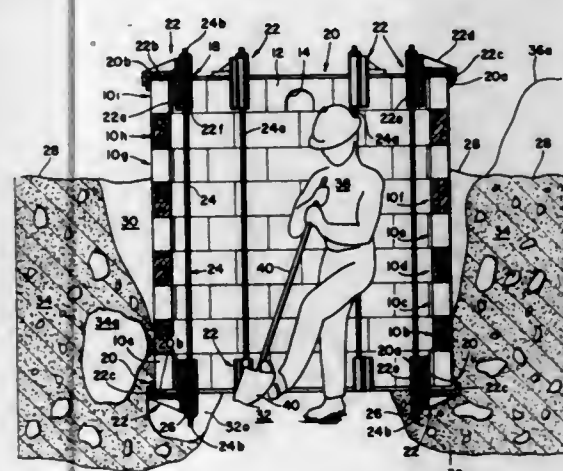
A truss used in the construction of shelters or the like wherein columns and roof supporting elements are required. The truss of the invention consists of two sections interconnected at an obtuse angle suitable as the angle between roof structure and a supporting column. The sections of the truss are similar in construction, being mirror images, and include end surfaces and end plates which are generally parallel to the longitudinal length of the other section, and fastener holes are defined in the

sections symmetrically related to the apex defined by the sections wherein either of the sections may be selective-



ly employed as a column or roof supporting portion, and the end plates permit trusses to be interconnected.

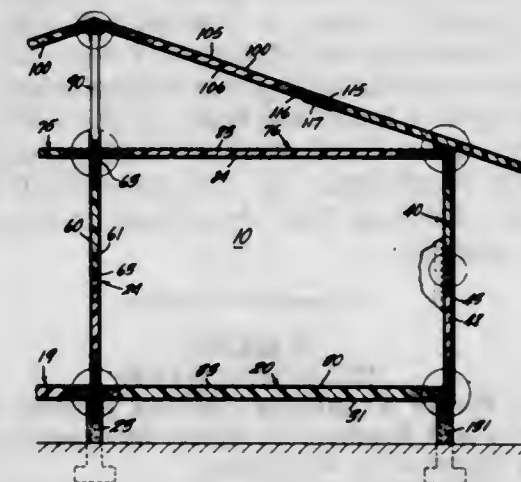
**3,462,896**  
**APPARATUS FOR INSTALLING SEPTIC TANKS AND CESSPOOLS**  
Otto M. Lokensgaard, 1041 89th Ave. NW., Coon Rapids, Minn. 55433  
Filed Nov. 13, 1967, Ser. No. 682,154  
Int. Cl. E04b 1/00; E04g 23/00  
U.S. Cl. 52—127 4 Claims



Successive circular rows of concrete blocks are placed in an end-to-end relationship and one above the other on a lower circular ring having an angular cross section so that the horizontal flange thereof underlies the lower surface of the bottom row and the vertical flange confronts a portion of the outer surface of the bottom row. A second ring identical to the first ring is placed on the upper surface of the top row of concrete blocks with its horizontal flange overlying the upper surface of the top row and its vertical flange confronting an outer portion of said top row. A plurality of identical hook units are angularly spaced at the bottom and a similar number are angularly spaced at the top, the lower hook units having jaws that underlie the lower ring and bottom row and the upper hook units having jaws that overlie the upper ring and top row. Each hook unit is formed with a vertical passage or bore through which extend opposite ends of an elongated rod, there being a rod for each pair of lower and upper hook units. By means of a clamping nut threadedly engaged with each projecting end of each rod, the jaws can be pulled together to provide the necessary clamping force which prevents the individual blocks from shifting due to lateral pressure. The concrete blocks can

be stacked one above the other at the ground level and then the soil removed from the interior of the cylindrical configuration constituting the septic tank or cesspool, thereby lowering all of the blocks as a single unit. Also, the person installing the tank has the choice of digging a small excavation and then removing soil to lower the assemblage of blocks. Cave-ins and dislodgements of the concrete blocks is thereby obviated during installation.

**3,462,897**  
**BUILDING CONSTRUCTION AND RESIDENTIAL BUILDING AND METHOD OF FABRICATING THEREOF ON CONSTRUCTION SITE**  
George H. Weimrott, New York, N.Y., assignor, by mesne assignments, to Urethane Structures, Inc., New York, N.Y.  
Continuation-in-part of application Ser. No. 436,210, Mar. 1, 1965. This application Feb. 7, 1966, Ser. No. 542,438  
Int. Cl. E04b 1/62, 2/04; E04c 2/36  
U.S. Cl. 52—169 9 Claims



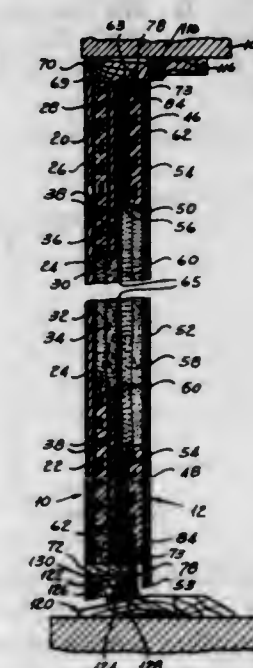
A structural sandwich panel and building constructed therefrom. Each panel is a one-piece, structural sandwich panel comprising outer skin members disposed spaced laterally from each other. An insulating core, made of rigid urethane core having opposite faces self-bonded directly to respective inner faces of the outer skin members in cooperation with internal framing members, acts as an internal continuous bridging between the outer skin members. The skin members comprise sheets of material that are joined at contiguous marginal edges in such a manner that the individual panels are of stressed-skin construction. The core is formed in situ by being foamed in place in cavities heated by air and defined by the framing members and outer skins to which the urethane is self-bonded. The panels are made on the construction site on which the buildings constructed therefrom are built. The panels are used in making all the walls, both exterior and interior, floors, roof and basement of a building. Each wall panel is of full-wall-length and the floor and roof panels are likewise constructed as full-floor-length or full-roof-length one-piece panels. The internal bridging core, which is self-bonded likewise to the framing means, joins directly substantially every point of the outer skins to corresponding points on each other and respective ones of the framing means so that the panels can withstand greater load in use than heretofore possible in construction panels when in use vertically as walls, horizontally as a floor or inclined as a roof. The buildings constructed by use of the panels need no studding or framing means since the panels provide internal framing means for the cavities in which the core is foamed in place and provision is made in the framing means so that the panels can be joined thereby at the desired angles to form the walls and the like.

**3,462,898**  
**CONSTRUCTIONAL BUILDING PANEL**  
André Baley-Bearn, 2 Rue Marechal de Lattre de Tassigny 92, Neuilly-sur-Seine, France  
Filed Oct. 4, 1967, Ser. No. 672,885  
Claims priority, application France, Dec. 7, 1966, 86,428  
Int. Cl. E06b 1/24; E04b 1/80, 2/06  
U.S. Cl. 52—208 9 Claims



A constructional building panel consists of inner and outer prefabricated concrete layers having a thermally insulating layer sandwiched therebetween and the concrete layers are connected for relative vertical and transverse displacement by connecting elements made of wire and suitably disposed in the upper and lower portions of the panel, the wires in the upper portion being arranged to permit said displacement and those in the lower portion being provided primarily to maintain the concrete layers against the thermally insulating layers.

**3,462,899**  
**WOODEN DUAL PANEL SOUND INSULATING STRUCTURES**  
Philip E. Sherman, 9060 Union Turnpike, Glendale, N.Y. 11327  
Filed Feb. 26, 1968, Ser. No. 708,109  
Int. Cl. E04b 1/84  
U.S. Cl. 52—309 18 Claims



Wooden dual panel sound insulating structures comprising a main panel member and a floating panel member, said panel members having inner face spans of dif-



ferent sizes and thicknesses, said face spans each being covered with layers of different and independent sound insulating materials, the peripheral edges of the panel members being covered with independent edge bands, said edge bands being secured fixedly to one of said panel members and being flexibly linked to the other of said panel members by means of splines adapted to be received within insulated peripheral slots, whereupon, there is a total and complete separation of the panels on their inner sides with no rigid point of contact whatsoever therebetween, whereby sound vibrations striking one outer face panel member cannot be transmitted into the other panel member without first penetrating through several layers of varying sound vibration insulating materials.

3,462,900

## MOLDING AND MOLDING SYSTEM

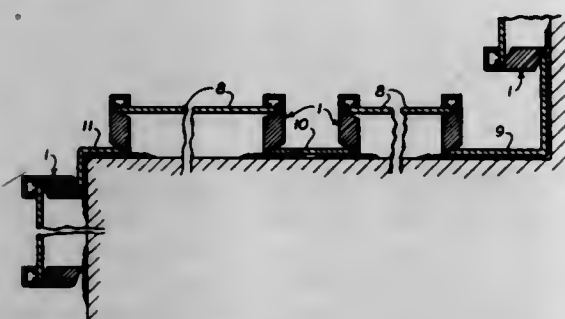
William H. Morrissey, Norwalk, Conn., assignor to U.S. Plywood-Champlain Papers Inc., New York, N.Y., a corporation of New York

Filed Aug. 18, 1965, Ser. No. 480,676

Int. Cl. E04f 13/08, 19/02

U.S. Cl. 52—312

2 Claims



A system of covering or decorating with plywood, cement-asbestos, or fiber or fibrous boards, high pressure laminates, etc., the interior surface of a room, including the ceiling, using a single type inexpensive molding which will permit a staccato of changing planes and/or alternating colors at regular intervals wherein narrow of scrap strips may be used as feature strips and may emphasize one plane while minimizing the adjacent, but offset plane.

3,462,901

## EMBOSSED CURTAINWALL WITH OVERLAPPED PORTIONS

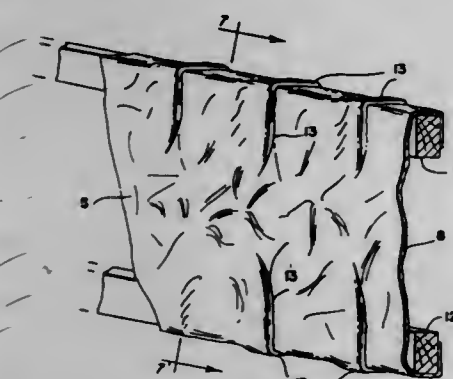
Haigh Jamgochian, Richmond, Va., assignor to Walter M. Dotts, Jr., Richmond, Va.

Filed July 31, 1967, Ser. No. 657,403

Int. Cl. E04c 1/64; E04b 2/00

U.S. Cl. 52—316

9 Claims



A long, seamless and jointless sheet metal strip is employed to fabricate a curtainwall by attaching two spaced-apart rows of supporting means to an underlying building structure and fastening the sheet metal strip across these rows of supporting means. Tucks are made by folding overlaps at intervals along both edges of the strip, thereby incorporating excess material in the curtainwall to accommodate expansion and contraction, while continuing to

fasten the strip to the supporting means. Additionally, the sheet metal strip may be wrinkled purposely at many points between the rows of supporting means to increase the curtainwall's stiffness and mechanical stability while also providing a unique, artistic, textured appearance.

3,462,902

## COMPOSITE FLOOR CONSTRUCTION

Raymond E. Albrecht and Bernard E. Curran, Sewickley, and Robert G. Lindner, Bridgeville, Pa., assignors to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 20, 1965, Ser. No. 514,976

Int. Cl. E04b 5/16, 13/04

U.S. Cl. 52—336

3 Claims



A composite floor construction utilizing corrugated sheet metal decking and concrete. The allowable loading for a specific span of composite flooring is significantly increased by the inclusion of wires or mesh embedded in the concrete in those regions where the decking rests upon a horizontal beam of the building framework. The quantity of wires or mesh is insufficient to satisfy the requirements of the American Concrete Institute for shrinkage and temperature reinforcement of concrete generally.

3,462,903

## WEATHER STRIP

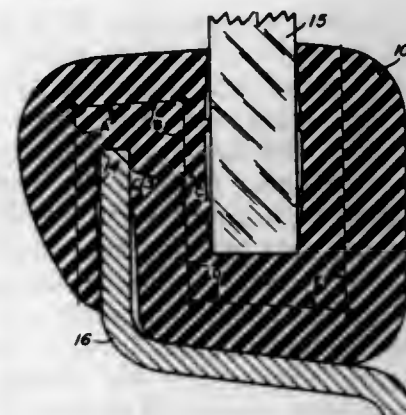
Clarence Walter Kronbitter, Benton Harbor, Mich., assignor to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana

Filed Dec. 23, 1966, Ser. No. 604,297

Int. Cl. E06b 7/23; B60j 1/02; E04b 1/66

U.S. Cl. 52—400

5 Claims



A resilient weather strip having grooves in opposite sides and a hinge point in the common leg between the grooves to increase the sealing forces generated when panels are inserted in the grooves.

3,462,904

## MOUNTING ASSEMBLY FOR PORTABLE PARTITIONS

John T. Napier, Alexandria, Va. (% Suffolk Properties, Inc., 5611 Columbia Pike, Baileys Crossroads, Va. 22041)

Filed Mar. 30, 1967, Ser. No. 627,004

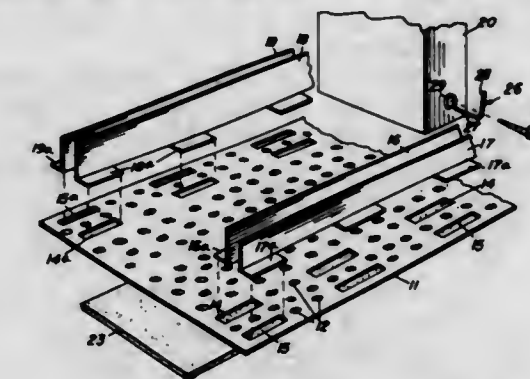
Int. Cl. E04b 2/76

U.S. Cl. 52—402

5 Claims

A partition supporting assembly for buildings, including a pair of base plates and associated cushioning pads detachably engageable with a floor and ceiling, respectively. Each plate has a pair of independently attachable and

detachable, upstanding flanges jointly forming channels for respectively receiving the upper and lower edges of



a panel. Locking clips detachably retain the flanges in panel-engaging positions.

3,462,905

## THERMAL INSULATION FOR WALLS

Georges Mordchelles-Regnier, Villiers-St-Frederic, near Neauphle-le-Chateau, Paul Marcel Naudin, La Celle-Saint-Cloud, and Pierre Gabriel Micheau, Rambouillet, France, assignors to Bertin & Cie, Paris, France

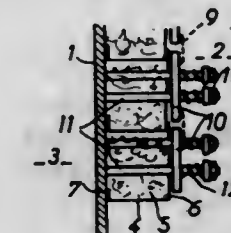
Filed Dec. 28, 1967, Ser. No. 694,332

Claims priority, application France, Dec. 30, 1966, 89,641

Int. Cl. E04b 1/78

U.S. Cl. 52—404

7 Claims



A heat insulating system, chiefly for the walls or covers of the chamber of a nuclear reactor, comprising inside the chamber a number of superposed shelves adjacent the wall to be protected against the heat prevailing in the chamber, said shelves extending in a substantially horizontal direction and sloping advantageously downwardly towards the wall. Said shelves provided preferably with vertical flanges along the wall and along their edges spaced with reference to the wall form troughs filled with a pulverulent or fibrous material such as siliceous sand, balls or fibres.

3,462,906

## COUPLED CHANNEL PANNELLING FOR CEILINGS, ROOFS, SIDING AND THE LIKE

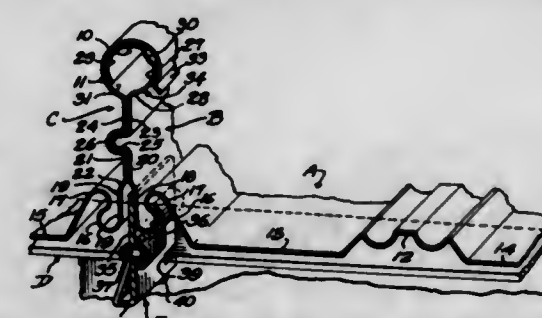
Patrick L. Schroyer, 12071 S. Downey Ave., Downey, Calif. 90242

Filed July 13, 1967, Ser. No. 653,157

Int. Cl. E04b 5/52, 7/00

U.S. Cl. 52—478

3 Claims



A ceiling, roof, and siding structure of rolled channel section panels connected side-by-side by coupled male and female marginal beads and attached to supporting rafters or beams by hold-down or suspension clips. The coupled beads provide water-tight joints between the panels.

3,462,907

## UTILITY POLE WITH CURVED, LAMINATED WOOD BEAMS

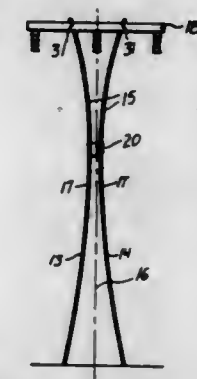
Herbert B. McKean, Lewiston, Idaho, assignor to Potlatch Forests, Inc., Lewiston, Idaho, a corporation of Delaware

Filed May 19, 1967, Ser. No. 639,732

Int. Cl. E04c 3/30; E04h 12/08

U.S. Cl. 52—721

1 Claim



The disclosure describes a utility pole having a transverse cross member 18 for supporting the electrical lines. The cross member 18 is supported by two bowed laminated beams 13 and 14 that extend from the ground to the cross member 18. The two beams have their convex surfaces opposing one another and facing the center 16 of the pole load. The beams are positioned with their laminated planes facing the convex surfaces. The beams are interconnected by a spacer block 20 positioned below the cross member and above the midpoint of the beams.

3,462,908

## METHOD FOR ERECTING BUILDINGS

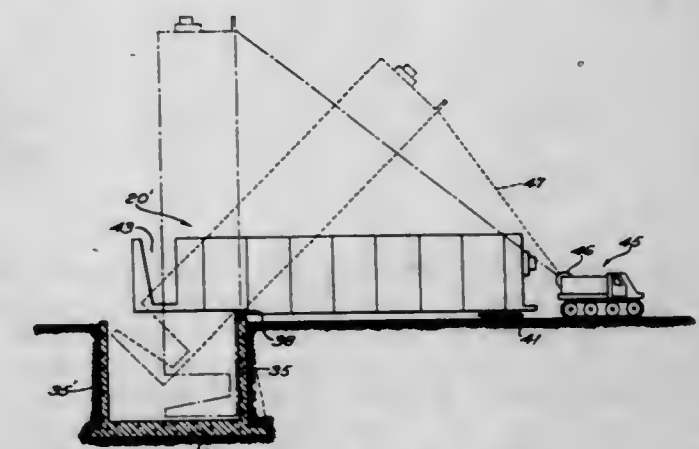
Jerzy Wysocki, 386 Benefit St., Providence, R.I. 02903

Filed Aug. 24, 1967, Ser. No. 662,974

Int. Cl. E04g 21/14; E04h 1/00; E04b 1/00

U.S. Cl. 52—745

7 Claims



The method of erecting buildings where multi-story sections or units of a building are constructed or mounted in a horizontal position on the site and are then raised into vertical position by one or more means.

3,462,909

## PACKAGING METHOD AND APPARATUS

Kelvin G. Anderson, Bronx, N.Y., assignor to Weldotron Corporation, Newark, N.J., a corporation of New Jersey

Filed Mar. 3, 1967, Ser. No. 620,532

Int. Cl. B65b 9/04, 47/02

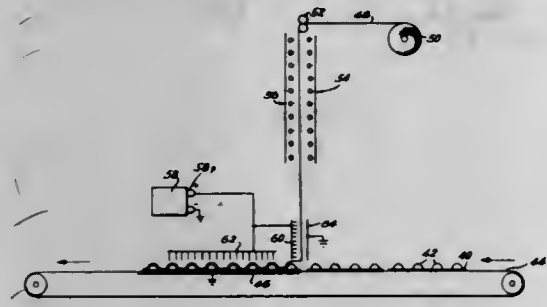
U.S. Cl. 53—41

32 Claims

A sheet of plastic film is softened by heating and is disposed with a package support between two electrodes. One of the electrodes produces a local electrostatic stress



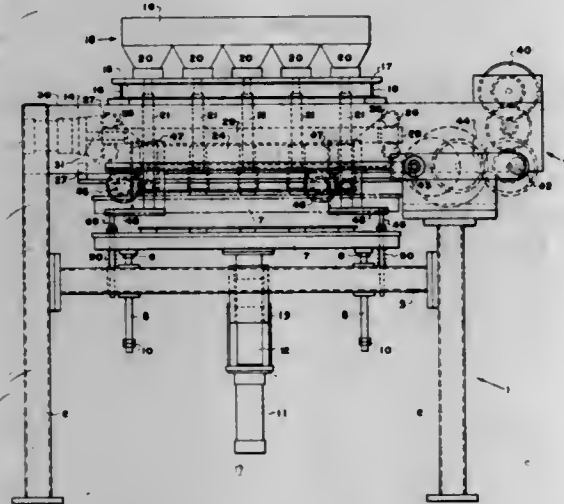
concentration in the ambient atmosphere. An electrical potential is provided between the electrodes and is adequate for local ionization of the atmosphere adjacent the one of the electrodes and provides a charge on the plastic



film. The electrostatic force developed between the electrodes and the plastic film moves the softened film to closely conform to the contours of an article on the support and against the support.

### 3,462,910 COUNTING AND FEEDING APPARATUS

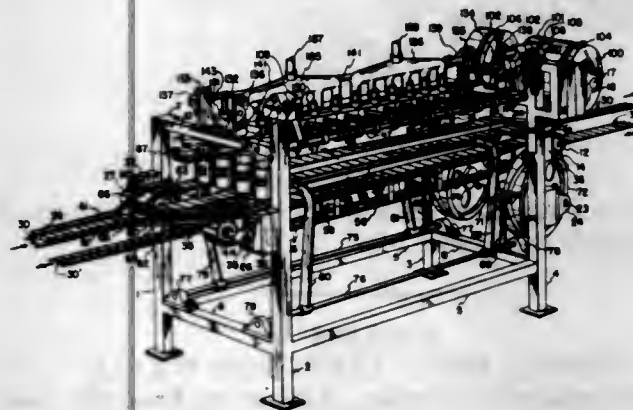
Lyman B. Furry, 15 N. Alexander, and Charles W. Kagy, 900 James St., both of Danville, Ill. 61832  
Filed July 18, 1966, Ser. No. 566,024  
Int. Cl. B65b 57/20, 39/12, 11/50  
U.S. Cl. 53—78 10 Claims



This invention comprises a new and improved apparatus for feeding and counting a plurality of articles to a plurality of containers or receptacles for subsequent handling, packaging, or processing. The apparatus includes a supply reservoir having a plurality of supply hoppers aligned with the containers or receptacles being fed. Vertically movable supply tubes are reciprocated into each of the hoppers to feed parts therethrough. The tubes are provided with vanes to stir up the parts in the hoppers to insure an uninterrupted flow of parts. A system of laterally movable, pneumatically or hydraulically actuated bars are provided with abutments extending into the supply tubes engaging the parts therein and operable upon movement to cause the parts to be fed one at a time to the containers or receptacles being filled. In operation the containers being filled (usually a card of blister packages) are placed on a movable table which is elevated to position the containers under the respective supply tubes. The supply tubes are reciprocated a predetermined number of times and the feed bar actuated to allow one of the parts to drop into each receptacle. After a predetermined number of cycles the feed mechanism stops and the storage table is lowered for the start of a new cycle.

### 3,462,911 APPARATUS FOR FORMING PELLETS OF SEMI-SOLID MATERIAL

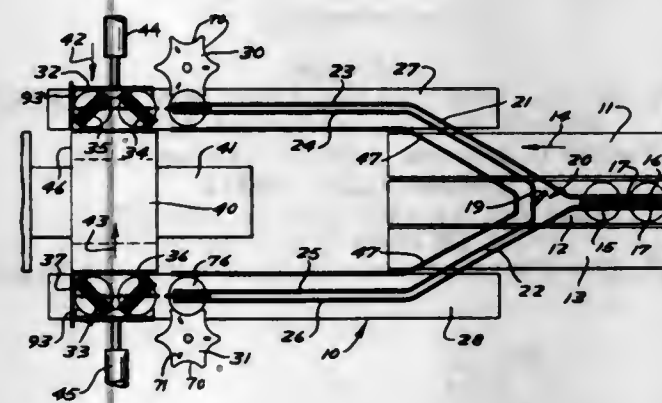
John Schmidt, 322 N. Greenwood Ave., Jenkintown, Pa. 19046  
Continuation of application Ser. No. 556,433, June 9, 1966. This application July 10, 1968, Ser. No. 761,366  
Int. Cl. B65b 25/06, 63/02; A22c 7/00  
U.S. Cl. 53—122 20 Claims



An apparatus adapted to form pellets of semi-solid material and deposit them into containers and comprising a source of pressurized semi-solid material, mold means connected to the discharge end of the conduit and adapted successively to receive charges of the material in one position of the mold means and to shape said charges into pellets during movement of said mold means in another position, means for ejecting the pellets sequentially from the mold means in said another position of the latter for gravity drop to a filling position beneath said mold means, and means for conveying containers to the filling position in timed relation to ejection of the pellets for reception of the latter in the receptacles.

### 3,462,912 ORIENTOR FOR CANS TO BE LOADED INTO CASES

Paul L. Anderson, Plymouth Village, Minn., assignor to Cherry-Burrell Corporation, Minneapolis, Minn., a corporation of Delaware  
Filed July 19, 1967, Ser. No. 654,506  
Int. Cl. B65b 35/34, 61/00, 17/00  
U.S. Cl. 53—159 12 Claims

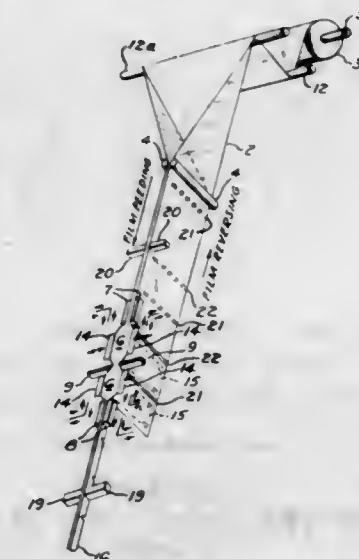


A machine to receive cans, primarily gallon cans, which have bails or wire handles inserted thereon and pack them into cases. The bails are guided between two guide rails which keep all of the cans in the same orientation with the bails upright and in a plane parallel to the direction of travel to a loading station. In the loading station, the bail guide rails have movable sections each of which is of size to receive and hold the bail from one of the cans in the loading station. The sections of guide rails are then twisted 45° to in turn twist the cans so that their bails are properly oriented for packing into a shipping case.

### 3,462,913 COMBINATION MULTIPLE BAG MAKING AND COMPARTMENT BAG MAKING MACHINE

John S. Bodolay, 16 Glendell Terrace 01108; William A. Bodolay, 54 Shady Brook Lane 01118; and Stephen M. Bodolay, 15 Daviston St. 01108, all of Springfield, Mass.  
Filed June 5, 1967, Ser. No. 649,064  
Int. Cl. B65b 9/08 10 Claims

U.S. Cl. 53—183



This invention is concerned with an improved development of a novel concept in bag making, filling, and sealing machines of the type of bag formed by the machine in our prior patent issued Mar. 17, 1959, Patent No. 2,877,609. In the aforesaid patent, we described our machine which formed a single bag having one pouch that was sealed along its edges and after the contents were placed therein, was sealed horizontally across the top. Since the development of that machine, we have built a new machine that will make more than one bag at the same time, and will make the bags of different sizes at the same time.

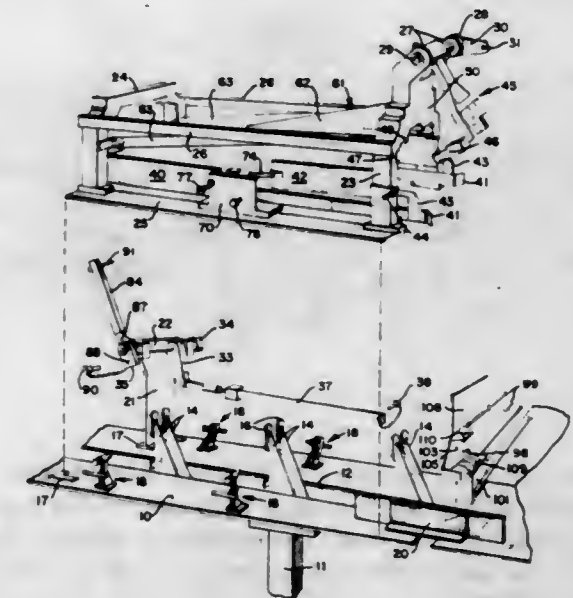
There has been a need in industry to package in more than one compartment, products that require, for example, hardware that go with a hinge. By packaging items like this, simultaneously, in one bag having more than one compartment, there is a tremendous cost saving. Further, the product is improved because of the efficiency in which the consumer can use the product.

### 3,462,914 BOX CLOSING MACHINE

Oskar Dorfmann, North Bergen, N.J., assignor to Federal Carton Corporation, North Bergen, N.J., a corporation of New York  
Filed Sept. 27, 1967, Ser. No. 670,925  
Int. Cl. B65b 7/24, 7/26 11 Claims

Disclosed herein is a machine for closing an already erected and filled folding box, the box being of the type which has base, front, side, and rear walls together with a cover having side flaps and a front flap which cooperate respectively with the side and front walls of the box and particularly with slots in those walls to lock the cover in closed position. The boxes as delivered to the closing machine are, as stated, erected and filled, and the front flap of the cover is bent at an angle to the cover, the cover likewise being bent forwardly at a slight angle to the rear walls, but the side flaps remain in the plane of the main body of the cover. The machine of the disclosure operates to sequentially bend the cover front flap and side flaps into position at right angles to the main portion of the cover, to exert pressure on the side walls to open the slit provided therein for reception of the side

cover flaps, to gradually lower the cover flap while maintaining the angular position of the walls, to then press against the side walls of the container and simultaneously and to a lesser extent, against the cover flaps to thus open the slits and permit the cover flap to enter them, and to

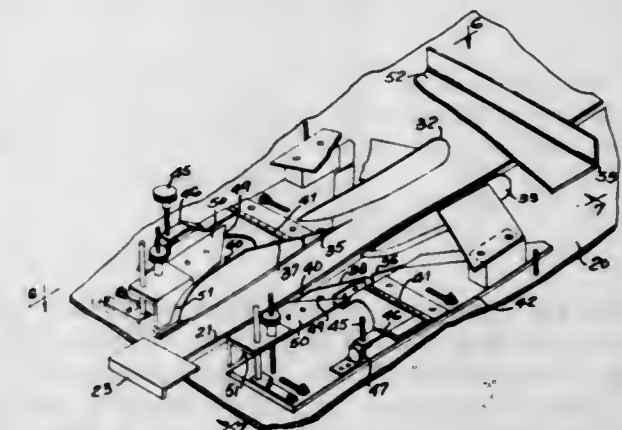


finally press instantaneously against a tab on the box front wall to cause it to enter into a slit in the front cover flap. The machine is so constructed that by a simple and rapid replacement of a unit of mechanism, boxes of different capacity may be closed.

### 3,462,915 WRAPPING MACHINES

Andrew W. Anderson, West Caldwell, N.J., assignor to Scandia Packaging Machinery Company, North Arlington, N.J., a corporation of New Jersey  
Substituted for abandoned application Ser. No. 524,969, Jan. 24, 1966. This application Oct. 18, 1968, Ser. No. 772,463  
Int. Cl. B65b 49/04, 11/08 1 Claim

U.S. Cl. 53—230



The invention consists of the provision in a wrapping machine of adjustable, hinged folding means or tucker blades for folding the bottom, laterally projecting ends of a wrapper and means for adjustably raising and lowering the folder about the hinged mounting.

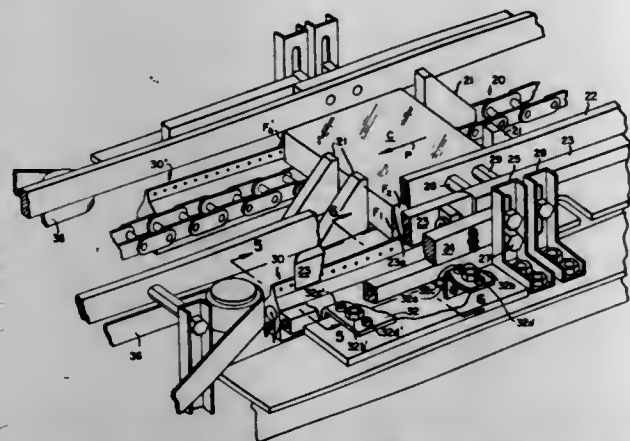
### 3,462,916 APPARATUS FOR HEAT SEALING CARTONS

Arthur H. T. Chin, Castro Valley, Calif., assignor to Fibreboard Corporation, San Francisco, Calif., a corporation of Delaware  
Filed July 18, 1966, Ser. No. 565,972  
Int. Cl. B65b 7/20, 51/20; F24h 3/04 24 Claims

U.S. Cl. 53—375 An apparatus for sealing adhesively treated flaps of a carton together comprises conveyer means for moving

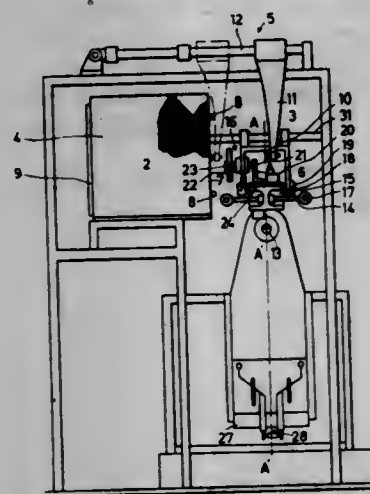


the cartons along a line of flight and a metallic nozzle bar inserted between the flaps to subject them to a combination of heat conducted through the nozzle bar and heated air discharged therefrom. A flap control bar co-



operates with the nozzle bar to maintain at least one of the flaps in substantial contact with the nozzle bar during the flap heating function. Compression means thereafter compress the heated flaps together to form a tightly sealed carton end closure.

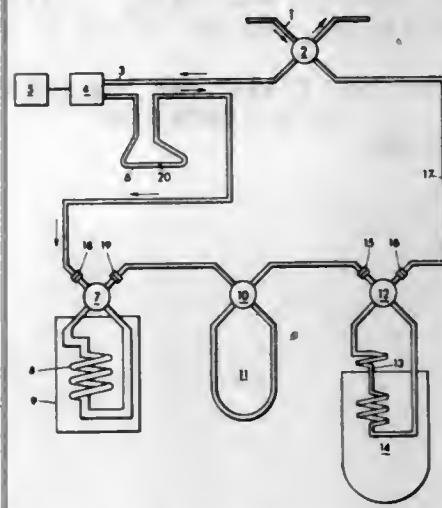
**3,462,917**  
**MEANS FOR SUPPLYING PACKING BAGS**  
Shigeo Nakashima, 7-7 Koaza Tenjimori, Oaza Morimoto, Mukomachi, Otokuni-gun, Kyoto-fu, Japan  
Filed Jan. 23, 1968, Ser. No. 699,900  
Claims priority, application Japan, Jan. 31, 1967, 42/6,194; Aug. 11, 1967, 42/51,542  
Int. Cl. B65b 43/18, 43/30, 39/02  
U.S. Cl. 53—386 3 Claims



Means for supplying packing bags which are enclosed in a magazine and stacked in a horizontal direction, comprising a horizontally pulling out mechanism and a vertically guiding mechanism, in said horizontally pulling out mechanism only the end of one of the packing bags is pulled out by turns from the magazine in the horizontal direction and in said vertically guiding mechanism, the packing bag which is pulled out horizontally is rotated vertically downward to a transition point where into the charging hole of the rotated packing bag is inserted the blow-in tube of an automatic measuring and packing apparatus.

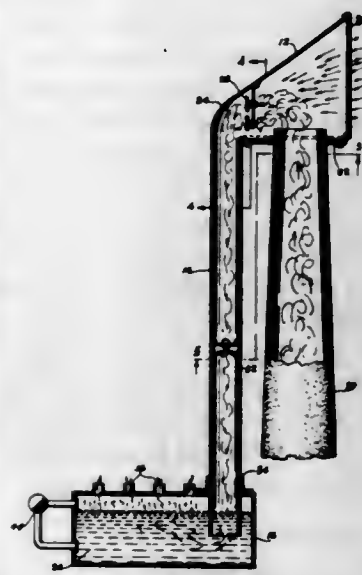
**3,462,918**  
**CHROMATOGRAPHIC METHOD AND APPARATUS**  
Robert A. Prosser, 15 Maine Ave., Natick, Mass. 01760  
Filed July 31, 1967, Ser. No. 657,343  
Int. Cl. B01d 15/08  
U.S. Cl. 55—67 32 Claims  
An apparatus and method which utilize a pulsating stream of carrier gas provide means for collecting volatile

materials in concentrated form and separating them from contaminants. The volatile materials can thus be subjected to the gas-liquid chromatograph and, if desired, recovered



with negligible loss or contamination. A reasonable approximation of "plug" flow into the chromatograph is obtained even when the sample is extremely small.

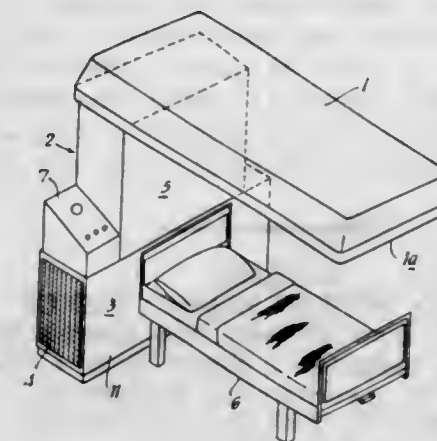
**3,462,919**  
**POLLUTANT TREATING AND ELIMINATING DEVICE**  
Solomon Zalman, Ozone Park, N.Y. (114—08 Rockaway Beach Blvd., Rockaway Park, N.Y. 11694)  
Filed May 29, 1967, Ser. No. 641,995  
Int. Cl. B01d 47/02  
U.S. Cl. 55—256 3 Claims



A pollutant treating and eliminating device for treating and eliminating pollutants from exhausts emitted into the atmosphere comprising a hood enclosing the exhaust outlet, a forced air stream drawn into the hood from the atmosphere mixing with the exhaust, the exhaust and atmosphere mixture being positively passed through a fluid, wherein the hood is open to the atmosphere to permit the exhaust to escape in the event of a failure of the forced draft.

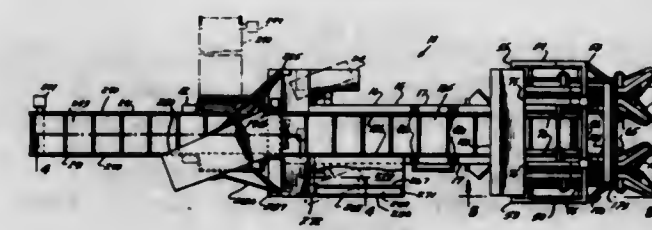
**3,462,920**  
**GASEOUSLY FORMED CURTAINS**  
Douglas Frank Denny, Stoke Poges, England, assignor, by mesne assignments, to Bell's Medical Products Limited, Slough, England, a British company  
Filed Dec. 15, 1967, Ser. No. 690,877  
Claims priority, application Great Britain, Dec. 16, 1966, 56,352/66  
Int. Cl. B01d 46/12  
U.S. Cl. 55—413 7 Claims  
A germ-free environment for a patient provided by novel "gaseous curtain." Apparatus includes first and second nozzle means mounted to communicate with means

for simultaneously projecting an isolating gaseous medium through both of said nozzle means, the first nozzle means being adapted to project a first stream of isolating gaseous medium to provide a gaseous curtain between the volume or area to be isolated and the environmental gaseous



medium and the second nozzle means being located adjacent to the first nozzle means and adapted to project a second stream of the isolating gaseous medium in substantially the same direction as the first stream to provide a further gaseous curtain between the first stream and the environmental gaseous medium.

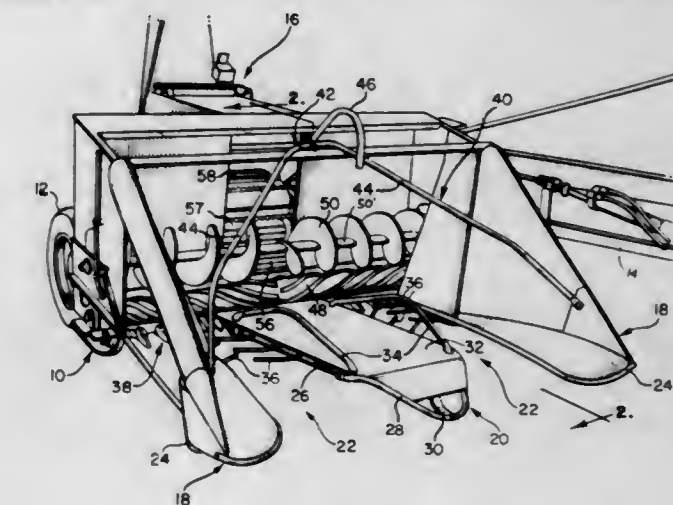
**3,462,921**  
**CROP ROW CORN HARVESTING APPARATUS**  
Loren W. Meredith, 1150 E. Main St., Pahokee, Fla. 33476  
Continuation-in-part of application Ser. No. 487,406, Sept. 15, 1965. This application June 16, 1967, Ser. No. 646,558  
Int. Cl. A01d 45/02  
U.S. Cl. 56—17 11 Claims



The disclosure relates to a crop row corn harvester which is particularly useful in harvesting green corn such as sweet corn. The harvester is shown in the form of a two row harvester adapted for use with support vehicles. The harvester has a picking mechanism which is designed to strip the ears from ear laden stalks that have been previously severed from the ground and hence includes an appropriate mechanism for cutting the standing stalks. The mechanism has a conveyor for the cut stalks and which is arranged to cooperate with a stripping assembly in separating the ears by an action that bends the ears toward the butt end of the stalk in accomplishing the separation. The stripping assembly provides a space in which the ears are trapped during their movement by the conveyor and this assembly has a pair of moving components that prevent the ears from becoming wedged in the trapping space provided in the assembly. The moving components are shown in the form of smooth surfaced cylindrical rolls which are so designed and operated as to minimize damage to the ears as they are being stripped from the stalks. Provisions are made for gathering the ears in a conveyor that is used to transport the harvest through a stream of air which is used to separate trash foliage and other unwanted accumulations from the harvested crop. The harvester has yet another conveyor

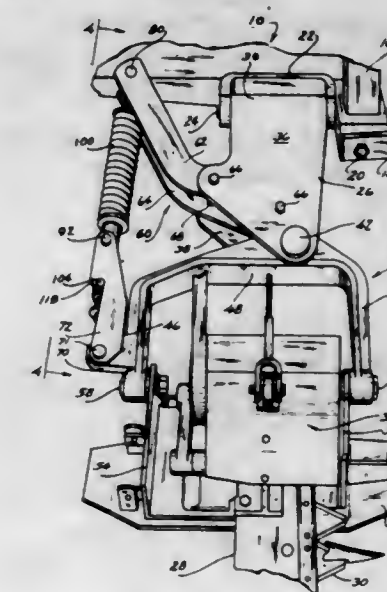
which is adjustably mounted on a mobile vehicle supporting the harvesting equipment and which is provided for feeding the harvested crop to support vehicles used in conjunction with the harvester.

**3,462,922**  
**ROW CROP HARVESTER**  
Carmen S. Phillips, Downers Grove, and H. Mervin Risum, Western Springs, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware  
Filed Oct. 20, 1966, Ser. No. 588,123  
Int. Cl. A01d 45/02, 49/00, 57/18  
U.S. Cl. 56—23 10 Claims



A harvester having a platform with a cutter at its leading edge, dividers extending forwardly of the cutter and forming plant passages therebetween into which project fingers forming a bed, above the cutter, the fingers flex horizontally to pass the stalks of plants to the cutter, a support for the fingers to limit their downward movement, and a pair of rollers having an upwardly directed purchase for grasping the butt ends of the cut stalks and lifting the plant over the cutter while feeding it to associated processing mechanism.

**3,462,923**  
**MOWER BREAKAWAY MECHANISM**  
Laurel R. Yeske and John G. Christopher, Rockford, Ill., assignors to J. I. Case Company, Racine, Wis., a corporation of Wisconsin  
Filed Apr. 21, 1967, Ser. No. 632,807  
Int. Cl. A01d 75/18  
U.S. Cl. 56—25 9 Claims



A releasable device for a cutterbar on a mower including a rigid member and a swingable member with



an element pivotally connected to the members. A cushioned breakaway mechanism with latching means on the element engageable with the swingable member, the cushioned mechanism tending to resist swinging movement and including means for assisting in resetting of the mechanism.

3,462,924

**LAWN MOWER CONTROL**

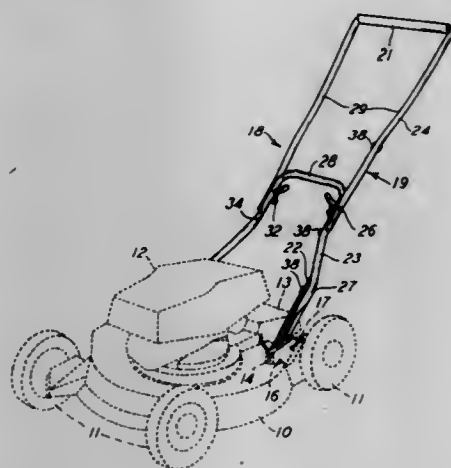
Warren H. Price, South Milwaukee, and Donald G. Erickson, Racine, Wis., assignors to Jacobsen Manufacturing Company, Racine, Wis., a corporation of Wisconsin

Filed Aug. 16, 1965, Ser. No. 480,051

Int. Cl. A01d 35/26; B62b 3/02

U.S. Cl. 56—25.4

6 Claims



A lawn mower control including two U-shaped handle pieces, with the legs of one piece pivotally attached to the mower, and with the legs of the other piece pivotally attached to the first piece. The two pieces are therefore arranged to present a rigid and extended handle in the operating position, since there is a locking bolt connecting them together, and they are arranged to fold compactly with the mower in the inoperative position. A hand grip portion is movable on the handle, and a control cable extends from the hand grip portion down to the mower for operating control of the mower. Means are provided on the handle pieces for assuring pivoting of the pieces only in the direction which will cause them to fold compactly with the mower.

3,462,925

**MOWING APPARATUS**

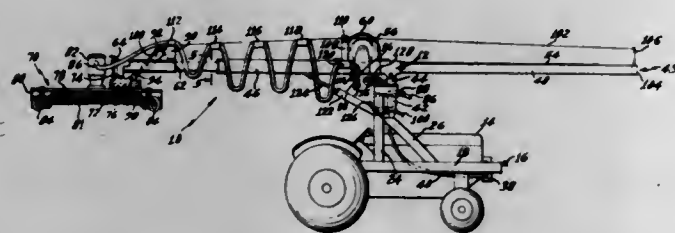
Jack K. Lanier, Jacksonville, Fla., assignor to Best Equipment Company, Jacksonville, Fla., a corporation of Florida

Filed May 18, 1967, Ser. No. 639,367

Int. Cl. A01d 55/26

U.S. Cl. 56—25.4

9 Claims



A mowing apparatus mountable on an ordinary tractor for mowing the shoulders, ditches and banks at the sides of roadways, while the supporting vehicle travels over the roadway. The apparatus including an adjustable

cutter head which is connected to the outer end of an extensible, elongated, limber boom member; the connection between the boom member and the cutter head being such as to permit the head to freely follow the contours of the ground over which it travels during mowing operations, relatively unaffected by any movement of the supporting vehicle relative to the mower head. The cutter head being positionable and operable both angularly and laterally and in any plane at various distances from the side and rear of the supporting vehicle. The limber boom member being adjustable both inwardly and outwardly of the supporting vehicle by means of a rack and pinion arrangement.

3,462,926

**ROTARY MOWER SAFETY FENCE**

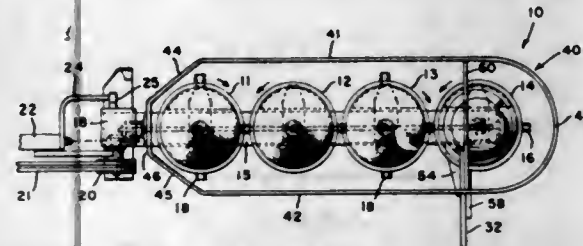
Neil W. Webster, New Holland, and Charles M. Kline, Reinholds, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed May 25, 1967, Ser. No. 641,276

Int. Cl. A01d 35/26

U.S. Cl. 56—25.4

7 Claims



In a rotary mower, an elongated support which extends adjacent the ground and rotatably carries a plurality of crop cutting elements in side by side relation and having an overlying safety fence to keep people away from the cutting elements.

3,462,927

**TOPPING MECHANISM FOR CANE HARVESTERS**  
Donald J. Quick, Highton, Australia, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

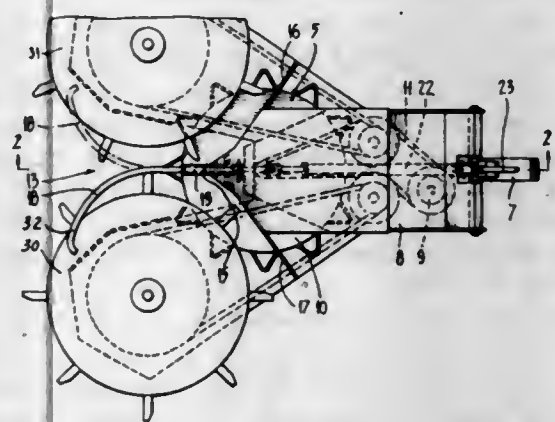
Filed Jan. 19, 1967, Ser. No. 610,314

Claims priority, application Australia, Jan. 19, 1966, 645/66

Int. Cl. A01d 45/10

U.S. Cl. 56—56

3 Claims



A device controlled by the operator of a cane harvesting machine for causing the severed tops of cane stalks to be discharged either to the right or to the left of the harvesting machine. A pair of guide bars located in the throat formed by the gathering drums and adjustably mounted such that the severed cane tops will be directed into the influence of one selected gathering drum and thus discharged on a selected side of the machine.

3,462,928

**HARVESTER ROLL STRUCTURE AND SUPPORT THEREFOR**

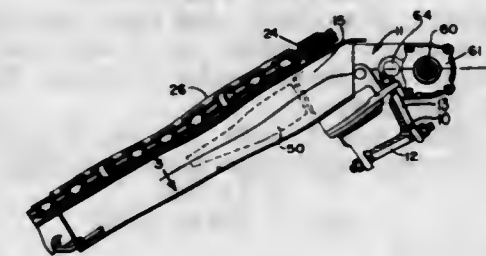
Lester Dale Schreiner, Ankeny, and Joseph John Shindelar, Des Moines, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Apr. 18, 1967, Ser. No. 631,755

Int. Cl. A01d 45/02

U.S. Cl. 56—104

5 Claims



A pair of harvesting rolls mounted on a corn harvester beneath snapping bars that define a fore-and-aft extending passage through which stalks of corn may pass, the harvesting rolls being supported on a gear housing in cantilever fashion and projecting forwardly from the gear housing to forward free ends.

3,462,929

**SELF-PROPELLED SIDE DELIVERY RAKE**

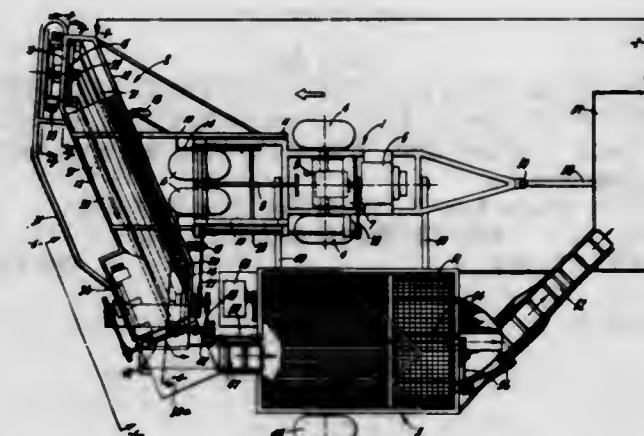
Charles C. Ingalls, 3042 Washington Road, Ceres, Calif. 95307

Filed Mar. 27, 1967, Ser. No. 626,009

Int. Cl. A01g 19/00

U.S. Cl. 56—328

5 Claims



A self-propelled side delivery rake especially adapted, but not limited, for use to sweep on-the-ground nuts (or fruit) laterally to a certain point for pick-up; the implement including an elongated, transverse raking reel disposed diagonally of the direction of travel and driven in a manner to effectively sweep the nuts, as encountered by the reel, laterally to and for discharge from the trailing end of such reel. A nut (or fruit) cleaning machine is disposed, in detachably connected relation to the rake, adjacent but rearwardly of the trailing end of the reel, and means being provided to feed the nuts (or fruits)—as discharged from said end of the reel—into said cleaning machine.

3,462,930

**POWER-OPERATED FRUIT HARVESTING HEAD**

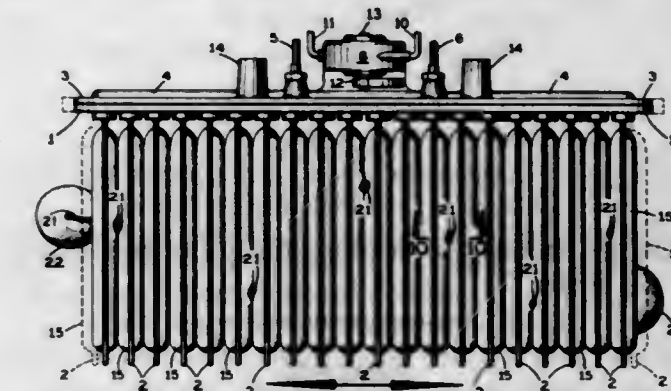
Joseph C. Clark, 4843 Backacher Lane, Orlando, Fla. 32806

Filed May 23, 1967, Ser. No. 640,623

Int. Cl. A01g 19/00

U.S. Cl. 56—328

5 Claims



A fruit harvesting device for simultaneously gripping a plurality of fruit bearing branches of different diameter without injury thereto and vibrating the branches for releasing the fruit therefrom by remote power means connected thereto.

3,462,931

**FRUIT CATCHER**

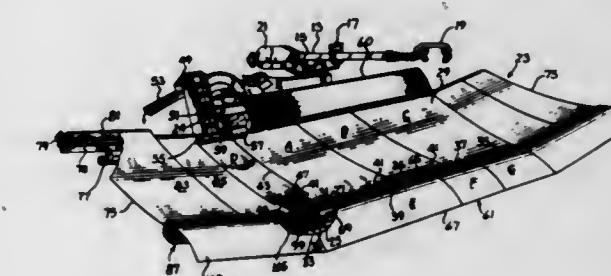
Arlie J. Thayer, Brookfield, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Oct. 31, 1966, Ser. No. 590,784

Int. Cl. A01g 19/06

U.S. Cl. 56—329

3 Claims



An extension for a fruit catcher apron in which there is provided in addition to a fruit catching web, a supplemental deflector, and an attitude control arm for supporting the extension and a tilt linkage for modifying the position of the arm by twisting the web extension for delivery to the apron.

3,462,932

**FRUIT CATCHER**

Stuart D. Pool, Naperville, Edward Sverelka, Chicago, and Arlie J. Thayer, Brookfield, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Oct. 31, 1966, Ser. No. 590,945

Int. Cl. A01g 19/06

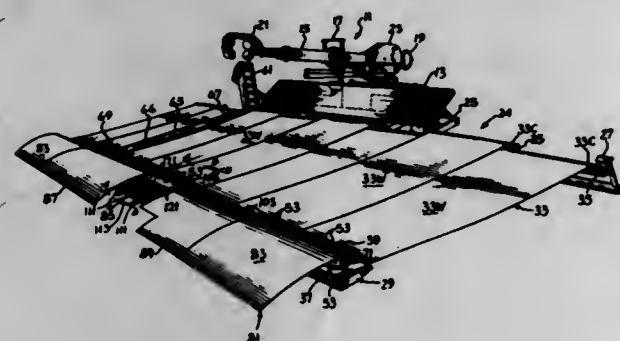
U.S. Cl. 56—329

8 Claims

A fruit catcher having an apron and medial and end sections on the treeward edge adapted to be tilted to gravitate fruit onto the apron, the medial section comprising a tree-engageable actuator, a linkage operated by



the actuator for flipping the center section upwardly, and the center section functional to return against the tree to



provide an incline for leading fruit dropped thereupon onto the apron.

3,462,933

**FALSE TWIST CRIMPING APPARATUS**

Mario Nava, Manderley, Castle Hill, Prestbury, England, assignor, by mesne assignments, to The Mecasta Corporation, Raleigh, N.C., a corporation of North Carolina

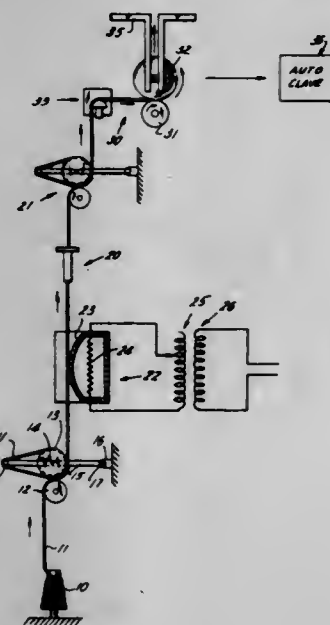
Application May 31, 1966, Ser. No. 554,209, now Patent No. 3,316,705, dated May 2, 1967, which is a continuation of application Ser. No. 313,392, Oct. 2, 1963, which is a continuation-in-part of application Ser. No. 12,536, Mar. 8, 1960. Divided and this application Mar. 27, 1967, Ser. No. 626,230

Claims priority, application Great Britain, May 13, 1958, 15,240/58

Int. Cl. D01h 13/26; D02g 3/00

U.S. Cl. 57—34

15 Claims



False twisting means false-twists a thermoplastic yarn while the same is maintained at a relatively low temperature below its melting point. This results in a partially set false twist crimped yarn having a high contractibility exceeding 50%. Delivery means is operatively associated with the false twisting means for delivering the yarn from the same at a predetermined speed. Collecting means is operatively associated with the delivery means for collecting the thus delivered yarn on a take-up package, but at a speed less than the predetermined delivery speed so that the tension of the yarn is reduced while, however, the yarn is still maintained under substantial tension when it reaches the take-up package. Finally, setting means is provided for treating the thus wound-up yarn

with a setting fluid for a given period of time so as to complete the setting of the yarn, thus obtaining a relaxed false twist crimped yarn which has only a low contractibility of substantially less than 50%, has substantial dimensional stability and is substantially of the non-torque type while being almost as highly bulked as fully twist crimped yarn.

3,462,934

**APPARATUS FOR GRIPPING BOBBINS ON TEXTILE MACHINES**

Gunter Schulz, Ebersbach, and Ernst Roethke, Schorn-dorf, Germany, assignors to Zinser-Textilmaschinen Gesellschaft mit beschränkter Haftung, Ebersbach an der Fils, Germany

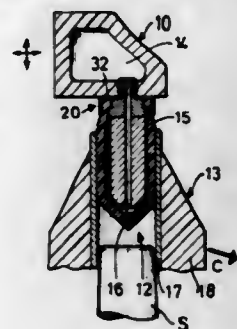
Filed Apr. 9, 1968, Ser. No. 719,945

Claims priority, application Germany, Apr. 11, 1967, Z 12,795

Int. Cl. D01h 9/00

U.S. Cl. 57—52

22 Claims



A gripping arrangement for gripping insertion into the bobbins of a textile machine consists of an elongated inflatable bag member shaped to fit into the interior of a bobbin and carried by a pressure manifold with which it is connected. A self-supporting support means is provided within the bag member to internally support the circumferential wall of the same over at least a portion of the length of the support member.

3,462,935

**CONTROL SYSTEM FOR TWISTING MACHINE**

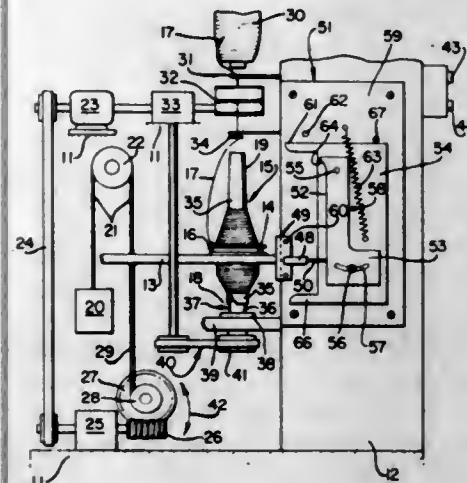
Charles W. Brouwer, East Greenwich, Conn., assignor to Leeson Corporation, Warwick, R.I., a corporation of Massachusetts

Filed July 3, 1967, Ser. No. 651,034

Int. Cl. D01h 9/14, 13/26

U.S. Cl. 57—54

11 Claims



A control system for a twisting machine such as a spinning frame or twister. The control system automatically prevents overfilling of a yarn receiver by automatically stopping operation of the winding mechanism if the doffer (machine operator) fails to do so at the proper time, and facilitates winding of a desired number of tail coils on the yarn receiver.

3,462,936

**STOP MOTION FOR OPEN END SPINNING MACHINES**

Miroslav Boucek and Frantisek Pospisil,usti nad Orlici, Jiri Elias, Brandys nad Orlici, Miloslav Tyl,usti nad Orlici, and Karel Mikulecky, Chocen, Czechoslovakia, assignors to Vyzkumny Ustav Bavlnarsky, Usti nad Orlici, Czechoslovakia

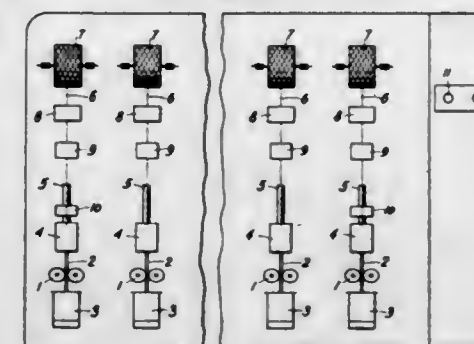
Continuation-in-part of application Ser. No. 598,268, Dec. 1, 1966. This application July 11, 1967, Ser. No. 652,558

Claims priority, application Czechoslovakia, Dec. 1, 1965, 7,194/65

Int. Cl. D01h 13/16, 7/22

U.S. Cl. 57—80

9 Claims



A spinning machine having a plurality of spinning units each comprising a spinning chamber, supply means for supplying fibrous material to the spinning chamber for conversion into a filament, and withdrawing means for withdrawing the filament from the spinning chamber. Detecting means is associated with at least one of the units and is active for detecting a trailing end of the particular filament originated in the spinning chamber of the one unit subsequent to termination of the supply of fibrous material to the spinning chambers of all units, and an operative connection is provided between the detecting means and the withdrawing means of all units for terminating the operation of the withdrawing means in response to detection of the trailing end by the detecting means associated with the one unit.

3,462,937

**MOUNTING FOR SPINDLE-BEARING HOUSINGS OF TEXTILE MACHINES**

Erwin Friedrich Schmid, Kemnat, Kreis Esslingen, Germany, assignor to SKF Kugellagerfabriken Gesellschaft mit beschränkter Haftung, Schweinfurt, Germany, a company of Germany

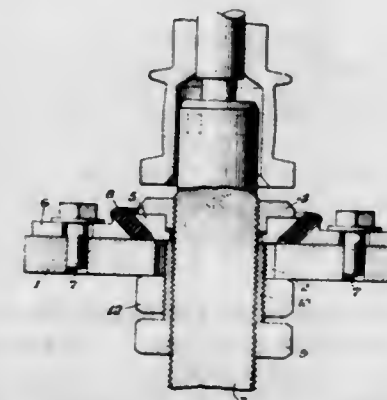
Filed Apr. 26, 1968, Ser. No. 724,442

Claims priority, application Germany, May 11, 1967, S 109,828

Int. Cl. D01h 7/04; F16c 35/00

U.S. Cl. 57—130

5 Claims



A textile machine has a structure for optionally providing an elastic or rigid mounting for a spindle-bearing housing. A spindle rail is formed with an opening passing therethrough, and a spindle-bearing housing extends with clearance through this opening and carries a shoulder-ring or flange. A support means engages the

flange to support the spindle-bearing housing on the spindle rail and has at least a single elastic part and at least a single rigid part. The support means normally assumes a position where the elastic part thereof provides an elastic support for the spindle-bearing housing. A fixing means is displaceable between a fixing and a non-fixing position and, when in its non-fixing position, permits the elastic part to provide the elastic mounting for the housing. However, when the fixing means is in its fixing position it fixedly connects the rigid part of the support means to the spindle rail to eliminate the action of the elastic part of the support means.

3,462,938

**PROCESSES FOR PRODUCING CRIMPED HETEROFILAMENT YARNS**

Parvez Naoraji Mehta, Pontypool, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

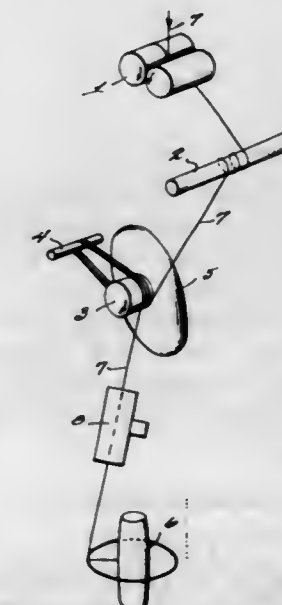
Filed Apr. 25, 1966, Ser. No. 544,721

Claims priority, application Great Britain, May 10, 1965, 19,627/65

Int. Cl. D02g 3/02, 3/00; D01h 13/26

U.S. Cl. 57—157

10 Claims



Yarns containing potentially crimpable heterofilaments are crimped, as by heat retraction, after first separating the filaments forming the yarn from each other so that the crimp develops fully in each filament.

3,462,939

**MECHANICAL VIBRATOR FOR TIMEPIECE**

Kazuo Tanaka, Hirohiko Yoshida, Yoshiaki Kato, and Hiromi Ueda, Tokyo, Japan, assignors to Tokai Kabushiki Kaisha, Tokyo, Japan

Filed Feb. 7, 1966, Ser. No. 525,754

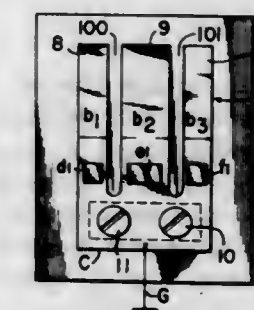
Claims priority, application Japan, Feb. 12, 1965, 40/8,031; Aug. 13, 1965, 40/49,337; Aug. 20,

1965, 40/50,829, 40/51,665, 40/50,830

Int. Cl. G04c 3/00

U.S. Cl. 58—23

3 Claims

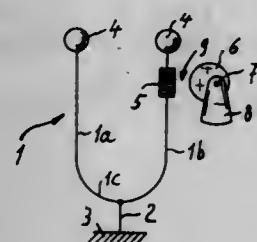


A mechanical vibrator for use as a time base in a timepiece is provided with at least two oscillatory arms extending parallel to each other in a common plane with



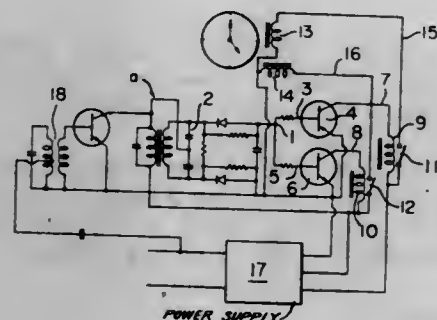
a base portion. An oscillation sensing device and an energizing device are secured on opposite surfaces of each of said oscillatory arms in close proximity to the root end of each of said oscillatory arms to maintain the proper oscillation of the arms relative to each other in a direction perpendicular to the common plane.

**3,462,940**  
**DEVICE FOR INFLUENCING THE FREQUENCY OF A MECHANICAL RESONATOR**  
Jean Schaad, Gorgier, Switzerland, assignor to Voumard Machines Co. S.A., La Chaux-de-Fonds, Neuchâtel, Switzerland, a firm of Switzerland  
Filed Mar. 20, 1967, Ser. No. 624,325  
Claims priority, application Switzerland, Mar. 25, 1966, 4,393/66  
Int. Cl. G04c 3/00  
U.S. Cl. 58—23 1 Claim



A mechanical resonator whose frequency varies according to its spatial position under the effect of gravity. The resonator has such frequency variations compensated by magnetic action which is arranged to vary according to the spatial position, the varying of the magnetic action being effected by the interaction between a permanent magnet element and a magnetic material element. One of these later named elements may be fixed to the resonating member, if desired.

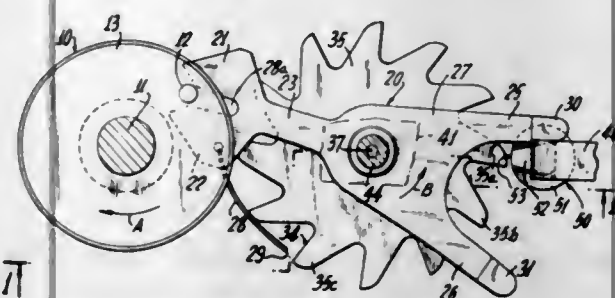
**3,462,941**  
**SECONDARY CLOCK APPARATUS**  
Hiroshi Sakurai, Tokyo, Japan, assignor to Amano Corporation, Kanagawa-ken, Japan  
Filed Feb. 13, 1967, Ser. No. 615,400  
Int. Cl. G04c 13/08  
U.S. Cl. 58—26 2 Claims



A secondary clock apparatus having a discriminator which produces a positive electric potential or a negative electrical potential depending upon whether the frequency of the input signal is high or low. Control transistors are connected in parallel to the output side of the discriminator. One of the control transistors conducts current when a negative potential appears at the control terminal or base and the other of the control transistors conducts current when a positive potential appears at the control terminal or the base. Relays connected to the output sides of the control transistors are disposed in conducting

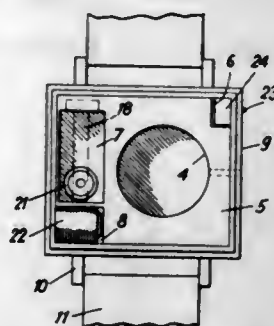
circuits and their contacts are in electrical circuits which connect the relays to a hand moving magnet or a correction magnet for the hands of a secondary clock.

**3,462,942**  
**DIAL TRAIN DRIVE**  
Heinz Meltinger and Josef Egger, Pforzheim, Germany, assignors to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut  
Original application May 12, 1966, Ser. No. 565,364, now Patent No. 3,396,531, dated Aug. 13, 1968. Divided and this application Oct. 23, 1967, Ser. No. 698,079  
Claims priority, application Germany, Nov. 3, 1962, U 93,671  
Int. Cl. G04c 3/04  
U.S. Cl. 58—28 8 Claims



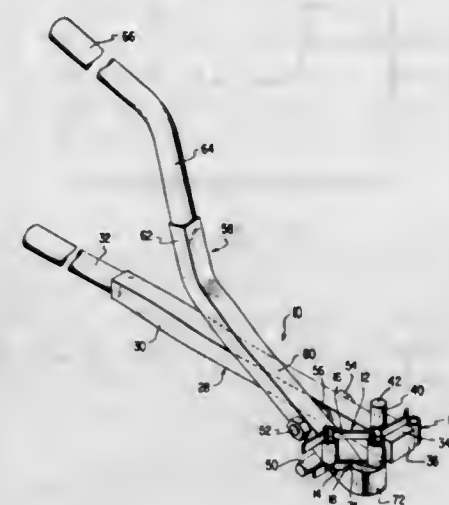
A watch includes a dial train drive in which power is transmitted from an oscillating balance wheel to a magnetizable index wheel. The index wheel drives the gear train of the watch. The balance wheel oscillates a lever between two end positions and a pin on the lever steps the index wheel. A magnet positioned adjacent the index wheel holds the lever in its rest position.

**3,462,943**  
**ALARM WRISTWATCH**  
Paolo A. Spadini, 88 Ave. Leopold-Robert, La Chaux-de-Fonds, Switzerland, and Andre Micheloud, Bern, Switzerland; said Micheloud assignor to said Spadini  
Filed Feb. 13, 1967, Ser. No. 615,495  
Claims priority, application Switzerland, Feb. 17, 1966, 2,306/66; June 8, 1966, 8,252/66; Sept. 9, 1966, 13,052/66  
Int. Cl. G04b 23/12  
U.S. Cl. 58—57.5 16 Claims



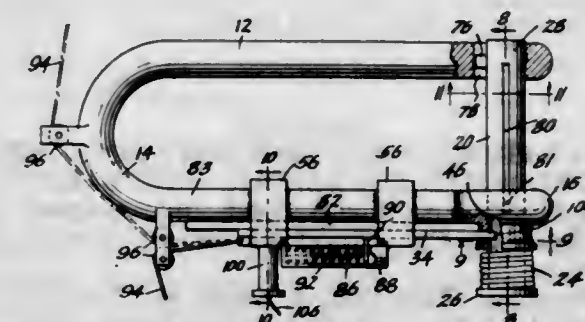
An alarm device inserted in the casing of a wristwatch and comprising, as alarm hammer, a spring blade or a tuning fork having a natural oscillation at an audible frequency. This hammer is electromagnetically kept vibrating at its natural frequency by a battery also located in the watchcase. The sound is produced by the watchcase bottom, a bell secured to this bottom, the glass or a plastic membrane located opposite a watchcase opening. The hammer either strikes on or oscillates in unison with the sound generator.

**3,462,944**  
**LINK APPLYING AND REMOVING DEVICE**  
James A. Madre, Rte. 4, Box 452, Elizabeth City, N.C. 27909  
Filed May 2, 1967, Ser. No. 635,522  
Int. Cl. B21 9/06, 5/00  
U.S. Cl. 59—7 8 Claims



A device for the removal or application of links from chains, the device having a holding portion engageable with a link and a force applying portion pivoted to the holding portion and operative to apply force to a next adjacent link for placement or removal thereof.

**3,462,945**  
**SPRING LOADED SHACKLE**  
Stanley Barber, Magazine, Ark.  
(P.O. Box 123, Fort Smith, Ark. 72901)  
Filed Oct. 12, 1966, Ser. No. 586,275  
Int. Cl. F16g 13/06, 13/08  
U.S. Cl. 59—86 9 Claims

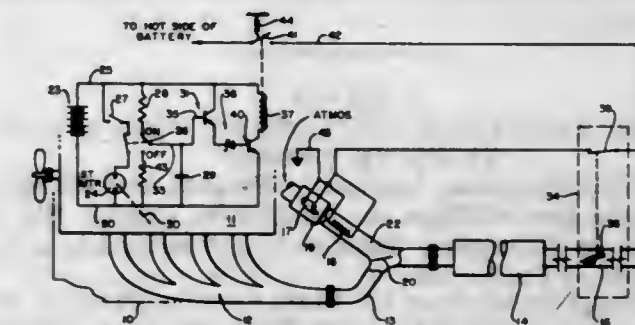


A clevis is provided for release by remote control. The shackle pin has a compression spring located beneath its head to facilitate its removal. One end of the pin has means cooperating with latch means mounted on one of the arms of the clevis. A lanyard or other release mechanism is applied to the latch to obtain remote control. A key-and-slot arrangement may be used to guide the shackle pin in the keeper holes.

**3,462,946**  
**ENGINE EXHAUST SYSTEM AND CONTROL**  
Gerald L. Schurmacher, 319 Bonita Ave., Piedmont, Calif. 94611  
Filed Nov. 24, 1967, Ser. No. 685,422  
Int. Cl. F01n 1/14, 3/10  
U.S. Cl. 60—30 4 Claims

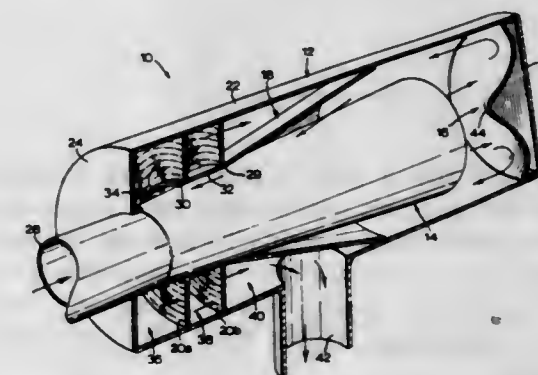
In a vehicle exhaust system, the exhaust fluids are heated by hot input air blown into the exhaust channel. Input

air is heated and blown into the exhaust channel by a blower and heater which operate whenever the exhaust



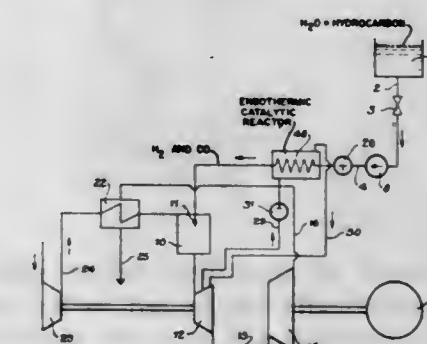
channel temperature falls below a predetermined level, except for short periods during starting of the engine.

**3,462,947**  
**EXHAUST SYSTEM FOR TWO-STROKE ENGINES**  
Klaus Frederick Nowak, 12 Weatherstone Crescent, Willowdale, Ontario, Canada  
Filed Nov. 15, 1968, Ser. No. 776,232  
Int. Cl. F02b 25/00; F01n 1/08  
U.S. Cl. 60—32 4 Claims



An exhaust system for two-stroke engines, wherein a divergent cone and a convergent cone are fitted within a sleeve having ends, so that the converging cone overlies the diverging cone. Sound muffling baffles may be installed beyond and over the outlet end of the converging cone; and a reflector plate may be installed beyond the wide end of the diverging cone.

**3,462,948**  
**CONTINUOUS FLOW COMBUSTION ENGINE**  
Norbert Scholz, Kottgeisering, Germany, assignor to M.A.N. Turbo GmbH, Munich-Allach, Germany  
Filed Sept. 25, 1967, Ser. No. 670,060  
Claims priority, application Germany, Sept. 27, 1966, M 71,072  
Int. Cl. F02c 3/22  
U.S. Cl. 60—39.02 1 Claim



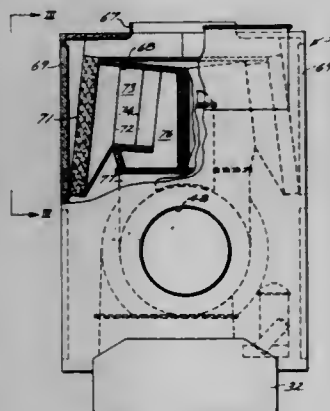
Hydrocarbon fuel and water are mixed and endothermically reacted to form a gaseous fuel composed of carbon monoxide and water. This gaseous fuel is burned and the



combustion gases used to drive a turbine. A portion of the partially expanded combustion gases is taken from between two turbine stages and used to supply the sole heat needed for endothermically reacting the hydrocarbon fuel and water.

### 3,462,949 NOISE REDUCING ENCLOSURE FOR A GAS TURBINE ENGINE

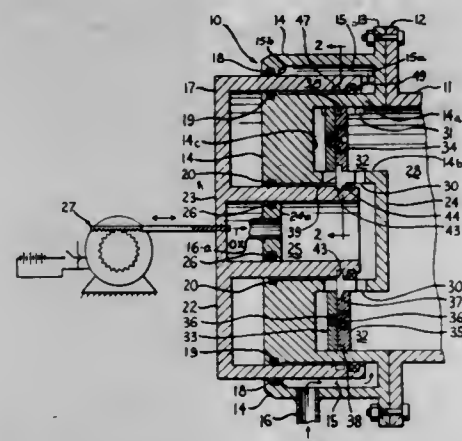
Howard R. Anderson, Marquette Heights, and Philip E. Lambdin and William A. Mitchener, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California  
Original application Sept. 13, 1965, Ser. No. 486,818, now Patent No. 3,418,485, dated Dec. 24, 1968. Divided and this application July 22, 1968, Ser. No. 763,450  
Int. Cl. F02c 7/20, 7/24; F04b 39/12  
U.S. Cl. 60—39.31 3 Claims



An enclosure for a gas turbine engine comprising a silencer for the engine's compressor and a specially configured compressor inlet housing to provide uniform flow free of turbulence or separation. The enclosure comprises inlet duct means for turning the incoming air through a plurality of right-angle bends thus silencing any compressor noise.

### 3,462,950 CONTINUOUS THROTTLING, SLOT INJECTION, VORTEX ROCKET INJECTOR

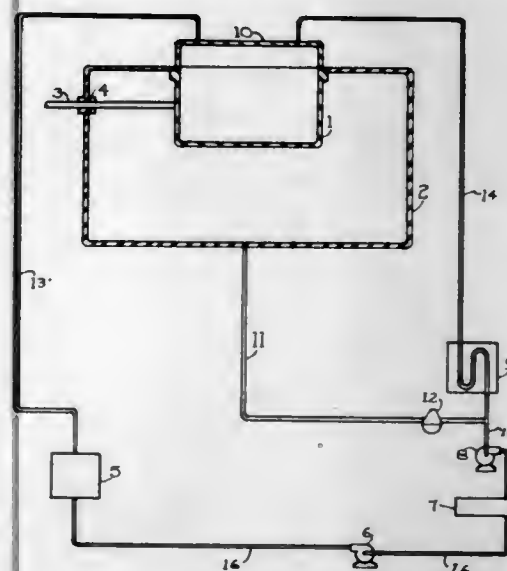
Roger A. Chevalaz, Rockaway, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware  
Filed Mar. 28, 1966, Ser. No. 540,139  
Int. Cl. F02k 9/02; F02g 3/00  
U.S. Cl. 60—39.74 9 Claims



A flow control or throttling device where flow passages are geometrically configured to be opened and/or closed to flow therethrough at a rate proportional to the linear movement of a control element moved over the passages. Included in the invention is provision for one or more control tabs in the flow passages connectable to the control element for movement thereby within the passages.

### 3,462,951 VAPOR ENGINE SYSTEM

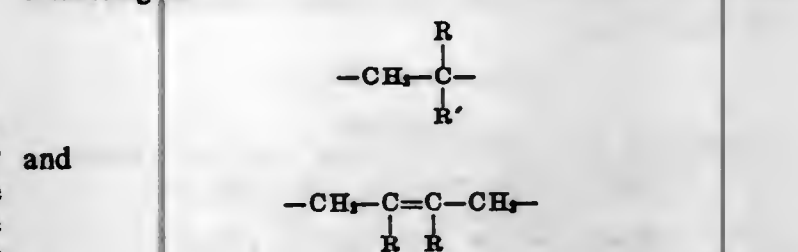
William Arthur Moore, 346 Leming Drive, San Antonio, Tex. 78201  
Filed May 13, 1966, Ser. No. 551,495  
Int. Cl. F01k 25/00, 19/10; F01m 1/12  
U.S. Cl. 60—64 4 Claims



A closed circuit vapor expansion engine system for use as a prime mover. The system includes the prime mover itself having a power output means extending therefrom and a boiler for supplying heat to the working fluid of the prime mover. A condenser means serves to remove the working fluid from the prime mover and is in communication with the boiler so as to resupply it with working fluid. The working fluid such as steam is utilized with a miscible lubricant so as to provide but a single engine fluid thus obviating lubrication and lubricant recovery problems and enhancing engine life. The engine further includes a hermetic casing thereabout for containing pressurized fluid that inherently escapes from the engine such as through the output and valve shafts. By use of a subsystem feed back control the pressure between the engine and casing is maintained at or near ambient pressure, thereby reducing or eliminating to a large degree leaking of working fluid through the seal in the engine hermetic enclosure.

### 3,462,952 ROCKET PROPULSION PROCESS USING IRRADIATED SOLID POLYMERIC PROPELLANT

Gaetano R. D'Alelio, South Bend, Ind., assignor to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware  
No Drawing. Filed Dec. 5, 1958, Ser. No. 778,304  
Int. Cl. F23r 1/18; C06d 5/06; C06b 15/00  
U.S. Cl. 60—219 47 Claims

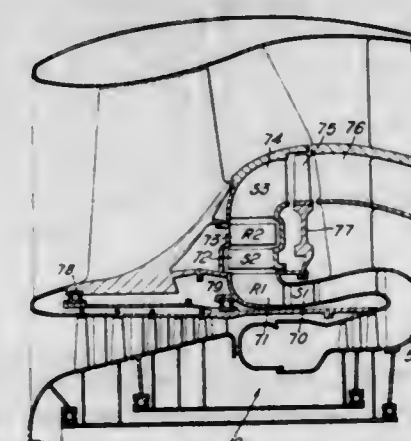


wherein R is selected from the class consisting of hydrogen and the methyl radical and R' is selected from the class consisting of hydrogen and aliphatic, cycloaliphatic and

aromatic hydrocarbon radicals having no more than about 12 carbon atoms therein, in intimate mixture with a metal substance selected from the class consisting of boron, aluminum, beryllium and magnesium metals, their hydrides and derivatives of said hydrides in which each of the substituent groups of said derivatives is selected from the class consisting of aliphatic, aromatic and cycloaliphatic hydrocarbon groups, the metal content of said mixture being about 1 percent to about 70 percent by weight based on the combined weight of said high molecular weight material and said metal substance, the irradiation dosage being at least one megarep and not more than 100 megareps of high-energy, ionizing radiation equivalent to at least about 100,000 electron volts.

### 3,462,953 GAS TURBINE JET PROPULSION ENGINE

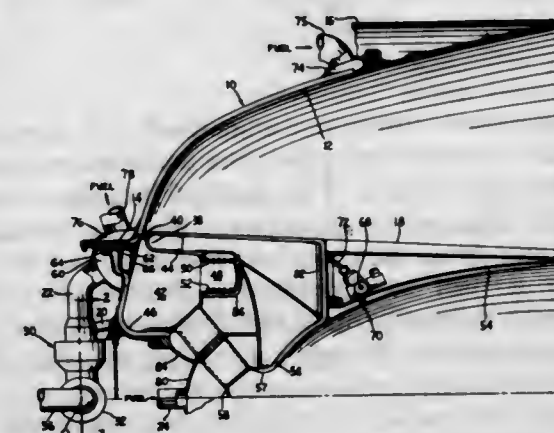
Geoffrey Light Wilde, Cowers Lane, Derbyshire, and Donald Eyre, Alvaston, England, assignors to Rolls-Royce Limited, Derby, England, a British company  
Filed Sept. 5, 1967, Ser. No. 665,350  
Claims priority, application Great Britain, Sept. 17, 1966, 41,603/66  
Int. Cl. F02k 3/12; F02c 3/08  
U.S. Cl. 60—226 5 Claims



A gas turbine jet propulsion engine comprising a gas generator which supplies gases to a turbine, the turbine driving a fan coaxial with and surrounding the gas generator. The turbine has at least one radial flow rotor stage to enable it to take up very little axial space while providing good efficiency.

### 3,462,954 ROCKET THRUST CHAMBER

Victor J. Adams, Jr., Parsippany, Lloyd W. Goldberg, Clifton, and Herbert S. Wolf, Denville, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware  
Filed Mar. 10, 1965, Ser. No. 438,514  
Int. Cl. F02k 1/20; B64c 15/08  
U.S. Cl. 60—228 13 Claims

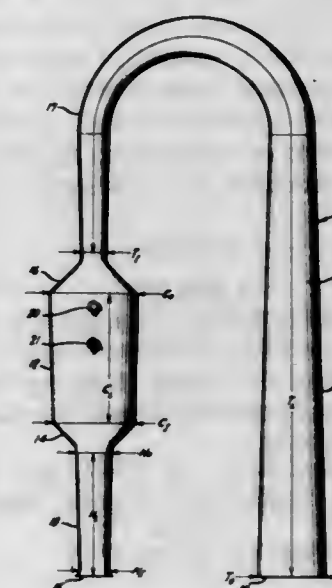


1. The combination with a rocket engine having a hemispherical expansion nozzle and an acorn thrust cham-

ber gimbaled thereon to vary the thrust vector of the exhausted gases when the engine is operating; of a secondary nozzle fixed to said chamber and means for injecting fluid transversely across and within said secondary nozzle to effect a reactive gimbaling of said chamber.

### 3,462,955 PULSE JET ENGINE

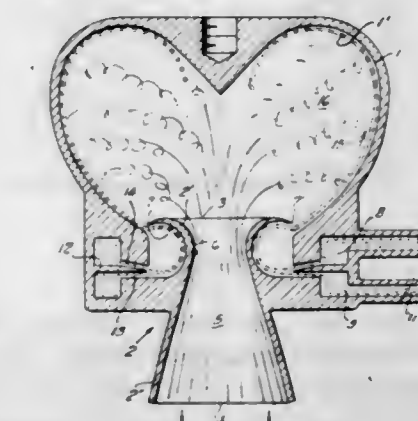
Raymond M. Lockwood and Edward L. Bennett, Los Altos, Calif., and David A. Graber, Menlo Park, Calif., assignors to Fairchild Hiller Corporation, Hagerstown, Md., a corporation of Delaware  
Filed June 29, 1967, Ser. No. 649,876  
Int. Cl. F02k 7/02; F02c 5/00  
U.S. Cl. 60—249 7 Claims



A valveless pulse jet engine comprised of a hollow U-shaped tube having open ends respectively defining inlet and exhaust openings, and being provided with a combustion chamber located intermediate such ends. The engine along its entire length is of non-cylindrical sections, and its performance characteristics are enhanced because of such non-cylindrical configuration.

### 3,462,956 ROCKET DRIVE COOLING ARRANGEMENT

Lutz T. Kayser, 10 am Bismarckturn, 7 Stuttgart, Germany  
Filed Nov. 28, 1967, Ser. No. 686,152  
Claims priority, application Germany, Nov. 29, 1966, K 60,812; Oct. 12, 1967, K 63,584  
Int. Cl. F02k 9/02, 11/02  
U.S. Cl. 60—258 16 Claims



A rocket drive cooling arrangement in which at least one propellant component, i.e., fuel or an oxidizing agent is injected against the concave toroidal outer surface of a



portion of the nozzle projecting into the burner chamber of the rocket drive so that the component flows first along this outer surface and passes then in countercurrent to the hot combustion gases leaving the burner chamber through the nozzle along the inner surface of the burner chamber to thereby cool the nozzle and the wall of the burner chamber.

3,462,957

**PROCESS FOR STORING A GAS IN A COAL MINE**  
Yvon Henri Arthur Loir, 97 Route de Mons,  
Fontaine-L'Eveque, Belgium  
No Drawing. Filed May 1, 1967, Ser. No. 634,824  
Claims priority, application Belgium, May 5, 1966,  
27,715

Int. Cl. E21f 17/16; B65g 5/00

U.S. Cl. 61—5

1 Claim

Process for storing a gas, especially a combustible gas, comprising the introduction of said gas into a gassy coal mine which is previously partially worked and degassed and which is unsaturated with water. This introduction of said gas is effected at a relatively high pressure so as to increase the absorption of said gas in the rocks of the coal deposit, and in particular, the adsorption of said gas by said rocks.

3,462,958

**METHOD OF CAULKING LEAKS IN A NATURAL WATER RESERVOIR**  
Pierre Patin, 58 Rue de Sevres, Boulogne-sur-Seine, and  
Jean Barree, La Frette-sur-Seine, France; said Barree  
assignor to said Patin  
No Drawing. Filed Sept. 12, 1967, Ser. No. 667,079  
Claims priority, application France, Sept. 20, 1966,  
76,908

Int. Cl. E03b 3/15

U.S. Cl. 61—1

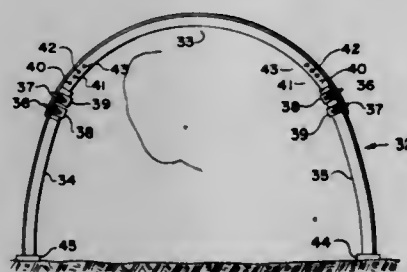
7 Claims

A method of caulking leaks in a natural water reservoir, characterized in that elements in the form of filaments having a density substantially the same as that of the water are suspended in the water in the reservoir, adjacent the zone where there is a leak, whereafter a mixture of a sealing product and the liquid is introduced into said zone.

3,462,959

**DEVICE FOR THE CONTROLLED YIELDING OF AN UNDERGROUND OPENING**  
Richard G. Mallander, Wheatridge, Colo., assignor to  
Shell Oil Company, New York, N.Y., a corporation of  
Delaware  
Filed Dec. 21, 1967, Ser. No. 692,381  
Int. Cl. E21d 11/22; E04c 2/08; F16l 37/08  
U.S. Cl. 61—45

9 Claims



A device for the controlled yielding of an underground opening which opening includes a floor, roof and ribs (or floor, back and walls), the device comprising both roof-supporting means and rib-supporting means adapted to support the roof and ribs of the opening. The roof-supporting means is slidably connected to the rib-supporting means in overlapping relationship and shearing means, extending through one of the supporting

means and comprising a plurality of shear pins of known shear strength and at least one shear pin of substantially greater shear strength, is disposed adjacent the juncture of the side-supporting means with the roof-supporting means and adapted to shear when the roof-supporting means slides with respect to the rib-supporting means. The shear pin of greater shear strength is disposed further from the juncture of the rib-supporting means with the roof-supporting means than the plurality of shear pins.

3,462,960

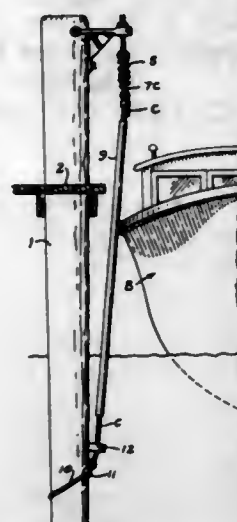
**MOORING DEVICE FOR BOATS**  
Anton Bruehl, Boca Raton, Fla., assignor to Emory L. Groff and Emory L. Groff, Jr., Bethesda, Md., as joint-tenants

Filed Mar. 25, 1968, Ser. No. 715,828

Int. Cl. E02b 3/22

U.S. Cl. 61—48

4 Claims

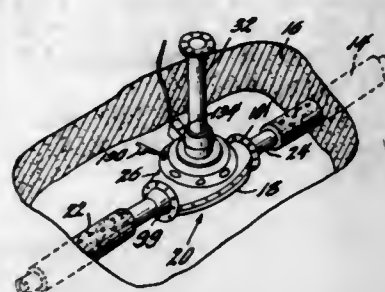


A mooring device for boats wherein a flexible cable is looped about a tapered dock pile at one end while its upper end is spring tensioned to a bracket near the upper end of the pile.

3,462,961

**SUBMARINE PIPELINE REPAIR CHAMBER AND METHOD**  
Daley J. Berard, New Orleans, La., assignor to Houston Contracting Company, Belle Chasse, La., a corporation of Louisiana  
Filed July 5, 1967, Ser. No. 651,264  
Int. Cl. B63b 35/04; B63c 11/36; F16l 1/00  
U.S. Cl. 61—69

17 Claims



The invention comprises a method and apparatus for the repair of submarine pipe lines and for the attachment of a riser pipe thereto. The method includes clamping a segmented chamber to an exposed pipeline portion, evacuating water from the chamber, and repairing the pipe or attaching a riser to the pipeline portion by means of tools operable from without the chamber, having operable members extending through a side wall, into the evacuated chamber. The apparatus includes a chamber of two generally semi-ellipsoidal casings, clamped about the pipeline portion, inlet and outlet means for air under pressure, a rotatable turret on the upper hemi-ellipsoidal casing, ports in the turret for admitting tools into the chamber, the

tools being an electric air welder, or cutting torch, and a split flange on the top of the turret for receiving a riser pipe portion to be welded to the pipeline portion, which flange may be replaced by a tool mount blister for circumferential welding or cutting of the pipeline portion. Additionally, the casings are provided with packing means in their distal ends grasping the pipeline; bearings may be mounted about the packing means allowing free rotation of the chamber about the pipeline portion.

3,462,962

**PREVENTION OF CORROSION OF METAL PIPES PLACED UNDERGROUND**  
Frank Weldon Jensen, 2507 Inwood Place,  
Austin, Tex. 78703

No Drawing. Filed Oct. 27, 1966, Ser. No. 591,391

Int. Cl. F16l 1/00; E02f 5/12; E02d 5/46

U.S. Cl. 61—72.1

2 Claims

The present invention deals with the use of an admixture of naturally occurring soils removed during ditching or trenching operations and 2 to 10 percent of lime by weight as a back fill and filling of the ditch or trench after metal pipe such as used in a pipe line is placed in the trench or ditch and the admixture tamped or compacted. The use of naturally occurring native clays, generally containing some clay materials of the bentonitic type may be employed to the extent of 5 to 20 percent by weight of the admixture of lime and the original soil if there is insufficient clay in the original soil to yield the desired lime-soil reaction to cause the formation of a hard, dense, impermeable condition of the admixture of lime and soil and one in which a high electrical resistance of said admixture also results.

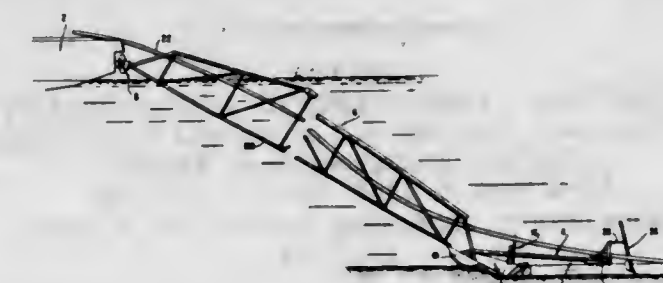
3,462,963

**APPARATUS FOR PIPELAYING AND TRENCHING OPERATIONS IN A BODY OF WATER**  
Warren T. Moore, Anchorage, Alaska, assignor to Brown & Root, Inc., Houston, Tex., a corporation of Texas  
Filed Aug. 2, 1967, Ser. No. 657,802

Int. Cl. B63b 35/04; F16l 1/00; E02f 3/92

U.S. Cl. 61—72.4

16 Claims



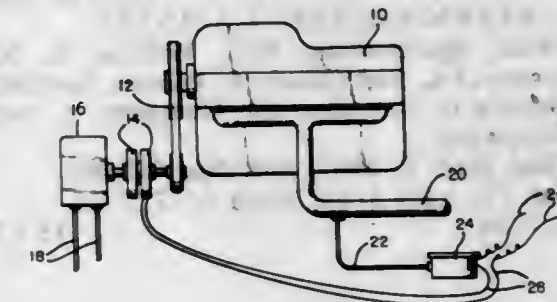
A method of underwater trenching utilizing a floating vessel and which includes the steps of providing ground-engaging means adapted to slide along the bed of a body of water, and adjustably connecting a plow to the ground-engaging means for selective, vertically adjustable movement relative thereto. In additional steps, the plow is moved to extend to a predetermined depth beneath the ground-engaging means and is fixedly secured thereto. The ground-engaging means is connected with the vessel and towed along the bed to cut a trench of predetermined depth. Another method aspect includes the step of providing an eductor to remove detritus from the trench behind the plow and of pivotally mounting the eductor for free swinging motion about a horizontally disposed axis. A further method aspect includes providing a rigid elongate ramp for connecting the ground-engaging means to the vessel and supporting the upper end of the ramp for movement relative to the vessel about one pivotal axis extending transversely of the ramp and two mutually perpendicular rotational axes perpendicular to the pivotal axis.

3,462,964

**AIR CONDITIONER CONTROL MEANS RESPONSIVE TO VEHICLE ENGINE POWER DEMANDS**  
Ralph K. Haroldson, Dallas, Tex.  
(5725 E. 63rd Place S., Tulsa, Okla. 74135)  
Filed Sept. 12, 1967, Ser. No. 667,176  
Int. Cl. B60h 3/04; H01h 35/34

U.S. Cl. 62—133

12 Claims



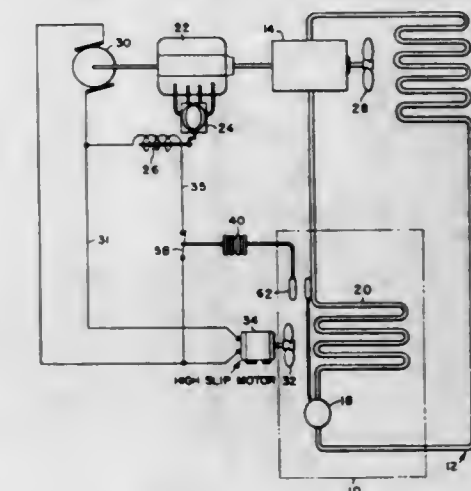
A system for automatically shutting off an automobile air conditioner if the full power of the automobile engine is needed including a vacuum line connecting the automobile intake manifold with a pressure-responsive switch having a flexible, concave cover, a normally open micro switch with its operating button adjacent the concave cover, and operable by inward movement of the concave cover, a set screw for adjusting the position of the micro switch relative to the concave cover in a horizontal direction and a set screw for adjusting the position of the micro switch relative to the concave cover in a vertical direction, a source of electrical power leading to the pressure-responsive switch, a source of electrical power passing from electrical switch to the operating clutch of an air-conditioning compressor and an operative connection between the clutch and the air conditioner compressor. In an alternate arrangement, an arm is connected to the accelerator and the arm is positioned to compress the concave cover of the switch when the accelerator is approaching the full power position.

3,462,965

**FAN SPEED CONTROL FOR REFRIGERATION SYSTEM**  
Robert G. Miner, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin  
Filed Aug. 19, 1968, Ser. No. 753,546  
Int. Cl. F25b 27/00; F25d 31/00

U.S. Cl. 62—180

6 Claims

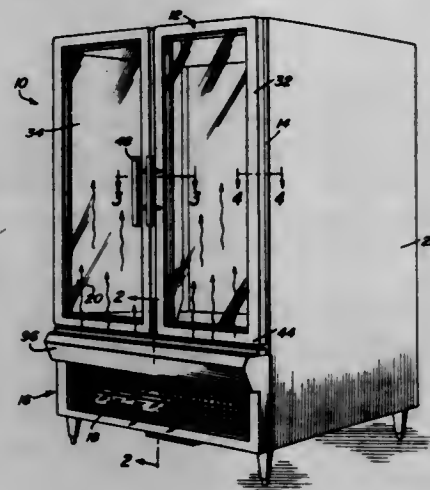


A refrigeration system is powered by an internal combustion engine. The capacity of the refrigeration system is varied by varying the speed of the engine. The evaporator fan of the refrigeration system is driven by an alternating current motor which derives its power from an alternating current generator driven by the engine. The frequency and voltage of the alternating current varies



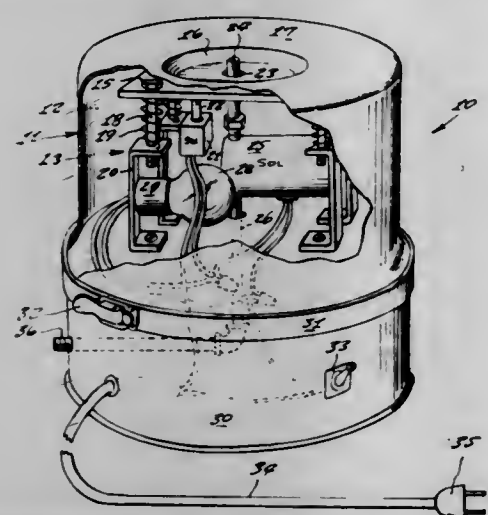
directly with the speed of the engine and generator. The evaporator fan motor is of the high slip class whereby it maintains relatively uniform speed despite the relatively large variations in the speed of the engine and generator.

**3,462,966**  
**CONDENSATION REMOVING MEANS FOR REFRIGERATED CABINETS**  
Philip L. Reid, Spartanburg, S.C., William E. Kallas, Punksutawney, Pa., and Claude A. Wilson, Spartanburg, S.C., assignors to Beverage-Air Company, a corporation of Delaware  
Filed Dec. 5, 1967, Ser. No. 688,065  
Int. Cl. A47f 3/04; E06b 7/12, 7/28  
U.S. Cl. 62-248 15 Claims



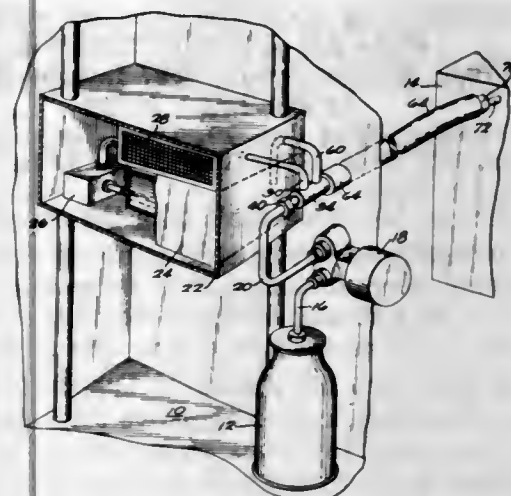
A refrigerated cabinet is provided with facilities for establishing an air curtain in front of its opening to prevent condensation on its glass door panels when closed and entry of warm air into the refrigerated space when opened. Condensate collected within a pan is also evaporated by the flow of air from which the air curtain is established to eliminate the need for any condensate drain.

**3,462,967**  
**GLASS CHILLER WITH ILLUMINATING MEANS**  
Ralph D. Pramkar, 1710 Pittsburgh St.  
Cheswick, Pa. 15024  
Filed Jan. 26, 1968, Ser. No. 700,864  
Int. Cl. F25d 27/00, 3/10  
U.S. Cl. 62-264 4 Claims



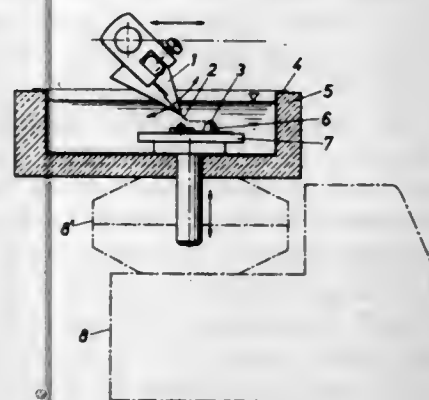
A device for chilling drinking glasses, the device including a mechanism for delivering carbon dioxide under pressure through a condensing coil within a cooling box which is then delivered to the inner surface of a wet drinking glass.

**3,462,968**  
**FREEZER WITH REMOTE REFRIGERATED SUPPLY AND DELIVERY AND COOLING CONDUIT THEREFOR**  
Ruben W. Puta, St. Nazianz, and Carl R. Stoelting, Kiel, Wis., assignors to Stoelting Brothers Company, Kiel, Wis., a corporation of Wisconsin  
Filed Sept. 13, 1968, Ser. No. 759,611  
Int. Cl. F25c 7/08; F28f 7/00  
U.S. Cl. 62-348 7 Claims



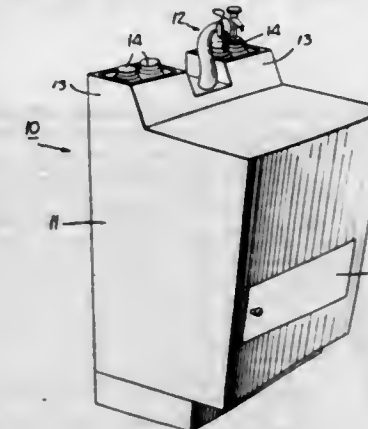
The supply of mix for the soft serve freezer is retained in the cooler and pumped to the freezer on demand. The hose through which the mix is supplied to the freezer is cooled by pumping cold water from the sump in the cooler through cooling coils and thence to the space between the ribbed tube surrounding the mix hose. The cold water flows to the delivery end of the mix tube and is returned on the outside of the ribbed tube in the space between the ribbed tube and the outside hose. Maximum water pressure is selected to be below the minimum mix pressure so any leakage can only be from the mix to the water. The couplings are designed to exert maximum pressure on the coupled hose at the inner extremity of the coupling to prevent the mix from creeping between the coupled hose and the fitting.

**3,462,969**  
**MICROTOME USING LIQUID REFRIGERANT**  
Fritz Grasenick, Wolfgang Geymayer, and Adolf Aldrian, all of 17 Steyrergasse, Graz, Austria  
Filed Sept. 5, 1967, Ser. No. 665,394  
Claims priority, application Austria, Sept. 8, 1966, A 8,471/66  
Int. Cl. B26d 4/50  
U.S. Cl. 62-373 4 Claims



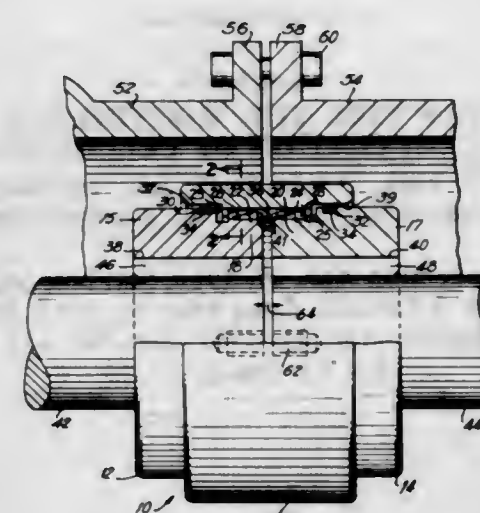
An apparatus for preparing refrigerated cut specimens for microscopical examination with a container, in which the specimen is carried by a supporting plate and submerged in a liquid refrigerant. Within the said refrigerant there is also arranged a microtome knife.

**3,462,970**  
**PORTABLE SODA FOUNTAIN**  
Howard Natter, 185 Grandview Blvd.,  
Yonkers, N.Y. 10710  
Filed Mar. 18, 1968, Ser. No. 713,738  
Int. Cl. B67d 5/62; F25d 17/06  
U.S. Cl. 62-392 6 Claims



The portable soda fountain is capable of home use and can be run on ordinary house current. The water tank is maintained at a substantially constant cool temperature to ensure quality mixing of the carbon dioxide and water in the coils while the coolant circuit is constructed with the ice bank system and refrigeration coil in series.

**3,462,971**  
**FLEXIBLE GEAR COUPLING**  
Samuel Kaufman, Tappan, N.Y., and Herbert A. Conrad, Old Tappan, N.J., assignors to Sier-Bath Gear Co., Inc., North Bergen, N.J., a corporation of New Jersey  
Filed Apr. 1, 1968, Ser. No. 717,574  
Int. Cl. F16d 3/18  
U.S. Cl. 64-9 7 Claims

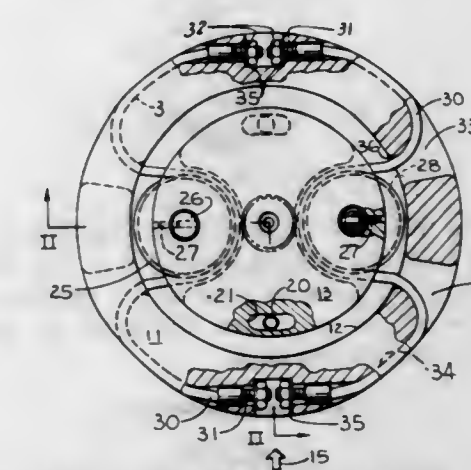


This invention relates to flexible shaft couplings, particularly of the self-aligning gear type, which can be used in enclosed or generally inaccessible places.

**3,462,972**  
**CABLE COUPLING**  
George A. Carlson, Dale E. Weller, and Shellie O. Williamson, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California  
Filed Jan. 10, 1968, Ser. No. 696,823  
Int. Cl. F16d 3/54 4 Claims

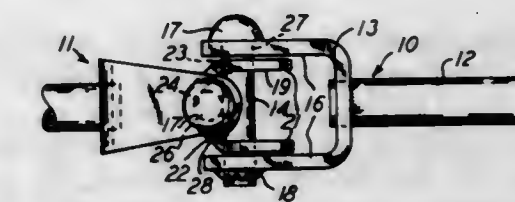
An improved wire rope or cable coupling for isolating vibrations when transmitting torques between adjacent shafts coupled with the novel coupling, employs an

outer housing having a circular recess therein and provisions to connect it to one of the shafts, an inner circular unit adapted to fit in the circular recess and having provisions for connecting it to the other shaft, said inner circular element having a plurality of freely rotating sheaves by which the inner circular unit is suspended



within the circular recess on loops of a cable suspension system which has the ends of the cables adjustably anchored in the outer housing. Stops can be provided between the outer housing and inner unit to limit relative rotation resulting when excess stretching of the cable suspension system occurs from temporary overloads.

**3,462,973**  
**UNIVERSAL COUPLING**  
Phillip G. Venable, Orion, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin  
Filed Apr. 29, 1968, Ser. No. 724,778  
Int. Cl. F16d 3/48 11 Claims



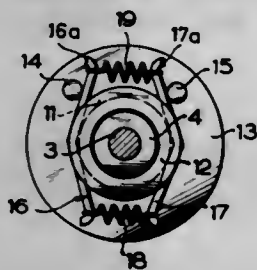
A universal coupling including a driving member and a driven member with connecting pieces between the members for transmitting rotation from one member to the other. The connecting pieces include pin portions on the respective two members, and they include a connector which connects the pins together. The connector is U-shaped, and it provides the necessary openings for receiving the two pins.

**3,462,974**  
**FRICTION-TYPE COUPLING**  
Wolfgang Riedel, Winnenden, and Siegbert Luz, Neustadt, Germany, assignors to Robert Bosch Elektronik und Photokino G.m.b.H., Stuttgart, Germany  
Filed Dec. 27, 1967, Ser. No. 693,840  
Claims priority, application Germany, Jan. 7, 1967, B 90,645  
Int. Cl. F16d 7/02 10 Claims

A friction-type coupling wherein a rotary driving part transmits torque to a coaxial rotary driven part through the intermediary of a unit comprising two mirror symmetrical shoe members extending into a circumferential groove of the driving part opposite each other and having their end portions articulately coupled with two connecting members. The shoe members consist of elastomeric material if the connecting members are rigid or vice versa.



and the elastomeric members are installed under initial stress so that the median portions of shoe members are biased against the surface bounding the groove and normally share rotary movements of the driving part. The



unit including the shoe members and connecting members is connected with the driven part so that the latter rotates when the friction between the shoe members and the driving part suffices to cause the unit to share rotary movements of the driving part.

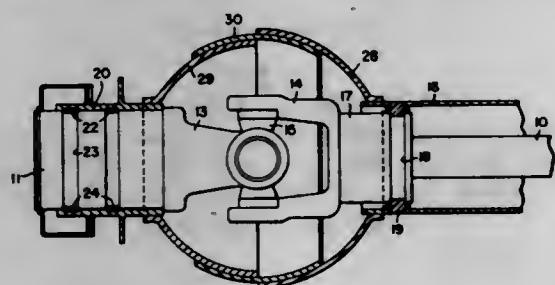
### 3,462,975 SHIELDING MECHANISM

Arnold Burton Skromme, Moline, Etar August Henningsen, Geneseo, and John E. Hoffman, Jr., Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Apr. 6, 1967, Ser. No. 628,966  
Int. Cl. F16d 3/84

U.S. Cl. 64—32

4 Claims



A shielding device for a universally articulated joint connecting two rotatable shafts and comprising a first spherical shield section mounted to articulate with one of the shafts, a second spherical shield section mounted to articulate with the second of the shafts, the two shield sections opening toward one another with one being smaller than the other so that it may move internally of the other, and a third spherical shield section disposed within the radial gap between the other shield sections whereby a portion of the third section will underlie a larger of the spherical shield sections and overlie the smaller of the spherical shield sections.

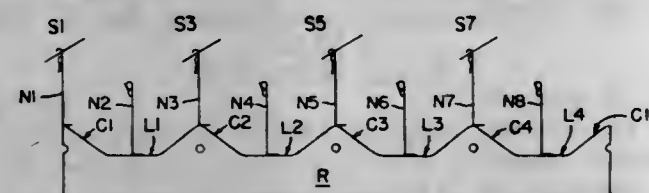
### 3,462,976 MACHINE AND METHOD OF KNITTING A REINFORCED TUBULAR COVER OVER A FLEXIBLE HOSE OR THE LIKE

John Greczin and Roy D. Faigenbaum, both of 7312 School Lane, Melrose Park, Philadelphia, Pa. 19126

Filed Jan. 2, 1968, Ser. No. 695,051  
Int. Cl. D04b 9/06

U.S. Cl. 66—9

3 Claims



A tubular fabric formed of alternate needle wales and intermediate, un-knit connecting wales and lay-in, or wrap-around yarns which pass in front of the loops of the needle wales and behind the loop of the connecting yarns.

### 3,462,977 DYE SETTING MACHINE

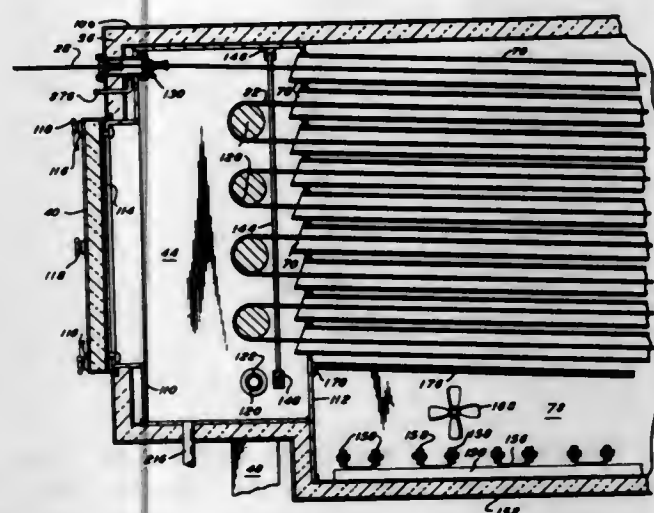
Jacob Serbin, Cedarbrook Hill Apartments, Wyncote, Pa. 19095

Continuation of application Ser. No. 380,740, June 19, 1964. This application May 28, 1968, Ser. No. 732,576

Int. Cl. D06f 37/00

U.S. Cl. 68—5

26 Claims



A machine for treating fabrics comprising an entrance chamber, an exit chamber, and a plurality of conduits connecting said entrance and exit chambers. The conduits are in fluid communication with the entrance and exit chambers, and the fabric follows a tortuous path through said conduits by passing from said entrance chamber through one of said conduits to the exit chamber, around a roller in the exit chamber, back through a second of the conduits to the entrance chamber, and back through a third of the conduits to said exit chamber.

### 3,462,978

#### APPARATUS FOR THE CONTINUOUS VAPOR PHASE ACETYLACTION OF CELLULOSE FIBER

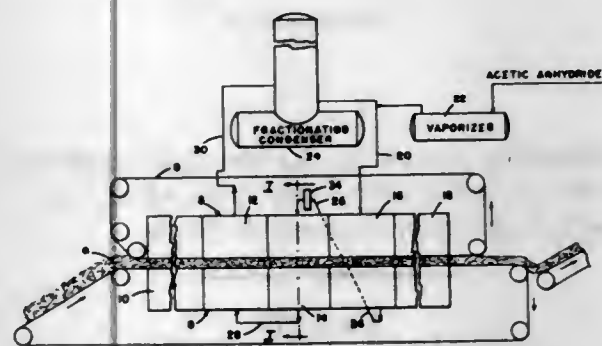
Frederick J. Hill, Wallingford, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

Original application Apr. 27, 1964, Ser. No. 362,770, now Patent No. 3,320,022, dated May 16, 1967. Divided and this application Apr. 21, 1967, Ser. No. 632,633

Int. Cl. D06m 13/20

U.S. Cl. 68—5

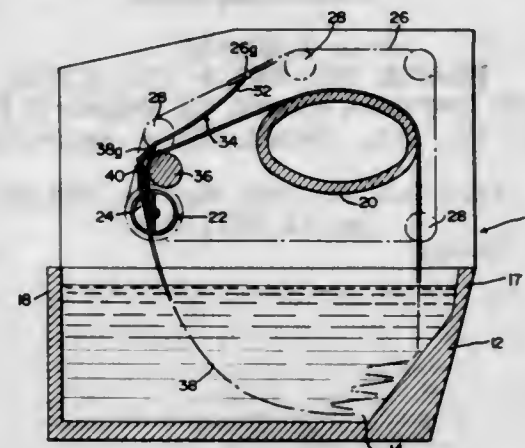
5 Claims



An apparatus for the continuous vapor phase acetylation of cellulose fiber whereby means for conveying cellulose fiber through a multi-stage acetylating zone and means for subjecting the fiber to a controlled counter-current flow of an acetylating gas are provided is disclosed herein.

3,462,979  
OVERFEED PREVENTION MEANS IN A SPIRAL DYE BECK OR THE LIKE  
George Edward Ziegler, Balloch, Alexandria, Scotland, assignor to United Merchants and Manufacturers, Inc., New York, N.Y., a corporation of Delaware  
Filed Apr. 19, 1968, Ser. No. 722,668  
Int. Cl. B65h 75/02; B05c 3/152  
U.S. Cl. 68—176

6 Claims



A guide which is perpendicularly disposed in front of a horizontal idler reel above the first pocket in the spiral guide of a rope form fabric helix forming and liquid treating apparatus, of the type disclosed in Ziegler et al., Patent No. 3,308,639, granted Mar. 14, 1967, for the purpose of supporting the leading end of a new loop being formed and keeping it out of contact with the idler reel, which is traveling at a greater speed than the new loop, and feeding it to the main driving reel which then takes over movement of the new loop, at which time such new loop travels at the same speed as the previously formed loops, whereby the danger of overfeeding is obviated.

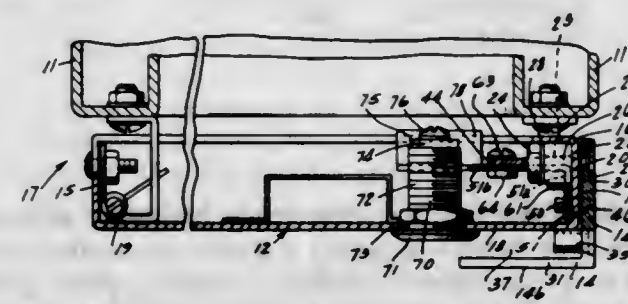
### 3,462,980

LATCHING DEVICE FOR CABINETS  
Lawrence J. Fay, Elgin, Ill., assignor to Equito Electronics Corporation, Aurora, Ill., a corporation of Illinois  
Continuation-in-part of application Ser. No. 674,204, Oct. 10, 1967. This application Feb. 12, 1968, Ser. No. 707,378

Int. Cl. E05b 65/44; E05c 1/06, 1/12

U.S. Cl. 70—81

11 Claims

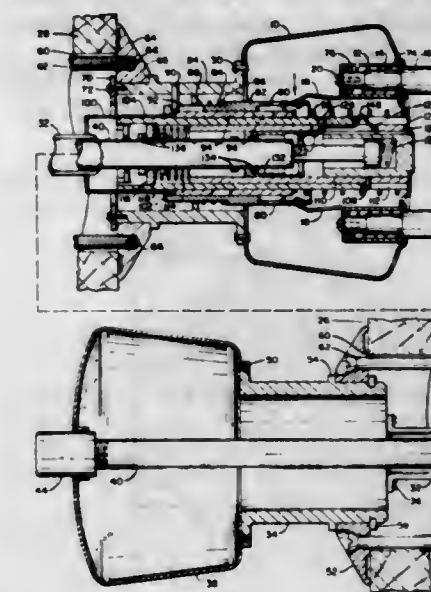


A cabinet door latch mechanism having a pivotable handle which carries a pin having at least a portion thereof interior of the cabinet door, which pin is moved through an arc by pivotably swinging the handle and which engages a lift bar to move the lift bar in a plane parallel to the plane of the cabinet door. The lift bar is fixedly attached to a latch bar and the pin is spaced from the pivotable connection so that pivoting the handle moves the pin to move the lift bar for the purpose of lifting the latch bar off of latches carried by the cabinet body to permit the door to open. A lock mechanism is provided to prevent the lift bar from being moved when it is desired to lock the cabinet.

3,462,981  
COMBINATION LOCK MECHANISM  
Edward H. LeBlanc, Cromwell, Conn.  
(2944 Hopkins Ave., Redwood City, Calif. 94062)  
Filed Feb. 1, 1967, Ser. No. 613,168  
Int. Cl. E05b 37/16

U.S. Cl. 70—156

12 Claims



A pushbutton combination lock mechanism having axial elements which are acted upon by pressing the pushbuttons in proper sequence and thereby causing engagement of a latch plunger and latch actuator to open the lock mechanism, and the automatic resetting of these axial elements when the wrong pushbutton is pressed during any time of the combination cycle.

### 3,462,982

#### AUTOMOTIVE ANTITHEFT DEVICE

William A. Moore, 52 Hancock St., Lexington, Mass. 02173

Filed June 5, 1967, Ser. No. 643,442  
Int. Cl. B60r 25/02; B62h 5/04

U.S. Cl. 70—209

6 Claims



An automotive antitheft device wherein a bar is placed across the diameter of a steering wheel of an automobile and locked in place to severely limit any motion of the wheel. A bracket is affixed to the bar for engaging one portion of the steering wheel while a movable bracket, which may be located in any one of a plurality of positions, engages the diametrically opposed portions of the



steering wheel and is locked in place. An extension of the bar extends substantially below the lowest portion of the steering wheel and terminates adjacent the seat, preventing anyone from getting into the car, sitting behind the steering wheel and operating the controls, unless the locking device is removed.

3,462,983

**PIN TUMBLER LOCK ASSEMBLY**

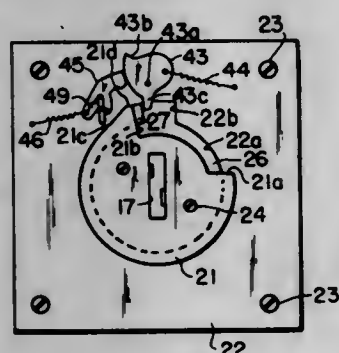
Michael A. Evanish, 3561 E. Court,  
Pittsburgh, Pa. 15205

Filed Nov. 9, 1966, Ser. No. 593,015

Int. Cl. E05b 25/00, 35/08, 27/00

U.S. Cl. 70—383

11 Claims



A key-operated tumbler element locking mechanism has been devised to selectively utilize a plurality of operating keys, including a master key. The mechanism is constructed to be released for resetting to use a second operating key by a reset control key which moves the lock from a locking position to a resetting position and back to the locking position. Thereafter, a first operating key for which the lock has been set is inserted and is employed to turn the mechanism from its locking position to and past its unlocking position to a second or final resetting position. At the latter position, the second operating key is introduced and thereafter utilized for moving the mechanism between normal unlocking and locking positions.

3,462,984

**SAFETY LOCK**

Antonio Soler Marti, Juan Soler Marti, Jose Soler Marti,  
and Mario Soler Marti, all of Aldana 3, Barcelona,  
Spain

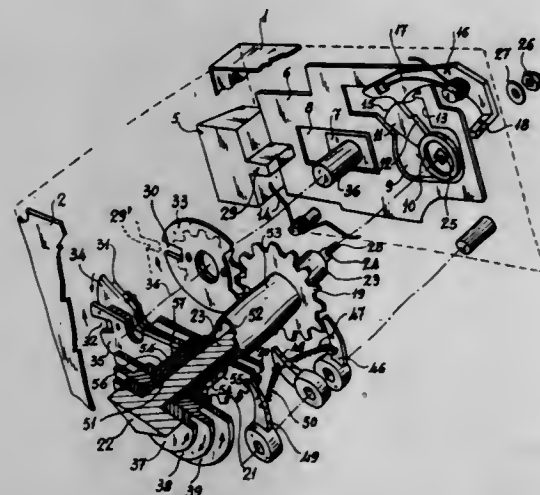
Filed Apr. 28, 1967, Ser. No. 634,671

Claims priority, application Spain, May 11, 1966,  
326,591

Int. Cl. E05b 37/02, 37/00

U.S. Cl. 70—310

5 Claims



A combination lock is described which utilizes a first series of toothed wheels actuated by combination setting discs. A second series of wheels each of which has a

notched plate attached thereto is operatively associated with the first series. The notches correspond to a protuberance on the bolt such that the protuberance will fit into the notches on the second series of wheels when all of the notches are in alignment. The second series of wheels is laterally moveable to disengage the two sets of wheels so that a combination can be set without the requirement for internal access into the lock.

3,462,985

**PLANE OF BEND SELECTOR**

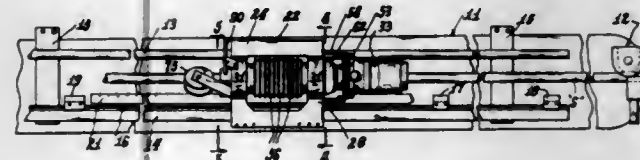
Constantin Troyanski, Aurora, Ill., assignor to Pines Engineering Co., Inc., Aurora, Ill., a corporation of Illinois

Filed Feb. 26, 1968, Ser. No. 708,283

Int. Cl. B21j 7/26

U.S. Cl. 72—22

10 Claims



Apparatus for indexing the spacing and plane of each of a plurality of bends to be performed by a bending machine on a length of tubular stock or the like.

3,462,986

**BRAKE ACTUATOR**

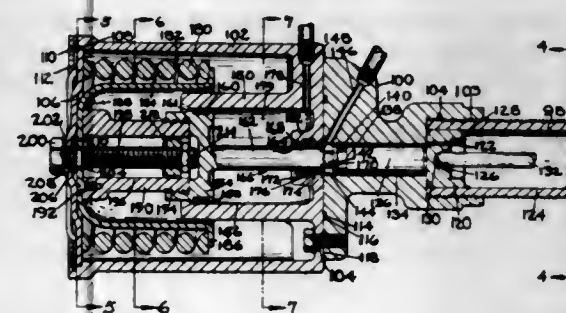
Frank T. Cox, Jr., Ashtabula, Richard L. Powers, Cincinnati, and William J. Williams, Ashtabula, Ohio, assignors, by mesne assignments, to Rockwell-Standard Company, Pittsburgh, Pa., a corporation of Delaware

Filed Oct. 26, 1967, Ser. No. 678,279

Int. Cl. F01b 7/00

U.S. Cl. 92—63

9 Claims



A combined service and emergency hydraulic actuator for wedge type brakes in which a hydraulic service actuator and a spring motor including a hollow spring guide providing power for emergency brake actuation are coaxially arranged with a motion transmitting hydraulic motor interposed therebetween and normally operative to maintain the spring motor disengaged from the service actuator.

3,462,987

**METHOD OF MANUFACTURING CLOSED END TUBULAR PRODUCTS**

Axel E. Westin, Milwaukee, Wis., assignor of thirty percent to Elwin A. Andrus, Milwaukee, Wis.

Filed May 15, 1967, Ser. No. 638,424

Int. Cl. B21b 19/04

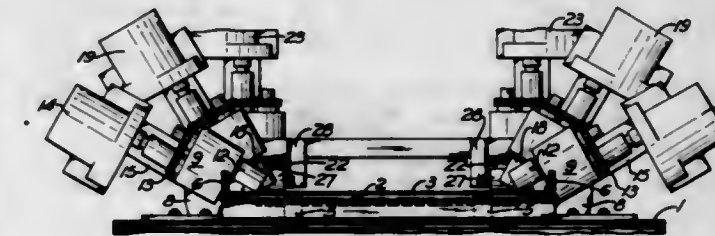
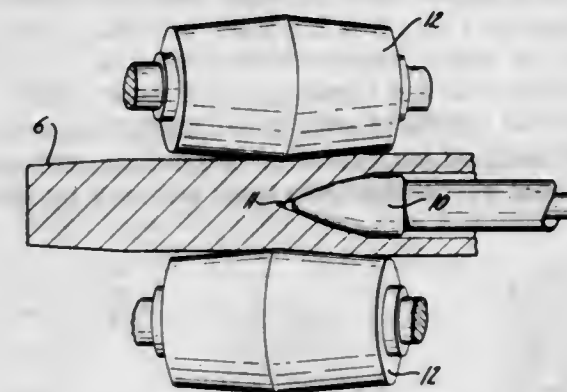
U.S. Cl. 72—97

3 Claims

The piercing of a heated billet to a point short of the trailing end to leave the end closed and free from the

usual incipient piercing crack or rupture, by initially reducing the diameter of the trailing end so that the rolls lose their traction upon the blank prior to reaching the

successive set is disposed at a steeper angle to complete the flanges during a single pass through the machine. In



the same manner the flanges can be provided with lips extending at an angle thereto.

end, and a zone of gradual reduction in roll pressure is provided that substantially eliminates the crack or rupture by the time the piercing operation terminates.

3,462,988

**ANCHOR SETTING TOOL**

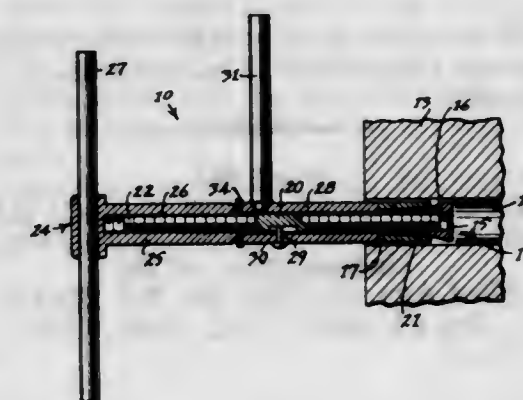
Robert H. Tudor, deceased, late of Nashville, Tenn., by Dulcie O. Tudor, administratrix, Nashville, Tenn., and Dulcie O. Tudor, 1319 Riverwood Drive, Nashville, Tenn. 37216

Filed Feb. 21, 1968, Ser. No. 707,337

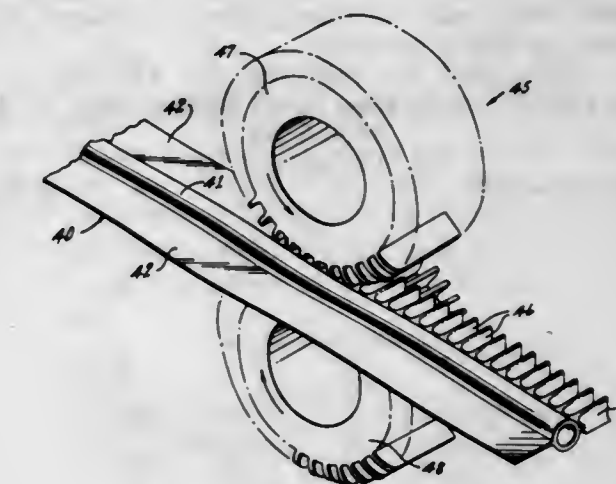
Int. Cl. B21j 15/12; B21d 9/05, 31/00

U.S. Cl. 72—114

5 Claims



A tool for setting an anchor of the type including an internally threaded tapered nut receiving an expandable sleeve, the tool comprising a shaft having a threaded remote end for engaging the nut and a threaded proximal end threadedly received in a tubular handle member, a tubular sleeve coaxially receiving the shaft between the tubular handle member and the remote end of the shaft and connected thereto for nonrotational, limited axial movement, and a handle for turning the sleeve.



Meshing gear members have teeth adapted to cooperatively act upon a flange of a tubular workpiece so as to divide it to form fins, twist the fins, and draw and iron the fins, thereby increasing their surface area while decreasing their thicknesses.

3,462,989

**SHEET-FLANGING MACHINE**

Harry F. Fischer, Jr., Pittsburgh, Pa., assignor to Zedco Co., Inc., Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 22, 1967, Ser. No. 625,155

Int. Cl. B21d 5/08

U.S. Cl. 72—178

11 Claims

A sheet of metal is moved along a horizontal support, during which the side portions of the sheet are bent upwardly by at least one set of plain cylindrical bending rolls forming passes inclined upwardly and outwardly from the sheet and having open lower ends for receiving the edges of the sheet. If only one set of rolls is used, consisting of two pairs of cooperating rolls, the pairs can be adjusted to different angles to progressively bend up the marginal portions of the sheet during successive passes of the sheet. If more than one set of rolls is used, each

3,462,991

**COMBINED EXTRUSION RESIDUE RECEIVER AND BILLET GUIDE FOR METAL EXTRUSION PRESS**

Akira Asari, Osaka, Japan, assignor to Kobe Steel Ltd., Kobe, Japan

Filed Jan. 5, 1967, Ser. No. 607,423

Claims priority, application Japan, Jan. 19, 1966,  
41/3,225

Int. Cl. B21c 35/00

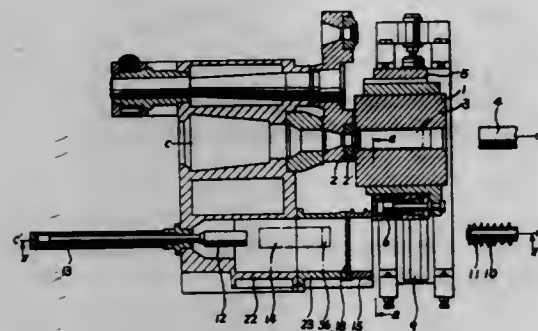
U.S. Cl. 72—257

4 Claims

This invention relates to an extrusion residue receiver means particularly having a billet guide associated therewith for the so-called double work center line type metal extrusion press having a preparatory-work center line in addition to the extrusion center line, wherein after the completion of extrusion and cutting of the extruded material, a billet container which is now on the extrusion center line is moved to the preparatory-work center line



together with a novel combined residue receiving cup-shaped cover and billet guide where the extrusion residue and dust such as lubricant and scale remaining in said con-



tainer are removed therefrom into said cup-shaped cover and a fresh billet is charged into said container aided by said billet guide.

3,462,992

## TUBE DRAWING MACHINES

Samuel Hugh Richards, Crook, and Norman D. Benson, Wolsingham, Bishop Auckland, England, assignors to Marshall Richards Machine Company Limited, Crook, England, a British company

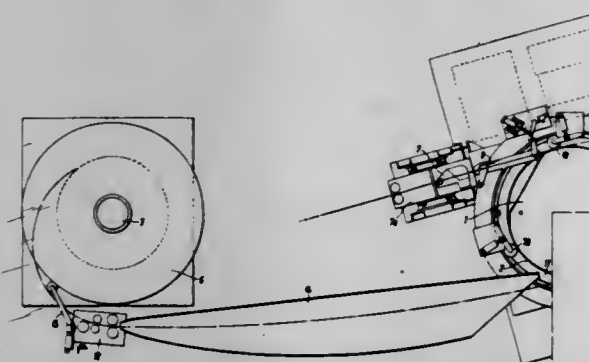
Filed Sept. 14, 1966, Ser. No. 579,322

Claims priority, application Great Britain, Sept. 20, 1965, 39,966/65

Int. Cl. B21c 1/10

U.S. Cl. 72—280

6 Claims



A tube drawing machine having a drawing block, a spool on each side of the drawing block which alternately functions as a pay-out reel and a take-up reel and dies between the drawing block and spools in alignment with tangents to diametrically opposed points on the surface of the drawing block. The drawing block is rotated in one angular direction and is selectively operable for drawing tubing through each of the dies from one of the spools, which thereby functions as the pay-out reel, onto the other spool, which thereby functions as the take-up reel.

3,462,993

## MACHINE FOR THE DRAWING OF SUPERFINE WIRE

Joseph V. O'Grady, Locust, N.J., assignor to Syncro Machine Company, Perth Amboy, N.J., a corporation of Delaware

Filed July 29, 1966, Ser. No. 568,867

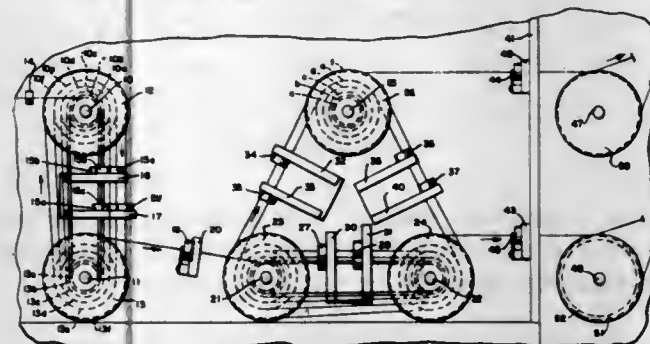
Int. Cl. B21c 1/08

U.S. Cl. 72—289

7 Claims

A wire drawing machine of the step-cone type having two capstan shafts and a capstan roller shaft, the capstans of each capstan shaft comprising a series of

capstans of increasing diameters fixed to the shaft, the increase in diameter of a successive capstan relative to a preceding capstan being proportioned in the usual manner to care for wire elongation resulting in drawing the wire to a smaller cross-sectional area equal to a standard gauge-size (e.g., B & S gauge) reduction and the capstans of the second capstan shaft being of increasing diameters such that the capstans of the second shaft operate at peripheral speeds relative to corresponding capstans of the first shaft which care for elongations corresponding to fractional gauge-size reductions whereby by selectively



placing dies between successive capstans of the first shaft, the wire first also passing over a roller of the capstan roller shaft, full gauge-size reductions are made, and by selectively placing fractional gauge dies between corresponding capstans of the first and second capstan shafts and complementary fractional gauge-size dies between the second and first capstan shafts, fractional reductions equal to a full gauge-size reduction occur. The three shafts are preferably arranged in a triangular formation and the complementary fractions of gauge-size reduction are preferably one-half.

3,462,994

## RELIEF VALVE WITH INDICATOR

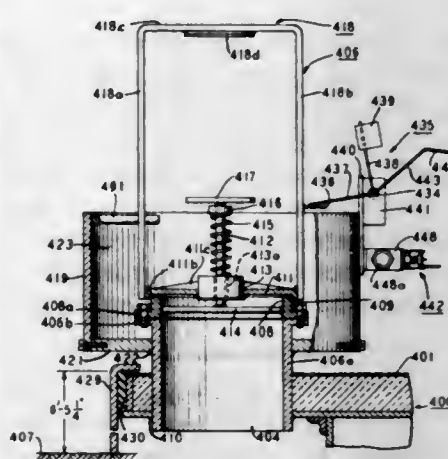
Charles L. Maust, 45 Blackburn Place, Summit, N.J. 07901

Filed Aug. 29, 1966, Ser. No. 581,412

Int. Cl. G01l 27/02; F27b 37/46

U.S. Cl. 73—4

9 Claims



A pressure relief valve system for mounting atop a potentially explosive combustion chamber which comprises a number of coordinated safety features. These include an upwardly extending guard element surrounding the mouth of the valve concentrically to form an annular chamber open only at its upper end, for directing the emerging products of an explosion above the heads of adjacent personnel. A salient feature is the provision of an operations target pivotally mounted across the open end of the guard which, upon the occurrence of an explosion, is flipped over to display an indicator, and to simultaneously contact a microswitch which closes circuits for performing one or

more functions, such as sounding alarms, flashing signal lights, and closing down operation of the malfunctioning combustion system. Means, including a vertically extending power jack, are also provided for in-place tests of the force necessary to dislodge the valve head from the valve seat.

3,462,995

## AERIAL PROSPECTING

Oscar Weiss, 26 Lisdale, Sea Point, Cape Town,

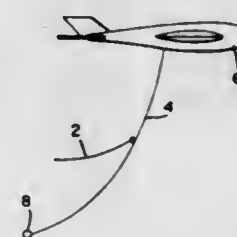
Cape Province, Republic of South Africa

Filed Sept. 27, 1967, Ser. No. 671,005

Int. Cl. G01n 31/00

U.S. Cl. 73—28

10 Claims



Airborne mineral particles are collected with high efficiency, in the course of mineral prospecting by correlation of airborne particle position to particle analysis and concentration, upon threads of nylon or other synthetic fibers towed from aircraft.

3,462,996

## MECHANISM FOR HANDLING AND TESTING CONTAINERS

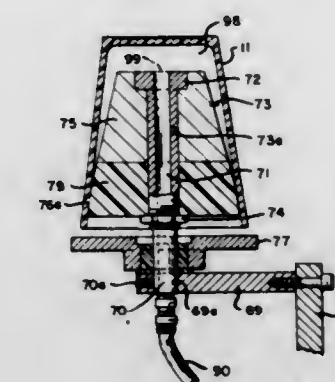
Alan I W Frank, Pittsburgh, Pa., assignor to The Alan I W Frank Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Original application June 29, 1965, Ser. No. 468,005, now Patent No. 3,351,388, dated Nov. 7, 1967. Divided and this application Apr. 15, 1966, Ser. No. 558,525

Int. Cl. G01m 3/04

U.S. Cl. 73—45.3

10 Claims



Vacuum testing mechanism for containers open at one end and closed at the other end comprising a testing element having a container receiving member to which a container being tested is applied, the container receiving member being shaped to provide space between it and the container, means for exhausting air from the space between the container receiving member and the container to cause the container to remain applied to the container receiving member by vacuum if the container is free from leaks and means acting only a predetermined time after air has been exhausted from the space between the container receiving member and the container for applying a counterforce of sufficient magnitude to separate the container from the container receiving member if the container has a leak.

3,462,997

## LIQUID METAL MONITORS

Peter Francis Roach, Warrington, and Daniel Fraser Davidson, Altrincham, England, assignors to United Kingdom Atomic Energy Authority

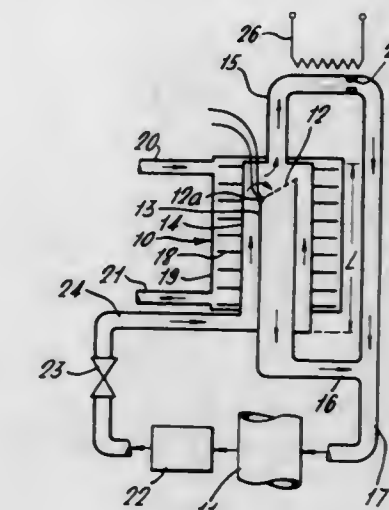
Continuation-in-part of application Ser. No. 492,378, Oct. 4, 1965. This application Mar. 20, 1967, Ser. No. 624,387

Claims priority, application Great Britain, Oct. 26, 1964, 43,659/64; Mar. 29, 1966, 43,731/66

Int. Cl. G01n 11/00

U.S. Cl. 73—61

6 Claims



A liquid metal monitor for estimating an impurity in a liquid metal stream and having an orifice in a liquid metal flow path, which orifice can be at least partially plugged by precipitate from liquid metal in the flow path. At the orifice, liquid metal flow is divided into two parts so that subsequently one of the parts passes through and the other part bypasses, the orifice. The liquid metal stream upstream of the orifice is maintained in counter-current heat transfer relationship with, but separate from, the stream passing through the orifice to prevent complete plugging of the orifice.

3,462,998

## INERTIAL PUMP SEISMOMETER

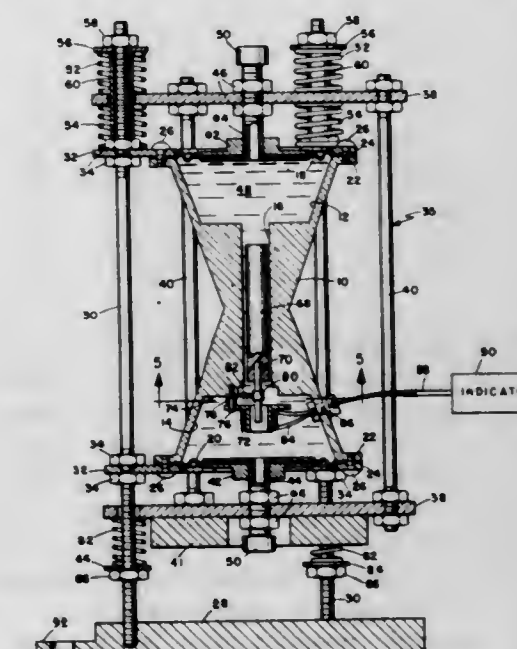
George W. Elder, 925 Rosecrans, San Diego, Calif. 92106

Filed May 18, 1966, Ser. No. 551,111

Int. Cl. G01n 9/18

U.S. Cl. 73—71.2

6 Claims



An inertial pump seismometer in which an inertial mass drives opposing diaphragms closing the ends of a hollow body with a restricted passage and a fluid which is accelerated through said passage on movement of the body

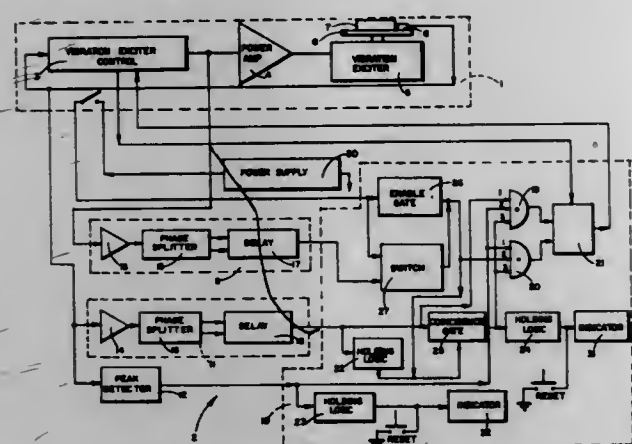


relative to the inertial mass, driving a float in the restricted passage. An electro-sensing unit records the float movement to indicate the magnitude of the shock.

**3,462,999**  
**VIBRATION OVERSTRESS PROTECTION SYSTEM**  
Jack V. Fultz, Anaheim, and Ronald E. Mines, Garden Grove, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware  
Filed Feb. 3, 1967, Ser. No. 613,857  
Int. Cl. G01n 29/00

U.S. Cl. 73-71.6

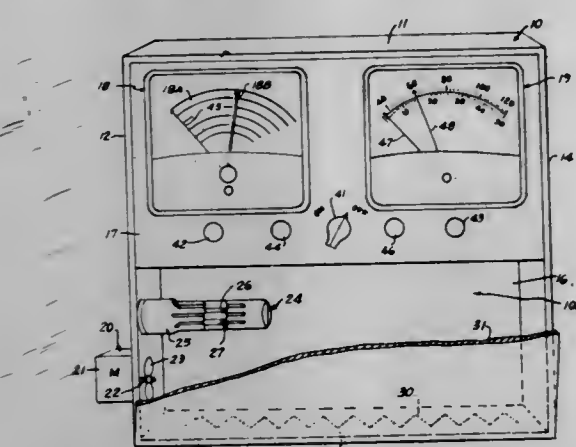
7 Claims



A system for monitoring signals to and from a vibrating device and for converting the signals into digital signals indicating desired input and output signal levels. The system also includes a control circuit for terminating the test when certain conditions are detected over an integrated test cycle.

**3,463,000**  
**METHOD FOR TESTING MOISTURE CONTENT OF A PRODUCT**  
Samuel M. Broadwin, 60 E. 8th St., New York, N.Y. 10003  
Filed Aug. 1, 1967, Ser. No. 657,675  
Int. Cl. G01n 25/56, 5/02  
U.S. Cl. 73-76

9 Claims

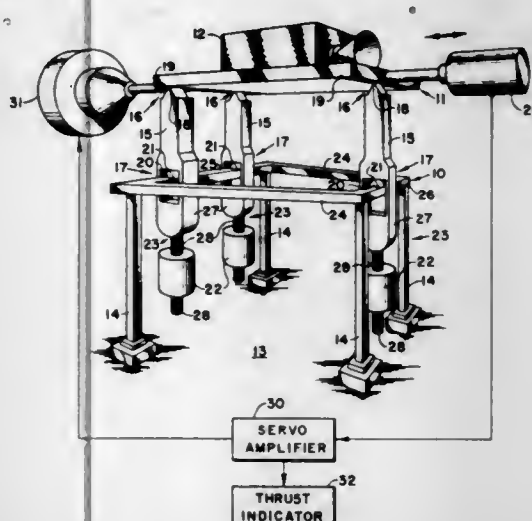


A method and apparatus for determining the relative humidity of a sample product that is produced as a multiple of the tested product, wherein the tested sample provides the measure of water vapor present in the product expressed in percentage of vapor by weight at given temperatures and the RH at each rising temperature is indicated to form a duly plotted reference curve for that product. This curve is used as a multiple humidity scale. With a hermetically sealed test chamber, any sample of the multiple product may be quickly and easily tested for its RH by setting the test chamber at a predetermined temperature and establishing an equilibrium of the humidity and temperature between the product and the air in the test chamber. The RH should agree with the RH established on the multiple humidity scale.

**3,463,001**  
**THRUST DYNAMOMETER**  
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Siegfried Hansen, Los Angeles, Calif.  
Filed Oct. 10, 1967, Ser. No. 674,355  
Int. Cl. G01l 5/12

U.S. Cl. 73-117.4

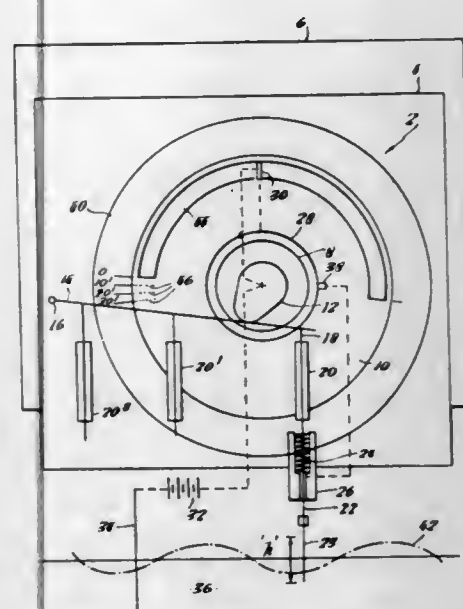
8 Claims



A thrust stand having a movable engine mounting platform supported at three points above a fixed platform by legs having pivotal ends. Counterweights are disposed below the fixed platform and connected through rigid lever arms to the legs.

**3,463,002**  
**WAVE AMPLITUDE MEASURING APPARATUS**  
Alfred Edward Bugg, London, England, assignor to Bruce G. White, Allan Harry Beckett, William E. Gelson, and John W. T. Tapp, all of London, England  
Filed Aug. 1, 1967, Ser. No. 657,563  
Claims priority, application Great Britain, Aug. 4, 1966, 34,984/66  
Int. Cl. G01w 1/00  
U.S. Cl. 73-170

10 Claims

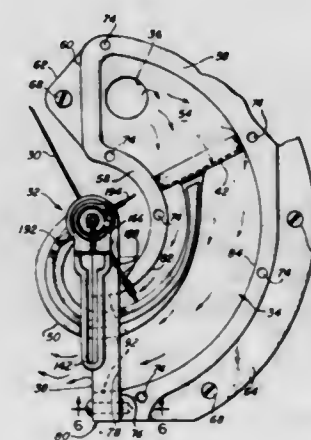


The invention provides a wave amplitude measuring apparatus for measuring the amplitude of small surface waves in hydraulic models. The apparatus consists of an electrical circuit having a source of electrical power one terminal of which is connected to the liquid in the model,

a light source connected to the power source and a probe which is arranged to oscillate into and out of contact with the liquid, thereby making and breaking a circuit to the light source. A rotating disc is provided to which the light source is attached and the wave form being analysed will become visible as an arc of light of varying length according to the wave amplitude in the model. A suitably calibrated scale is provided adjacent the light source so that the full scale wave amplitude can be read.

**3,463,003**  
**AIR VELOCITY MEASURING APPARATUS**  
Martin J. Pierman, Mount Prospect, Edwin W. Donath, Arlington Heights, and Otto A. Ernst, Mount Prospect, Ill., assignors to Alnor Instrument Company, Div. of Illinois Testing Laboratories, Inc., Chicago, Ill., a corporation of Illinois  
Filed Aug. 10, 1967, Ser. No. 659,710  
Int. Cl. G01w 1/02; G01f 1/06  
U.S. Cl. 73-189

17 Claims

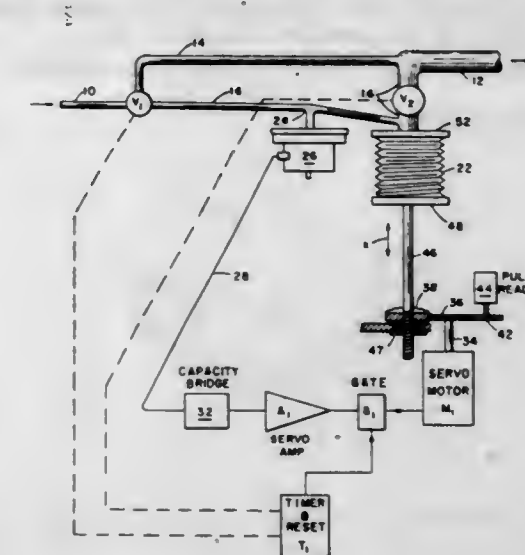


Air velocity measuring apparatus of the type in which a vane is mounted on an axis enabling the vane to swing in a calibrated tunnel so that pressure admitted to the tunnel will tend to move the vane out of the tunnel against a bias thereby swinging a pointer connected to the vane over a suitable scale. The vane being suspended by means of a suitable low friction suspension and the entire suspension including the vane being mounted on an integral mounting member including a frame portion and arms, the frame fitting and being precisely keyed to the front end of the tunnel and being in accurate alignment therewith, the arms seating and supporting the suspension. The delicate movement may be fully assembled and adjusted and the vane aligned with the interior of the frame portion, all independently of the remainder of the meter, and thereafter readily attached to the front of the tunnel so that adjustments are simplified and rendered more economical. The arrangement of removable mounting member enables an air velocity meter to be made with a taut-band suspension to take advantage of its sensitivity and ruggedness, and the preferred structure uses a taut-band suspension of a piston-cylinder-spring construction.

**3,463,004**  
**VOLUMETRIC FLOW MEASUREMENT**  
Ronald Withnell, Wading River, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission  
Filed May 12, 1967, Ser. No. 639,596  
Int. Cl. G01f 3/02  
U.S. Cl. 73-232

3 Claims

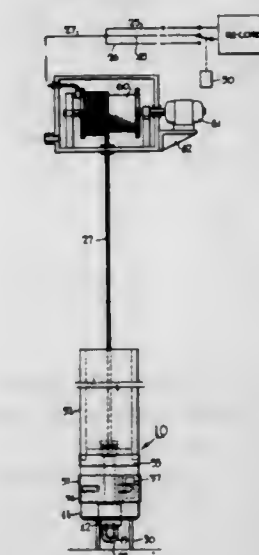
A system for measuring volumetrically the flow of a gaseous fluid independently of fluid density and viscosity. The system utilizes a bellows to receive the fluid flow



stant value within the tube containing the fluid. The rate of bellows expansion gives the volumetric flow rate.

**3,463,005**  
**IMMERSION MOLTEN METAL SAMPLER DEVICE**  
Richard J. Hance, Philadelphia, Pa., assignor to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania  
Filed July 12, 1966, Ser. No. 564,568  
Int. Cl. G01k 1/00  
U.S. Cl. 73-341

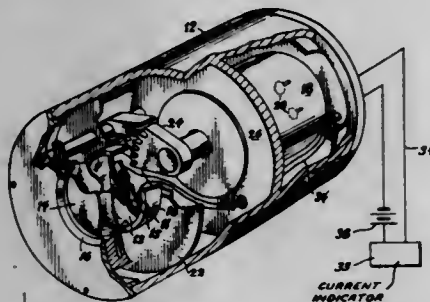
10 Claims



An immersion molten material sampler device for measuring the temperature of molten material at a subsurface level of a molten bath and for measuring the liquidus arrest temperature of a sample of the molten material. A weighted body having a cavity therein receives a sample of the molten material and temperature sensing means disposed in the cavity measures the liquidus arrest temperature of the sample in the cavity. A second temperature sensing means projects from the body and is adapted to measure the temperature of the molten bath. Electrical circuit connections extend from each of the temperature sensing means to a location above the surface of the bath, and means is provided for alternately connecting the circuit connections to a temperature measuring instrument for alternately recording the temperature of the bath and the liquidus arrest temperature of the sample in the cavity.

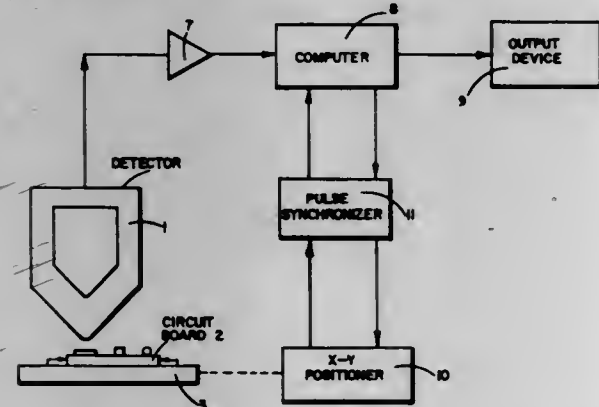


**3,463,006**  
**THERMAL FLUX GAUGE**  
 David A. Paddock and Robert G. Hardy, Wellsville, N.Y., assignors to The Air Preheater Company, Inc., Wellsville, N.Y., a corporation of Delaware  
 Filed Sept. 29, 1966, Ser. No. 583,043  
 Int. Cl. G01f 3/08  
 U.S. Cl. 73—355 2 Claims



A portable electronic gauge for measuring by radiation the temperature of a distant source of heat. The gauge has shutter means behind its entrance aperture, to protect the radiation sensing means from ambient conditions and control the exposure thereof.

**3,463,007**  
**FIELD GRADIENT CORRELATOR SYSTEM FOR FIELD EFFECT TESTING**  
 Roger W. Jones, Garden Grove, and Lloyd M. White, Fullerton, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware  
 Filed Feb. 27, 1967, Ser. No. 618,911  
 Int. Cl. G01k 11/00, 7/00  
 U.S. Cl. 73—355 3 Claims

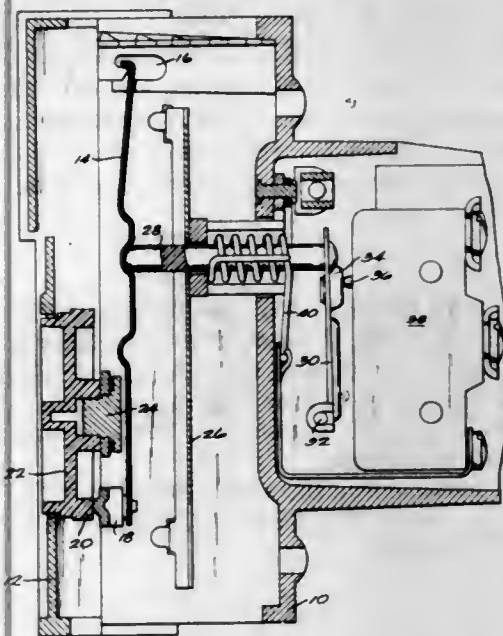


A system for detecting and recording the differential change in the thermal radiation pattern of an electronic unit under test by comparing the recorded differential change with similar data taken from a reference unit for determining whether or not the temperature of the components of the test unit is within proper limits. The change in the radiation pattern is computed and used in the comparison, rather than the absolute intensity. An X and Y positioning apparatus controlled by a computer is used to position the field effect detector during the test.

**3,463,008**  
**THERMOSTAT WITH ANTICIPATOR REMOTE FROM AMBIENT TEMPERATURE SENSOR**  
 Allen L. Telchert, Menomonee Falls, and George F. Schrader, Milwaukee, Wis., assignors to Controls Company of America, Melrose Park, Ill., a corporation of Delaware  
 Filed Feb. 7, 1968, Ser. No. 703,643  
 Int. Cl. G01k 5/62  
 U.S. Cl. 73—363.5 5 Claims

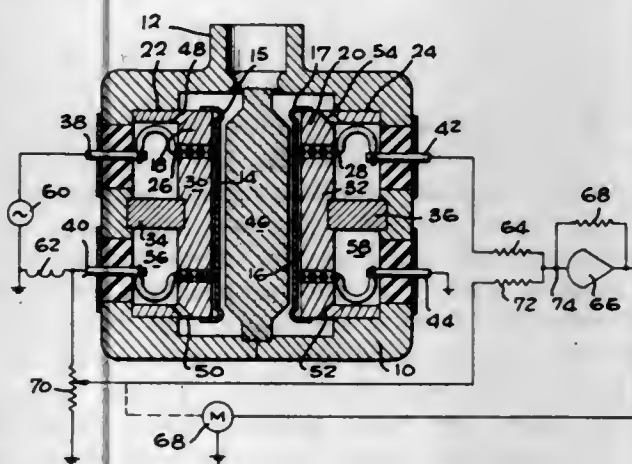
The ambient temperature sensing bimetal operates the switch through a rod which is heated during the "on" cycle by the anticipator heater. This causes the pin to expand in a direction aiding the bimetal to actuate the switch to "off." Expansion rate is selected to give desired anti-

cipation and the heater is positioned remote from the bimetal to reduce heater influence on the bimetal. This re-



duces thermostat droop during long "on" cycles characteristic of high heat load conditions.

**3,463,009**  
**METHOD AND APPARATUS FOR MEASURING ABSOLUTE GAS PRESSURE**  
 Roger W. Blakely, Jr., Los Angeles, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland  
 Filed Feb. 13, 1967, Ser. No. 615,586  
 Int. Cl. G01l 7/20  
 U.S. Cl. 73—384 16 Claims

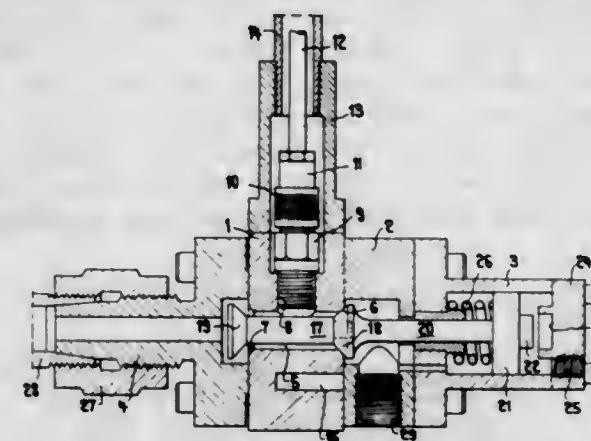


A means and method for measuring the absolute pressure of a gas by isothermally transmitting pressure variations of predetermined frequency through the gas, and detecting the transmitted variations. A pair of diaphragms is used, one diaphragm being subject to a periodic change of volume of a constant quantity of gas, while the second diaphragm measures the change of pressure transmitted isothermally thereto through a heat sink of porous material. The variations of the two diaphragms are compared and a value of absolute pressure is obtained.

**3,463,010**  
**INDICATOR ADAPTOR AND METHOD FOR OPERATING IT**  
 Rudolf Hatschek, Freiburg, Switzerland, assignor to Vibro-Meter AG, Freiburg, Switzerland  
 Filed Apr. 21, 1967, Ser. No. 632,748  
 Claims priority, application Germany, Apr. 25, 1966, V 30,935  
 Int. Cl. G01l 7/18  
 U.S. Cl. 73—396 6 Claims

An indicator adaptor for connection to the indicator pipe of a cylinder of a combustion motor has a canal passing

through from a connection piece to an exhaust in which two valve seats are disposed behind each other. A valve



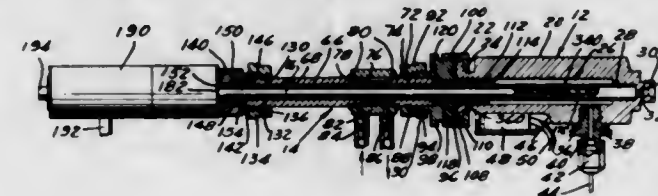
body is displaceable by forced control between said valve seats, and a pressure measuring instrument is connected between said valve seats.

**3,463,011**  
**TWISTED BOURDON TUBE**  
 Heinz Wehde and Werner Ries, Heidelberg, Germany, assignors to Teldix Gesellschaft mit beschränkter Haftung  
 Filed June 30, 1967, Ser. No. 650,391  
 Claims priority, application Germany, July 1, 1966, T 31,506  
 Int. Cl. G01l 7/04; B21d 11/14  
 U.S. Cl. 73—418 7 Claims



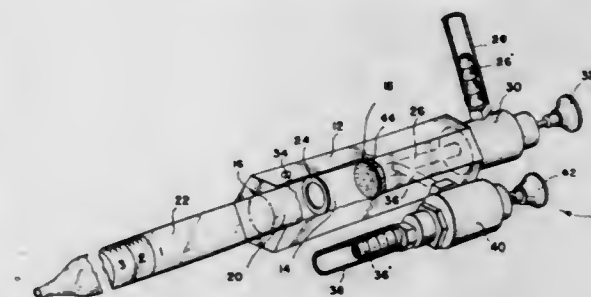
A twisted Bourdon tube made of a single piece of material and having a twisted central portion and two end portions, the two end portions having greater wall thicknesses than the central portion so as to be relatively rigid, and the twisted central portion having a star-shaped cross section.

**3,463,012**  
**PROBE SAMPLING APPARATUS**  
 Carlton B. McKinney, Los Angeles, and William M. Shepard, Whittier, Calif., assignors to Hamilton Company, Whittier, Calif., a corporation of California  
 Filed Sept. 29, 1966, Ser. No. 582,934  
 Int. Cl. G01n 1/00, 31/00, 33/00  
 U.S. Cl. 73—422 8 Claims



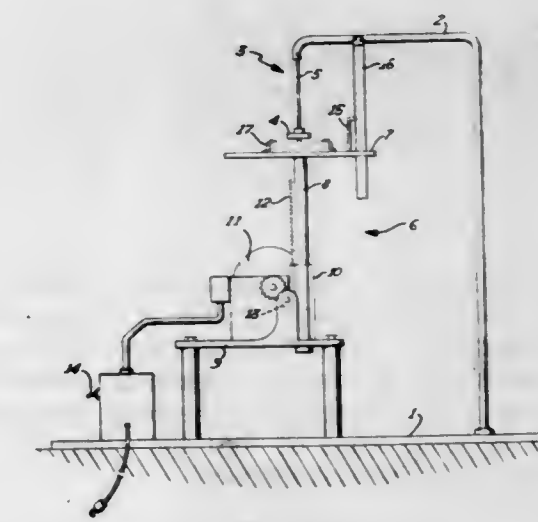
Apparatus for preparing samples for analysis for gas chromatography having a vaporizer tube, means for operably attaching the tube to an inlet of a chromatograph, a probe carrying a sample container for insertion into the vaporizer tube, and sealing means adjacent the outer free end of the vaporizer tube for sealing engagement with the probe which is slidable in said seal when the seal is in sealing engagement with the probe.

**3,463,013**  
**PIPETTING DEVICE FOR TISSUE CULTURE DISSEMINATION**  
 Robert J. Reedy, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Department of Health, Education, and Welfare  
 Filed June 21, 1967, Ser. No. 647,683  
 Int. Cl. G01n 1/14  
 U.S. Cl. 73—425.6 6 Claims



The present disclosure relates to a hand-operated pipetting device utilizing sources of superatmospheric pressure and vacuum, which device is particularly suitable in tissue culture dissemination. The device is adapted to receive a pipette and resultant combination is then operated to aspirate a tissue culture into the pipette by means of the source of vacuum, and then for ejecting the previously aspirated culture from the pipette into a suitable flask by use of the source of air pressure. Vigorous splashing of the cell suspension breaks up the clumps into smaller units, thereby creating conditions of greater tissue.

**3,463,014**  
**METHOD AND APPARATUS FOR ASCERTAINING THE CHARACTERISTICS OF FOOD PRODUCTS**  
 Morris H. Katz, St. Louis Park, and William F. Henry, Minneapolis, Minn., assignors to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware  
 Filed Dec. 7, 1966, Ser. No. 599,921  
 Int. Cl. G01n 33/02  
 U.S. Cl. 73—432 12 Claims



The short gel characteristics of ductile compositions (e.g., smooth, creamy consistency thereof) can be objectively ascertained by contacting the surface of a ductile composition with a smooth surfaced member and adhesively withdrawing the ductile composition in the form of a filamentous mass until it ruptures. The length of the resulting filament to its point of rupture is an objective measurement of the ductile mass short gel character.



3,463,015

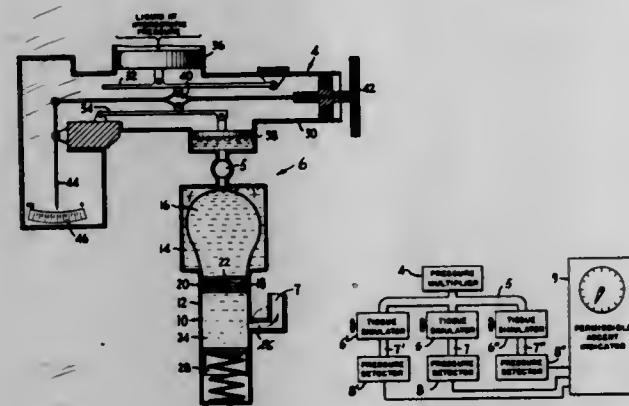
## DECOMPRESSION MONITOR

Rosario Gulino and Kenneth H. Hall, Ledyard, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 12, 1966, Ser. No. 601,083  
Int. Cl. G01n 33/00

U.S. Cl. 73-432

12 Claims



A monitor is provided for a diver indicating to him a continuous rate of ascent after exposure to high hydrostatic pressures. Flow barriers within the monitor permit passage of fluid at a rate dependent upon the ambient pressure and the length of time the diver has been down in the water, creating a mechanical analogy to the absorption of inert gas in the diver's bodily tissues. As the diver ascends, the indication of the comparative pressures permits the diver to ascend at the fastest rate permissible to avoid decompression syndrome, or "bends."

3,463,016

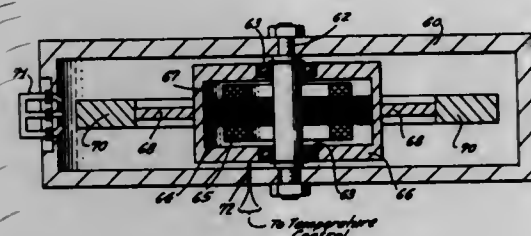
## VIBRA-ROTOR GYROSCOPES

Harold F. Erdley, Jerome S. Lipman, and Sidney Shapiro, Los Angeles, Calif., assignors to Litton Systems, Inc., Woodland Hills, Calif.

Filed Nov. 15, 1963, Ser. No. 323,985  
Int. Cl. G01c 19/54, 19/28

U.S. Cl. 74-5.4

30 Claims



27. An inertial instrument comprising a shaft, means for rotating said shaft about its axis at a constant rate, a pair of collinear cruciform torsion bars fixed at right angles to said shaft, an inertial element of closed hollow form, and a pair of diaphragms of selected stiffness each mounted at opposite ends of said bars normal thereto and mounting said inertial element.

3,463,017

## DUAL BAND PUSHBUTTON TUNER

Russell D. Stamm, Wilbraham, and Sidney K. Smart, Westfield, Mass., assignors to General Instrument Corporation, Newark, N.J., a corporation of Delaware

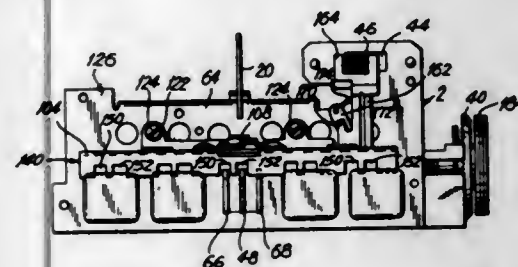
Filed Nov. 24, 1967, Ser. No. 685,446  
Int. Cl. F16h 35/18; H03j 5/06, 5/08

U.S. Cl. 74-10.33

13 Claims

The dual band pushbutton tuner comprises the usual movable tuning elements, a rocker for moving the same,

and a plurality of button keys for operating the rocker. There is a side key on each side of a button key, and cams carried by the side keys for turning the rocker, and a cam lock for locking the cam in desired tuning position. Each button key carries a shuttle which is movable to one side or the other for engaging one side key or the other, and a manually operable shuttle plate shifts all of the shuttles simultaneously. The improvement centers about the shuttle and the addition of an anti-jam plate movable with the shuttle plate and having parts so positioned in



relation to the keys as to prevent manual operation of the shuttle plate and keys in improper sequence. When a button key is pulled forward to unlock a cam, the key is straddled by parts of the anti-jam plate to prevent shifting of the latter while the cam is unlocked. When one side key is being unlocked, a part of the anti-jam plate prevents simultaneous unlocking of the other side key. If the shuttle plate is improperly held in midposition, the anti-jam plate prevents unlocking of either side key.

3,463,018

## DRIVE

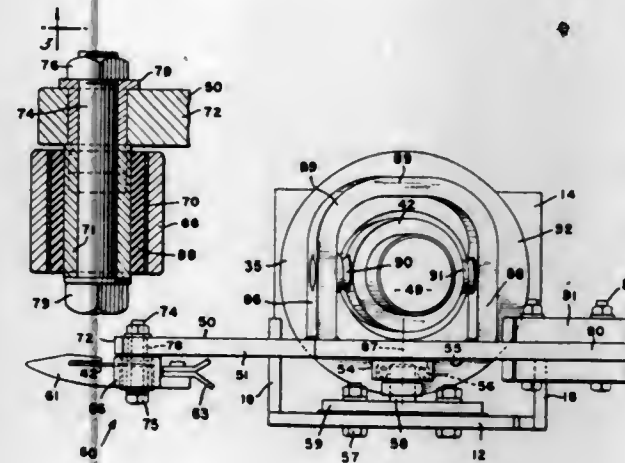
John K. Hale, New Holland, Emmett F. Glass, Akron, and Richard P. Bernhardt, Leola, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Original application Mar. 23, 1965, Ser. No. 442,021. Divided and this application Sept. 27, 1968, Ser. No. 763,194

Int. Cl. F16h 33/20; A01d 55/26

U.S. Cl. 74-60

6 Claims



A sickle drive mechanism for reciprocating a sickle having a horizontally extending drive arm which is oscillated about a fixed vertical axis and is connected directly to the sickle by a resilient bushing assembly so that angular movement of the arm relative to the sickle is permitted only by the torsional action of the bushing without slidable rotatable movement of adjacent parts.

3,463,019

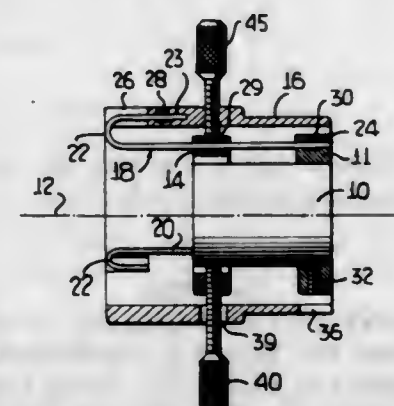
## ALIGNMENT MECHANISM FOR STREAM SUPPORTING ELEMENTS

William B. Noe, Annandale, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware

Filed Nov. 3, 1967, Ser. No. 680,583  
Int. Cl. F16h 27/02

U.S. Cl. 74-89.15

17 Claims



A mechanism for adjusting the alignment of elements of a system utilizing a stream, whether fluidic, electronic, or optic, relative to a reference axis, in which three channels are coupled in spaced-apart relationship to share a normally common longitudinal axis by one or more lengths of spring wire each bent back on itself in the form of a loop, such that one of the channels, having dimensions normal to the axis greater than those of the other two, at least partly encompasses the other two, these being spaced apart along the axis. Adjustment or set screws are provided in the walls of each channel to permit mounting and/or aligning one or more elements of the stream-utilizing system relative to the common axis, each screw arranged to produce a reaction, upon adjustment, between only the channel in which it is installed and either the element(s) to be aligned or the spring wire. It is this reaction, without interaction between multiple adjusting devices that produces secure mounting and independent translation and rotation of the element relative to the common or reference axis.

3,463,020

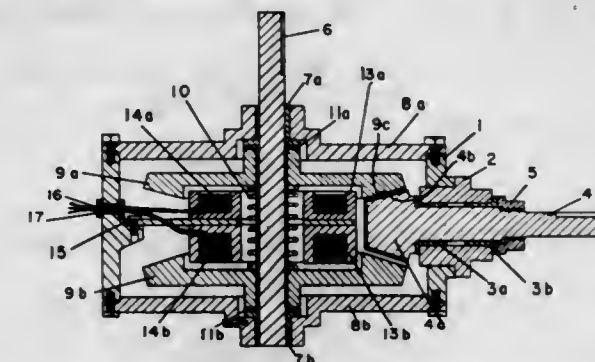
## REVERSING DRIVE MECHANISM

John Gelb, Van Nuys, Calif., assignor, by direct and mesne assignments, of forty-five percent to Allan Friedman and ten percent to Marvin Friedman, both of Los Angeles, Calif.

Filed Nov. 17, 1966, Ser. No. 595,250  
Int. Cl. F16h 13/12, 3/14, 55/34

U.S. Cl. 74-202

4 Claims



A reversing drive mechanism enabling an output shaft to be selectively coupled to a constantly revolving input shaft and to impart to the output shaft either clockwise or counterclockwise rotation. In the de-energized state the output shaft is not rotatably connected to the revolving input shaft. Selective actuation of the output shaft is achieved by selectively actuating a pair of electromagnets. Output shaft rotation and torque transfer is achieved by frictional engagement of frictional drive components.

865 O.G.-41

3,463,021

## COAXIAL SHAFT REVERSING DRIVE MECHANISM

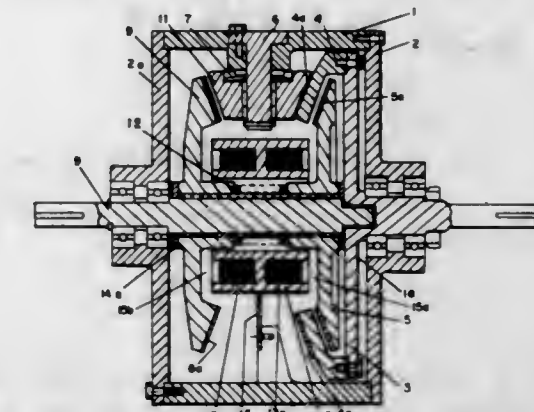
John Gelb, Van Nuys, Calif., assignor, by direct and mesne assignments, of forty-five percent to Allan Friedman and ten percent to Marvin Friedman, both of Los Angeles, Calif.

Filed Aug. 4, 1967, Ser. No. 659,287

Int. Cl. F16h 15/16, 13/12, 3/14

U.S. Cl. 74-202

6 Claims



The present invention is a reversing drive mechanism having an input shaft rotatably mounted at one end of a housing and an output shaft rotatably mounted at the other end of the housing. A plurality of pinions are mounted on the housing and a cone shaped ring is connected to the input shaft and in operative engagement with the plurality of pinions. A pair of disk shaped armature members are slidably mounted on the output shaft. An electromagnet is positioned between these armature members for selectively actuating each of the armature members. When one of the armature members is actuated, it contacts the cone shaped ring and the output shaft rotates in one direction. When the other armature member is actuated, it contacts the plurality of pinions and the output shaft rotates in the opposite direction. In another embodiment, a second cone shaped member is in contact with the plurality of pinions and the second mentioned armature member contacts it rather than the plurality of pinions for reversing the direction of output shaft rotation.

3,463,022

## CHAIN ADJUSTER

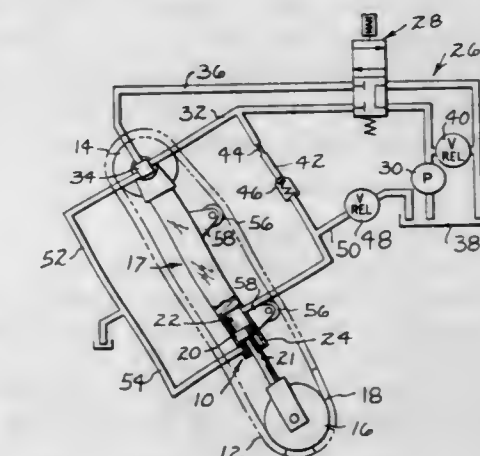
Lawrence J. Miller, Joliet, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Oct. 24, 1967, Ser. No. 677,529

Int. Cl. F16h 7/12, 7/14

U.S. Cl. 74-227

3 Claims



An adjuster for a chain movable around a rotary chain support member, the adjuster providing hydraulic means including a piston connected to the chain support member for exerting a predetermined pressure on the chain support member, flexible means for preventing a pressure



increase caused by external forces acting on the chain support member, and means for maintaining a predetermined degree of sag in the chain.

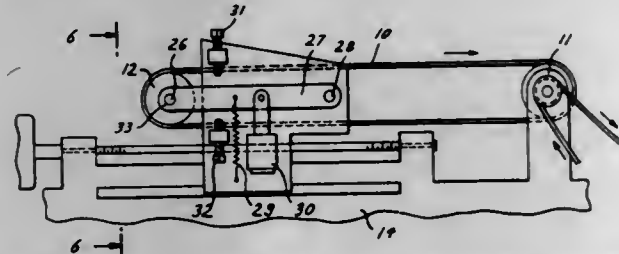
### 3,463,023 STRETCH-GUIDE MECHANISM FOR CONTINUOUS MOVING BELTS

Laurence M. Woodside, Delmar, N.Y., assignor to Albany Felt Company, Albany, N.Y., a corporation of New York

Filed Feb. 12, 1968, Ser. No. 704,611  
Int. Cl. F16h 7/20

U.S. Cl. 74-241

6 Claims



A unitary mechanism for use in continuous moving elastic and inelastic belt systems wherein the belt is wrapped around a peripheral portion of the roll which is maneuverable to provide guiding and guide line adjustment as well as length adjustment.

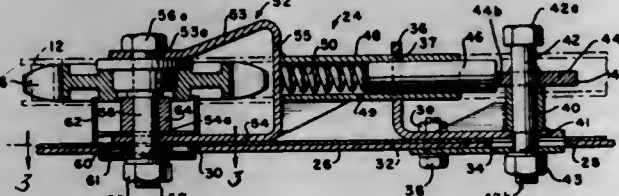
### 3,463,024 SPRING LOADED CAM ADJUSTED IDLER

Allison W. Blanshine, Lititz, and Edward C. Procter, New Holland, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed June 6, 1968, Ser. No. 735,021  
Int. Cl. F16h 7/08

U.S. Cl. 74-242.11

7 Claims



A cam adjusted spring loaded idler for adjusting the tension on a driven chain including a slidably mounted cam plate with a rotatable cam thereon, a slidably mounted idler support means connected to the cam plate by a tubular member, having a spring biased cam follower disposed therein, the combination of elements being such that adjustment of the chain tension is achieved by first retracting the cam to an "off" position, sliding the cam plate relative to a connecting surface, securing the cam plate in the adjusted position relative to the connecting surface and, finally, rotating the cam into maximum engagement with the cam follower so that the idler sprocket support means is caused to slide relative to the connecting surface, increasing the chain tension.

### 3,463,025 CHAIN TENSIONER

Edward C. Turner, Hitchin, and John Poyser, Letchworth, England, assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware

Filed May 27, 1968, Ser. No. 732,256  
Claims priority, application Great Britain, June 5, 1967, 25,766/67

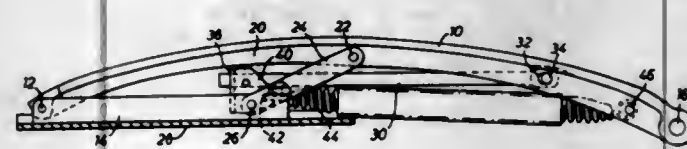
Int. Cl. F16h 7/08

U.S. Cl. 74-242.11

9 Claims

A chain tensioner has an arcuate shoe of synthetic plastics material which will "creep" under load and elevated temperature. The shoe engages the chain to be tensioned, and is secured to a slidable member. Its ends are

urged towards each other by a spring to bulge the shoe to engage the chain and a non-return mechanism is at-



### 3,463,026 MINE MACHINE CUTTER CHAINS AND THE LIKE

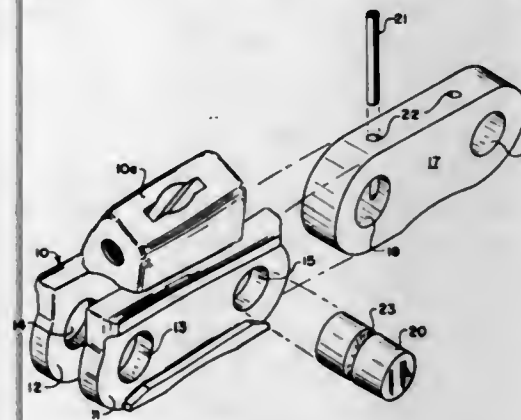
Jennings M. Staub and Robert E. MacPherson, Pittsburgh, Pa., assignors to Bertrand P. Tracy Company

Filed Sept. 22, 1967, Ser. No. 669,754

Int. Cl. F16g 13/08; E21c 13/00

U.S. 74-254

6 Claims



A mining machine cutter chain having toothed cutter links with spaced side straps having circular pin openings at each end, a connector link fitting between the side straps and having like pin openings, a chordal passage at each opening in the connector link intersecting the openings therein and having a frictional lock pin and a connector pin slidable in the openings of the side straps and connector with an annular groove receiving the locking pin.

### 3,463,027 ELECTROMAGNETIC ACTUATED TWO SPEED DRIVE MECHANISM

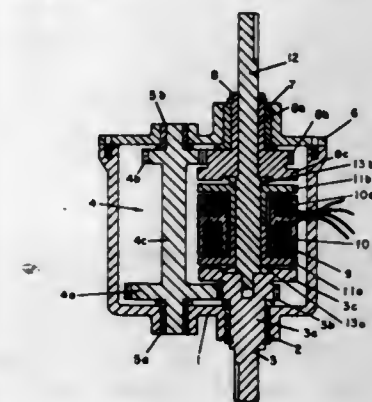
John Gelb, Tarzana, Calif., assignor, by direct and mesne assignments, of forty-five percent to Allan Friedman and ten percent to Marvin Friedman, both of Los Angeles, Calif.

Filed Nov. 16, 1967, Ser. No. 683,510

Int. Cl. F16h 3/08

U.S. Cl. 74-365

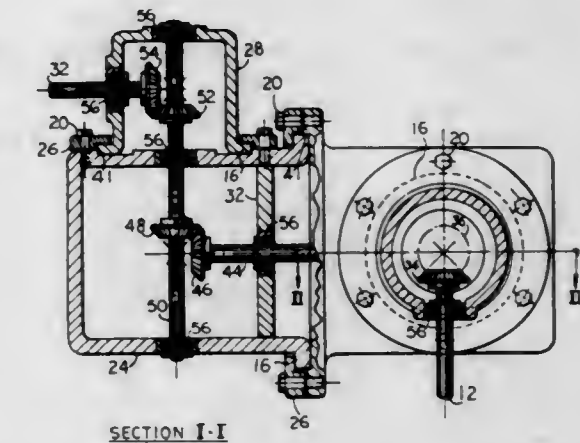
4 Claims



A two speed drive mechanism having an input drive member in driving engagement with an idler assembly

that drives a second stage drive member. An output shaft extends through and is rotatably mounted in the hollow hub of the second stage drive member. A pair of armature disks are slidably mounted and keyed to the output shaft to impart rotary motion thereto. A pair of electromagnets attached to the housing and positioned between the pair of armature disks. When the electromagnets are de-activated no rotary motion is transmitted from the input drive member to the output shaft. When one of the electromagnets is activated it causes frictional engagement of one of the armature disks with the input drive mechanism resulting in direct drive of the output shaft. When the other electromagnet is activated it causes frictional engagement of the other armature disks with the second stage drive member resulting in driving the output shaft through the idler assembly at a gear ratio determined by the gearing of the idler assembly gear train.

put shafts and one other shaft because the shafts are coupled to one another by means of gears which allow



SECTION I-I

### 3,463,028 VARIABLE SPEED TRANSMISSION

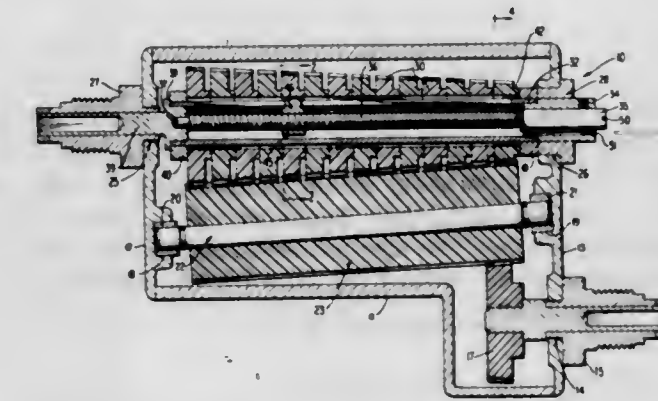
Herbert C. Polidor, Springfield, Vt., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York

Filed Feb. 14, 1968, Ser. No. 705,516

Int. Cl. F16h 3/08

U.S. Cl. 74-366

10 Claims



This invention relates to a variable speed transmission, the operative elements of which include a series of tapered output gears of different diameter but equal pitch which are rotatably mounted on a tubular member with a clutch arranged for translational movement within the tubular member and adapted to engage any one of a series of output gears to control the speed of the transmission. An input gear tapered in a plane parallel to that of the output gears is arranged to drive an elongated cylindrical gear and to transmit therethrough the drive motion to any of the tapered output gears.

### 3,463,029 OMNIDIRECTIONAL POWER TRANSMISSION DEVICE

Wei Teh Chow, 605 Water St., New York, N.Y. 10002

Filed Mar. 6, 1968, Ser. No. 710,814

Int. Cl. F16h 3/14, 1/12

U.S. Cl. 74-385

6 Claims

A power transmission device for transmitting power between an input and an output shaft whose axes can be originally positioned in any three-dimensional orientations relative to each other. Each shaft is supported by a different housing and two additional housings are inserted between them. Three shafts extend through the housings to couple the first two shafts. All housings are adjustably rotatable relative to one of the housings and rotation of the housings also rotates the input and out-

a full 360 degree relative rotation of the axes of their associated shafts.

### 3,463,030 ANTI-BACKLASH GEAR REDUCER

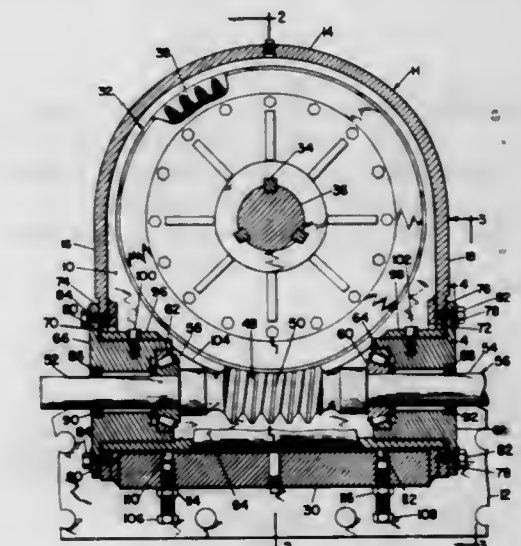
Albert W. Nuccel, Harrisburg, Pa., assignor, by mesne assignments, to Teledyne Inc., Los Angeles, Calif., a corporation of Delaware

Filed May 6, 1968, Ser. No. 726,744

Int. Cl. F16h 35/06, 55/24

U.S. Cl. 74-409

9 Claims



An anti-backlash worm gear reducer in which both the worm and the worm gear are formed with their addendums sufficiently smaller than their dedendums to provide in the assembled worm and worm gear between the top of the worm gear teeth and the bottom of the worm thread and between the top of the worm thread and the bottom of the worm gear teeth, not only the conventional working clearance necessary to allow for imperfections in workmanship so that the worm and worm gear will mesh at their pitch circle with zero or minimal backlash, but also a substantial additional clearance whereby when backlash due to wear on the teeth and threads occurs, such backlash can be eliminated by adjustment means associated with the worm. The adjustment means includes a cartridge in which the bearings for the worm shaft are mounted, the cartridge being supported at its ends in plate members releasably secured to the side walls of the gear reducer housing, and including means for adjusting the cartridge and plate members as a unit for controlling movement of the worm in a direction solely radially of the worm gear.

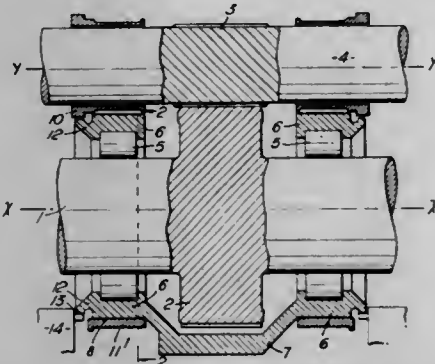


### 3,463,031 GEARING HAVING TOOTH PRESSURE DISTRIBUTION MEANS

Ivan Charles Lawrence, Long Eaton, and John Kenneth Rhodes, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company  
Filed Oct. 30, 1967, Ser. No. 679,027  
Claims priority, application Great Britain, Nov. 9, 1966, 50,315/66  
Int. Cl. F16h 57/00

U.S. Cl. 74-410

8 Claims



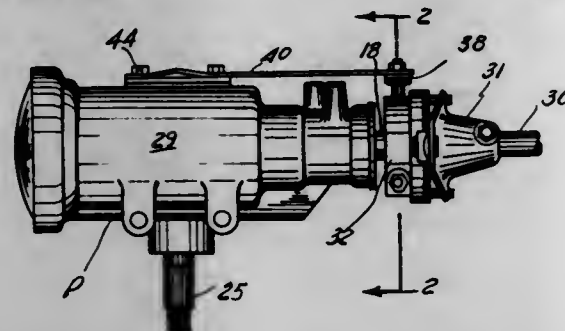
The apparatus comprises two meshing gear wheels one of which is mounted on a rotatable shaft. Bearing means support the shaft and permit limited movement of the shaft in a plane perpendicular to the axis of rotation. Fixed abutment members engage points on the outer periphery of the bearing means so that limited rocking movement of the shaft in a plane about one of the points may take place so that the axes of rotation of the gear wheels may be maintained at a substantially constant distance apart for a predetermined range of relative movement of the gear wheels towards and away from each other.

### 3,463,032 POWER STEERING INDICATION FOR AUTOMOBILES

John Murphy, Jr., 100 Parkwood Court,  
Bay City, Mich. 48706  
Filed May 23, 1966, Ser. No. 552,210  
Int. Cl. B62d 1/16, 5/00

U.S. Cl. 74-495

4 Claims



Apparatus for providing an indication to a vehicle operator that the vehicle wheels are turning from a straight line of travel. The apparatus includes socket and detent means used in combination with either the input or output shafts of a power steering unit.

### 3,463,033 MULTIPLE RATIO HYDROKINETIC TORQUE CON- VERTER TRANSMISSION WITH SPLIT-TORQUE LOCK-UP CLUTCHES IN THE CONVERTER HOUSING

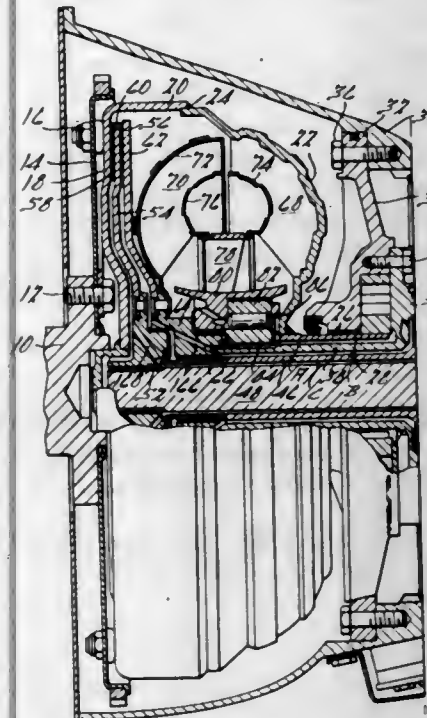
Alan R. Fisher, Highland Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware  
Filed Feb. 20, 1968, Ser. No. 706,945  
Int. Cl. F16h 47/08; F16d 37/00

U.S. Cl. 74-688

12 Claims

A torque converter transmission mechanism having compound clutches in the impeller shell of the converter

and multiple ratio gearing connected to the turbine of the converter, wherein the application and release of the clutches in proper sequence, together with sequential operation of torque establishing devices in the transmission gearing, effects any one of three forward driving speed ratios or a single reverse speed ratio can be obtained, one



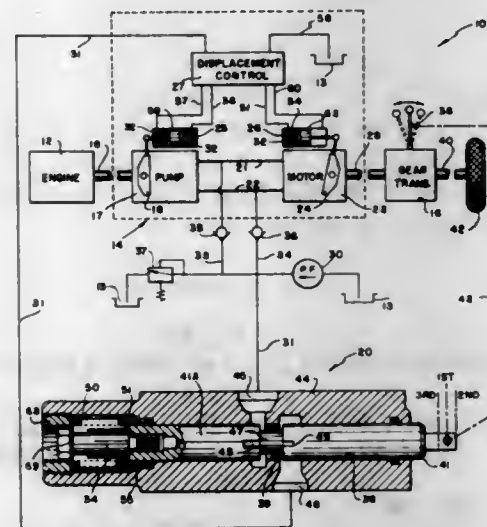
operating mode establishing a split torque path between the driving member and the driven member of the gearing and another operating mode establishing a solid, direct-drive torque path that bypasses the converter and wherein the clutches are applied and released by controlling the direction of torus fluid feed for the converter.

### 3,463,034 ACCELERATION CONTROL FOR VARIABLE SPEED TRANSMISSIONS

Wendell E. Miller, Hutchinson, Kans., assignor to The Cessna Aircraft Company, Wichita, Kans., a corporation of Kansas  
Filed Oct. 23, 1967, Ser. No. 677,194  
Int. Cl. F16h 47/02

U.S. Cl. 74-733

13 Claims



A fluid volume flow control device for interposition in a flow line which conducts fluid from a pressure source to a fluid pressure actuated mechanism, the rate of operation of which mechanism is dependent on the volume flow of fluid which is permitted to reach the mechanism through the flow line. The control device is adjustable to

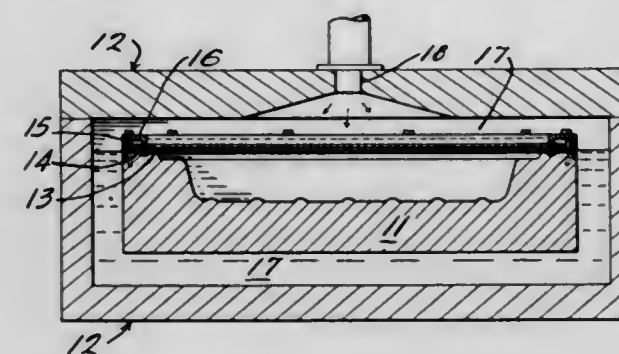
provide several different specific rates of flow through the line to the pressure actuated mechanism for any given pressure from the source, thereby providing a like number of different and corresponding specific rates of operation for the fluid actuated mechanism. One primary use of the invention is to adjust the rate of acceleration of the output shaft of a variable speed transmission, which in turn drives a multiple gear transmission, in such a manner that the rate of acceleration of the output shaft of the gear transmission will be substantially the same in any selected gear ratio.

### 3,463,035 METHOD OF PREPARING DIE PLATES

Wilfred Bright, Higher Barton Hallwood Crescent,  
Shenfield, Essex, England  
Filed Dec. 5, 1966, Ser. No. 599,080  
Int. Cl. B21k 5/20; B21d 26/02

U.S. Cl. 76-107

9 Claims



1. A method of forming matching die plates which, when mated, have an interior cavity conforming in shape to an object to be reproduced, said method comprising the steps of

- (1) forming an undersized negative impression of the object to be reproduced,
- (2) covering the surface of said undersized negative impression with a first sheet of metallic material having a thickness equal to the amount by which said negative impression is undersized, an adjacent second sheet of material having a thickness equal to the thickness of such object to be reproduced and an adjacent third sheet of material,
- (3) deforming said first, second and third sheets into close conforming relation with said negative impression in a manner such that said first sheet directly contacts and conforms closely to the surface contour of said impression whereby, when said second sheet is removed, said first and third sheets, when adjacent, will enclose an interior cavity conforming in shape to such object to be reproduced.

### 3,463,036 AUTOMATIC DRILLING DEVICE

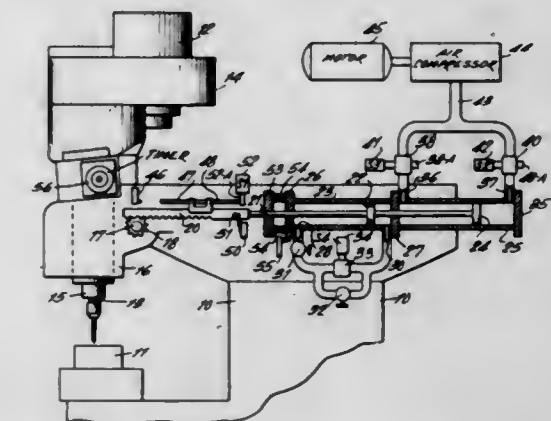
Charles A. O'Connor, Wantagh, N.Y., assignor, by mesne assignments of one-half to Charles A. O'Connor, Wantagh, N.Y., and one-half to Richard A. Maehr, Huntington, N.Y.  
Filed July 20, 1967, Ser. No. 654,834  
Int. Cl. B23b 39/10, 47/18

U.S. Cl. 77-32.3

13 Claims

A control means is added to a motor drill for producing several kinds of operating cycles. A rack and pinion are coupled to the drill quill so that a movement of the rack moves the quill and drill bit in a vertical direction. The rack is connected to a first piston operating in a chamber full of oil for regulating the speed of the drill bit. A second piston is secured to the first and operates within a second

cylinder subjected to gas under pressure. The piston in the air-operated cylinder furnishes the power to raise and lower the drill bit. A plurality of micro-switches are arranged



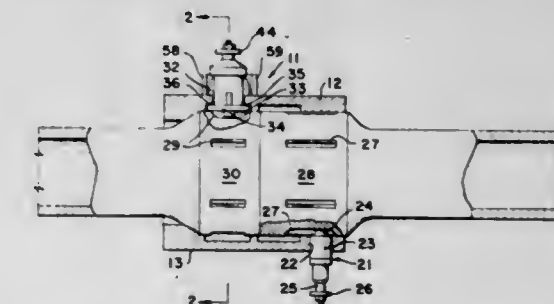
for sensing the positions of the rack and quill and these switches operate in conjunction with three solenoid valves to operate the mechanism.

### 3,463,037 POWER-TORQUE PIPE TONGS

Glenn D. Johnson, Downey, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Filed Sept. 20, 1967, Ser. No. 669,035  
Int. Cl. B25b 13/50, 13/04

U.S. Cl. 81-54

5 Claims



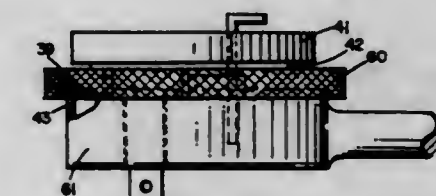
The power tongs and the reaction tongs are incorporated along with prime-mover means in the form of a fluid motor in one unit to provide self-contained power-torque pipe tongs wherein the torque and lateral forces are counteracted within the unit.

### 3,463,038 ACTUATION GEAR FOR A RATCHET WRENCH

Louis C. Scull, 3019 Garnet Lane, Apt. A,  
Fullerton, Calif. 92631  
Filed June 1, 1967, Ser. No. 642,795  
Int. Cl. B25b 17/02

U.S. Cl. 81-58.1

1 Claim

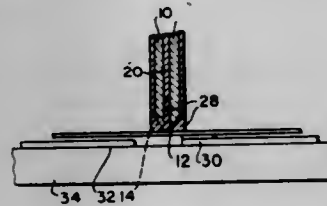


A circular member having teeth along its inner circumference for meshing with the teeth of the pinion gear which has fewer teeth so that a favorable gear ratio between the two members results. By virtue of the mechanical advantage thus developed, a workpiece can be operated on by manually rotating the circular member digitally.



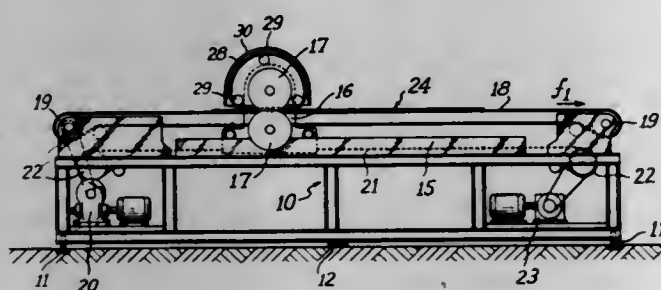
### 3,463,039 KNIFE FOR CUTTING TEAR-LINES IN CARDBOARD AND METHOD FOR FORMING THE SAME

Stanley Milton Silver, 10 Blenheim St., London W. 1, England  
Filed Jan. 4, 1967, Ser. No. 607,217  
Int. Cl. B26d 1/00; B26f 1/24  
U.S. Cl. 83-139 9 Claims



Knife section for cardboard cutting die for forming tear-line in cardboard, formed of a pair of cutter blades with cutting edges closely spaced and each formed with intermittent, closely spaced, cutting teeth disposed in staggered relation to teeth of the other; the space between blades and between teeth filled by a continuous mass of resiliently compressible material provided by pouring a viscous liquid material that cures to a solid resilient mass into said spaces.

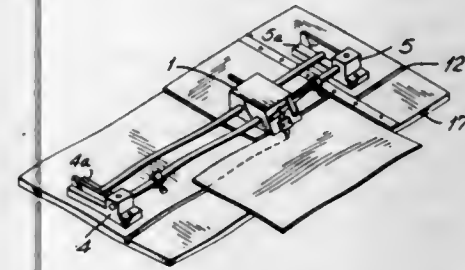
3,463,040  
MACHINE FOR CUTTING SHEET MATERIALS  
Jacques Pouilloux, St.-Gatien, France, assignor to Pneumatiques, Caoutchouc Manufacture et Plastiques Kleber-Colombes, Colombes, Hauts-de-Seine, France, a French body corporate  
Filed Mar. 27, 1967, Ser. No. 626,170  
Claims priority, application France, Mar. 25, 1966, 55,120  
Int. Cl. B23d 19/00; B26d 1/18  
U.S. Cl. 83-374 8 Claims



This invention relates to a machine for cutting sheet material of the type comprising at least one circular knife which moves transversely with respect to the sheet material and according to the invention an endless band pressure member is provided to hold the sheet material and is constituted by a member that moves transversely with the circular knife and rolls along a predetermined cutting line immediately adjacent the knife. Furthermore, means are provided for resiliently applying the pressure member to the material so as to press the latter only on the reduced surface zone which moves at the same time as the knife. In this way, the application force is reduced and it becomes easier to detach the pressure member from the sheet material.

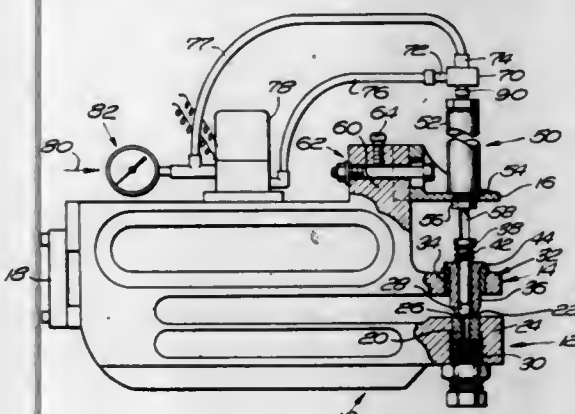
3,463,041  
PICTURE MAT CUTTER  
Mordecai Shapiro, 119 Byron Road, and Jerome Perlmutter, 4 Whalenek Drive, both of Merrick, N.Y. 11566  
Filed Mar. 18, 1966, Ser. No. 536,951  
Int. Cl. B26d 5/08  
U.S. Cl. 83-564 3 Claims  
A picture mat cutter including a cutting knife carried in a carriage which is mounted upon a pair of shafts. One

of the shafts is fixed in bearings while the second shaft is supported upon and lies upon extensions of the bearings.



No part of the cutter, except the knife and the base touches the mat.

3,463,042  
PNEUMATIC PUNCH  
Rubin Goldman, 22 Park Drive, Newton Highlands, Mass. 02161  
Continuation-in-part of application Ser. No. 409,415, Nov. 6, 1964. This application Nov. 25, 1966, Ser. No. 597,019  
Int. Cl. B26d 5/08, 5/12; B26f 1/14  
U.S. Cl. 83-627 10 Claims



The punch assembly of this invention comprises a die, punch, and cylinder holder frame 10. A die 20 is mounted in the die holder. A sleeve 36 is mounted in the punch holder and aligned with the die, and a cylinder assembly 50 including a plunger 58 is mounted in the cylinder holder. A ball 28 is mounted in the lower end of and slidable axially in the sleeve 36, and a stem 38 is locked in the sleeve above the punch and is movable axially in the sleeve toward and away from the ball. Pneumatic actuating means, including an impulse valve 70, is connected to the cylinder assembly 50 for driving the plunger of the cylinder against the stem 38 causing the stem to drive the ball 28 against the die 20. A relatively heavy spring 42 is secured to the stem for returning the stem to its position away from the ball, and the spring 42 also assists in returning the plunger to its withdrawn position in the cylinder.

3,463,043  
MUSIC TEACHING DEVICE  
Harold C. Keir, 3382 Warburton Ave., Santa Clara, Calif. 95051  
Filed Aug. 11, 1967, Ser. No. 660,004  
Int. Cl. G09b 15/00  
U.S. Cl. 84-470 11 Claims

A music teaching device in which a scroll is transported behind a transparent plate at an adjusted predetermined speed. Musical notes and rests are spaced longitudinally of the scroll in accordance with the time value of these symbols. The notes are also spaced transversely of the scroll in registration with a musical staff which is marked on the transparent plate. An indexing mark is placed on the transparent plate. A note of given time value, for example an

eighth note, advances beyond the indexing mark and remains in view as it advances beyond the indexing line for the correct time duration of this note. For a note of longer time value, a line is drawn following the note so that such line remains in view after the note advances beyond the indexing line for the correct duration of the longer note. The scroll may have associated words of a song printed in registration with the corresponding notes, and may have fiducial marks for permitting the generation of an audible rhythm accompaniment. A letter index is placed along the edge of the staff on the transparent

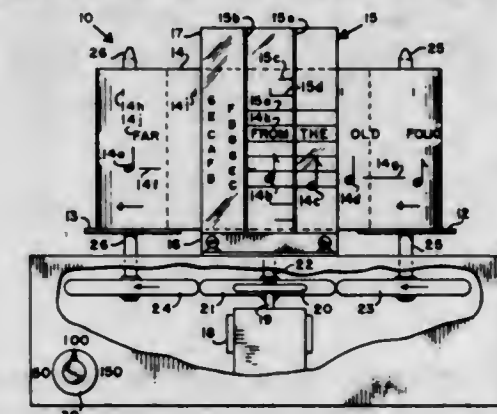
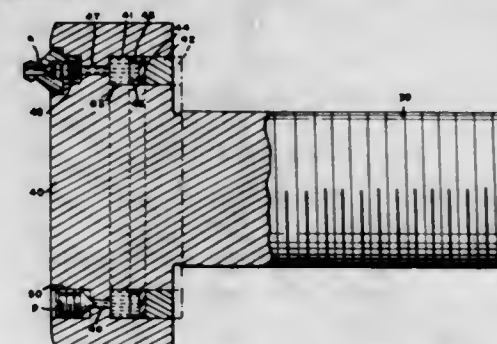


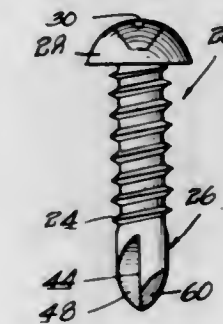
plate so that the letter designation of a note can be identified. This device aids the beginning music student to immediately combine note recognition with rhythm, and permits a more rapid and less frustrating development of the proper sensory responses to the musical symbols. After the initial development of these skills, the student may continue his musical training from standard written sheet music.

3,463,044  
HYDRAULIC HOLDING DEVICES  
Joseph J. Rossman and Eugene Hudgins, both % Jerry Tools, Inc., 6200 Vine St., Cincinnati, Ohio 45216  
Filed May 5, 1967, Ser. No. 636,447  
Int. Cl. F16b 33/00, 37/00, 43/00  
U.S. Cl. 85-9 10 Claims



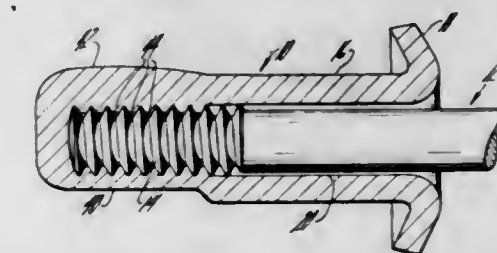
A hydraulic nut, a hydraulic bolt and a hydraulic washer are provided consisting each of a body, an annular groove on one end of the body and a thrust ring in the groove. The groove between the ring and the body is filled with hydraulic fluid. Each has an inlet duct leading from the groove which terminates with a grease (Alemite) fitting through which grease from an ordinary grease applicator is inserted. A fluid outlet duct leads from the groove and is provided with a valve for selectively withdrawing fluid from the groove. The washer is devoid of the fitting and is provided only with a pair of diametrically opposite ducts with removable plugs.

3,463,045  
DRILLING SCREW  
Arthur W. Prescott, Elgin, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware  
Filed May 10, 1966, Ser. No. 548,892  
Int. Cl. F16b 25/00; B21h 3/08  
U.S. Cl. 85-41 6 Claims  
There is disclosed a drilling screw having a forged drilling tip. The forging is accomplished so as to provide



tip to provide cutting edges and the rounded surfaces are relieved behind these cutting edges. The flutes extend across a plane containing the central axis of the screw so as to define therebetween a narrow web providing the screw with a relatively sharp tip including continuations of the aforementioned cutting edges.

3,463,046  
BLIND FASTENING RIVET AND METHOD OF MAKING SAME  
Nicholas A. Welch, West Hartford, and Harry C. Wendt, Farmington, Conn., assignors to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut  
Filed Dec. 11, 1967, Ser. No. 689,520  
Int. Cl. F16b 13/06, 33/04  
U.S. Cl. 85-70 4 Claims



A hollow rivet and pull-stem assembly wherein the rivet is provided with a flange or head at its outer end and the inserted inner end portion of the stem is threaded and the end of the rivet body opposite the head has a plurality of circumaxially spaced longitudinally extending sections which are pressed into the stem threads to connect the stem and rivet and to form longitudinal inner end ribs on the rivet which help to form a desirable inner head on the rivet when the said inner end is forcefully moved toward the original or outer head.

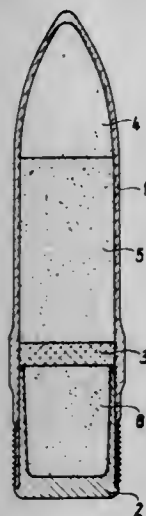
3,463,047  
METHOD OF MAKING DISINTEGRATING BODIES FOR USE AS PRACTICE AMMUNITION  
Raimund Germershausen, Dusseldorf, Germany, assignor to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany  
Filed Mar. 10, 1967, Ser. No. 622,356  
Claims priority, application Germany, Mar. 11, 1966, R 42,806  
Int. Cl. F42b 33/02

U.S. Cl. 86-23 1 Claim  
A method of making practice rounds of ammunition in which equal parts by weight of iron powder whose



particles have a greatly cleft surface and iron powder whose particles have a smooth spherical surface are mixed

means may be provided, as adjustable dashpots actuated by movement of the work holding surface on the base member. Other means are provided for locking the surface against movement, as when drilling. The spindle of the



with a lubricant for example graphite, wax or synthetic resin products and compacted and then placed in a casing.

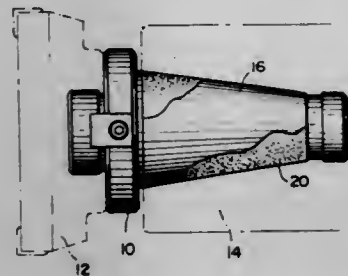
### 3,463,048 VIBRATION DAMPING DEVICE FOR MILLING CUTTERS

Paul J. Owsen, Wayne, Mich., assignor to Lovejoy Tool Company, Inc., Springfield, Vt., a corporation of Vermont

Filed Aug. 17, 1967, Ser. No. 661,403  
Int. Cl. B23c 9/00

U.S. Cl. 90—11

2 Claims



The tapered shank of a face mill arbor is covered with a layer of rubberized cloth or fiber glass cloth which has been impregnated with a high-heat resistant plastic to damp the vibrations of the mill when in operation. Other surfaces of the arbor which are engaged by surfaces of the face mill or the back of the mill body may be covered with impregnated cloth.

### 3,463,049 MACHINE WORK HOLDING TABLE

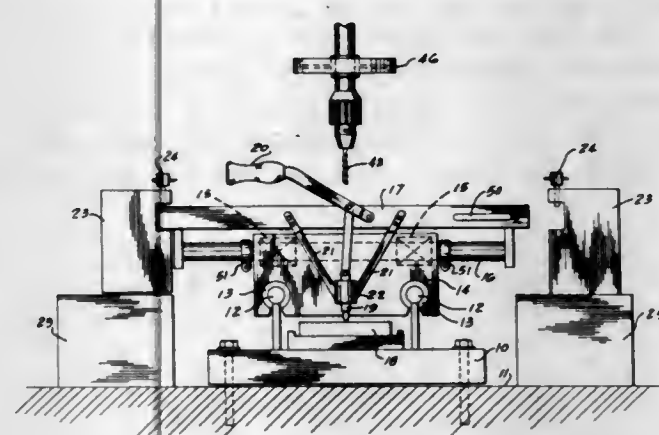
John B. Thomson, 1029 Plandome Road, Manhasset, N.Y. 45216

Filed Mar. 27, 1967, Ser. No. 626,311  
Int. Cl. B23d 7/08; B23b 47/28

U.S. Cl. 90—13

9 Claims

The present invention provides a hand propelled work holding table for use on machine tools, such as milling machines and drill presses. The work holding surface of the table is mounted on its base so as to move freely in any direction in one plane and is provided with a template engaging device whereby the work on the surface may be guided or located with respect to the cutting tool. Attachable and detachable weights are provided for lifting and clamping them to the work holding surface to stabilize the surface and the work hold thereon. Other stabilizing



machine tool preferably has a supplementary mass rotatable with it at high speed, the supplementary mass also generating a gyroscopic force to reduce vibration and chatter during the cutting operation.

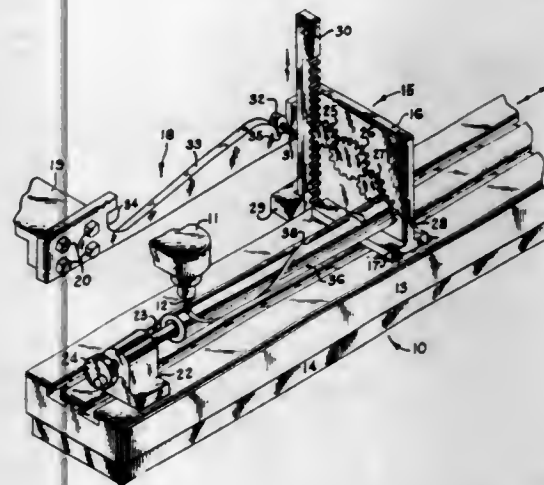
### 3,463,050 APPARATUS FOR CUTTING A VARIABLE OR CONSTANT LEAD ON A MILLING MACHINE

James C. Machen, Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Oct. 30, 1967, Ser. No. 678,911  
Int. Cl. B23c 1/18

U.S. Cl. 90—11.62

5 Claims



An apparatus for cutting a helical groove in a cylindrical cam so that the cam can be used as a variable or constant lead for the milling machine in future applications to material in which a desired configuration must be reproduced by the milling machine.

### 3,463,051 POSITION CONTROL EQUIPMENT

Richard F. Jones and Arnold V. Mathison, Ilford, England, assignors to The Plessey Company Limited, Ilford, England, a British company

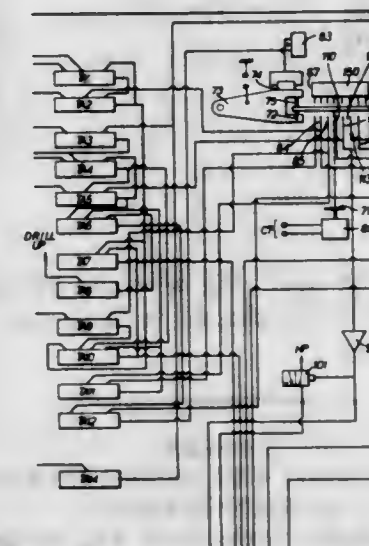
Filed Oct. 11, 1967, Ser. No. 675,751  
Int. Cl. F15b 21/02; F01b 21/00

U.S. Cl. 91—36

14 Claims

Position control equipment for a co-ordinate table comprising two movable structures and driving means therefor

arranged for producing movement of said structures in parallel planes and in mutually perpendicular directions, in which each of the movable structures has associated with it coarse and fine position control devices, the coarse position control device being arranged to permit operation of said driving means initially during driving movement of each of said structures to the required position and operable upon the structure reaching the vicinity of said position to render the fine position control device effective for controlling the driving means, said fine position control device comprising co-operating relatively movable contoured reaction and fluid jet structures in



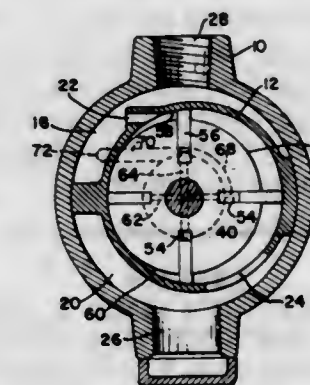
close proximity with each other, said jet structure having a plurality of orifices therein through which fluid is supplied under pressure so that the difference in pressure of the fluid in said orifices resulting from their being asymmetrically orientated with respect to one contoured portion of the reaction structure, which contoured portions correspond to position increments of said movable structure, is utilized to produce relative movement between the reaction and jet structures thereby to effect accurate positioning of said movable structure to the desired position thereof.

### 3,463,052 VANE MOTOR

Carl G. Matson, 401 E. Central Blvd., Kewanee, Ill. 61443  
Filed Jan. 23, 1967, Ser. No. 611,143  
Int. Cl. F01c 1/04; F04e 1/02

U.S. Cl. 91—138

3 Claims



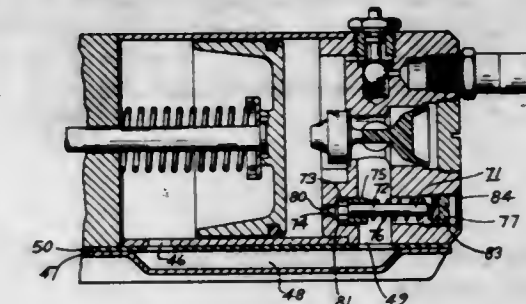
A vane motor in which the bottoms of the vane slots in the rotor are constantly fluid-pressurized to bias the vanes outwardly and into sliding contact with the cylindrical wall of the stator housing.

### 3,463,053 RELIEF VALVE FOR FLUID MOTOR

James A. Leibundgut, Waterford, Wis., assignor to Applied Power Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Oct. 16, 1967, Ser. No. 675,457  
Int. Cl. F01l 25/06; F15b 11/06; F16k 17/20  
U.S. Cl. 91—240

2 Claims



A relief valve is disclosed capable of being coupled to the pressure chamber of a motor to limit the pressure developed in the chamber of fluid-type motors such as pneumatically powered reciprocating piston-type motors or rotary-type motors.

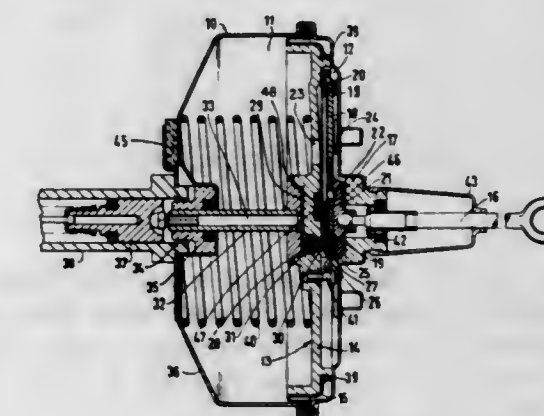
### 3,463,054 FLUID PRESSURE OPERATED BOOSTERS OR SERVO MOTORS

Glyn P. R. Farr, Kenilworth, England, assignor to Girling Limited, Tyseley, England, a British company

Continuation of application Ser. No. 508,429, Nov. 18, 1965. This application Jan. 30, 1968, Ser. No. 704,943  
Claims priority, application Great Britain, Nov. 18, 1964, 46,884/64

Int. Cl. F15b 9/10, 13/042; F01b 19/02  
U.S. Cl. 91—369

10 Claims



In a fluid pressure booster a lever formed by a part of a movable wall is adapted to fulcrum on another part of the movable wall at a point spaced from the axis of the booster, and an input member aligned axially on the axis of the booster with an output member acts on the output member through the lever.

### 3,463,055 FLUID ACTUATOR

Fred R. Bayles, Dallas, Tex., assignor to LTV Electro-systems, Inc., Greenville, Tex., a corporation of Delaware

Filed Dec. 2, 1966, Ser. No. 598,695  
Int. Cl. F15b 15/26

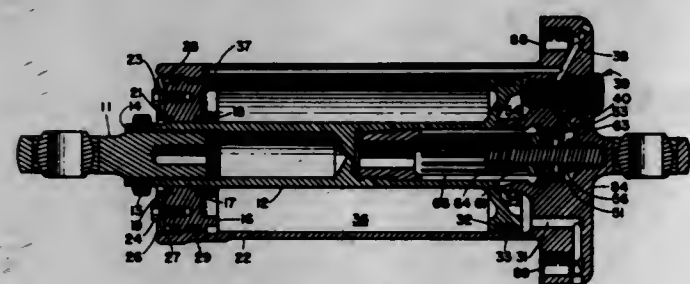
U.S. Cl. 92—26

3 Claims

A double-acting hydraulic actuator having finger locks



to restrain the piston in the retracted position, and an internally mounted slider valve for affecting the movement



of a locking piston to selectively hold the finger locks in their locking position.

#### ERRATUM

For Class 92—63 sec:  
Patent No. 3,462,986

3,463,056

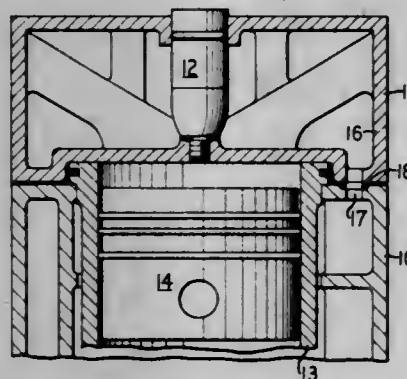
#### COMBUSTION SEAL FOR CYLINDER LINER IN INTERNAL COMBUSTION ENGINES

James D. Moore, East Peoria, and Charles N. Fangman, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed July 29, 1968, Ser. No. 748,305  
Int. Cl. F16j 11/04

U.S. Cl. 92—171

4 Claims



A seal between the flange of a cylinder liner and the inner wall of a recess in a cylinder head which seals by radial outward or expanding pressure rather than compressive pressure between the cylinder head and the liner flange, thus eliminating the necessity for excessive stud loads and excessively rigid cylinder heads.

3,463,057

#### ARRANGEMENT OF CYLINDER AND PISTON IN ENGINE

Norman M. Packard, Des Plaines, Leonard O. Squinto, Berwyn, and William Lenz, Western Springs, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware

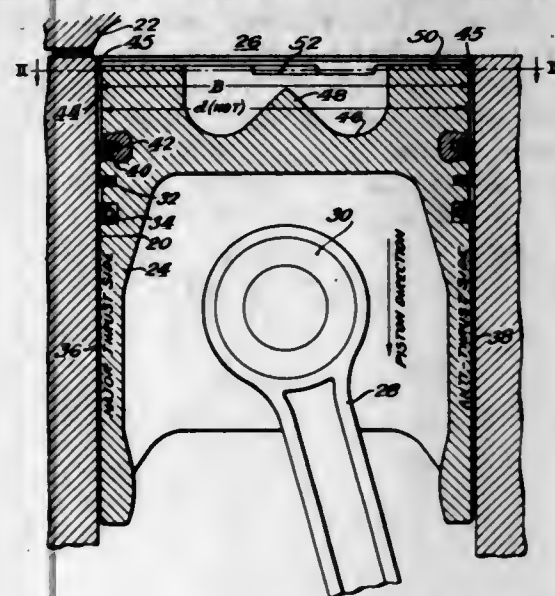
Filed Mar. 23, 1967, Ser. No. 625,352  
Int. Cl. F16j 1/04

U.S. Cl. 92—233

6 Claims

Internal combustion engine piston formed with a large setback of the top land to provide exaggerated piston clearance about the head of the piston. The setback creates an oversize annular orifice, leading to the top seal ring on the piston and insuring maintenance of a wide orifice path in which sufficiently high, carbon-burning temperatures can prevail to prevent adherent, unburned,

load-bearing carbon from being formed and deposited about the piston head, and through which is afforded instant communication of substantially full combustion gas



pressure to the top seal ring whereby radial force sufficient to seal will be developed in large part by gas load behind the top ring.

3,463,058

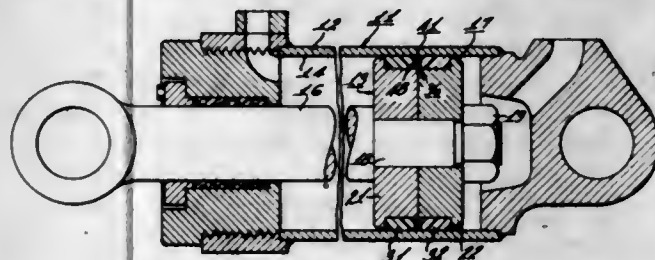
#### PISTON AND CYLINDER SEALING ARRANGEMENT

Harvey W. Rockwell, Springfield, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Sept. 27, 1967, Ser. No. 670,960  
Int. Cl. F16j 9/12

U.S. Cl. 92—250

3 Claims



An annular recess is provided on one of the pair of relatively extensible and contractable members into which a pair of axially spaced guide rings are installed providing an axial gap between their end faces. Within the radially outer part of this gap a flexible ring of Teflon material or the like is provided and a metallic spacer ring is installed in the radially inner part of the gap. An O-ring is positioned radially between the metallic ring and the sealing ring. The metallic spacer ring effectively serves to maintain the axial spacing between the two guide rings and provides a smooth surface at its outer diameter for the O-ring to slide on. The sealing ring is of slightly less axial width than the axial gap between the two guide rings. This is achieved by the spacer ring having a greater axial dimension than the sealing ring.

3,463,059

#### METHOD OF CONSTRUCTING A LIQUID-TIGHT SIDE WALL FOR SHIPPING CONTAINERS

Johnny Vank, Shertogenbosch, Netherlands, assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware

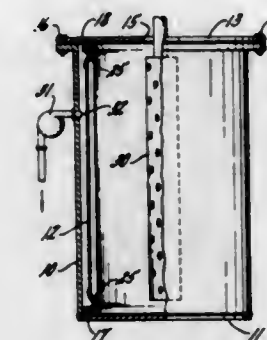
Filed Aug. 22, 1966, Ser. No. 574,119  
Int. Cl. B31c 13/00

U.S. Cl. 93—77

4 Claims

1. Apparatus for forming a liquid-tight shipping container side wall, said apparatus comprising the combination of an annular vacuum vessel adapted to receive a

tubular air-permeable side wall that is open at both ends and a preformed liquid-tight tubular liner of air-impermeable flexible sheet material disposed within said side wall and extending beyond the ends of said side wall, sealing gasket means at both ends of said vacuum vessel for forming a seal between said vacuum vessel and said side wall, said sealing gasket means pressing the end portions of said liner against the corresponding ends of said side wall when said end portions of said liner are turned over the corresponding ends of said side wall, said



vacuum vessel and said sealing gasket means forming a substantially uniform annular vacuum chamber between the inner surface of said vacuum vessel and the outer surface of said side wall and extending along substantially the entire length thereof, a heating element disposed within the interior of said side wall to render said tubular liner plastically deformable, and means for drawing a vacuum within said annular vacuum chamber to draw said liner into adherent contact with substantially the entire inner surface of said side wall.

3,463,060

#### CONTAINER BODYMAKER

Charles J. Chebuhar, Chicago, Ill., assignor to Continental Can Company Inc., New York, N.Y., a corporation of New York

Filed Nov. 9, 1966, Ser. No. 593,079  
Int. Cl. B31c 7/02; B31b 1/00

U.S. Cl. 93—79

12 Claims



A machine for fabricating container bodies of truncated cone shape from blanks of flexible sheet material which comprises an elongate cylindrical forming horn fixed in horizontal position on a supporting frame, means for feeding successive blanks to the entrance end of the horn from a supply magazine through a preliminary edge folding mechanism, an overhead conveyor having a run thereof traveling in a path immediately above the top surface and parallel with the long axis of the horn, blank pushing blocks carried on the conveyor which have a concave face confronting the top surface of the horn and a means for folding the blanks against the face thereof with the side margins depending along the sides of the horn while advancing the blanks along the horn, a heater for activating an adhesive on the seam forming margins of the blanks past which the blanks are moved, folders for overlapping the blank margins and seam sealers which press the seam forming areas against the bottom face

of the horn. The machine includes stripper means at the discharge end of the horn and an arrangement for up-ending and discharging the completed body members.

3,463,061

#### MEANS AND METHOD FOR INSERTING JOINT FORMING STRUCTURE

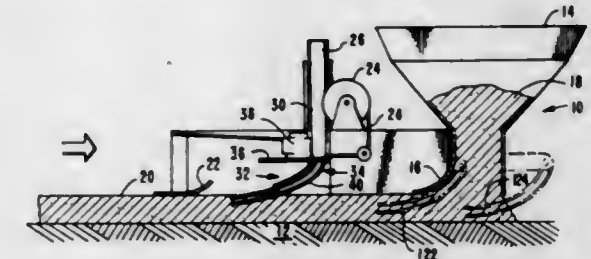
Robert F. Dill, 13341 Illinois, Westminster, Calif. 92683

Filed July 3, 1967, Ser. No. 650,704

Int. Cl. E01c 23/02

U.S. Cl. 94—39

10 Claims



A method and device for inserting a flexible joint forming structure beneath the surface of a plastic mass such as uncured concrete. The joint forming structure is inserted in the plastic mass by guiding it through an open sided guide.

3,463,062

#### MACHINE FOR LAYING JOINTLESS FLOOR SURFACINGS

Jakob Ehrbar, Allschwil, Basel-Land, and Emil Flury, Riehen, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

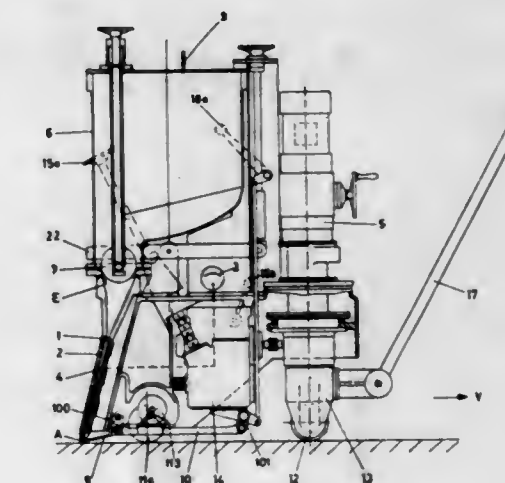
Filed Apr. 26, 1966, Ser. No. 545,348

Claims priority, application Switzerland, May 7, 1965, 6,420/65

Int. Cl. E01c 19/10, 19/16

U.S. Cl. 94—39

10 Claims



An ambulatory machine for laying jointless floor surfacings consisting of a hardenable plastics mortar, comprising a chassis having at least three ground-engaging wheels, an apparatus for depositing a strip of plastics mortar to a floor mounted upon said chassis, a front wheel steering mechanism, a rear wheel steering mechanism, coupling means for connecting and disconnecting said front and rear wheel steering mechanisms, a speed reduction gear arranged between said front and rear wheel steering mechanisms, the gear ratio of said speed reduction gear being such that when the front and rear wheel



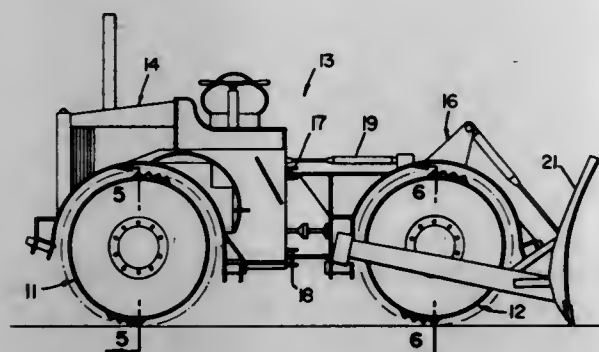
steering mechanisms are connected through said coupling means the rear wheel steering lock and the variation therein are smaller than the front wheel steering lock.

**3,463,063**  
**VEHICULAR WHEEL FOR COMPACTING**  
**SANITARY FILL**

Fred Joseph Caron, Citrus Heights, and Orville G. Barnum, South San Francisco, Calif., assignors, by mesne assignments, to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin  
Continuation-in-part of applications Ser. No. 558,306, June 17, 1966, and Ser. No. 645,680, June 13, 1967.  
This application Apr. 1, 1968, Ser. No. 717,580  
Int. Cl. E01c 19/26

U.S. Cl. 94—50

8 Claims

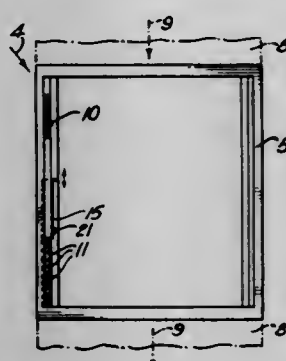


A compaction roll or wheel is equipped with symmetrical, wedge-shaped cleats arranged in a pattern of staggered, circumferential rows. An inclined, open gap extends between the cleats across the wheel facilitating self-cleaning in both rotational directions. One cleat at a time presents a destructive edge to the six o'clock position, transmitting one quarter of the compacting vehicle's weight to the ground across the single edge.

**3,463,064**  
**CAMERA WITH FILM MARKING STRUCTURE**  
Paul Klingenstein, Scarsdale, N.Y., assignor to Berkey Photo, Inc., New York, N.Y.  
Filed Feb. 20, 1967, Ser. No. 617,155  
Int. Cl. G03b 17/24

U.S. Cl. 95—1.1

3 Claims



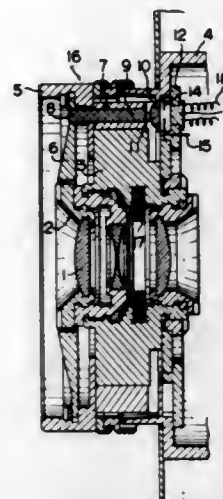
Camera with masking frame for the picture to be taken on the film in which the masking frame is apertured to pass light through the lens to the film outwardly of the picture area. A row of apertures have a slider to cover one or more of the apertures. Another aperture is backed with a solid transparent material to which is attached a transparent sheet with opaque indicia thereon. The light passed through the apertures is adapted to expose the film outwardly of the masked picture area.

**3,463,065**  
**LIGHT RECEIVING APPARATUS FOR AN**  
**EXPOSURE METER FOR A CAMERA**  
Tatsuo Kobayashi, Osaka, Japan, assignor to Minolta Camera Kabushiki Kaisha, Osaka, Japan  
Filed Aug. 19, 1965, Ser. No. 480,849  
Claims priority, application Japan, Aug. 27, 1964, 39/48,863

U.S. Cl. 95—10

Int. Cl. G01j 1/02; G03b 7/00

3 Claims



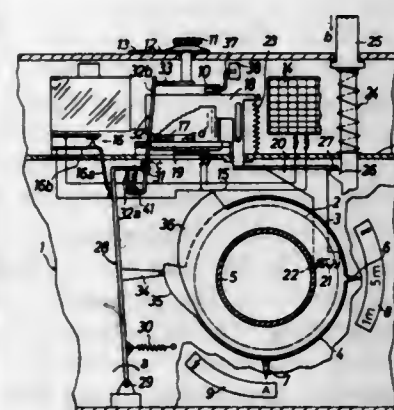
A camera having a built in exposure meter wherein a light sensitive element is disposed in the camera body. A cylinder assembly is secured to the camera body and a light conductor is mounted in the cylinder to provide a light path for the light sensitive element. A light restricting member is mounted in front of the light sensitive element and is adapted to be adjusted by a film magazine or other adjusting device so that the light received by the light sensitive element is adjusted to compensate for the particular sensitivity of the film contained in the camera. This adjustment is made by an actuating rod which extends into the camera body and is attached to the light restricting member.

**3,463,066**  
**EXPOSURE REGULATING DEVICE FOR**  
**PHOTOGRAPHIC CAMERA**  
Dieter Engelsmann, Unterhaching, and Hubert Hackenberg, Munich-Solln, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany  
Filed Dec. 1, 1966, Ser. No. 598,393  
Claims priority, application Germany, Dec. 2, 1965, A 50,954

U.S. Cl. 95—10

Int. Cl. G01j 1/52

19 Claims



A photographic camera comprising an exposure control device including an adjustable diaphragm, exposure meter,

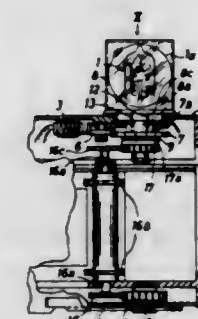
focusing means, electric circuit and an output member. The diaphragm is adjusted as a function of the position of the output member. When the camera is set for operation in daylight, the position of the output member is a function of scene brightness and such position is determined by the electric circuit which includes a photosensitive receiver. When the camera is set for operation with flash, the circuit is ineffective and the position of the output member is determined by an integrator mechanism which is adjustable by the focusing means and as a function of film speed.

**3,463,067**  
**PHOTOGRAPHIC CAMERA WITH FLASH UNIT**  
Guenter Fauth, Unterhaching, Munich, and Helmut Nusser, Grafting-Stadt, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany  
Filed Sept. 21, 1966, Ser. No. 580,918  
Claims priority, application Germany, Oct. 2, 1965, A 50,397

U.S. Cl. 95—11

Int. Cl. G03b 19/04, 15/03

23 Claims



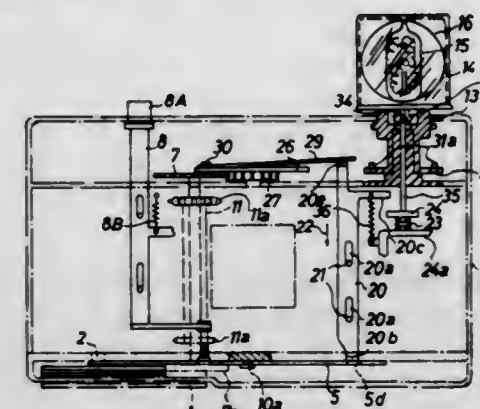
A photographic camera whose housing supports a socket for multiple flash bulb holders. The indexing mechanism for the socket is actuated by the film transporting mechanism and is connected with the socket by way of a friction clutch which permits the socket to remain idle when the indexing mechanism is operated while an unfired flash bulb faces the subject. The safety device which prevents indexing of the socket when an unfired bulb faces the subject comprises an electromagnet or a mechanical stop which is automatically deenergized or disengaged in response to firing of the flash bulb.

**3,463,068**  
**PHOTOGRAPHIC CAMERA WITH FLASH UNIT**  
Dieter Engelsmann, Unterhaching, Munich, Dieter Maas, Munich, Karl Bammesberger, Munich-Untermenzing, and Hubert Hackenberg, Munich-Solln, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany  
Filed July 14, 1966, Ser. No. 565,121  
Claims priority, application Germany, Aug. 9, 1965, A 49,945

U.S. Cl. 95—11.5

Int. Cl. G03b 9/70, 15/03

18 Claims



A photographic camera with a built-in flash unit employing multiple flash bulb holders which are indexible

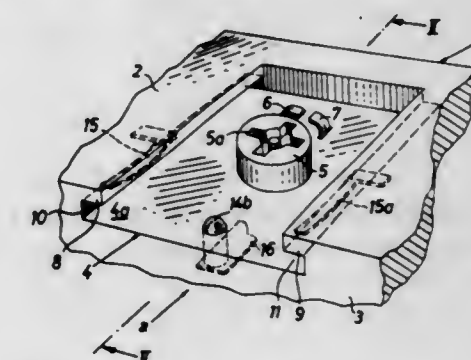
to place successive bulbs into appropriate position for firing. The camera has a socket for supporting the multiple flash bulb holder, a device for actuating the camera, an indexing member for the camera socket, and a control element for the indexing member. The control element prevents the indexing member for the multiple flash bulb holder from indexing the holder prior to operation of the camera actuating device and subsequent to attachment of the holder to the camera socket. The control element also prevents operation of the indexing member when the holder is detached from the camera socket.

**3,463,069**  
**PHOTOGRAPHIC CAMERA FOR DAYLIGHT**  
**AND FLASH OPERATION**  
Rudolf Kremp, Grunwald, Munich, Karl Wagner, Otto-brunn, Munich, Dieter Engelsmann, Unterhaching, Munich, and Alfred Winkler, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany  
Filed Aug. 23, 1966, Ser. No. 574,332  
Claims priority, application Germany, Aug. 27, 1965, A 50,116

U.S. Cl. 95—11.5

Int. Cl. G03b 9/70

20 Claims

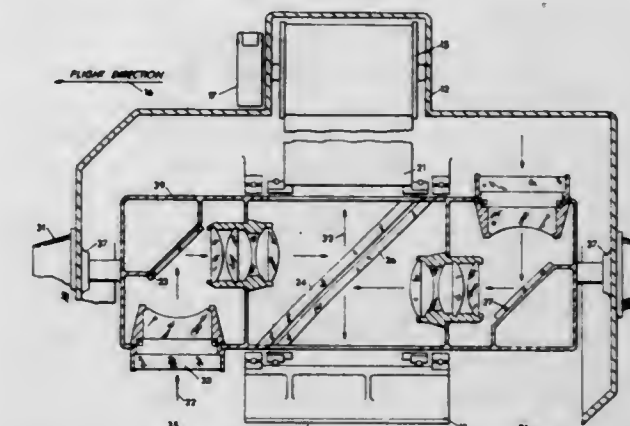


A photographic camera whose housing carries an indexible socket for multiple flash bulb holders and a shoe or a female connector for the complementary connector of an electronic flash. The socket can be accommodated within the confines of the shoe or is accommodated in a recess which can receive an aligning device of the electronic flash. Those parts of the flash circuit which are used only for firing of flash bulbs are disconnected when the electronic flash is connected to the camera housing.

**3,463,070**  
**PANORAMIC AERIAL CAMERA**  
Joseph F. G. Miller, Lincoln, and John T. Watson, Wellesley Hills, Mass., assignors to Itek Corporation, Lexington, Mass., a corporation of Delaware  
Filed Feb. 21, 1967, Ser. No. 617,678  
Int. Cl. G03b 37/02

U.S. Cl. 95—16

9 Claims



A continuous scan panoramic camera which eliminates overlapping or missing frames and utilizes slow scanning



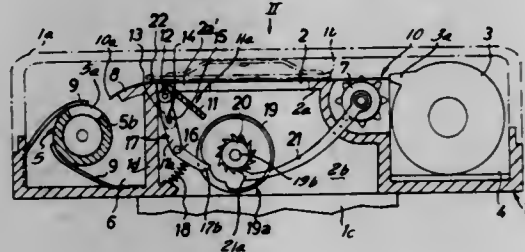
speeds to lower driving power required. This accomplished by having two lens systems 180° apart, and rotatably mounted on the camera. The two lens systems alternatively scan the object area and image it upon a synchronized, feeding, cylindrical film platen.

**3,463,071**  
**CAMERA WITH AUTOMATIC FILM**  
**THREADING DEVICE**

Alfred Winkler, Munich, Karl Bammesberger, Munich-Untermenzing, and Heinz Ernst, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany

Filed May 16, 1966, Ser. No. 550,268  
Claims priority, application Germany, May 15, 1965,  
A 49,230

Int. Cl. G03b 19/04, 1/48  
U.S. Cl. 95—31 20 Claims

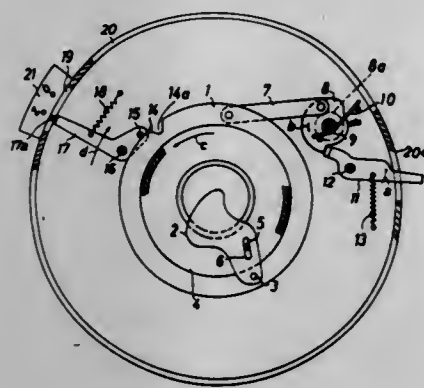


A photographic camera wherein the film is guided in a channel extending between a chamber for a supply of roll film and a chamber for a take-up spool, and wherein the channel communicates with a window into which the leading end of film tends to curl during transport from the first chamber into the second chamber. The window accommodates a movable guide member having a guide surface which is inclined with reference to the path of film in such a way that it can deflect the leading end back into the channel.

**3,463,072**  
**SHUTTER FOR PHOTOGRAPHIC CAMERAS**  
Gerd Kiper and Erwin von Wasielewski, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany

Filed Oct. 18, 1966, Ser. No. 587,461  
Claims priority, application Germany, Oct. 29, 1965,  
A 24,646

Int. Cl. G03b 9/00  
U.S. Cl. 95—53 4 Claims

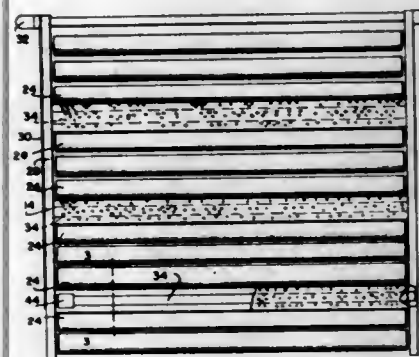


A photographic shutter wherein movement of shutter blades to open position results in completion of a circuit including a signal lamp which lights up to indicate to the

user of the camera that the shutter is open. The circuit is deenergized in response to closing of the shutter.

**3,463,073**  
**FILM PROCESSING APPARATUS**  
Earle M. Knibiehly, Annandale, Va., assignor to Logetronics, Inc., Alexandria, Va., a corporation of Delaware

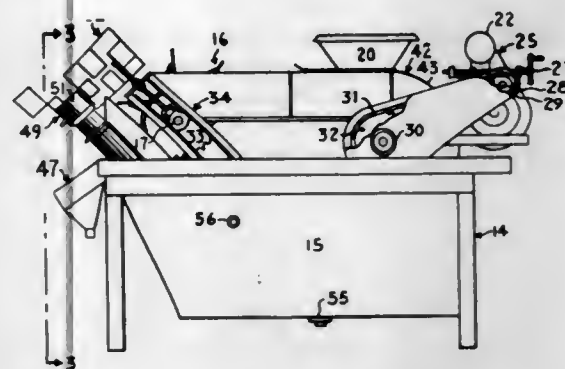
Filed July 26, 1966, Ser. No. 567,890  
Int. Cl. G03d 3/12  
U.S. Cl. 95—94 10 Claims



A photographic film processing apparatus having a frame defining a path of film movement, a pair of film engaging rollers journaled in the frame, a tube containing discharge ports interposed between the rollers, and a grille arrangement for directing the spray of processing fluid from the tube onto the rollers. The tube is interposed between the rollers substantially parallel to the axes of the rollers, and the discharge ports of the tube are arranged on axes parallel to the path of film movement and at an acute angle of inclination relative to the rollers. The grilles are interposed between the spray tube and the path of film movement to prevent the spray of the tube from coming into direct contact with the film being processed whereby the rollers effect an indirect transfer of the fluid from the spray tube to the film.

**3,463,074**  
**IN-THE-SHELL PECAN SANITIZER**  
Leo J. Meyer, San Antonio, Tex., assignor to Meyer Machine Company, a division of Ramo, Inc., San Antonio, Tex.

Filed Feb. 6, 1968, Ser. No. 703,292  
Int. Cl. B65b 55/14; A23I 1/36  
U.S. Cl. 99—249 5 Claims



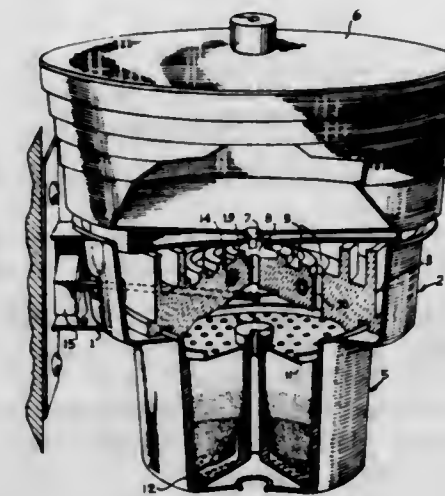
A hot water sanitizing machine comprising a tank and a thermostatically controlled immersion heater. The pecans are fed into a hopper and immersed by a variable speed continuous bucket conveyor through the hot water at variable adjustable rates sufficient to kill the *E. coli* bacteria on the exterior of the shells and casebearer worms in the shells.

**3,463,075**  
**APPARATUS FOR PREPARATION OF COFFEE**  
**OR LIKE BEVERAGE**

Chester H. Wickenburg, 890 Ford Ave.,  
Elgin, Ill. 60120

Filed Apr. 8, 1968, Ser. No. 719,604  
Claims priority, application Sweden, Apr. 11, 1967,  
5,034/67

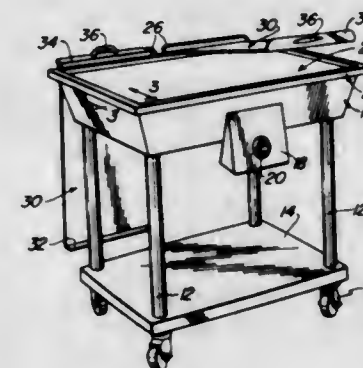
Int. Cl. A23f 1/08  
U.S. Cl. 99—282 5 Claims



An apparatus for preparation of coffee or like beverages in which water is heated and caused to seep through ground coffee within the apparatus, including a heat responsive element for controlling the electric energization of the water heating unit.

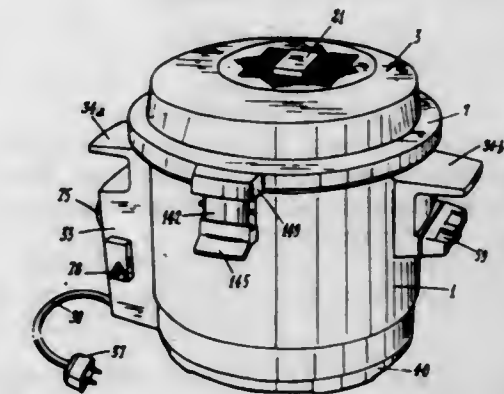
**3,463,076**  
**BUN TOASTER**  
Richard T. Keating, 4301 W. Madison St.,  
Chicago, Ill. 60624

Filed Oct. 6, 1967, Ser. No. 673,317  
Int. Cl. F24c 15/10; A47j 37/06  
U.S. Cl. 99—349 7 Claims



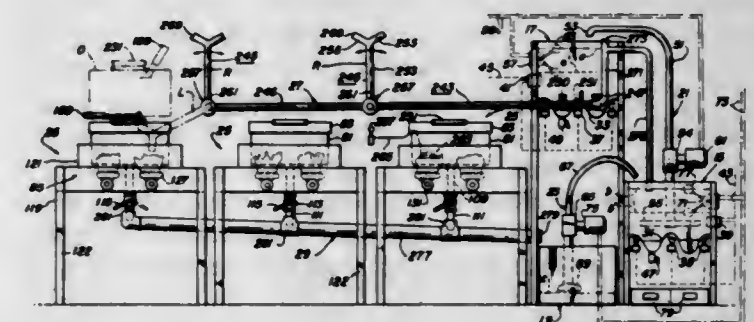
The disclosure describes a bun toaster and griddle having a wheeled stand with a body member or tray which supports a griddle having a lift-off perimetrical frame member, spaced therefrom and supporting removable loosely hinged bun boards at one edge which hold the buns in contact with the griddle. In one embodiment the griddle plate has at least one supporting lug at each of its peripheral edges which lugs engage the flanges of an open-topped tray to support the griddle plate in spaced relationship across the open top and which lugs are also engaged by and hold in spaced relationship a lift-off perimetrical frame member so that the edges of the griddle are insulated. Other embodiments are disclosed including the provision of handles on the lift-off frame serving as hinges and retainer guides for the bun boards thereon.

**3,463,077**  
**FRYING APPLIANCE**  
Henri Lescure, Selongey, France  
Filed July 14, 1967, Ser. No. 653,501  
Claims priority, application France, July 21, 1966,  
70,300; Mar. 1, 1967, 97,036  
Int. Cl. A47j 37/12, 27/00  
U.S. Cl. 99—403 17 Claims



A frying appliance comprising a container intended to receive the frying oil and characterized in that it comprises a lid arranged fluid-tightly on the rim of the container, closure members allowing the lid to be fixed on the container and a filter accommodated in the lid, allowing communication from the inside of the container with the atmosphere but adapted to deodorise the fumes and vapours. The lid contains a cover arranged inside it, and having vents allowing communication between the space inside the container and space located between the lid and said cover, this latter having moreover a profile which ensures that the condensation water is led off towards the periphery of the cover while the rim of the container has an annular gutter intended to receive the condensation water running off of the cover.

**3,463,078**  
**DEEP FAT FRYING APPARATUS**  
Jack O. Pirtle, 2419 Union Ave., Memphis, Tenn. 38112  
Filed Oct. 4, 1967, Ser. No. 672,825  
Int. Cl. A47j 37/12  
U.S. Cl. 99—403 20 Claims



Apparatus for pressurized deep fat frying to cook chicken, fish, potatoes, onions or other food items. The apparatus is particularly suitable for deep fat cooking large quantities of food and for use in restaurants or other commercial establishments specializing in take-out food orders. The apparatus preferably includes a row of cooking units with each unit having an open topped drainable frypan arranged over gas burner means and with the food items being adapted to be deep fat fried in the pan.

Each cooking unit has a cyclic operation and is adapted for rapidly cooking successive batches of food items. This is made possible by virtue of having a continuously available supply of preheated filtered liquid cooking fat and having means for rapidly introducing the cooking fat into the frypan of each cooking unit and for rapidly draining the cooking unit frypan. The used fat from successive batches of food items is substantially continuously proc-



essed by being conducted through a plurality of tanks; the preheated filtered fat is stored in one of the tanks and provides a continuously available supply of clean, hot liquid fat for each cooking unit. Each cooking unit includes a frypan having smoothly contoured bottom and side portions, and also heat insulated wall means spaced closely around the sides of the frypan. The above structure facilitates the uniform heating of the frypan and proper circulation of the liquid fat during cooking.

3,463,079

**BALING MACHINES**

George Lawrence Corbett, Birmingham, England, assignor to Portable Balers Limited, Hockley, Birmingham, England, a corporation of the United Kingdom of Great Britain and Northern Ireland

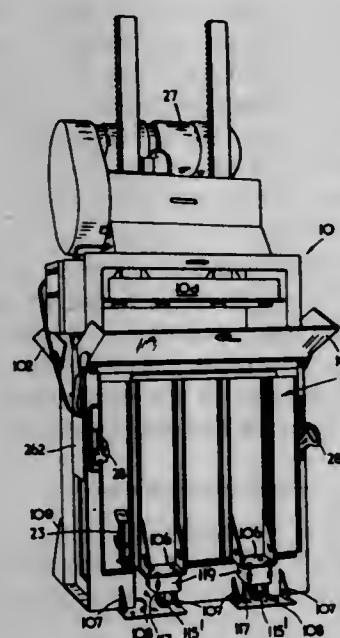
Filed June 1, 1967, Ser. No. 642,750

Claims priority, application Great Britain, June 23, 1966, 28,112/66; Feb. 28, 1967, 9,413/67, 9,414/67, 9,415/67, 9,417/67

Int. Cl. B30b 1/24, 15/30; B65b 13/04

U.S. Cl. 100—215

9 Claims



This invention has reference to baling machines and consists inter alia of a baling machine operating on the general principles of the prior United States Patent No. 2,757,603 in which the bottom of the detachable mobile truck is supported on spring suspended wheels and in which the said wheels are adapted to be run into runways in the bottom of the body when the open side of the body is to be closed for baling purposes, and in which the runways are bounded by reinforcements of a rigidity sufficient to withstand crushing under the maximum designed baling pressure of the machine and in which the depth of the said runways is such that during loading the springs of the spring suspension for the wheels may be compressed until loading advances beyond a predetermined amount whereupon the bottom of the truck is caused to rest on said reinforcements and thereby to provide a rigid support which can withstand crushing during the application of continued baling pressure.

3,463,080

**PLASTIC LAMINATING PRESS**

George Rodriguez and James Ouye, both of 1365 Rollins Road, Burlingame, Calif. 94010

Filed Feb. 12, 1968, Ser. No. 704,751

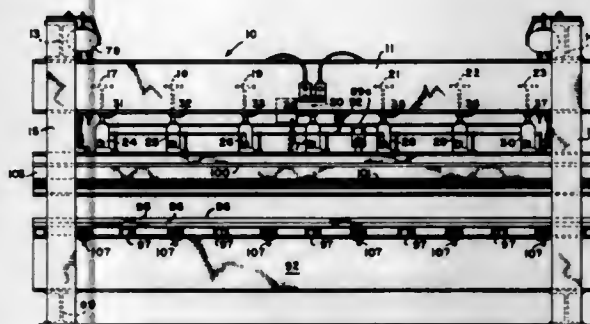
Int. Cl. B30b 1/34, 15/34; B27d 3/00

U.S. Cl. 100—257

9 Claims

A press adapted for cementing plastic or the like to a base of wood or the like provided with a table on which the work to be cemented is placed. A pressure plate

adapted to be lowered onto the top of the work by suitable hoists attached to the top of the press frame. The pressure plate is attached to several longitudinally disposed rigid beams and rows of hydraulic jacks, which are interconnected by a hydraulic pressure line, are attached to the top surfaces of these beams. Each jack is provided with a small pump so that when the pump of a selected jack is operated fluid pressure is supplied thereto and also through the pressure line to the other jacks



and uniform pressure is applied by the pressure plate to the work surface. The pressure plate is also provided with an electrical heating element and heat may be applied to the work during the cementing operation. One side of the pressure plate is also provided with a hinged pressure member which is adapted to be pressed against the edge of the work by suitable clamps attached to the table so that curved surfaces may be cemented to the side of the work.

3,463,081

**ELECTRICAL HIGH SPEED PRINTER**

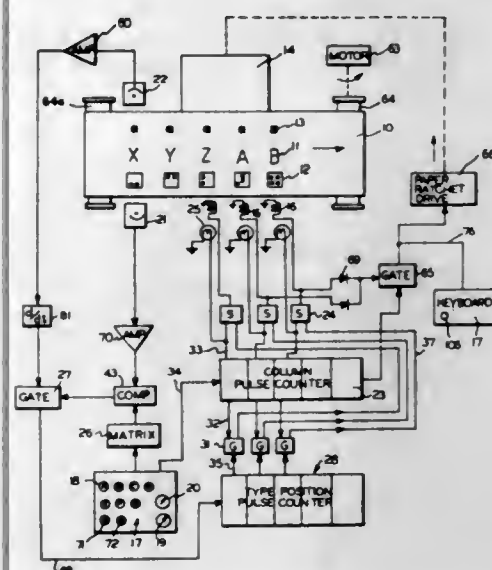
Alfred B. Levine, 2924 Terrace Drive, Chevy Chase, Md. 20015

Filed May 12, 1967, Ser. No. 638,160

Int. Cl. B41j 21/02, 29/42

U.S. Cl. 101—93

15 Claims



An electronically controlled printing apparatus or type-writer operated by a keyboard or coded record and having a minimum of moving parts including a constantly moving endless type belt or otherwise shaped record traversing a stationary sheet of paper. In a preferred construction, the printing is performed serially by inductively displacing preselected type on the moving belt against the paper by pulsing a magnetic field located at the selected column of the paper to receive print in synchronism with the positioning of the preselected type on the belt to be printed at that column. This time and position synchronization is controlled electronically by detecting a symbol position code on the moving type belt and electronically triggering the generation of the magnetic field at the proper time and position using electronic logic circuitry. The printer provides electronically

controlled backspacing, indenting, and recycling as well as visually indicating each succeeding column on the print receiving paper to be typed for providing assistance to a manual operator. A plurality of interchangeable type belts are provided for rapidly changing the kind, style, language, (or pictorial symbols to be printed, and each type belt is preferably formed of a light weight plastic base member supporting nonmagnetic, electrically conductive printed circuits in the configuration of the symbols to be printed and carrying a digital position coding adjacent each of the symbols for synchronization purposes. Electronically controlled right hand and left hand margin setting is also provided to enable an operator or program to adjustably set these margins.

3,463,082

**OFFSET PRINTING MACHINE WITH WIPING SHEET FOR REMOVING INK FROM BLANKET CYLINDER**

Helmut Käufer, Metzhausen/über Mettmann, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany

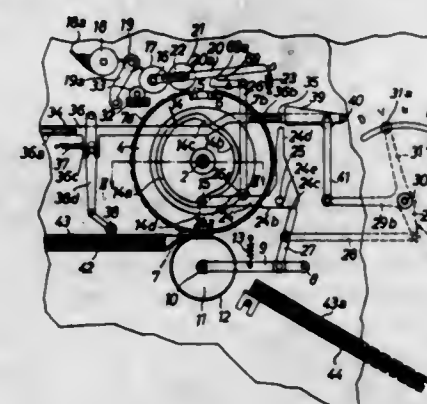
Filed Apr. 5, 1966, Ser. No. 540,291

Claims priority, application Germany, Apr. 15, 1965, A 48,952

Int. Cl. B41f 9/08, 13/24

U.S. Cl. 101—144

18 Claims



An offset printing machine wherein a rotary master cylinder and platen unit which can include one or two cylinders serves to transfer ink images to and to constitute a back support for the blanket cylinder. The master cylinder and platen unit carries an image-transferring master sheet, a wiping sheet for removing ink from the blanket cylinder, and clamping devices for detachably securing the sheets to the master cylinder and platen unit. The two sheets may form a one-piece foil.

3,463,083

**ROTARY CODE DATER WITH PACKAGE BLANK FEEDER**

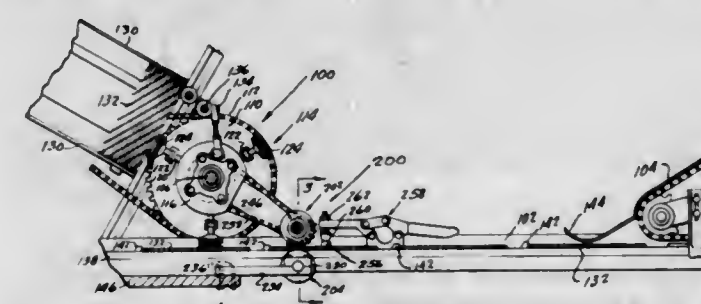
William A. Graham, Baltimore, Md., and Allan Kay Green, Macon, Ga., assignors to J. H. Filbert Inc., Baltimore, Md., a corporation of Maryland

Filed May 18, 1967, Ser. No. 639,433

Int. Cl. B41f 13/24

U.S. Cl. 101—232

6 Claims



A code dating assembly for utilization with packing machines which includes a coding wheel having removable

type inserts secured therein, a backing wheel which cooperates with the coding wheel for impressing code numerals on packages and a system for synchronously driving the coding wheel to position the code numerals at the same point on package blanks is disclosed.

3,463,084

**PRINTING PRESS WITH FLEXIBLE WORK SUPPORT PLATE**

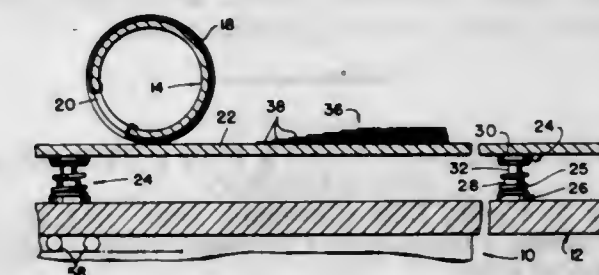
Edward Nineberg, Evanston, Ill., assignor to The Hodges Press Inc., Detroit, Mich., a corporation of Michigan

Filed Oct. 4, 1967, Ser. No. 672,815

Int. Cl. B41f 3/66, 21/00

U.S. Cl. 101—279

8 Claims



A rotary printing press adapted to print the marginal portions of stacked sheets of material arranged in shingle fashion including a rotary printing cylinder and a flexible and resiliently supported movable plate on which the stacked sheets are carried beneath the cylinder to be printed, and gauge means on the plate engaged by the cylinder to depress the plate so that the marginal portions of successive sheets in the stack are brought down into the printing plane of the press as they pass under the cylinder.

3,463,085

**UNDERWATER EXPLOSIVE CHARGE**

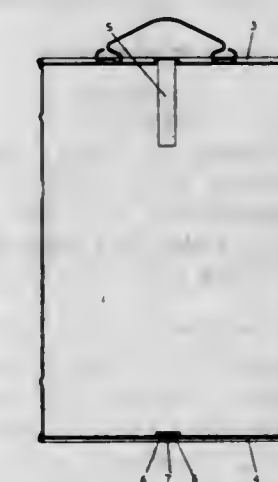
William Stewart Kerr Andrew, deceased, late of West Kilbride, Scotland, by Jeanie Andrew, sole executrix, West Kilbride, Scotland, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Continuation of application Ser. No. 618,227, Feb. 23, 1967. This application Oct. 4, 1968, Ser. No. 769,469 Claims priority, application Great Britain, Mar. 18, 1966, 11,989/66

Int. Cl. F42d 3/00

U.S. Cl. 102—24

8 Claims



An explosive charge for underwater use comprises a water-destructible explosive contained in a casing having an aperture and normally closed valve means for opening the aperture at a predetermined exterior pressure so that



water will enter the casing upon sinking of the latter to a predetermined depth. The valve may take the form of a flexible flap which is displaceable away from the inner end of the aperture by the hydrostatic pressure outside the casing.

3,463,086

# CASELESS SMOKELESS POWDER PELLET AND METHOD OF PREPARING SAME

Joseph W. Silva, New Haven, and Edward A. Staba, Higganum, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia  
Filed Nov. 6, 1967, Ser. No. 680,882  
Int. Cl. F42b 5/02, 9/02

U.S. Cl. 102-38

7 Claims

A caseless pellet comprising a propellant body of dry compacted fibrous smokeless powder and a slurry priming composition adhered to said propellant body.

3,463,087

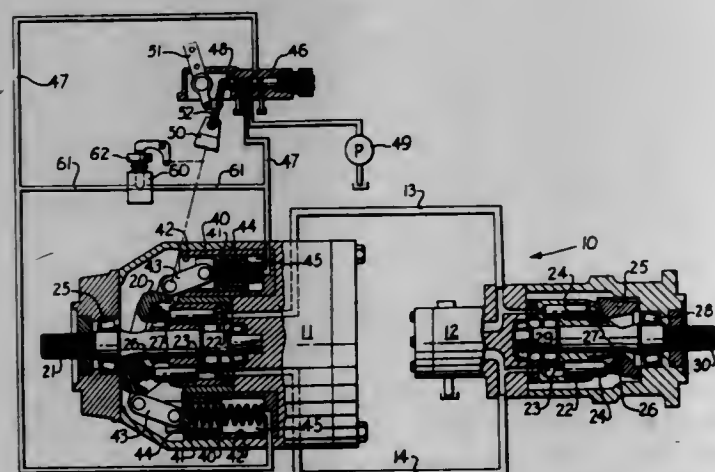
# CONTROL RESPONSE VALVE FOR HYDROSTATIC TRANSMISSION

Arthur F. Grant, East Cleveland, Ohio, assignor to Towmotor Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 16, 1967, Ser. No. 675,373  
Int. Cl. F04b 49/00, 1/02; F04d 15/00

U.S. Cl. 103-38

1 Claim



A hydrostatic transmission having a pump whose displacement is controlled by a fluid ram and a servo loop. The servo loop has a manual displacement control valve and an adjustable metering valve which controls the rate of ram response to the movement of the manual control valve. The manual control valve and the metering valve are connected by linkage for simultaneous movement.

3,463,088  
PUMP

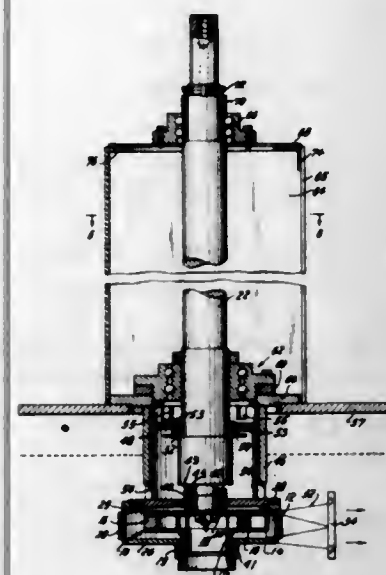
Emil Umbricht, Northville, Mich., assignor to Ajem Laboratories, Inc., Livonia, Mich.  
Continuation of application Ser. No. 143,355, Oct. 6, 1961. This application Oct. 22, 1964, Ser. No. 407,272  
Int. Cl. F04d 1/04, 29/22, 29/42

U.S. Cl. 103-103

10 Claims

2. A centrifugal pump adapted for handling liquid suspensions and contaminated liquids with low wear, long life and high efficiency comprising a scroll body, a substantially vertical rotatable shaft, a shaft support, drive means for said shaft, a scroll-support assembly suspended from said shaft support, a seal centered in the bottom face of said scroll-support assembly through which said rotatable shaft extends, a pump scroll suspended from the scroll-support assembly having a central intake pipe in the lower surface, said intake pipe having a seal, an impeller assembly having parallel circular plates with a plurality

of backward sloping vanes extending between them and an upper central hub connected to the end of said rotatable shaft and a lower central hub fitted into said central intake pipe whereby to receive fluid therefrom, said impeller vanes commencing at the circumference of said lower hub and shaped to provide constant cross-section at all points along the path of liquid flow between the vanes to the outer circumference of the impeller assembly, said seals having sufficient clearance to allow substantially



free passage of particulate suspended matter, said rotatable shaft having an abrupt shoulder near the scroll-support assembly that acts as a primary slinger of liquid if any escapes past the upper impeller seal, a secondary slinger connected higher on the rotatable shaft, said scroll support having escape holes in its wall opposite said primary slinger, a stationary splash deflection shelf located in the scroll support assembly close above the secondary slinger, said scroll support also having holes located in its wall above the stationary shelf.

3,463,089

# HIGH-PRESSURE GEAR PUMPS

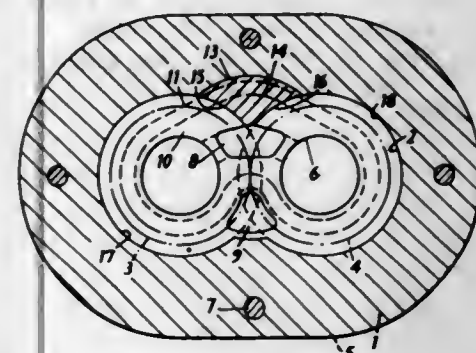
Harry Newborough, Ilford, England, assignor to The Plessey Company Limited, Ilford, England, a British company

Filed Oct. 2, 1967, Ser. No. 672,308  
Claims priority, application Great Britain, Oct. 7, 1966, 44,926/66

Int. Cl. F04 1/04; F04b 21/08

U.S. Cl. 103-126

6 Claims



In a gear pump for very high pressure the housing is made of high tensile-material, while a replaceable insert containing the surfaces which form the peripheral seal with the gears, consists of softer material having good tracking characteristics.

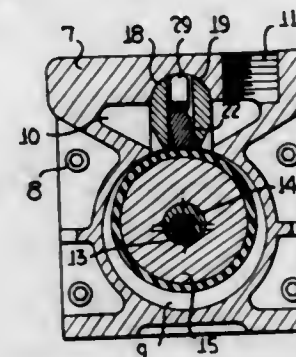
3,463,090  
FLUID PUMP

Ralph E. Gordinier, Newark, N.J., assignor to Eco Pump Corporation, Newark, N.J., a corporation of New Jersey

Filed Dec. 15, 1967, Ser. No. 690,864  
Int. Cl. F04c 1/02

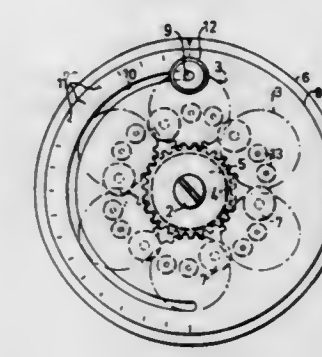
U.S. Cl. 103-130

9 Claims



A fluid pump having a pair of impeller rotors and means for imparting a gyrating motion to the impellers. A chamber above the impeller rotors having a vane guide dividing the chamber into a fluid intake and discharge section, vanes slidably mounted in said guide for contact with the periphery of the impeller rotors, and means for conducting fluid pressure to the upper ends of said vanes to exert a downward pressure on said vanes.

rollers rotatably mounted on a rotatable member. The rollers form relatively sharp bends in the hose, thereby forming closed cells within the hose, which cells are moved along the hose by the rotation of the rotatable member. According to the invention the rollers are adjustable radially on the rotatable member to change the



length of the cells and thereby the liquid output of the pump at an unchanged rotational speed of the rotatable member. The invention further comprises mechanical means for the adjustment of the rollers on the rotatable member and for compensating for the variations of the length of the hose engaged by the rollers.

3,463,091

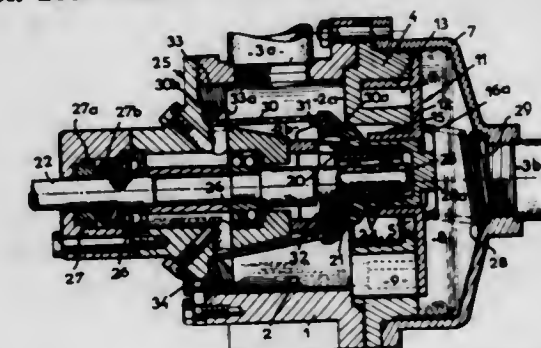
# VOLUMETRICAL PUMP

Jean Delsuc, 101 Avenue Mozart, Paris XVI<sup>e</sup>, France  
Filed Mar. 21, 1967, Ser. No. 624,766  
Claims priority, application France, Mar. 23, 1966, 54,688

Int. Cl. F04c 1/00, 3/00

U.S. Cl. 103-131

8 Claims



The volumetrical pump comprises a fixed casing provided with an annular recess containing a fixed radial partition and having an inlet port on one side of said partition and a moving cylinder assembly consisting of a ring provided with a radial slot and lodged within said recess with the partition extending through the slot and of a plate fixed to the ring and provided with outlet ports located on the other side of the partition, said plate sealing one side of the recess except for the outlet ports, the moving cylinder being supported by an eccentric bush carried by a rotary shaft whereby the rotation of said shaft causes the pumping of the fluid.

3,463,092

# HOSE PUMP

Sven Fredrik Erhard Meyer, Stockholm, Sweden, assignor to Blotec AB, Stockholm, Sweden, a corporation of Sweden

Filed July 31, 1967, Ser. No. 657,381  
Claims priority, application Sweden, Aug. 1, 1966, 10,439/66

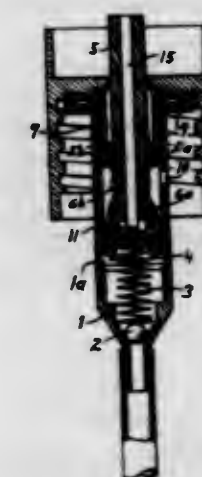
Int. Cl. F04b 43/08

U.S. Cl. 103-149

19 Claims

This invention relates to a hose pump of the type in which a flexible elastic hose is laid around a number of

A hand actuated simply operating push plunger pump with a compression spring 3 in the pump cylinder 1, the spring pressing against a valve plate 4 of an outlet valve that is opened by means of a hollow plunger stem 5 but with the plate pressing against a valve seat in pump plunger 6a, 6b while the pump is at rest, in combination with a sealing sleeve 7 in the pump cylinder in a position between the plunger and the closure cap 13 on the container where the sleeve will be engaged, while the pump is at rest, by a plunger consisting of a cuff 6a and a neck 6b, there being in the pump cylinder a pressure equalizing opening 10 which in the resting position is at the level of the space between the plunger cuff and the

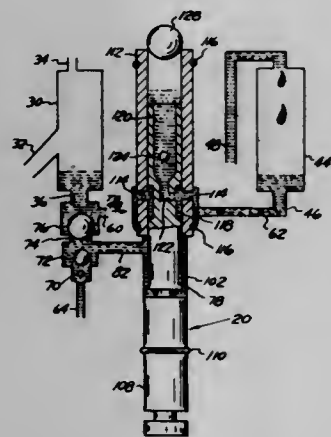




sealing sleeve whereby the air equalizing path is sealed off by the latter during the resting stage, but where during the actuating stroke the inside of the container is kept in communication with the outside atmosphere, characterized in that the plunger 6a, 6b with its thin walled elastic neck 6b is adapted to be axially coordinated with an enlargement 5b on the plunger stem 5.

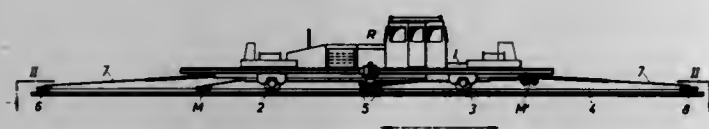
### 3,463,094 PUMP AND STORAGE CHAMBERS FOR PREVENTING BACK SIPHONAGE

John R. Fonda, 150 Victor Ave.,  
Birmingham, Mich. 48203  
Filed May 3, 1968, Ser. No. 726,292  
Int. Cl. F04b 21/04; F16l 43/00; B67d 5/40  
U.S. Cl. 103—195 3 Claims



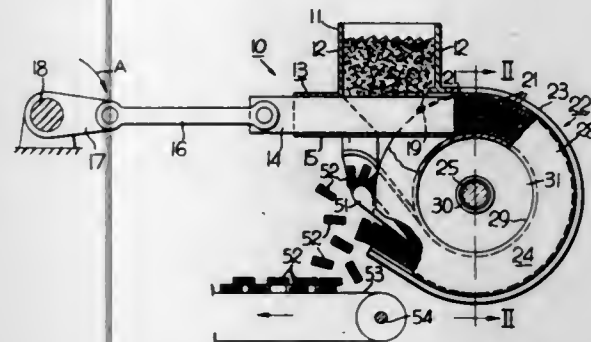
The pump of this invention comprises two axially aligned pistons, one controlling intake of fluid from a reservoir, and the other controlling its discharge through the pump outlet. Intermediate these stations are two storage chambers which function to assure accurate metering of the fluid and to prevent back siphonage of the fluid to the pump output in the event of loss of head at the output.

3,463,095  
**TRACK ALIGNING MACHINE**  
Franz Plasser and Josef Theurer, both of 3 Johannesgasse,  
Vienna 1, Austria  
Filed Nov. 13, 1967, Ser. No. 682,099  
Claims priority, application Austria, Nov. 14, 1966,  
A 10,489/66  
Int. Cl. E01b 33/00  
U.S. Cl. 104—8 19 Claims



A track aligning machine for measuring, recording and/or correcting the position of rails comprising a vehicle suitable for rail travel and having rail alignment devices depending therefrom to selectively engage and displace the rails. At least one linearly extending chordal reference element is mounted on the vehicle with the ends thereof spaced from the rail. A transmission device is operatively connected between the chordal element and a transducer element which senses deviations of the rail from the desired path. An adjustment means is responsively connected to the transducer element to indicate the need for rail alignment.

3,463,096  
**ROTATING DIE WAFERING DEVICE**  
Bruce H. Fiedler, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.  
Filed Nov. 17, 1967, Ser. No. 684,059  
Int. Cl. A21c 11/16; B30b 5/00; B28b 3/20  
U.S. Cl. 107—14 4 Claims



A pelleting machine provided with a movable pellet dwell portion wherein movement of the dwell portion is accomplished by pellet formation and wherein such movement can be controlled.

3,463,097  
**PRODUCTION OF LIQUID FILLED  
CHOCOLATE ARTICLES**  
Hans-Georg Monheim, Aachen, Germany, assignor to  
Messrs. Leonard Monheim, Aachen, Germany  
Filed Jan. 18, 1967, Ser. No. 610,100  
Claims priority, application Germany, Jan. 21, 1966,  
M 68,093  
Int. Cl. A23g 1/00, 3/20  
U.S. Cl. 107—54 5 Claims

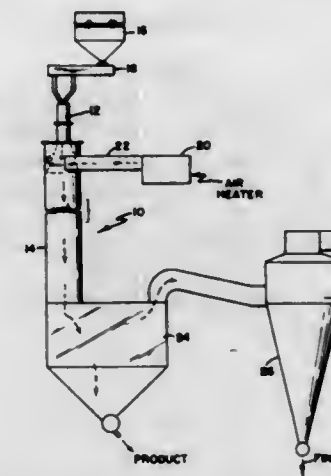


A method of and apparatus for producing liquid filled chocolate articles, according to which a hollow body adapted to maintain its shape and formed from a mass of chocolate, sugar, or similar substances is filled with a liquid, whereupon said body is coated with a layer of chocolate containing at least one shape maintaining taste carrier and, if desired, flavoring additives, and the thus composed article is formed to its final shape.

3,463,098  
**LOW IMPACT AGGLOMERATOR AND METHOD**  
Donald G. Gyde, Minneapolis, and Howard R. Melndi, Brooklyn Center, Minn., and Frederick T. Varani, Warehouse Point, Conn., assignors to General Mills, Inc., a corporation of Delaware  
Filed May 5, 1967, Ser. No. 636,349  
Int. Cl. A21d 2/00  
U.S. Cl. 107—54 16 Claims

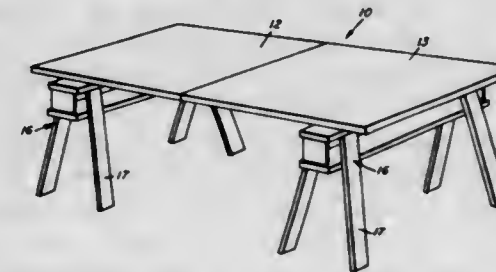
An apparatus and process for forming loosely-bound agglomerates from a powdery or pulverulent material, such as flour. Particles of the material are admitted into an agglomerating zone in such a manner that they are uniformly distributed over a prescribed cross-sectional area. An atomized spray of small water droplets is also introduced into the agglomerating zone, so that the spray covers the cross-sectional area of the particles of mate-

rial being admitted into the agglomerating zone. The particles and the droplets are finely dispersed and intimately



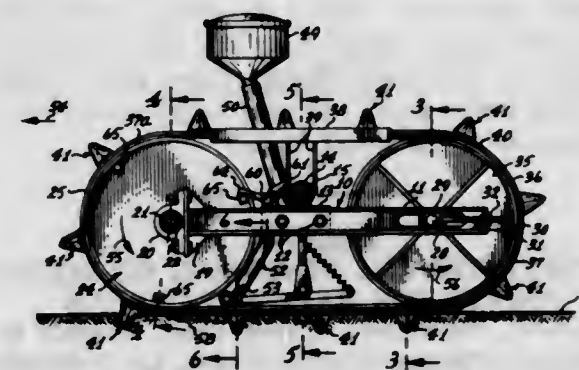
mixed to form agglomerates having a low bulk density or cup weight.

3,463,099  
**SECTIONALIZED TABLE**  
Edmund J. Donette, 50 Monmouth Blvd.,  
Oceanport, N.J. 07757  
Filed Aug. 1, 1967, Ser. No. 657,609  
Int. Cl. A47b 3/06  
U.S. Cl. 108—111 5 Claims



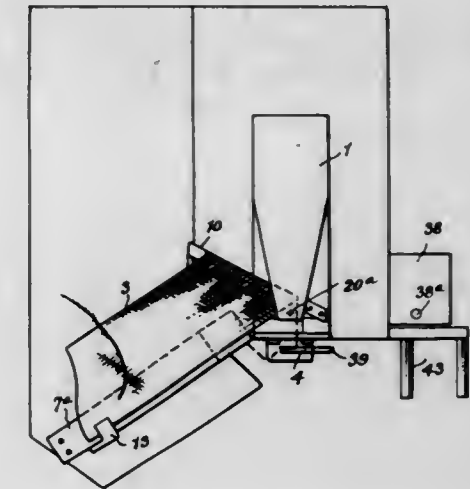
A collapsible table having two top slabs removably secured to a pair of elongated, parallel supporting beams, swivel bars connecting said beams to permit maximum spacing therebetween for accurate alignment and receipt of the slabs and to also permit minimum spacing so that the beams collapse when the slabs are removed.

3,463,100  
**PRECISION SEED PLANTER APPARATUS**  
Jay Tschudy, Jr., Shawnee Mission, Kans., assignor to Precision Agricultural Machinery Company, Phoenix, Ariz., a corporation of Arizona  
Filed Apr. 12, 1967, Ser. No. 630,265  
Int. Cl. A01c 7/18, 5/06  
U.S. Cl. 111—91 1 Claim



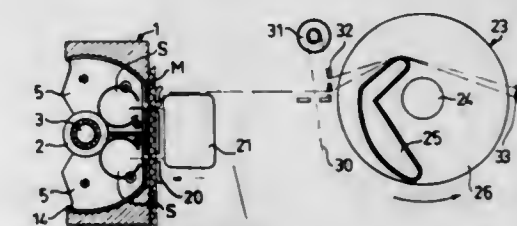
A precision seed planting apparatus for accurately planting seed in a prepared plant row of a field utilizing an endless ground contacting belt and an inside liner belt to change the spacing of the seed planting along the plant row.

3,463,101  
**BUTTONHOLE SEWING APPARATUS**  
James F. Ansel III, Waldwick, N.J., assignor to Phillips-Van Heusen Corporation, New York, N.Y., a corporation of New York  
Filed June 19, 1967, Ser. No. 646,995  
Int. Cl. D05b 3/06  
U.S. Cl. 112—121.15 3 Claims



A sewing machine for sewing buttonholes in garment parts, such as shirt fronts, the machine having an indexing clamp for drawing the shirt front successively from one point of buttonhole sewing to another, there being provided supporting means over which the shirt front is moved and which means includes an edge over which the shirt front is angularly folded, the clamp engaging one end of the shirt front. A second or travelling clamp is slidably mounted on the supporting means and it engages the second end of the shirt front so that the shirt front is tensioned over the edge of the support between the two clamps. Means is provided for imposing a drag on the travelling clamp to secure the required tension on the shirt front and means is also provided for freeing the travelling clamp from its engagement with the shirt front and for returning the travelling clamp to its initial or starting position when the position of sewing of the last buttonhole is reached.

3,463,102  
**MULTI-NEEDLE SEWING MACHINES**  
Stig Henry Sigurd Eklund, Malmö, Sweden, assignor to Infor, Institutet för nyttiggorande av forskningsresultat, Stockholm, Sweden  
Filed June 12, 1967, Ser. No. 645,143  
Claims priority, application Sweden, June 13, 1966,  
8,039/66  
Int. Cl. D05b 1/08, 11/00, 49/04  
U.S. Cl. 112—164 11 Claims

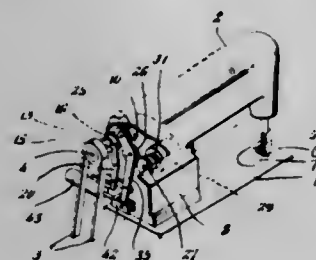


A multi-needle sewing machine for rapid sewing with an upper thread and a lower thread, in which the gripping shuttles are rotary and supported in a compact arrangement in pairs and driven by drive means, such as gears, on a drive shaft which is common to at least one row



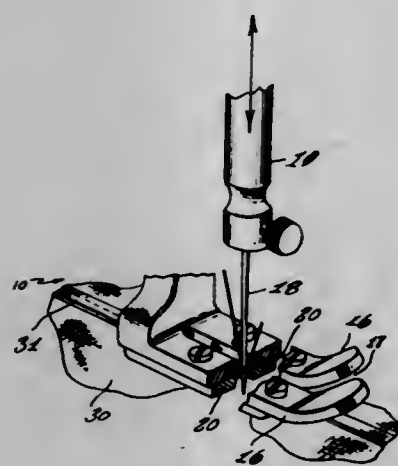
of gripping shuttles. The multi-needle sewing machine is preferably equipped with a rotary upper-thread tensioning means for adaptation also of this part of the machine to the high operating speed made possible by the use of rotary gripping shuttles.

**3,463,103**  
**INACTIVE POSITION CENTERING MECHANISM FOR SEWING MACHINES**  
George B. Saray, Stamford, Conn., assignor, by mesne assignments, to Ivanhoe Research Corporation, New York, N.Y., a corporation of Delaware  
Filed May 24, 1967, Ser. No. 640,990  
Int. Cl. D05b 69/22  
U.S. Cl. 112—219 2 Claims



A control device for sewing machines is provided so that the machine will always stop operation and become latched only at a known inactive position, shown here as the upper limit of the needle stroke, i.e., its top dead center position. The device causes the needle to stop when it is removed from the workpiece and to remain locked in that inactive position until the machine is started again. The automatic device operates by using a second motor which produces motion of the needle after the primary motor is stopped, until a predetermined position of the main shaft of the sewing machine is reached. The second motor is controlled by a cam and cam follower; it is disengaged during normal operation of the sewing machine.

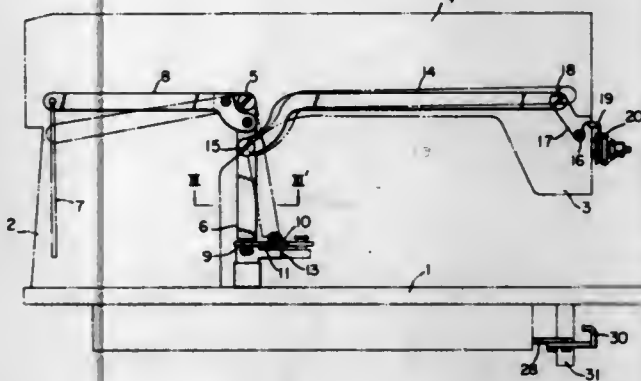
**3,463,104**  
**PRESSER FOOT WITH ADJUSTABLE WELTING PADS**  
Carlos Vrana, Long Island City, and Frank Passaro, Brooklyn, N.Y., assignors to C. & W. Sewing Machine Co., New York, N.Y., a corporation of New York  
Filed Feb. 9, 1968, Ser. No. 704,414  
Int. Cl. D05b 29/06  
U.S. Cl. 112—235 5 Claims



A presser foot for an industrial sewing machine, the presser foot having sidewardly adjustable pads under-

neath for selectively controlling the width of the cord groove in the presser foot, thus eliminating the need to use different feet for different size cords.

**3,463,105**  
**THREAD CUTTING MECHANISM IN A SEWING MACHINE**  
Noritoshi Aoyama, Tokyo, Japan, assignor to Tokyo Juki Kogyo Kabushiki Kaisha, Tokyo, Japan  
Filed Nov. 3, 1967, Ser. No. 680,580  
Claims priority, application Japan, Nov. 12, 1966, 41/74,328  
Int. Cl. D05b 65/00  
U.S. Cl. 112—252 1 Claim

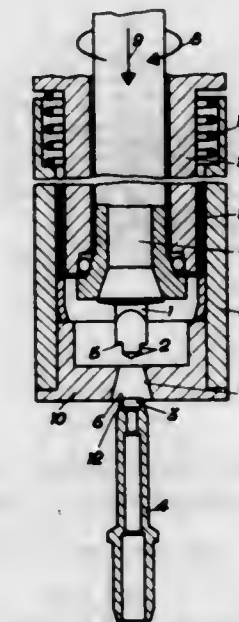


Thread cutting mechanism in a sewing machine which is adapted to be stopped at the end of stitching operation with the needle positioned at its lower dead point and with the portions of the upper thread from the needle as well as from the bobbin case after it travels around the bobbin case and the portion of the lower thread from the bobbin case forming together a knot within the cloth, and in which the needle is then retracted from the cloth and moved toward its upper dead point and stopped at a position adjacent to the upper dead point by the actuation in one direction of a lever swingably mounted on the machine, the combination of a connecting rod operatively coupled with said lever so that it is engaged with the bobbin case and disengaged therefrom, a lower knife operatively coupled with said lever and swingably located at the lower side of the needle plate adjacent to the needle hole, a fixed upper knife cooperating with said lower knife, and a link operatively coupled with said lever and being adapted to enter the space between the members of the thread tensioning disc and to be retracted therefrom, said lower knife being permitted to first effect the separation of the portion of the upper thread near the needle from the needle from the portion of the upper thread near the stitch in the cloth as well as the portion of the lower thread from the bobbin case during the movement of the lower knife in one direction in connection with the operation of said lever, said lower knife being thereafter caused to effect cutting of said portion of the upper thread near the stitch together with the portion of the lower thread from the bobbin case between said lower knife and said upper knife by the return movement of the lower knife.

**3,463,106**  
**METHOD FOR THE FINISHING OF ROUGH POINTS FOR BALL POINT PENS**  
Pietro Azzariti, Desenzano, Garda, Italy, assignor to Real Patentauswertungs Anstalt, Vaduz, Liechtenstein  
Filed May 23, 1967, Ser. No. 640,724  
Claims priority, application Italy, May 31, 1966, 18,518/66, Patent 12,517  
Int. Cl. B21d 53/76  
U.S. Cl. 113—32 2 Claims

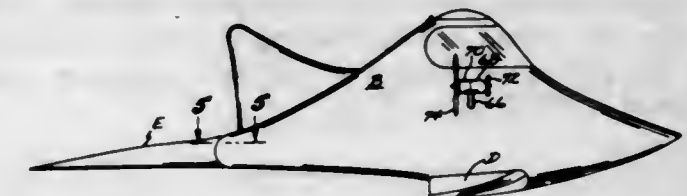
Rough points for ball point pens are formed by rotating a tool and a pen point workpiece relative to each other

and advancing them relatively toward each other until the tool forms in the workpiece the seat for the ball,



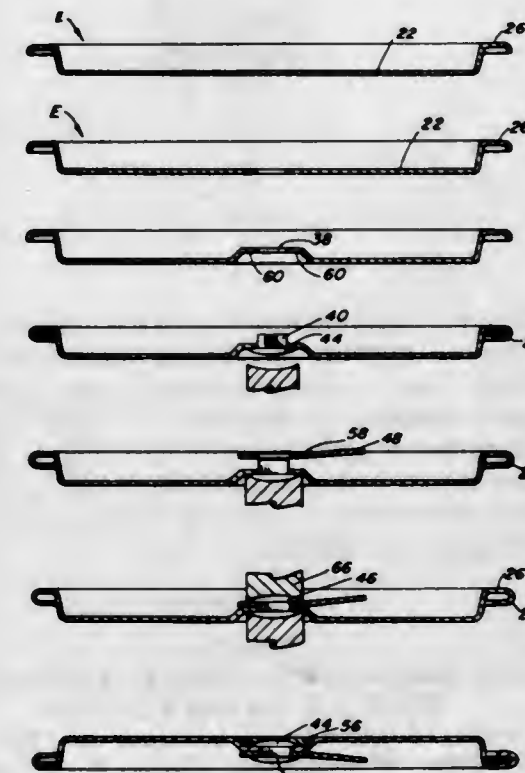
In some embodiments, the fastener is a rivet which has a square, serrated, or like shaped shank to prevent rotation of the rivet inside the can end, and, in some embodiments, the sealing material is located in an embossed or recessed area near the rivet. Processes for making the easy opening end are also described.

**3,463,108**  
**AMPHIBIOUS VEHICLE**  
Robert E. Neumeier, 2028 W. 16th St., Long Beach, Calif. 90813  
Filed May 22, 1968, Ser. No. 731,095  
Int. Cl. B63g 8/00; B64c 3/38  
U.S. Cl. 114—16 11 Claims



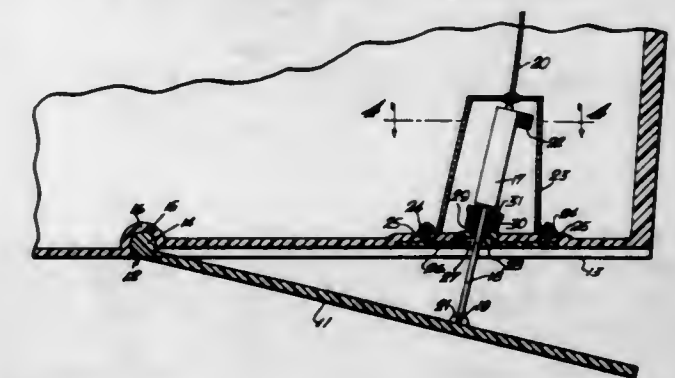
A power-operated amphibious vehicle capable of traveling when submerged in a body of water, as well as skimming along the surface of the water and flying thereabove.

**3,463,107**  
**CAN END AND METHOD**  
Benjamin B. Lipske, Greenvale, N.Y., assignor to National Can Corporation, Chicago, Ill., a corporation of Delaware  
Original application May 26, 1965, Ser. No. 458,932, now Patent No. 3,383,008, dated May 14, 1968. Divided and this application Dec. 21, 1967, Ser. No. 692,369  
Int. Cl. B21d 51/00  
U.S. Cl. 113—121 4 Claims



An easy opening can end with a line of weakness defining a tear out portion in the end, a finger tab attached to the tear out portion by a fastener which extends through both the end and the tab, and a synthetic resin material forming a seal covering the opening in the can end through which the fastener extends to prevent leakage of gas therethrough.

**3,463,109**  
**LEVELER TRIM TAB FOR BOAT HULLS**  
Howard E. Weller, 7350 Belle Meade Island Drive, Miami, Fla. 33138  
Filed Apr. 3, 1968, Ser. No. 718,449  
Int. Cl. B63b 1/22, 1/20  
U.S. Cl. 114—66.5 8 Claims



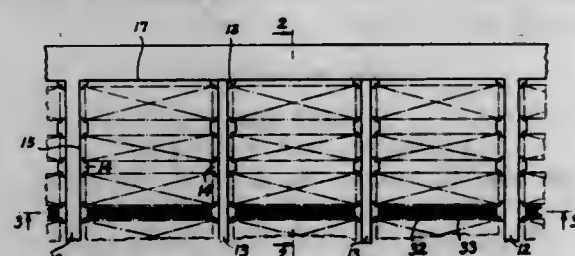
A leveler trim tab construction for molded boat hulls comprising a trim tab having a pintle portion integrally formed along one edge, integrally molded about which is the boat hull bottom, that portion of the boat hull bottom molded about the pintle portion of the trim tab providing, together with the pintle portion, a fully streamlined hinge. Since the hull bottom is molded around the preformed trim tab placed in the bottom of the boat mold, substantially perfect streamlining is achieved when the trim tab is in fully withdrawn position.

**3,463,110**  
**SHIFTING BOARD SETTING APPARATUS FOR CONTAINER SHIP**  
Masanao Oshima, Tokyo, Japan, assignor to Mitsui Shipbuilding & Engineering Co. Ltd., Tokyo, Japan, a corporation of Japan  
Filed Dec. 7, 1967, Ser. No. 688,727  
Int. Cl. B63b 25/08, 25/00  
U.S. Cl. 114—75 2 Claims

In a container ship having a hold with sets of vertical corner guides therein forming a series of guideways for



the containers, a framework for mounting a shifting board between adjacent guideways. The framework is mounted on the vertical guides and the guide blocks which provide



the upper terminus for said vertical guides in such a manner that the frame and the shifting board do not project into the guideways formed by the sets of corner guides mounted in the hold.

3,463,111

**SLIDING AND TILTABLE HATCH COVERS**

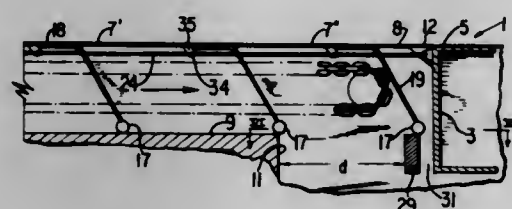
Louis Marie Joseph Pierre Bain, Paris, and Paul André Mege, Saint-Germain-en-Laye, France, assignors to Mac Gregor-Comarain, Paris, France, a company of France

Filed Sept. 17, 1967, Ser. No. 670,885

Claims priority, application France, Oct. 6, 1966, 79,001; Feb. 24, 1967, 96,504

Int. Cl. B63b 19/18; E05d 15/12

U.S. Cl. 114—202 15 Claims



A hatch construction comprising cover sections interconnected by flexible bonds, tiltable by gravity into upstanding open position within a stowage space and mutually overlapping in the closed position, and two overlying runways, extending along at least one portion of each longitudinal edge of the hatch and stowage space for at least temporarily guiding each cover section on two bearing points on either side of the transverse vertical plane passing through the centre of gravity of the cover section, the forward bearing point forming the tilting axis, whereas the horizontal portion of said lower runway is interrupted within said stowage space.

3,463,112

**QUICK-RELEASE ANCHOR**

Robert C. Zakaitis and Joseph Jacevicius, both of 61 Arlington St., Worcester, Mass. 01604

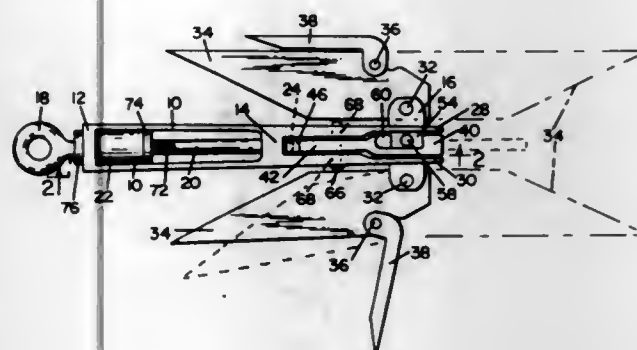
Filed Apr. 19, 1968, Ser. No. 729,137

Int. Cl. B63b 21/24

U.S. Cl. 114—208 10 Claims

Fluke anchor including a shank, a shaft crossing the shank, flukes pivotally mounted on the shaft, a fluke lock on the shaft with means for limiting its rotary motion with respect thereto, said lock being elongated and extending a substantial distance along said shank, a releas-

able latch for the lock, said latch having resilient means normally urging it towards the fluke lock and holding it



in position with the flukes locked in an anchoring position, and means to easily relocate the flukes.

3,463,113

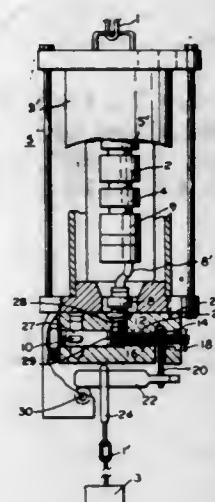
**RECOVERY RELEASE SYSTEM**

Anders F. Feyling, Cambridge, Mass., assignor, by mesne assignments, to EG & G International, Inc., Bedford, Mass., a corporation of Delaware

Filed May 23, 1966, Ser. No. 551,994

Int. Cl. B63b 9/00; E21b 43/00, 29/00

U.S. Cl. 114—221 11 Claims



Underwater equipment or the like is released automatically from an anchor or securing mechanism at a predetermined time. A timer produces pulses during a predetermined interval at the end of which release is to be effected, and a squib pressure cartridge is energized to effect the release mechanically upon the counting of a predetermined number of pulses corresponding to the predetermined time interval.

3,463,114

**METHOD FOR MANEUVERING A VESSEL WITH RESPECT TO ITS STATION**

Jack Lovell, McLean, Va., assignor to The Stanwick Corporation, Washington, D.C., a corporation of Delaware

Filed Apr. 24, 1968, Ser. No. 723,855

Int. Cl. B63b 21/00, 21/50

U.S. Cl. 114—230 5 Claims

Method for maneuvering a vessel with respect to its station, particularly a method for fending the vessel horizontally and vertically with respect to a rigid station, such as an offshore oil well drilling platform. According to the method an extensible boom and suction cup assembly mounted upon a station is used to draw a vacuum

upon integral portion of a maneuvering vessel freeboard. The boom is raised and lowered in horizontal alignment with the maneuvering vessel prior to drawing of the vacuum and is supported for free vertical movement cor-

mounted in a water passage in the body of the skimmer for rotation about a vertical axis. The impeller is driven



by a prime mover secured to the rear portion of the body and has a vertical output shaft projecting into the water passage, the impeller being secured to the output shaft.

3,463,117

**ARROW DRAW CHECKING DEVICE**

Gerald I. Killian, 2200 White Bear Ave., St. Paul, Minn. 55109

Filed May 31, 1967, Ser. No. 642,508

Int. Cl. G01d 21/00

U.S. Cl. 116—114 9 Claims

A swingable actuator arm is pivotally attached to a bow and extends outward from the bow into the general area where the arrow head is normally located when in the drawn position. The arm rests against the arrow head and follows its taper to sense the proper location of the drawn arrow. Attached to the arm is an indicating device in the form of a thin, stiff wire which is located in the



responding to boat action after drawing the vacuum. The boom is telescoped with respect to the station, so as to control movement of the vessel about the station through the boom.

3,463,115

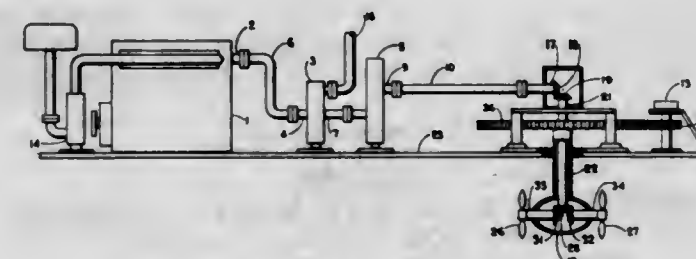
**SHIP PROPULSION SYSTEM**

Kendric R. French, 1632 Live Oak Way, Walnut Creek, Calif. 94596

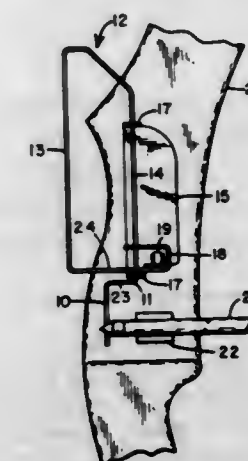
Filed Feb. 23, 1968, Ser. No. 707,669

Int. Cl. B63h 25/42

U.S. Cl. 115—35 1 Claim



This specification discloses a ship propulsion system which consists briefly of a four cycle diesel engine whose exhaust gases drive a gas turbine which in turn are connected to a gear reduction means which transmits the power to propeller means. A preferred propeller means consists of coaxially mounted counterrotating dual propellers with the assembly mounted on a vertical shaft extending from the ship into the water. Further modified forms include multiple engines and turbines and dual propeller means.



normal sighting area of the archer so that when the arrow is properly drawn, the indicator swings into the archer's view and gives a visual indication of the correct draw. The arm is biased to rest against the arrow and to follow the contour of the arrow head by a magnet which acts on the arm or a spring connected to the arm, or something of a similar nature.

3,463,118

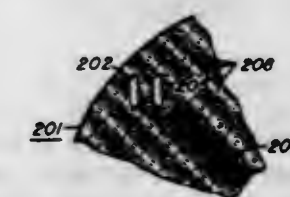
**DIFFRACTION GRATING INSTRUMENT DIALS**

Remsen V. Wood, Riderwood, Md. 21139

Filed Apr. 10, 1967, Ser. No. 629,586

Int. Cl. G09f 9/00

U.S. Cl. 116—129 3 Claims



Instrument dials having faces comprising spirally ruled optical diffraction gratings arranged to provide optimum spectral-color contrast with instrument pointers superimposed on the dials.

3,463,116

**SELF-PROPELLED WATER SKIMMERS**

Edward S. Dawson, Edmonton, Alberta, Canada, assignor to Surf Skimmer Ltd., Edmonton, Alberta, Canada

Filed Dec. 5, 1967, Ser. No. 688,214

Claims priority, application Canada, Nov. 9, 1967, 4,628

Int. Cl. A63h 5/08, 15/00

U.S. Cl. 115—70 6 Claims

A self-propelled water skimmer includes a body with the general configuration of a surfboard and an impeller



3,463,119

**NICKEL-MERCURY AMALGAM SEAL**

Malcolm Basche, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Jan. 30, 1968, Ser. No. 702,163

Int. Cl. C23c 13/08; B65d 53/06

U.S. Cl. 118—49.5

4 Claims



In a reactor wherein pyrolytic deposition takes place on a resistively-heated moving wire, the wire is drawn through an orificed fitting containing a nickel-mercury amalgam which performs the dual function of providing a gas seal around the wire and effecting electrical contact therewith.

3,463,120

**APPARATUS FOR APPLYING POWDER COATINGS TO ARTICLES**

Nell Rudolph Wallis, Carlad, Goring-on-Thames, England, assignor to Aerocoat S.A., Geneva, Switzerland

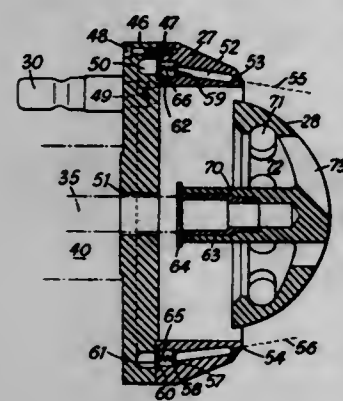
Filed May 15, 1967, Ser. No. 638,328

Claims priority, application Great Britain, May 26, 1966, 23,514/66

Int. Cl. B05c 5/02; B05b 5/08

U.S. Cl. 118—626

11 Claims



An electrostatic gun for powder material having a rotatable hollow dome-shaped member provided with a plurality of first slots around the periphery of the dome in which the powder leaves the member in a direction generally perpendicular to the axis of rotation and a plurality of second slots in the central portion of the dome in which the powder leaves the member in the general axis of rotation.

3,463,121

**SPRAY GUN**

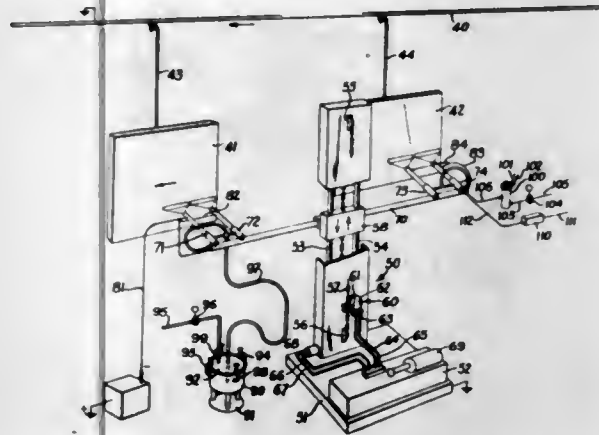
Arvid C. Walberg, Lombard, Ill., assignor to H. G. Fischer & Co., a corporation of Illinois

Filed Sept. 19, 1966, Ser. No. 580,468

Int. Cl. B05b 5/02; F23d 11/28

U.S. Cl. 118—631

15 Claims



Work is electrostatically coated with highly conductive materials by air or hydrostatic atomizing spray guns. The rate of material application to work for water base material such as porcelain enamel is high being in excess of three mils of film thickness in less than sixty seconds to prevent "dry spray." The problem of "dry spray" is further controlled by placing the spray guns very close to the work (less than twelve inches).

3,463,122

**PROCESS FOR DELAYED PRODUCTION OF JAPANESE BEETLE LARVAE**

Grant St. Julian, Peoria, Ill., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Sept. 25, 1967, Ser. No. 670,376

Int. Cl. A01k 67/04

U.S. Cl. 119—6

1 Claim

Storage of fertile Japanese beetle eggs for as long as 3 weeks to provide an out-of-season supply of newly hatched larvae is made practical by storing the freshly collected eggs at 3–5° C. in 0.85% NaCl solution for the desired period and then incubating the washed eggs at ca 26° C. to induce the hatching of the surviving viable eggs.

3,463,123

**ADJUSTABLE RACK AND WASTE REMOVAL MEANS FOR ANIMAL CAGES**

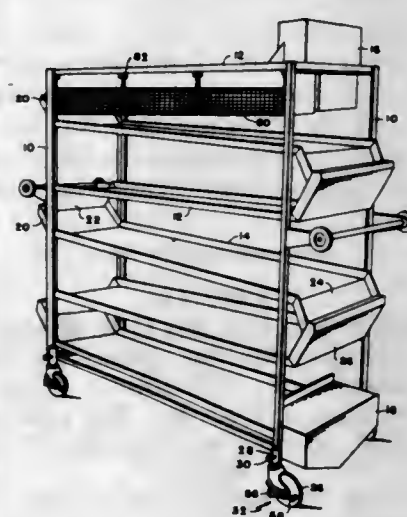
Elmer J. Hoeltge, 1971 Ebenezer Road, Cincinnati, Ohio 45238

Filed Oct. 3, 1967, Ser. No. 672,499

Int. Cl. A01k 1/00, 31/04

U.S. Cl. 119—15

2 Claims



Cages housing animals are stowed in racks consisting of ramps onto which the animal wastes are dropped. The

ramps form a part of a cascading flushing system for cleaning the wastes from the ramps. In order to make the flushing system effective, the corners of the racks are supported on caster wheels, which may be adjustably locked at the proper height and which may be braked to provide stability.

3,463,124

**ENDLESS CONVEYOR CATTLE FEEDER**

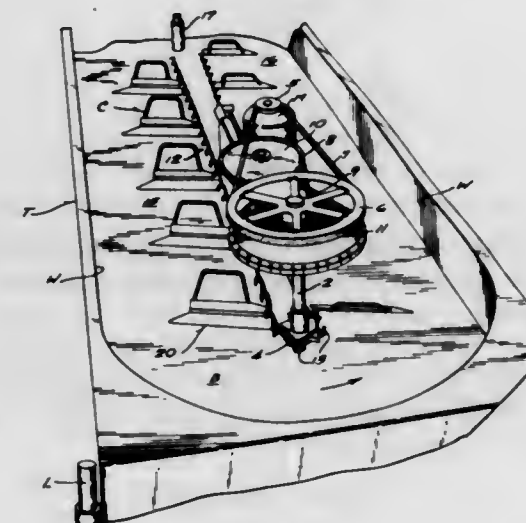
Paul Patz, Pound, Wis. 54161

Filed Dec. 6, 1967, Ser. No. 688,611

Int. Cl. A01k 5/00; B65g 19/00

U.S. Cl. 119—52

10 Claims



An endless conveyor which moves in a horizontal orbit in a feeding trough to distribute feed, such as hay and ensilage, around the trough where it is eaten by the cattle. The conveyor is formed of an endless chain having spaced flites extending outwardly therefrom, which flites have a generally pointed, triangular outer end which breaks up the otherwise compacted feed material in the trough.

3,463,125

**HORIZONTAL BOILERS, APPARATUS IN COMBINATION THEREWITH AND METHODS FOR HEATING SAME**

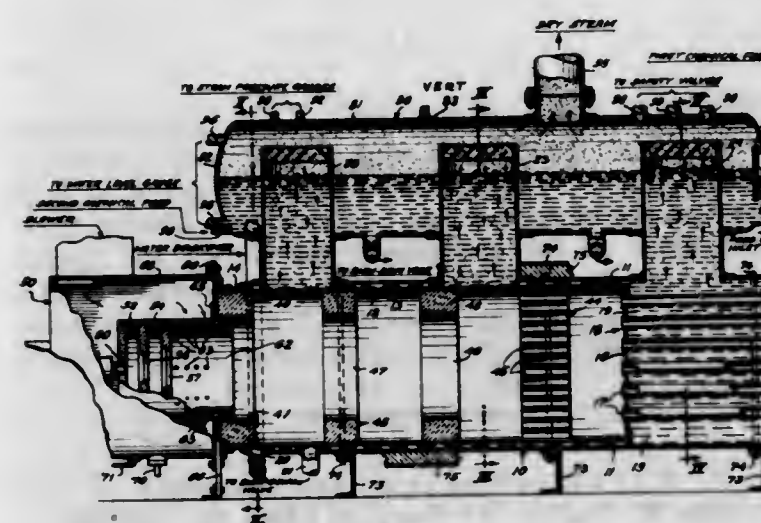
James T. Voorhels, 105 Rensselaer Road, Essex Fells, N.J. 07021

Filed Nov. 16, 1967, Ser. No. 683,690

Int. Cl. F22b 9/12

U.S. Cl. 122—88

12 Claims



A horizontal boiler comprising an elongated first shell having a sheet at one end and a stack breeching extending from said end and beyond said sheet, with or without an economizer section therebetween, a direct-

fired second shell in and spaced from the first shell and having a sheet at one end, flue tubes spaced from each other and said first shell and connected to the sheets at openings therein, thereby providing a convection section including passageways in communication with the interior of the second shell and the stack breeching and also space for water and in communication with the space for water between said shells, and a water storage and steam drum above the first shell, means for the passage of water between the drum and first shell and means for the passage of steam from the first shell into the drum; and means for feeding water-treating chemicals to the water. Also shown are means in the second shell for aiding in the combustion of fuel preferably supplied into the second shell from means located at one end of the second shell for internal direct-firing. The convection section, the economizer section as well as the stack breeching are in alignment with said second shell, and the flue tubes of said sections, and the means for aiding combustion are all disposed interiorly of said first shell. The method comprising into the second shell feeding flaming fuel, which flame terminates upstream of the flue tubes.

3,463,126

**COMBUSTION EFFICIENCY OF ROTATING COMBUSTION ENGINES**

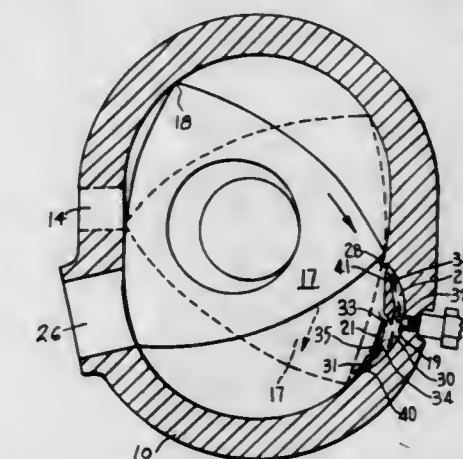
Henry A. Pax, 620 E. Third Ave., Roselle, N.J. 07203

Filed Nov. 14, 1967, Ser. No. 682,931

Int. Cl. F02b 53/00, 55/00

U.S. Cl. 123—8

7 Claims



In order to more completely burn the fuel-air charge in rotating combustion (RC) engines in less time, and thus improve their efficiency, the inner housing wall adjacent the spark plug is provided with a duct having an aft fuel-air mixture inlet port and a forward combustion mixture outlet port, through which the combustible mixture flows past the spark.

Additional inlet and outlet ports connecting with said duct (which desirably has a concave surface adjacent said spark) may be provided.

3,463,127

**ROTARY COMBUSTION ENGINE**

Gifford W. Chester, P.O. Box 3, Bull Shoals, Ark. 72619

Filed Jan. 12, 1968, Ser. No. 697,345

Int. Cl. F02b 53/10, 55/16, 53/04

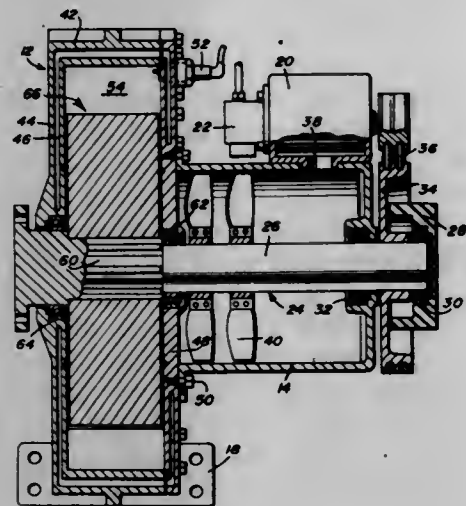
U.S. Cl. 123—8

9 Claims

A rotary impact engine in which peripheral pockets formed in a rotor periodically register with combustion chambers enclosed by radially projecting portions of a housing and with exhaust ports formed in the housing in



axially and radially spaced relation to intake ports. A fuel mixture supplied to an engine driven blower is further compressed by flow inducing blades positioned adjacent the



intake ports to transfer pressurized fuel charges, through tangentially converging passages in the rotor, to the combustion chambers.

3,463,128

## ROTARY ENGINE

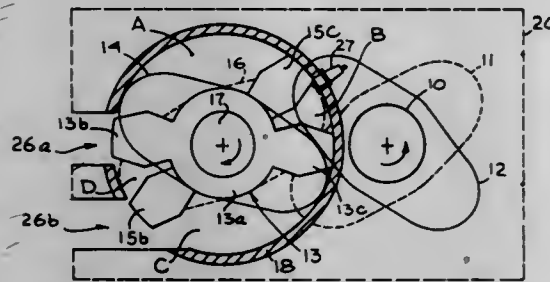
Raymond G. Spinnett, North Hollywood, Calif.  
(1961-A Mitchell, Santa Ana, Calif. 92705)

Filed Sept. 15, 1967, Ser. No. 668,150

Int. Cl. F02b 53/00; 55/00

U.S. Cl. 123-11

9 Claims



The present invention relates to a new and novel type of rotary engine containing few moving parts and highly efficient in its operation. The simplest possible symmetrical form of this invention has only three basic moving parts, but performs the same function as the eight cylinder, four-stroke cycle, rectilinear type of reciprocating engine.

3,463,129

## FUEL INJECTION SYSTEM FOR INTERNAL COMBUSTION ENGINES

Rudolf Babitzka, Ludwigsburg-Hoheneck, and Gunther Baumann, Hermann Hoele, and Hermann Scholl, Stuttgart, Germany, assignors to Robert Bosch GmbH, Stuttgart, Germany

Filed Oct. 13, 1967, Ser. No. 675,118

Claims priority, application Germany, Oct. 25, 1966, B 89,551

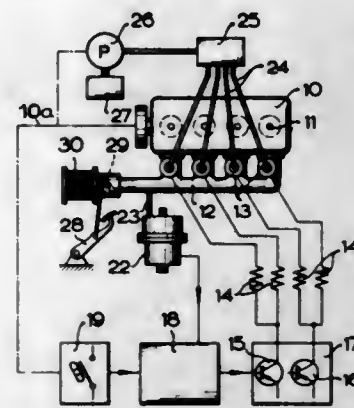
Int. Cl. F02b 3/00; F02m 39/00

U.S. Cl. 123-32

7 Claims

The electronic control unit which effects opening and closing of electromagnetic fuel injection valves in a fuel injection system for internal combustion engines receives impulses from a signal generator which is responsive to pressure changes in the intake manifold of the engine. The magnitude of impulses determines the length of intervals

during which the fuel injection valves remain open. The signal generator comprises an output portion which is electrically connected with the control unit and an input portion having a chamber which is in permanent communication with the intake manifold through one or more flow restricting openings serving to prevent the input portion from influencing the output portion in response to



minor pressure fluctuations in the intake manifold resulting from repeated opening and closing of inlet valves for individual cylinders. A relief valve is provided in parallel with the flow restricting opening or openings to open automatically when the pressure differential between the intake manifold and the chamber of the input portion exceeds a predetermined value.

3,463,130

## FUEL INJECTION CONTROL SYSTEM

Wolfgang Reichardt, Stuttgart-Rohr, Dieter Eichler, Bonlanden, Hermann Scholl, Stuttgart, and Josef Wahl, Stuttgart-Kaltental, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany, a limited-liability company of Germany

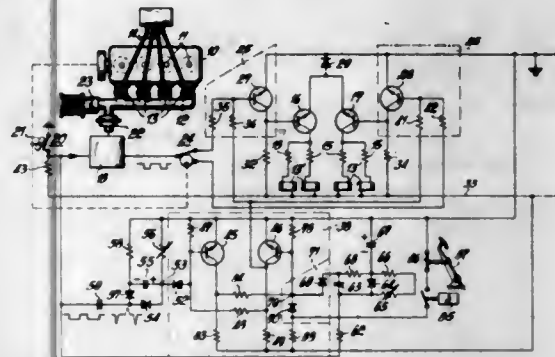
Filed Oct. 24, 1967, Ser. No. 677,566

Claims priority, application Germany, Nov. 3, 1966, B 89,669

Int. Cl. F02b 3/02; F02d 31/00

U.S. Cl. 123-32

8 Claims



The application of fuel injection pulses to fuel injection valves is inhibited by a blocking circuit, under control of engine speed; a switch, coupled to the fuel control, with a low temperature override prevents fuel feeding upon concurrence of the conditions: (a) closed (or almost closed) throttle and (b) engine speed in excess of a certain minimum and (c) temperature above a certain minimum, to prevent fuel from being injected upon coasting of the vehicle.

3,463,131

## VALVE OPERATING MECHANISM

John W. Dolby, 717 Douglas, Elgin, Ill. 60120

Filed Mar. 12, 1968, Ser. No. 712,547

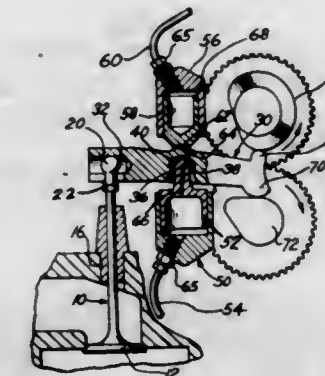
Int. Cl. F01l 1/00

U.S. Cl. 123-90

3 Claims

A valve operating mechanism for use in an internal combustion engine utilizing a rocker arm for actuating the valve, a cam for opening the valve, and a second cam for

closing the valve. The rocker arm is pivoted on a bearing carried by the piston of a first hydraulic cylinder and held on the pivot by a retainer carried by the piston of a



second hydraulic cylinder of smaller diameter than the first cylinder, whereby the center of the pivot is movable between the two hydraulic cylinders.

3,463,132

## SYSTEM FOR INCREASING THE EFFICIENCY OF INTERNAL COMBUSTION ENGINES

James H. Krieck, P.O. Box 536,

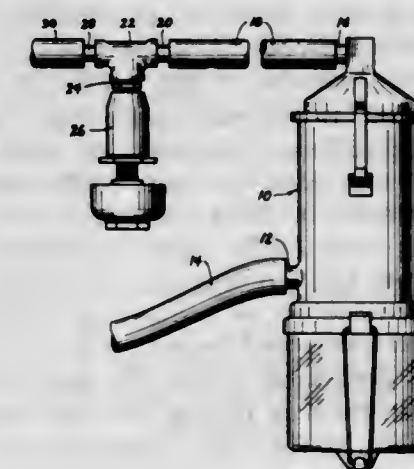
Westport, Conn. 06880

Filed June 26, 1967, Ser. No. 648,716

Int. Cl. F02b 33/00; F02m 35/00

U.S. Cl. 123-119

2 Claims



A system for improving the efficiency of an internal combustion engine including a filter unit connected between the crankcase and inlet manifold of the engine, an improved flow control valve in the filter unit, an improved filter element in the filter unit and a vacuum breaker valve in the line leading from the filter unit to the inlet manifold.

3,463,133

## AUTOMATIC FUEL VAPORIZER

Albert B. Edwards, 4014 Ellendale Road,

Drexel Hill, Pa. 19026

Filed Apr. 30, 1968, Ser. No. 725,345

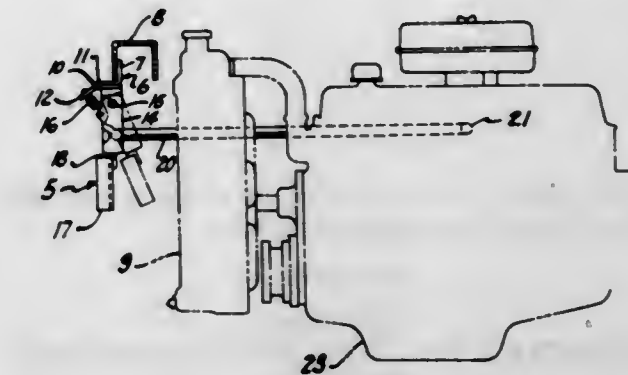
Int. Cl. F02m 23/04; F02d 31/00

U.S. Cl. 123-124

5 Claims

This invention consists of an L-shaped bracket which is secured to a lateral structural member of a vehicle in front of and above the radiator of the vehicle. A bracket, having a vertically disposed leg with an opening in the lower portion thereof and an angularly disposed member, is secured to the underside of the first mentioned bracket. A movable blade is swingably mounted on the

aforesaid vertically disposed leg by means of a spring-loaded pin or its equivalent. The blade has its lower end secured to an actuating vane that is pushed backward by the action of air as the vehicle moves forward. A coil spring has one end secured to the aforesaid movable blade and the other end secured to an angularly disposed member of the second mentioned bracket for



a purpose hereinafter described. A tube has one end secured to the opposite side of the said vertically disposed leg from that of the aforesaid movable blade. The tube has its other end adapted to the intake manifold of the internal combustion engine just below the carburetor of the engine, thereby completing the installation of this invention on a vehicle.

3,463,134

## LIGHT-OPERATED CONTROL APPARATUS FOR A COMBUSTION ENGINE

Richard Zechall, Stuttgart, Jörg Issler, Stuttgart-Süd, Gerhard Söhner, Geradstetten, and Paul Würz, Stuttgart-West, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany

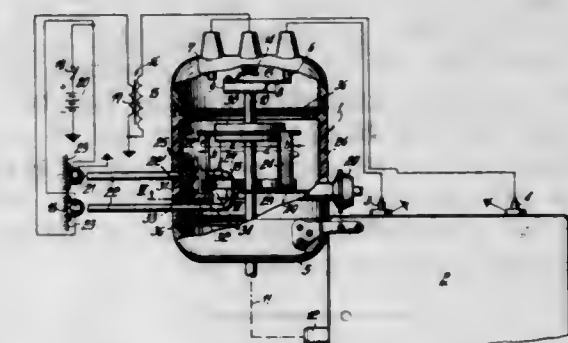
Filed Nov. 17, 1967, Ser. No. 684,040

Claims priority, application Germany, Nov. 24, 1966, B 89,988

Int. Cl. F02p 9/00; G01J 5/50

U.S. Cl. 123-146.5

16 Claims



Light operated control means for the ignition circuit of a combustion engine are located spaced from the engine and its distributor and connected by light guiding means to the distributor where a rotating actuator interrupts the path of light falling into a light sensitive means.

3,463,135

## INTERNAL COMBUSTION ENGINES

Joseph Albert Pope, 12 Carrwood Road, Bramhall, England, and John Edwin Herbert Appleby, 87 Acre Lane, Cheadle Hulme, Cheadle, England

Filed Mar. 29, 1967, Ser. No. 626,861

Claims priority, application Great Britain, Apr. 1, 1966, 14,428/66

Int. Cl. F01m 11/00; F16n 29/00, 31/00

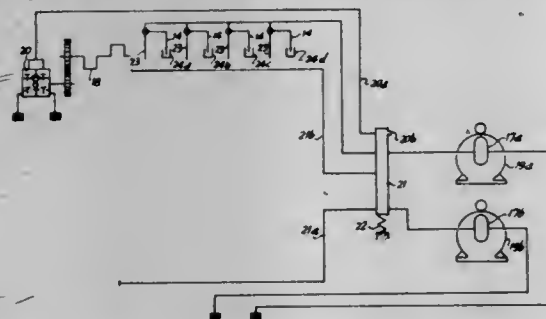
U.S. Cl. 123-196

6 Claims

In large "opposed piston" ignition engines it may be necessary to circulate the oil when the engine is not run-



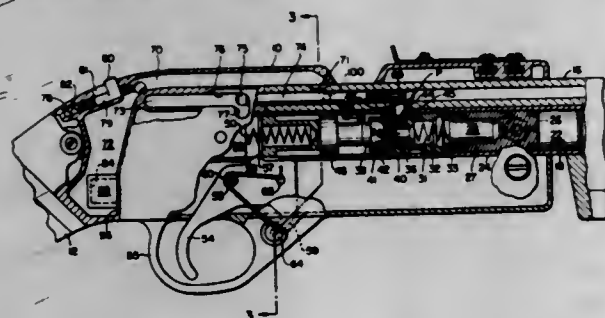
ning. The engine is provided with a lubricant extractor to remove oil from the inverted pistons of the engine,



when the engine is not running, in order to prevent the overflow of the oil from the piston skirt.

### 3,463,136 PROJECTILE LOADING MECHANISM FOR AIR RIFLE

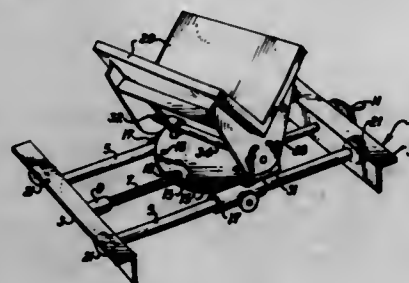
John F. Vadas, Webster, and Edward P. Joslyn, Rochester, N.Y., assignors to Crosman Arms Company, Inc., Fairport, N.Y., a corporation of New York  
Filed Oct. 26, 1966, Ser. No. 589,668  
Int. Cl. F41b 11/02, 11/00  
U.S. Cl. 124—11 9 Claims



A magazine, which holds projectiles in single file in the gun frame, communicates at its forward end with the rear end of the gun barrel and at its rear end with the upper end of a large projectile reservoir formed in the frame beneath the magazine. A spring-loaded detent normally closes off the magazine from the reservoir, but can be opened manually to allow projectiles to roll from the reservoir into the magazine to replenish the latter, when the barrel is tilted downwardly. The bolt of the gun, which normally blocks the front end of the magazine, when retracted allows a projectile to drop from the magazine into the barrel. When the bolt is advanced, the projectile is advanced to firing position and held there until fired by a magnet on the bolt.

### 3,463,137 JIG FOR PRECISION REFRACTORY CUTTING

Maurice J. Hare, Parkersburg, Pa., assignor to Lukens Steel Company, Coatsville, Pa., a corporation of Pennsylvania  
Filed Oct. 3, 1966, Ser. No. 583,782  
Int. Cl. B28d 7/04, 1/02  
U.S. Cl. 125—35 5 Claims

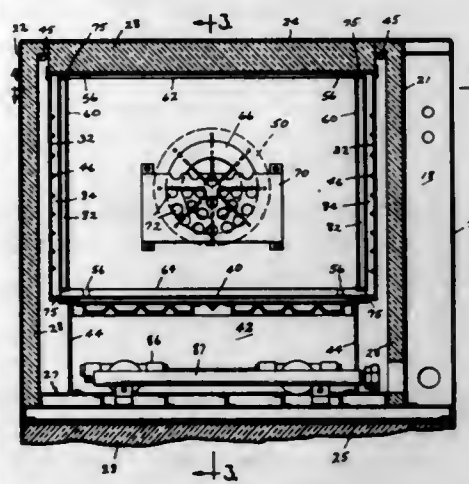


A jig for holding a workpiece to be precision cut including a frame with rollers that can be moved relative to a stationary saw. A V-shaped holder is mounted on a

plate and can be rotated to turn same about a vertical axis. The holder can be tilted and locked in position. The plate can be also traveled along rods on the frame to further adjust the position of the holder and workpiece.

### 3,463,138 CONVECTION OVEN

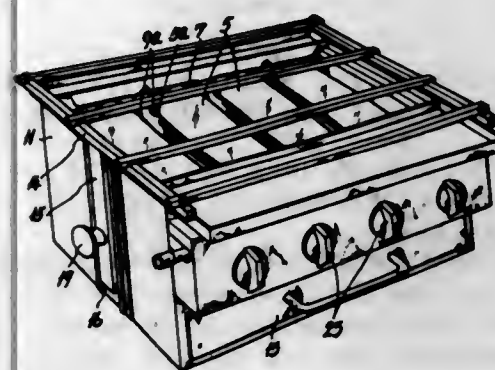
William Lotter and Frank De Vos, South Bend, Ind., assignors to South Bend Range Corp., South Bend, Ind., a corporation of Indiana  
Filed Apr. 29, 1968, Ser. No. 724,976  
Int. Cl. A21b 1/26; F24c 15/32  
U.S. Cl. 126—21 9 Claims



A convection oven having an inner housing defining a cooking chamber and a cabinet surrounding said housing including parts spaced from the bottom and side walls of the housing to form a continuous heat chamber therebetween. A heating means, such as gas burners, is disposed within said heat chamber. A baffle plate is spaced from and substantially parallel to the back wall of the inner housing. A blower is mounted in the housing back wall, having its fan positioned between said baffle plate and said wall. The side edges of said baffle plate are spaced from the opposite housing side walls and a deflector extends along each baffle plate side edge. Each deflector is spaced from said housing and said baffle plate so as to direct blower-impelled air around the baffle plate side edge and along the adjacent housing side wall where the air absorbs heat generated within the heat chamber from the side wall before it is turned into the center of the cooking chamber by the front cabinet doors.

### 3,463,139 GAS INFRARED BURNER

Kanekichi Hayashi, 19, 3-chome, Nagaike-cho, Showa-ku, and Susumu Naito, 1/6 Haruyama-cho, Mizuho-ku, both of Nagoya-shi, Japan  
Filed Oct. 10, 1967, Ser. No. 674,161  
Claims priority, application Japan, Oct. 17, 1966, 41/96,801  
Int. Cl. F24c 3/08  
U.S. Cl. 126—39 8 Claims



A burner having a burner plate covered by an arch which transmits a portion of the heat generated at the

plate while absorbing and releasing the balance of the heat. The arch serves to protect the plate from dripping grease and the like and to direct such waste into a drawer which is readily removed.

### 3,463,140 CONTAINER FOR HEATED LIQUIDS

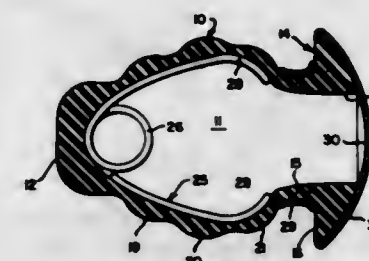
Edward A. Rollor, Jr., 658 Wisteria Drive, Marietta, Ga. 30060  
Filed Oct. 11, 1967, Ser. No. 674,597  
Int. Cl. A47g 23/04; F24h 7/00; F25d 3/08  
U.S. Cl. 126—246 5 Claims



A container for heated liquids comprising an outer cup-shaped shell and an inner cup-shaped shell received in the outer shell. The inner shell is double walled and its walls define an annulus. Corrugated metal foil is inserted in, and extends about the annulus, and paraffin, or similar material which is fusible at a relatively low temperature, is positioned between the folds of the corrugated metal foil. When a hot liquid is poured into the container, the heat from the liquid is transmitted by the metal foil to and stored in the paraffin as the paraffin fuses at a temperature which is approximately the optimum temperature for drinking hot liquids. As the liquid and cup cools, the paraffin will begin to solidify as the liquid passes through the optimum temperature, thereby giving up the heat previously absorbed and tending to maintain the liquid at the optimum drinking temperature.

### 3,463,141 MALE CONTRACEPTIVE

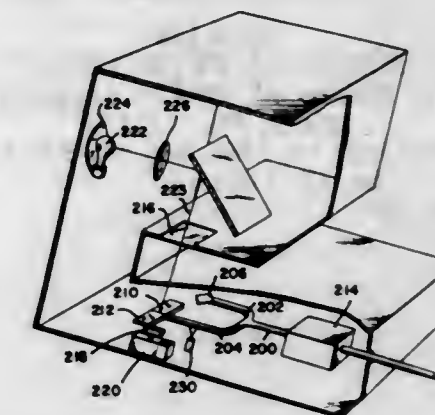
Casimir Mozolf, 356 N. Ogden St., Buffalo, N.Y. 14206  
Filed May 15, 1967, Ser. No. 638,395  
Int. Cl. A61f 5/37, 5/42, 5/44, 5/48; A61b 19/00  
U.S. Cl. 128—1 2 Claims



The contraceptive is a soft, resilient, moisture impervious, elongated plug insertable endwise, when moistened, into the orifice of the urethra without discomfort and having sufficient area of contact, and preferably a series of endless external transverse ribs, to prevent ejection in response to fluid pressure in the urethra. Desirably the body is a hollow rubber body containing a distending spring and a head is provided to limit insertion of the body as well as to facilitate manual removal. The device can also be used, in the event of incontinence, to prevent escape of urine.

### 3,463,142 BLOOD CONTENT MONITOR

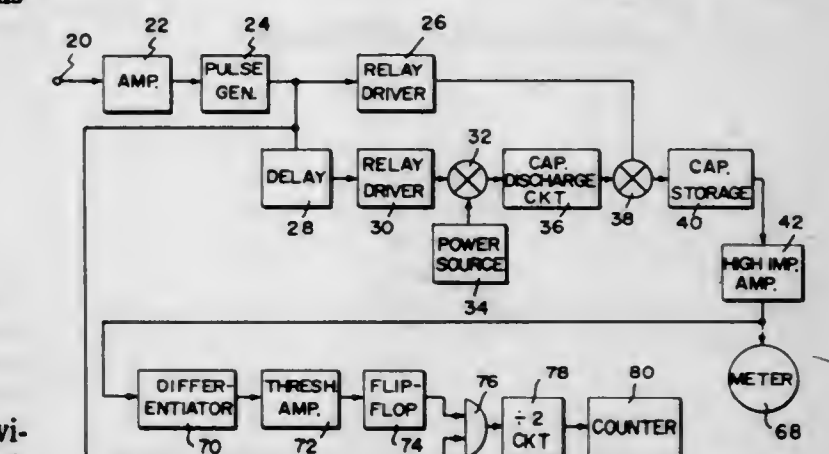
Richard A. Harte, Los Angeles, Calif., assignor to TRW, Inc., Redondo Beach, Calif., a corporation of California  
Filed July 5, 1966, Ser. No. 562,590  
Int. Cl. A61b 5/00; G01n 33/16  
U.S. Cl. 128—2 2 Claims



An intense collimated beam of light is passed through the fingertip of an individual causing the entire end of the digit to glow red which is caused by the diffusely transmitted and internally scattered light through the red pigment. A narrow band spectral filter centered on an ethyl alcohol-near infrared absorption band is interposed in the light path. Energy levels will fall if absorption takes place due to the presence of alcohol in the blood. Another filter, alternating with the first, isolates an infrared band close to the absorption band but is relatively transparent to alcohol. A calibration source permits absolute measurements of energy transmitted in the two bands which in turn can be calibrated to the amount of alcohol present. This apparatus is useful in other field tests, for example, diabetes detection and narcotics investigation, by the mere change of the filters.

### 3,463,143 ECTOPIC BEAT DETECTOR

Herbert Karsh, Lexington, Mass., assignor to Lexington Instrument Corporation, Waltham, Mass., a corporation of Massachusetts  
Filed Nov. 23, 1966, Ser. No. 596,493  
Int. Cl. A61b 5/04  
U.S. Cl. 128—2.06 7 Claims



An ectopic beat detector employing a beat-by-beat detector circuit which provides a step change in signal amplitude responsively to a change in the repetition rate of an input train of pulses. The step changes in the signal are differentiated to provide signal spikes, the amplitude of which is proportional to the change in repetition rate



of the pulse train. Only spikes exceeding a threshold magnitude due to approximate doubling of the pulse train repetition rate are used then to trigger a flip-flop to generate enabling signals applied to a gate. The latter is connected to pass the input train only when so enabled. Gate output thus occurs only when ectopic beats occur in the pulse train.

3,463,144

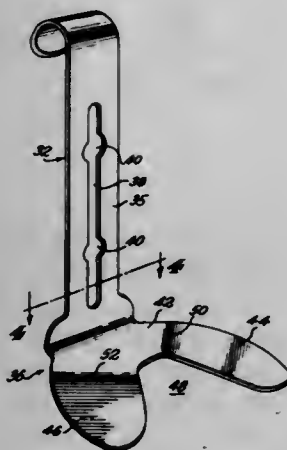
**SURGICAL RETRACTOR**

Daniel O. Hammond, 5901 N. Bayshore Drive,  
Miami, Fla. 33137

Filed June 13, 1966, Ser. No. 557,150  
Int. Cl. A61b 1/32, 1/00

U.S. Cl. 128—20

4 Claims



An upper abdominal retractor comprising a mounting arm adjustably mountable in a retractor frame and a retractor blade having a substantially flat central section depending from the mounting arm at an angle of about 90° and two substantially flat wings extending laterally from said central section, the ends of said wings being free and spaced apart to define a notch between said wings.

3,463,145

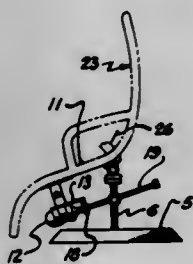
**ELECTRICALLY ACTIVATED THERAPEUTIC CHAIR**

Christian A. Whitaker, 8600 E. Broad St., Rte. 1,  
Reynoldsburg, Ohio 43068

Filed Jan. 11, 1967, Ser. No. 608,684  
Int. Cl. A61h 1/00

U.S. Cl. 128—24

3 Claims



A heavily padded chair that has a basic configuration of an ogee curve. The chair is mounted on a pair of spaced vertically disposed supports that arise from a suitable base. The aforesaid supports are so connected to the bottom of the chair that the chair may be moved from a near horizontal to a near vertical position when the controls located on one arm of the chair are operated. The controls activate an electric motor that is suitably connected to movement mechanism of the chair by means of a screw shaft.

3,463,146

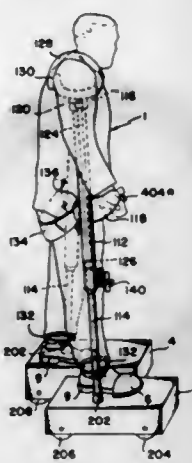
**INVALID MOBILITY DEVICE**

Arthur Schwartz, Annapolis, Md. (14 Williron Drive,  
Rte. 25, Edgewater, Md. 21037), and Frederick L. Day, Washington, D.C.; said Day assignor to said Schwartz

Filed Jan. 20, 1967, Ser. No. 610,627  
Int. Cl. A61h 3/00, 3/04

U.S. Cl. 128—25

13 Claims



A device for raising and lowering a partially paralyzed person from a seated to a substantially standing position and moving the person in a standing position along a substantially transverse direction. Motive means for raising the person and additional motor means for moving the person in a plurality of directions along the surface.

3,463,147

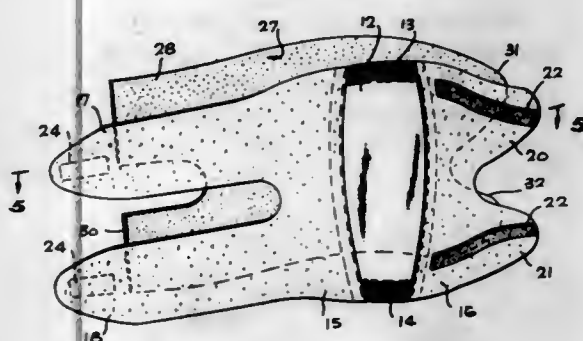
**BODY JOINT SUPPORT**

Frank F. Stubbs, 6718 Alcove Ave.,  
North Hollywood, Calif. 91606

Filed June 28, 1966, Ser. No. 561,124  
Int. Cl. A61f 5/37; A41c 1/00

U.S. Cl. 128—30

5 Claims



This invention relates to arm and leg joint supports and more particularly to a novel elbow or knee joint support which prevents an uncomfortable gathering of material under the joint as the body extremity is flexed and which evenly distributes tension about the joint intended to be supported.

3,463,148

**BONE PLATE**

Harry T. Treace, Germantown, Tenn., assignor, by mesne assignments, to Richards Manufacturing Company, Inc., a corporation of Delaware

Filed Jan. 20, 1966, Ser. No. 521,853  
Int. Cl. A61f 5/04, 13/06

U.S. Cl. 128—92

10 Claims

Bone plate means for bone fracture fixation including an apertured bone plate and screws adapted to extend

through the plate to secure clampingly the bone and plate together. The bone plate being generally thick and bar-like in form and having flattened conelike structure protruding upwardly about each aperture of the plate for reinforcing

other system includes a heat insulating shell encompassing the cooling garment to shield against external thermal conditions.



ing the plate at each aperture. The cross sectional area in structure of the bone plate being substantially constant at least along the medial portion of the full length of the plate for resisting lateral flexing and breaking of the bone plate.

3,463,149

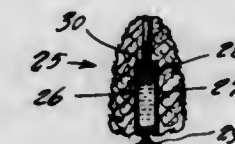
**NOSE AIR FILTER**

Theodor Alba, 31024 Glenmuer Ave.,  
Farmington, Mich. 48024

Filed July 5, 1968, Ser. No. 742,615  
Int. Cl. A61f 15/00, 13/00; A61m 15/08

U.S. Cl. 128—140

1 Claim



A filter plug removably receivable within each nostril of a person for the purpose of filtering out air impurities such as dust so to prevent entry thereof into the person's body, the device comprising a cotton body contained within a fabric covering. A medicament containing cylinder, having a stationary ported piston received therein, dispenses medicament into the body upon relative movement of the cylinder and piston.

3,463,150

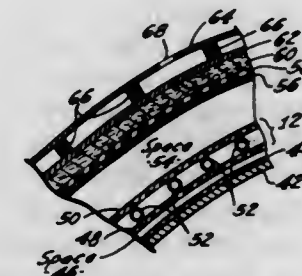
**SELF-CONTAINED THERMAL AND RESPIRATORY LIFE SUPPORT SYSTEM**

Alan S. Penfold, Los Angeles, Calif., assignor to Litton Industries, Inc., Beverly Hills, Calif.

Filed June 22, 1964, Ser. No. 376,745  
Int. Cl. A62b 7/10; G05d 32/00

U.S. Cl. 128—142.5

10 Claims



A self-contained thermal control system for space suits having at least two separate control systems; one to conduct body heat away from the body of the wearer, to dissipate such heat into space, and the other to protect the wearer from external thermal conditions such as extremes in temperature. One system includes a cooling garment having a plurality of conduits filled with a cooling fluid and a closed loop circulatory system which conducts the cooling fluid through the conduits to a heat exchanger to dissipate the body heat into space, and the

3,463,151

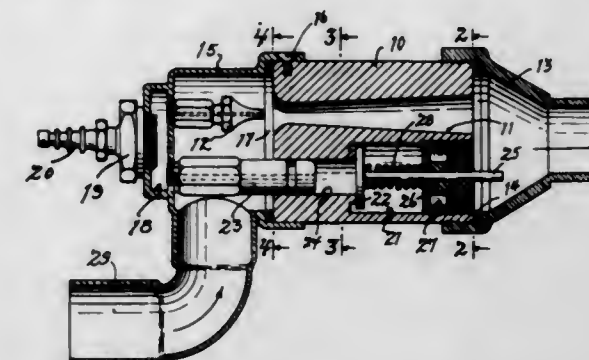
**DUAL VENTURI ANESTHETIC GAS CIRCULATING DEVICE**

William B. Neff, 11 Granite Court,  
San Carlos, Calif. 94070

Filed Sept. 7, 1965, Ser. No. 485,417  
Int. Cl. A61m 17/00; F04b 39/10

U.S. Cl. 128—188

4 Claims



This invention relates to an anesthetic gas circulating device employing a plurality of Venturi jets operating from a source of anesthetizing gas under pressure for maintaining a flow of gas in the breathing circuit of an anesthetic gas administering system, involving a gas mask, a breathing sack and a carbon dioxide absorption canister with a normally closed by-pass conduit having an adjustable pressure responsive valve by which a continuous circulation and re-circulation of anesthetizing gas will be maintained in a unidirectional manner without resort to check valves or other reverse flow inhibiting means in the breathing circuit.

3,463,152

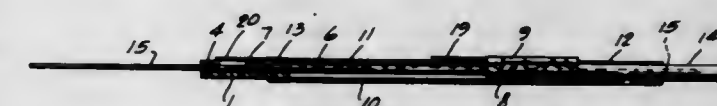
**CATHETER PLACEMENT UNIT**

James L. Sorenson, Salt Lake City, Utah, assignor to Sorenson Research Corp., Salt Lake City, Utah, a corporation of Utah

Filed June 8, 1966, Ser. No. 556,194  
Int. Cl. A61l 5/00

U.S. Cl. 128—214.4

7 Claims



The combination of the catheter placement unit including a needle and a catheter telescopically associated therewith, and wherein the needle is retractable relatively to the catheter following puncture of a body lumen, and locking means to hold the needle in retracted position in such manner that the patient's body is effectively protected from contact of the needle point.

3,463,153

**FLUID HEAD INDICATOR FOR ENEMA ADMINISTRATION SET**

Robert A. Gandi, New York, N.Y., assignor to Dickinson Becton and Company, East Rutherford, N.J., a corporation of New Jersey

Filed May 17, 1967, Ser. No. 639,170  
Int. Cl. A61m 3/00; B67d 5/38

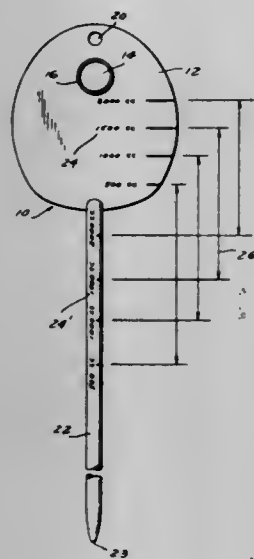
U.S. Cl. 128—227

4 Claims

An apparatus in the form of a container for holding a quantity of cleansing enema fluid and an elongated



tube at the container fluid outlet. Indicia markings indicating volumetric capacity of the container disposed on both the container and tube being separated by a set



distance which allows maintenance of the fluid head at the prescribed elevated distance from the injection site prior to and during the enema administration.

3,463,154

## DISPOSABLE PANTY SHIELD

Laurel A. Hendricks, 1535 Mount Lassen Drive, San Jose, Calif. 95127

Continuation of application Ser. No. 544,617, Apr. 22, 1966, which is a continuation-in-part of application Ser. No. 525,233, Feb. 4, 1966. This application Dec. 16, 1968, Ser. No. 785,447

Int. Cl. A41b 9/04, 9/12

U.S. Cl. 128—287

10 Claims



A disposable shield for undergarments, particularly panties wherein laminations of absorbent material are secured to a contoured liquid repellant material, and wherein adhesive material is affixed to the liquid repellant material so that the shield, in its entirety, may be detachably secured to the inner surface of a panty or the like for the protection of the undergarment.

3,463,155

## RECTILINEAR CUTTING ATTACHMENT FOR BEAK TRIMMER

James Lyon, 2922 Qualtrough St., San Diego, Calif. 92106

Filed June 26, 1967, Ser. No. 648,687

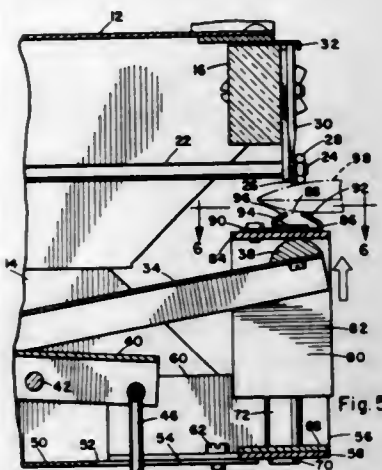
Int. Cl. A61b 17/38, 17/32

U.S. Cl. 128—303.1

4 Claims

An attachment for a machine for trimming beaks of chickens and other such birds, the machine having a fixed,

heated cutting blade and a swinging anvil which moves in an arcuate path to force the beak against the blade,



the attachment utilizing the existing anvil mechanism but converting the motion to a rectilinear stroke for more precise cutting and control of the cut.

3,463,156

## HEMOSTATIC CLIP AND APPLICATOR

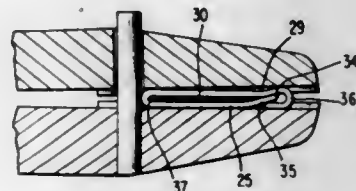
Edward B. McDermott, 23 Flower Lane, Manhasset, N.Y. 11030; Bernard Rackear, executor of said Edward B. McDermott, deceased

Filed May 27, 1965, Ser. No. 459,151

Int. Cl. A61b 17/12; B65d 63/10

U.S. Cl. 128—325

13 Claims



1. A hemostatic clip formed from an elongated member, comprising  
a substantially straight back portion,  
a bowed front closure member extending from one end of the back portion at a first bend, said front closure member having an outer end disposed transversely from the back portion,  
a hook extending from another end of the back portion and terminating in an outer end of the elongated member, said hook having two legs interconnected by a second bend and located to form an open slot facing generally toward the front closure member, and a third bend at the juncture of the hook and the end of the back portion to locate one leg of the hook on an opposite side of the longitudinal axis of the back portion from the front closure member.

3,463,157

## ARTERY COMPRESSION CLAMP

Donald W. Hunt, Sunnyvale Farms, R.R. 2, Arkansas City, Kans. 67005

Filed July 14, 1966, Ser. No. 565,270

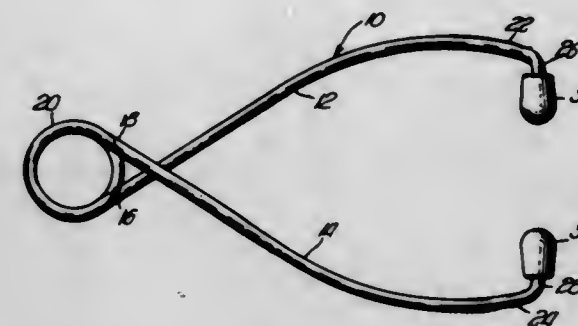
Int. Cl. A61b 17/12

U.S. Cl. 128—325

1 Claim

An artery clamp for suppressing the flow of blood from the cornual arteries of a horned animal during dehorn-

ing. The clamp includes a pair of legs joined by a spring interior surface which diverges toward valve. Rigid chamber surrounds valve, and has outlet at end opposite nip-



tached to the free ends of the legs are bulbous pads shaped to conform to the animal's temporal fossae.

3,463,158

## POLYGLYCOLIC ACID PROSTHETIC DEVICES

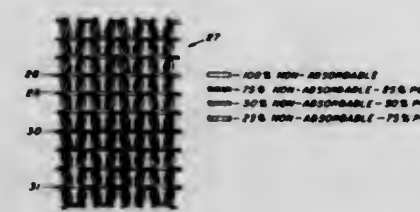
Edward Emil Schmitt, Norwalk, Conn., and Rocco Albert Polistina, Port Chester, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Jan. 9, 1967, Ser. No. 608,068

Int. Cl. A61b 17/04

U.S. Cl. 128—334

8 Claims



Polyhydroxyacetic ester, also called polyglycolic acid (PGA), has surgically useful mechanical properties as a solid prosthesis, such as reinforcing pins, screws, plates, or thin sheets. The polyglycolic acid can form a single or bicomponent fabric, either mixed uniformly, or in discrete areas with non-absorbable fibers. In either form, on implantation, in living mammalian tissue, the polyglycolic acid is absorbed, and replaced by living tissue. Fabric structures of an intermixture of PGA and non-absorbable material are particularly useful in tissue repair or replacement so that living tissue mechanically unites about the non-absorbable fiber structure, locking it into place.

3,463,159

## INSTRUMENT FOR DRAINAGE OF THE CHEST

Henry J. Heimlich, 851 Forest Ave., Rye, N.Y. 10580  
Continuation-in-part of application Ser. No. 392,073, Aug. 18, 1964. This application Feb. 16, 1965, Ser. No. 433,008

Int. Cl. A61m 27/00; A61f 5/44

U.S. Cl. 128—350

3 Claims

One-way valve comprising tubular element of rubbery material surrounding a rigid nipple at one end to keep that end of element open. Nipple connectable to intrapleural catheter. Walls of remainder of valve flattened together to close passage between them, but yieldably separate to permit passage between them of air and masses draining from the chest. Valve is of appreciable length with respect to size of drainage masses. Nipple has smooth



3,463,160

## STEAM AND HYDROTHERAPY SYSTEM AND APPARATUS

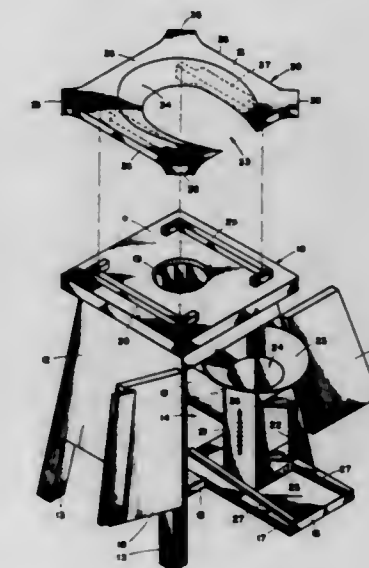
Joseph Halonen, 31 Cedar St., Sudbury, Ontario, Canada  
Filed Mar. 28, 1967, Ser. No. 626,594

Claims priority, application Canada, Mar. 31, 1966, 956,817

Int. Cl. A61h 33/06, 35/00

U.S. Cl. 128—368

5 Claims



An apparatus having a vessel for containing hot water; a seat member; means on said seat member for registering same with respect to said vessel; and a steam opening in said member.

3,463,161

## TEMPERATURE MAINTAINING DEVICE

Stella Andrassy, Ridge Road, Kingston, N.J. 08528  
Filed Apr. 13, 1965, Ser. No. 447,615

Int. Cl. A61f 7/00, 7/04

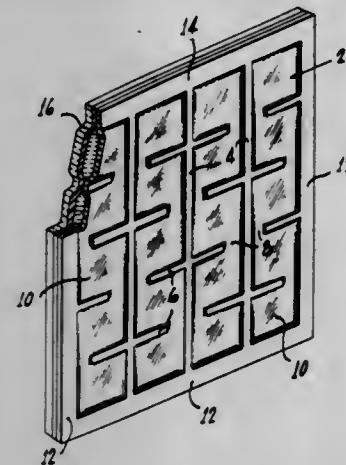
U.S. Cl. 128—402

11 Claims

A temperature maintaining device containing a composition which is permanently plastic at temperatures in the range of about 0° F. to 150° F. which contains an emulsion or dispersion containing from about 1 to 15% by weight of soap, from about 1 to 5% by weight of an emulsifying agent and from about 2 to 80% by weight of an aqueous mixture the major portion of which

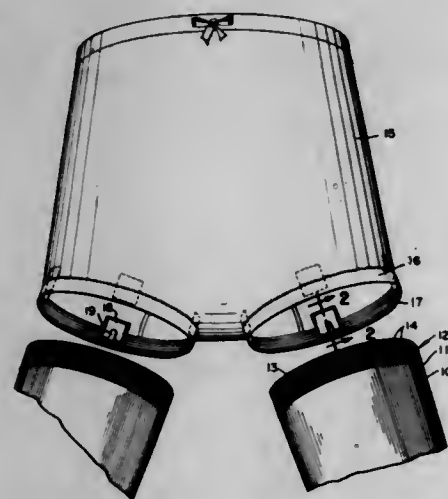


is water containing from about 1 to 30% of a miscible alcohol. The composition is preferably enclosed within



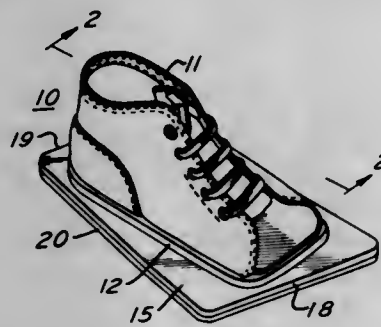
an impervious flexible enclosure adapted to conform to the surface to which the enclosure is applied.

**3,463,162**  
**STOCKING WITH GIRDLE-ATTACHING MEANS**  
Henry W. Heggie, Grenada, Miss., assignor to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware  
Filed Sept. 8, 1967, Ser. No. 666,264  
Int. Cl. A41b 11/00; A41c 1/00  
U.S. Cl. 128—519 10 Claims



A panty hose type garment and the hose used therewith, the hose being detachably connected to the panty by flat connecting means within the panty legs which releasably engage a perforate longitudinally elastic upper portion of the hose.

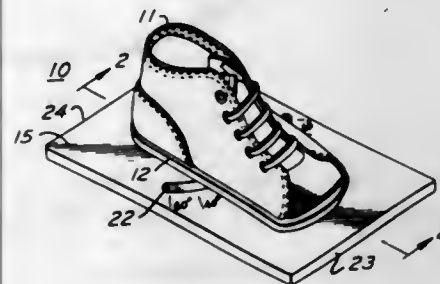
**3,463,163**  
**THERAPEUTIC SHOE**  
Arthur L. Matles, Manhattan, N.Y. (% Eugene J. Sabel & Co., 1207 Chestnut St., Philadelphia, Pa. 19107)  
Filed Jan. 31, 1967, Ser. No. 612,872  
Int. Cl. A43b 7/24; A61f 5/00  
U.S. Cl. 128—583 6 Claims



A therapeutic shoe for treatment of talipes for children, the shoe having a splint plate associated with the sole

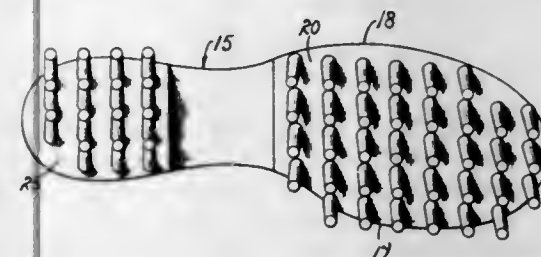
which, whether the child is on its back or on its stomach, urges the foot to a position determined by the front or rear edge of the splint plate.

**3,463,164**  
**THERAPEUTIC SHOE**  
Arthur L. Matles, Manhattan, N.Y.  
(4 E. 78th St., New York, N.Y. 10021)  
Filed June 9, 1967, Ser. No. 644,924  
Int. Cl. A43b 7/24; A61f 5/00  
U.S. Cl. 128—583 6 Claims



A therapeutic shoe for treatment of talipes for children, the shoe having a splint plate associated with the shoe, which, whether the child is on its back or on its stomach, urges the foot to a position determined by the front or rear edge of the splint plate, which position can be adjusted to meet changing conditions of therapy and to which plate different types of shoes may be attached.

**3,463,165**  
**ORTHOPEDIC SHOE**  
Joseph P. Goodman, 105 Beardsley Ave., Bakersfield, Calif. 93308  
Continuation-in-part of application Ser. No. 450,803, Apr. 26, 1965. This application May 29, 1967, Ser. No. 651,644  
Int. Cl. A43b 7/24  
U.S. Cl. 128—583 10 Claims

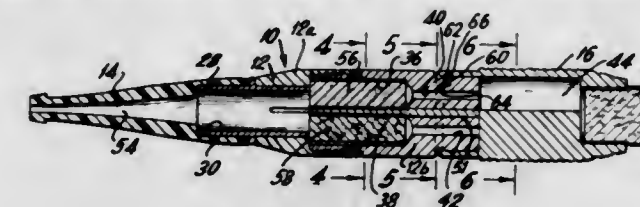


An orthopedic shoe having a sole-like member providing a plurality of deformable calks or studs outwardly obliquely extended therefrom for deformation upon the application of the weight of the wearer to impart a force to the member which is opposite to the direction of the oblique extension of the studs. The studs are varied in form to impart turning and/or tilting for correcting different types of defects.

**3,463,166**  
**SMOKERS' SMOKE TREATMENT ATTACHMENT**  
John M. Bennett, 118 Riverside Drive, New York, N.Y. 10024, and Karel A. Hozak, Brooklyn, N.Y.; said Hozak assignor to said Bennett  
Continuation-in-part of application Ser. No. 450,938, Apr. 26, 1965. This application Aug. 31, 1967, Ser. No. 664,768  
Int. Cl. A24f 3/02  
U.S. Cl. 131—178 2 Claims

A device for selectively filtering and treating smoke for use with a smoking device such as a cigarette holder or a pipe includes a tubular member having one end adapted to be connected to a mouthpiece and an opposite end adapted to be connected to either a cigarette or a pipe. The tubular device includes a fixed barrel portion having a

plurality of cavities which may be filled with various smoke treatment devices such as filters, menthol additives, medicinal elements and the like and an opposite rotatable end with a bore which may be selectively aligned with at least one and in some instances two of the individual cavities in order to provide a variation of smoke treatment. In the



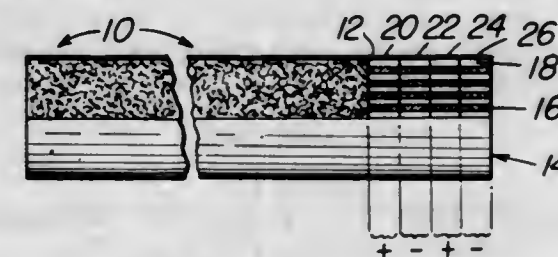
preferred arrangement the rotatable part is journaled for rotation about a central axis on the fixed part and it carries an eccentric bore or selection passage which is shifted between alignment with bores leading to one or more of the treatment chambers so that the smoke may be selectively passed through one or more of such chambers.

**3,463,167**  
**SMOKING PIPE**  
Ervin A. Kubert, 1328 Smilax Ave., Fort Worth, Tex. 76111, and Reece Allday, 3536 Montreal Circle, Fort Worth, Tex. 76117  
Filed July 24, 1967, Ser. No. 655,451  
Int. Cl. A24f 1/08, 1/16, 1/20  
U.S. Cl. 131—202 3 Claims



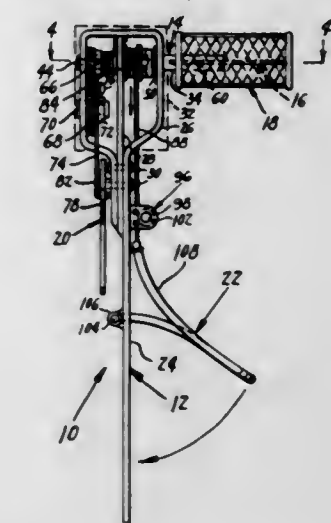
A smoking pipe including a bowl, a mouthpiece and a tubular stem extension therebetween. Within the extension there is an inner tube or duct connected with the bowl, around the duct and spaced therefrom there is a tube having a closed end and around the tube there is a filter. Filling the space between the filter and the inner surface of the stem extension there is a layer of absorbent material for absorbing any saliva entering the pipe through the mouthpiece. A feature of the invention has to do with fingers on the filter making contact with the absorbent material so as to transfer moisture from the fingers to the absorbent material.

**3,463,168**  
**ELECTROSTATICALLY CHARGED TOBACCO SMOKE FILTER**  
John H. Troll, Bronx, N.Y. (52 North St., Ridgefield, Conn. 06877), and Alan N. Alpern, 88 Remsen St., Brooklyn, N.Y. 11201  
Continuation-in-part of application Ser. No. 372,182, June 3, 1964. This application Apr. 27, 1967, Ser. No. 634,196  
Int. Cl. A24f 13/06, 7/04  
U.S. Cl. 131—262 3 Claims



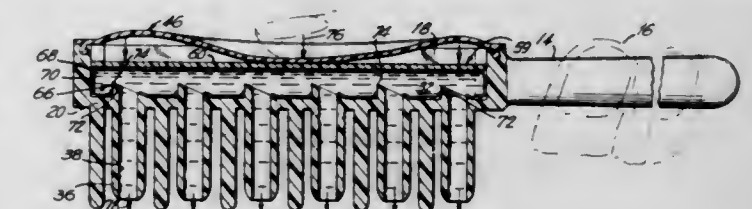
A tobacco smoke filtering means having passageways through which the smoke passes, the passageways being defined by dielectric material permanently electrostatically charged to provide a negative and a positive charge in series alignment.

**3,463,169**  
**HAIR CURLING APPARATUS**  
Joseph P. Zaidan, 1234 S. Broad St., Philadelphia, Pa. 19146  
Filed July 1, 1966, Ser. No. 562,309  
Int. Cl. A45d 2/12  
U.S. Cl. 132—34 6 Claims



A hair curler comprising a support and a roller and a pair of compressible operating members adjacent the support each mechanically connected to the roller, the members being disposed in perpendicular relation to each other whereby the roller may be activated by either hand regardless of the position of the device relative to the hand of the user.

**3,463,170**  
**TREATMENT COMB**  
Marjorie McCullough, 258 Wadsworth Ave., New York, N.Y. 10033  
Filed Oct. 25, 1968, Ser. No. 770,567  
Int. Cl. A45d 24/22  
U.S. Cl. 132—113 3 Claims



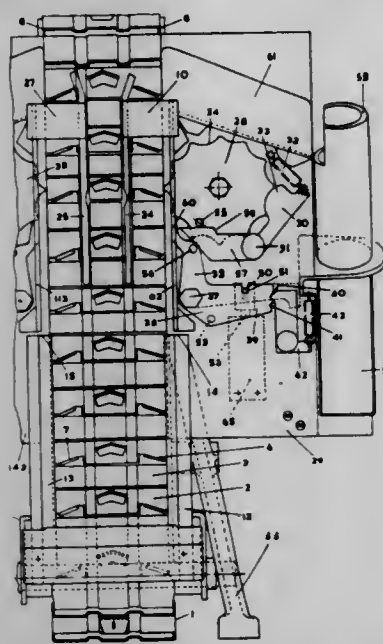
A treating comb adapted to apply treating solutions in selected quantities to the scalp or hair of the user having a handle and body portion, with bristles and hollow teeth depending from the body portion and a reservoir in the body portion for containing the hair treatment fluid, said fluid being actuated for application by means of a pressure plate movably mounted in the reservoir, said pressure plate being moved by pressure applied on the body portion of the comb.

**3,463,171**  
**APPARATUS FOR EXTRACTING AND FEEDING COINS STORED IN A BULK SUPPLY**  
Henry J. Dolman, Chew Magna, near Bristol, England, assignor to Brecknell, Dolman and Rogers Limited, Bristol, England, a company of England  
Filed Oct. 3, 1967, Ser. No. 672,595  
Claims priority, application Great Britain, Oct. 6, 1966, 44,780/66  
Int. Cl. G07d 9/00  
U.S. Cl. 133—1 14 Claims

In a system of separating and feeding coins stored in bulk supply hopper, a conveyor agitates the coins in the hopper, extracts the coins individually from the hopper

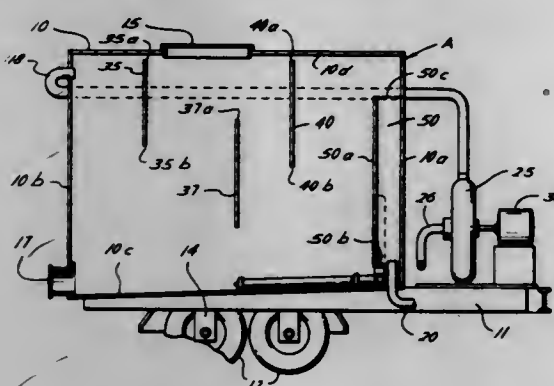


and feeds them in series. The conveyor includes individual carriers each of which comprise a pair of sloping panels which cause the extracted coins to roll laterally to posi-



tions on opposite sides of the carrier. The coins are individually supported by a fixed guide and a supporting ledge formed on the conveyor.

**3,463,172**  
**TANK UNIT FOR RECEIVING AND TRANSPORTING SEWER SOLIDS**  
William S. Naylor, Pasadena, Tex., assignor to Naylor Pipe Cleaning Company, a corporation of Texas  
Filed Jan. 5, 1968, Ser. No. 696,083  
Int. Cl. B08b 13/00, 3/00, 9/00  
U.S. Cl. 134-169 **10 Claims**

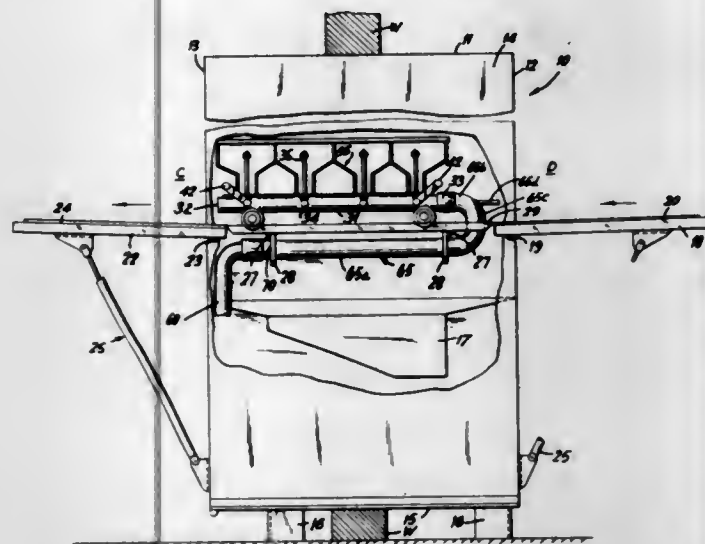


A tank unit for receiving and transporting sewer solids removed by a sewer cleaner or obtained from any source, wherein a pump and inlet pipe are provided for introducing sewer fluid into the tank unit to settle and collect the solids while discharging the liquid by gravity from the tank unit back to the sewer or other location, and wherein a cleanout door and jet spray nozzles are provided for removing the solids from the tank unit after transporting the tank unit and solids to a waste disposal area.

**3,463,173**  
**MACHINES FOR WASHING LABORATORY EQUIPMENT SUCH AS FLASKS, BOTTLES, TEST TUBES AND SIMILAR ARTICLES**  
David Goldman, New York, N.Y., assignor to Better Built Machinery Corporation, New York, N.Y., a corporation of Delaware  
Filed Oct. 23, 1965, Ser. No. 503,528  
Int. Cl. B08b 3/00, 13/00  
U.S. Cl. 134-145 **10 Claims**

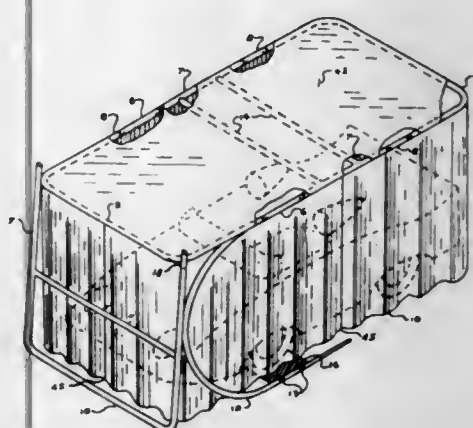
A laboratory equipment washer comprising a casing placed in a building wall, with an entrance door of the casing on one side of the wall and an opposed exit door on

the other side of the wall. A horizontal rail support is disposed in the casing, leading from the entrance door to the exit door so that a header adopted to receive water, may be placed onto the support and into the casing through the entrance door and moved out through the exit door. In the casing there is a water supply which is disengage-



ably engagable with the header to supply water thereto, and includes a pipe which has constant connection to the water supply but is movable into the path of movement of the header for engagement therewith and which must be moved out of the path of the header to permit passage of the header through the casing and out of the exit door.

**3,463,174**  
**PORTABLE COVER STRUCTURE**  
Frederick L. Heller, 205A S. Brevard Ave., Cocoa Beach, Fla. 32931  
Filed Jan. 27, 1967, Ser. No. 613,391  
Int. Cl. E04b 1/347; A45f 1/16; E04f 10/00  
U.S. Cl. 135-1 **1 Claim**

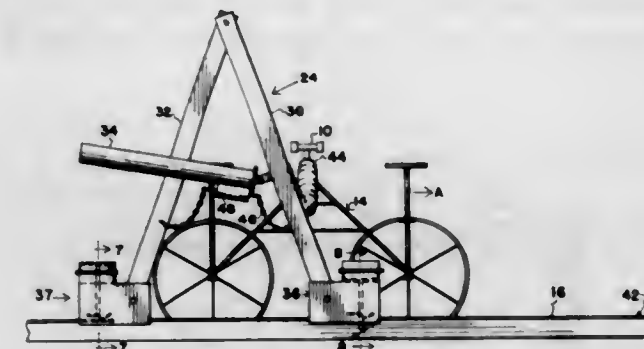


A configuration having foldable frame sections with adjacent curtain track attached, pivot hinged to come together to form a continuous covered level frame with an uninterrupted curtain track for a complete enclosing curtain; which is attached to a cantilever structure for support.

**3,463,175**  
**CONSTANT MOVE AUTOMATIC IRRIGATOR**  
Thelmer A. Rogers, P.O. Box 1589, Lubbock, Tex. 79408  
Filed Dec. 19, 1966, Ser. No. 602,961  
Int. Cl. A01g 25/02; B60p 3/00; B05b 3/18  
U.S. Cl. 137-1 **10 Claims**

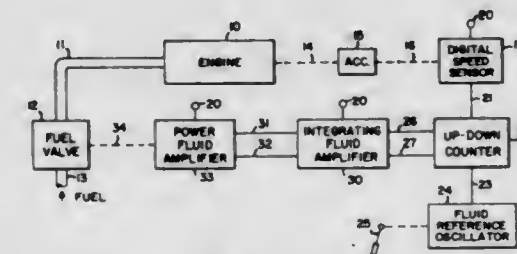
A constantly moving irrigation sprinkler pipe is sequentially connected to a series of valves in a stationary

supply conduit to transfer water under pressure to the sprinkler pipe. A step-terminal on the moving pipe moves two valve openers to the conduit valves by alternately expanding and contracting tubular legs. The valve openers



are on the tubular legs and one of the valve openers is always anchored to one of the conduit valves. The valve opener opens the valve before sealing itself to the valve, thus flushing the sealing surface with a gush of water.

**3,463,176**  
**FLUIDIC FUEL CONTROL SYSTEM**  
Jeffrey M. Lazar, St. Paul, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware  
Filed Dec. 22, 1965, Ser. No. 515,549  
Int. Cl. F01c 21/12; F15c 1/08; G06m 1/12  
U.S. Cl. 137-36 **7 Claims**



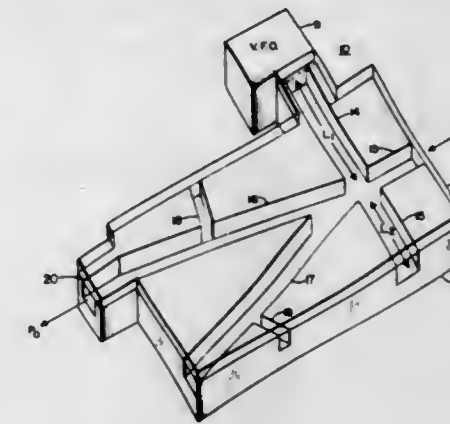
Pure-fluid apparatus for controlling the fuel valve of an engine to maintain its speed at any defined value. In a first embodiment an up-down counter receives trains of fluid pulses from an adjustable reference oscillator and from a speed sensor driven by the engine. In a second embodiment, a fluid pulse modulation comparator receives the trains of fluid pulses. In each embodiment a fluid output is supplied to a power fluid amplifier, of such a sense and magnitude as to cause appropriate activation of the fuel valve.

**3,463,177**  
**FLUIDIC FREQUENCY DISCRIMINATOR**  
John G. McMillan, New Brighton, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware  
Filed Oct. 7, 1966, Ser. No. 585,039  
Int. Cl. F15c 1/08  
U.S. Cl. 137-81.5 **4 Claims**

A fluidic frequency discriminator comprising a bistable fluid amplifier, having its control ports connected to tuned chambers of different lengths. One of the chambers is adapted to receive a variable frequency input signal. An

output from the discriminator is obtained only when the frequency of the input signal is between two predetermined frequencies dependent on the lengths of the tuned chambers.

**3,463,178**  
**LIQUID LEVEL CONTROLLER**  
William O. Kirchmeyer, San Ramon, Calif., assignor to The Rucker Company  
Filed May 12, 1967, Ser. No. 638,000  
Int. Cl. G05d 9/04; F15c 3/00  
U.S. Cl. 137-81.5 **3 Claims**



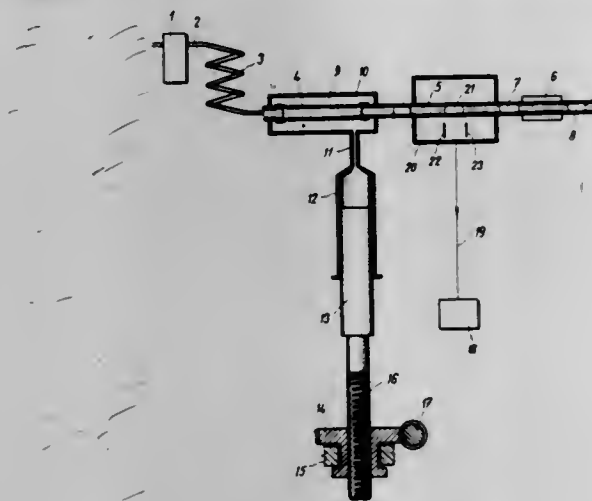
A liquid level controller for a vessel containing liquid has a bubbler tube level sensor acting through a logic circuit comprised of fluid-actuated amplification devices for controlling a pump connected to withdraw liquid from the vessel.

**3,463,179**  
**APPARATUS FOR FEEDING AND MEASURING A SUBSTANTIALLY EVENLY SEGMENTED FLUIDAL MEDIUM**  
Jiří Hrdina, Prague, Czechoslovakia, assignor to Československá akademie věd, Prague, Czechoslovakia, a corporation of Czechoslovakia  
Filed Dec. 7, 1966, Ser. No. 599,972  
Claims priority, application Czechoslovakia, Dec. 10, 1965, 7,436/65  
Int. Cl. G01f 3/04 **7 Claims**

A tubing causes a fluid substantially evenly divided into segments by bubbles of a liquid not mixable therewith to flow into and through a measuring cell to place a fluid segment therein for measurement. The said flow of fluid

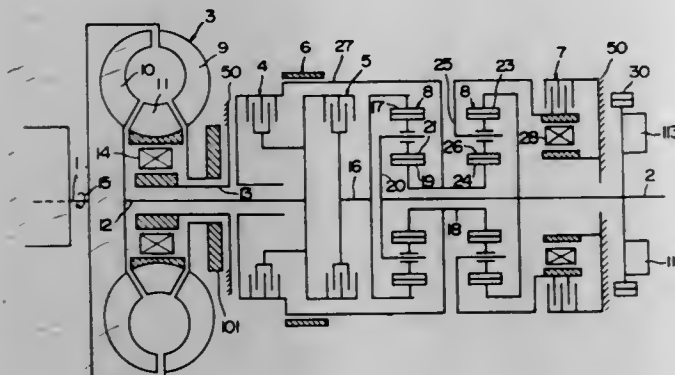


contains a volumetrically changeable portion such as a resilient portion and passes through a sensing device testing the position of one bubble therein relative to a segment of fluid to be measured in the cell. In case of a disagreement between these positions the sensing device ac-



tuates pumping means which changes the volume of said changeable portion of the flow of liquid thus controlling this flow of liquid through the tubing and placing a fluidal segment in agreeing position into the cell for measurement.

**3,463,180**  
**AUTOMATIC SHIFTING DEVICE OF AUTOMATIC SPEED CHANGE GEAR FOR AUTOMOBILES**  
Katsuo Yamada, Yokohama, Japan, assignor to Nissan Jidosha Kabushiki Kaisha  
Filed Nov. 9, 1967, Ser. No. 681,746  
Claims priority, application Japan, Nov. 15, 1966, 41/74,820  
Int. Cl. F16k 11/00  
U.S. Cl. 137—269 3 Claims

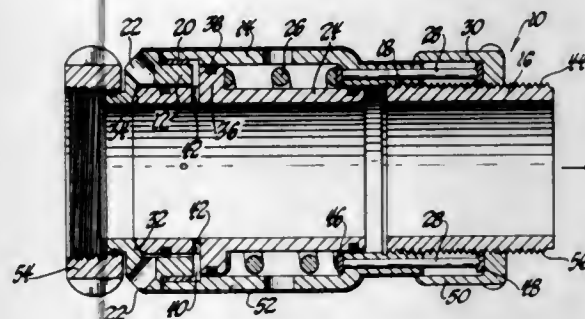


An automatic shifting device of an automatic speed change gear for automobiles, including a manually selecting valve having a partitioning board with through holes and a change-over valve having a detachable steel ball, wherein a number of different combinations of operative conditions of said automatic speed change gear can be achieved simply by modifying the pattern of the through holes of the partitioning board and keeping or removing the detachable ball of the change-over valve.

**3,463,181**  
**PRESSURE RELIEF VALVE**  
John M. Hastings, 234 Tuckahoe, Birmingham, Mich. 48010  
Filed July 28, 1967, Ser. No. 656,932  
Int. Cl. F16k 17/06, 17/08; F16l 31/00  
U.S. Cl. 137—382 14 Claims

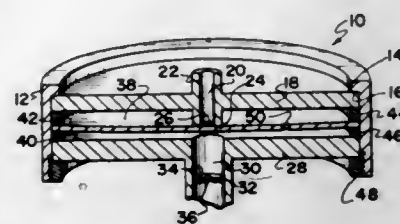
A combination relief valve and coupling of the type for interconnecting two hoses or similar fluid lines and including a housing allowing fluid flow therethrough and having

a plurality of relief passages for exhausting fluid to create a force in a direction opposite to the direction of fluid flow through the housing. A sleeve is slidably supported in the housing and the housing has a seat adjacent the relief passages for engaging the sleeve to close the relief passages. A spring biases the sleeve against the seat and a nut threadedly engages the housing for adjusting the compression of the spring. The sleeve includes an annular shoulder disposed thereabout for coacting with the housing to de-



fine a pressure chamber and a plurality of passages extend through the sleeve to transmit the pressure of the fluid flow through the housing to the pressure chamber so that the sleeve is moved against the action of the spring and opens the relief passages when the pressure in the fluid flow exceeds a predetermined value. In addition, the value of the pressure in the fluid flow at which the sleeve moves to open the relief passages can be adjusted by rotating the nut to change the compression on the spring.

**3,463,182**  
**CONSTANT PRESSURE FLUID REGULATOR**  
John L. Evans, Oakland, and Hugh E. Riordan, Wyckoff, N.J., assignors to Singer-General Precision, Inc., Little Falls, N.J., a corporation of Delaware  
Filed Apr. 10, 1967, Ser. No. 629,635  
Int. Cl. F16k 31/385  
U.S. Cl. 137—494 7 Claims

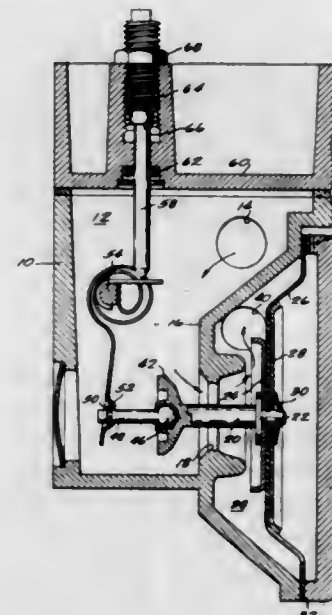


A constant output pressure regulator comprises a rigid enclosure with a deformable diaphragm separating the enclosure into two regions. Inlet and outlet in the enclosure communicate with these respective regions. The diaphragm may be impervious except for an orifice therein and in an initial position of the diaphragm, it closes the inlet orifice. Under inlet pressure sufficiently in excess of outlet pressure, it is deformable away from such closure position to admit fluid into the first region and it then passes successively to the second region through the diaphragm orifice and then through the outlet orifice. The sizes of the various orifices and diaphragm characteristics are proportioned relative to each other to provide substantially constant output pressure.

An alternative embodiment comprises a structure differing from that described above in that the inlet orifice communicates with a third region separated from the mentioned first region by a deformable plate having an orifice establishing communication between first and third regions.

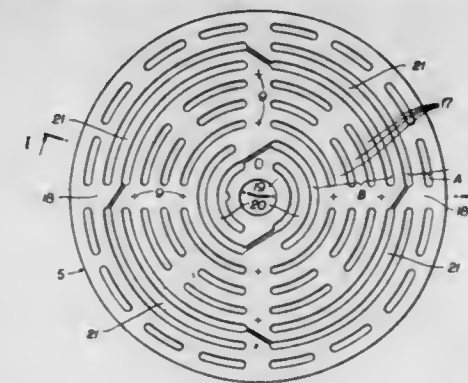
Alternatives to each of the described embodiments are (1) the provision of a porous diaphragm in lieu of the orificed one, and an impervious cover on a localized portion of the diaphragm for contact with the shoulder of the inlet orifice, (2) a porous plug covering the orifice in the impervious diaphragm, and (3) a precise orifice in a jewel or other material covering a less precise orifice in the diaphragm.

**3,463,183**  
**GAS PRESSURE REGULATOR HAVING ADJUSTABLE LATERALLY LOCATED CLOCK-TYPE BIASING SPRING**  
Elmer E. Wallace, Fullerton, Calif., assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware  
Filed June 27, 1967, Ser. No. 649,287  
Int. Cl. F16k 31/145  
U.S. Cl. 137—505.41 3 Claims



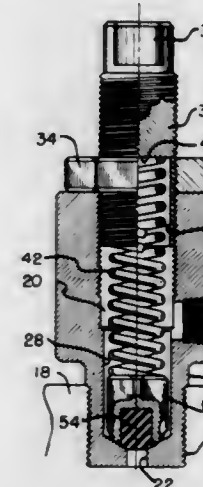
The laterally located spiral wound (clock type) spring biases the pressure regulator and is adjustable by rotating the shaft supporting the spring.

**3,463,184**  
**SUCTION VALVE FOR PISTON-TYPE COMPRESSORS**  
Robert Felix Köhler and Otto Fromhold, Schongau (Lech), Upper Bavaria, Germany, assignors to Hoerbiger Ventilwerke Aktiengesellschaft, Vienna, Austria  
Filed Jan. 10, 1968, Ser. No. 696,926  
Claims priority, application Austria, Feb. 28, 1967, A 1,940/67  
Int. Cl. F16k 15/14; F04b 39/10  
U.S. Cl. 137—512.15 5 Claims



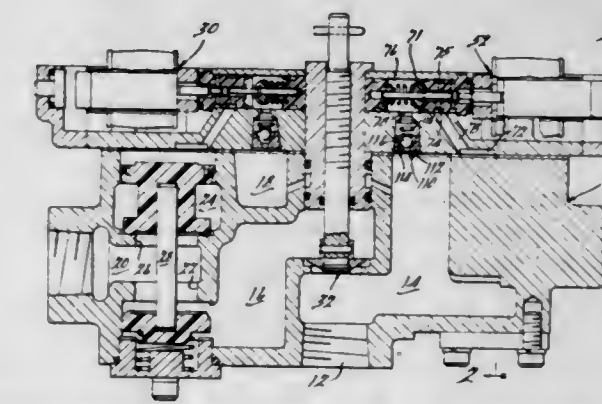
A suction valve for piston-type compressors, comprising a lifting device for the valve plate for the infinitely variable delivery control. The valve plate is subdivided into an outer plate area and an inner plate area, only the inner plate area being impinged upon by the lifting device.

**3,463,185**  
**ADJUSTABLE RELIEF VALVE**  
Alton D. Oliver and Gerald E. Carter, Houston, Tex., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey  
Filed May 2, 1966, Ser. No. 546,711  
Int. Cl. F16k 17/04, 25/00  
U.S. Cl. 137—516.29 3 Claims



A relief valve which comprises a valve body having a valve chamber having fluid inlet and outlet ports. A conical valve seat is formed about the inlet port and is engaged by the circular edge of a cylindrical plastic sealing member carried by a plunger to establish a fluid seal. The plunger member is provided with a square cross section which cooperates with the cylindrical interior walls of the valve body to define a plurality of flow passages through which fluid may flow past the plunger and toward the outlet. The edges of the plunger are cut away to form a plurality of small longitudinal guide surfaces which engage the cylindrical interior wall and maintain accurate alignment of the plunger. The plunger is biased toward the valve seat by a compression spring, the compression of which is adjustable by an external adjustment member. The plunger is provided with a circular edge which is disposed for contact with the valve seat for the purpose of limiting compression of the sealing member.

**3,463,186**  
**UNLOADER CONTROL VALVE UNIT WITH MEANS FOR MAINTAINING CONSTANT JAW PRESSURE**  
Harlan R. Cagle, Clarkston, Mich., assignor to Sahlin Engineering Co., Inc., Troy, Mich., a corporation of Michigan  
Filed May 18, 1967, Ser. No. 639,546  
Int. Cl. F16k 11/06, 31/363  
U.S. Cl. 137—596.16 10 Claims



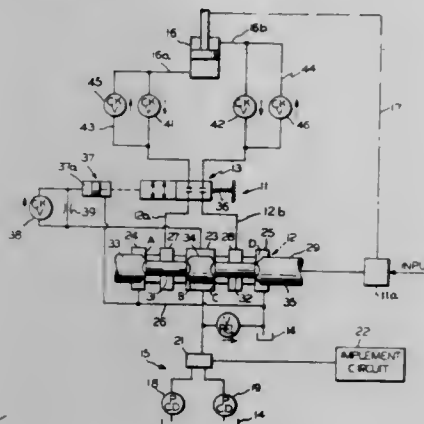
There is herein disclosed a control valve unit for controlling operation of an air operated swinging arm type press unloader and of an air operated jaw carried thereby. The valve unit includes valve means for maintaining constant air pressure at the jaw during gripping and movement of a workpiece.



### 3,463,187 HYDRAULICALLY OPERATED POWER STEERING CIRCUIT

Robert W. Rue, Kalamazoo, Mich., assignor to General Signal Corporation, a corporation of New York  
Filed Feb. 7, 1968, Ser. No. 703,720  
Int. Cl. F16k 11/00; F15b 11/08, 13/04  
U.S. Cl. 137—596

4 Claims

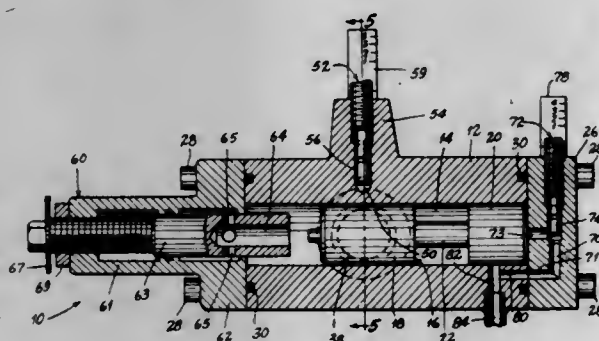


Hydraulically operated power steering circuits employing a metering valve for controlling the flows to and from the steering cylinder, and a separate lock-out valve operated by the differential between the inlet and exhaust pressures of the metering valve for isolating the cylinder from the metering valve when the latter is in neutral position. Return flow from each side of the cylinder is restricted by a check valve located either between the cylinder and the lock-out valve or between the latter and the metering valve. Check valve-controlled paths by-passing the flow-restricting check valves insure substantially unrestricted flow to the two sides of the cylinder.

### 3,463,188 SHOT SPEED CONTROL VALVE AND METHOD OF CONTROLLING THE SPEED OF A SHOT CYLINDER RAM

Robert R. Ryan and Leonard G. Werner, St. Louis, Mo., assignors to St. Louis Diecasting Corporation, St. Louis, Mo., a corporation of Missouri  
Filed Oct. 23, 1965, Ser. No. 503,697  
Int. Cl. F15b 7/08, 15/22  
U.S. Cl. 137—599

3 Claims

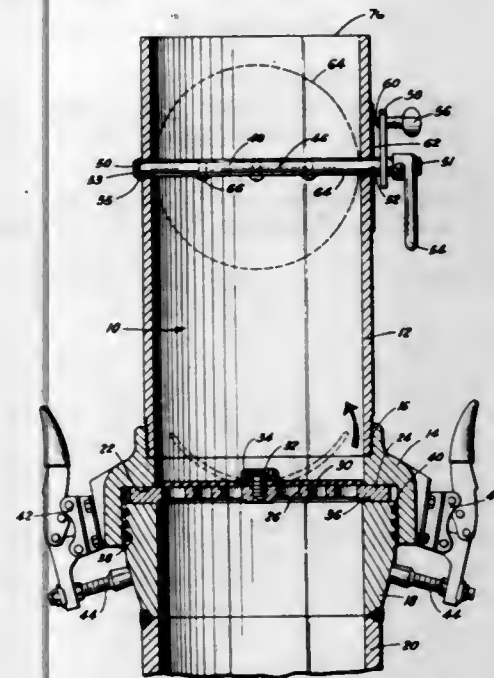


A shot speed control valve including a casing having a reciprocable spool piston therein, passages for supplying fluid under pressure to each end of the piston, passages for passing a maximum flow of fluid under pressure through said casing which is closed when said piston is in one limit position of movement and open a predetermined amount when said piston is in the other limit position of movement, means for adjusting said other limit position of movement, an adjustable by-pass channel for said maximum flow passages, an adjustable metering passage for supplying fluid at one end of said piston at less than full flow for the initial travel of said piston, and adjustable cushion means effective on the other end of said piston.

### 3,463,189 BLOW-DOWN VENT AND CHECK VALVE

John R. Fitzpatrick, Tulsa, Okla., assignor to Charles Wheatley Company, Tulsa, Okla., a corporation of Oklahoma  
Filed Mar. 7, 1966, Ser. No. 532,404  
Int. Cl. F16l 55/18; F16k 15/14  
U.S. Cl. 137—614.2

2 Claims

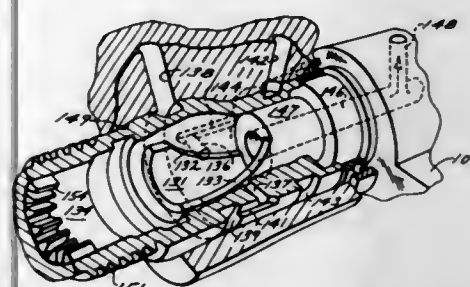


A blow-down vent and check valve device for facilitating pipe line repairs by providing a control for the gas in the line during the repair operation. A sleeve is secured to the pipe line above the usual blow-down valve after the pipe line has been evacuated. A one way valve or check valve is disposed in one end of the sleeve and installed in the proximity of the blow-down valve for precluding admittance of atmospheric pressure into the pipe line while permitting the escape of any pressure in the line in excess of atmospheric pressure. A throttle valve is disposed in the proximity of the opposite end of the sleeve and is utilized for controlling the rate of flow of any gas being discharged through the sleeve. The throttle valve is particularly designed to permit the escape of sudden surges of gas which may come through the pipe line in a sudden force.

### 3,463,190 HYDRAULIC BLADE CONTROL

Marvin E. Beyers, Peoria, Mackenzie P. Brown, New Lenox, John W. Carter, Peoria, and John A. Junck, Joliet, Ill., Jerre F. Lauterbach, Glastonbury, Conn., and Frank H. Winters, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California  
Original application Aug. 4, 1964, Ser. No. 387,307, now Patent No. 3,354,563, dated Nov. 28, 1967. Divided and this application June 12, 1967, Ser. No. 667,015  
Int. Cl. E03b; E03c; F17d  
U.S. Cl. 137—625.17

1 Claim



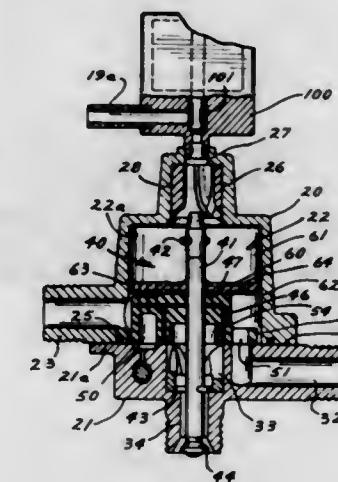
An automatic blade control unit for adjusting slope of a grader blade including a blade slope simulator and a valve

responsive to deviations of the simulator from a desired slope to direct working fluid to a hydraulic system suitable for positioning the blade at a desired slope, the valve being adjustable to vary the desired blade slope.

### 3,463,191 LIQUID CONTROL VALVE

Harry Addison, 206 W. Marshall, Marshall, Minn. 56258  
Filed Dec. 9, 1966, Ser. No. 600,434  
Int. Cl. F16k 11/18; G04c 23/08  
U.S. Cl. 137—625.29

2 Claims

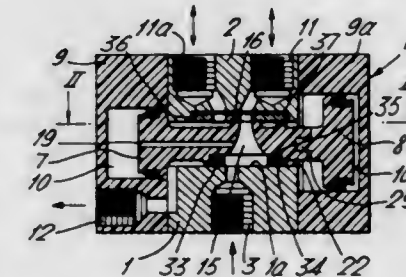


A liquid control valve for controlling fluid flow to a number of individual conduits including a valve member provided for reciprocating movement within a housing with a piston associated therewith to control the reciprocation with means for controlling the pressure on opposite sides of the piston whereby the reciprocation is attained with means for rotating the valve member during the reciprocation thereof and the valve member provided with at least a resilient exterior surface for sealing against the seating portion of the housing.

### 3,463,192 SLIDE VALVE

Erich Herion, Jr., Stuttgart-Frauenkopf, Germany, assignor to Erich Herion, Sr., Stuttgart-Frauenkopf, Germany  
Filed Nov. 29, 1967, Ser. No. 686,572  
Int. Cl. E03b; E03c; F17d  
U.S. Cl. 137—625.64

12 Claims

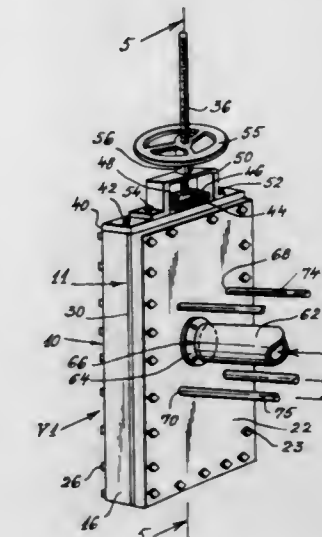


A slide valve comprising a housing, a slide movably arranged in the housing and having a central portion of substantially rectangular cross section and two reversing piston portions respectively at opposite ends of the central portion, the slide being made of a relatively rigid plastic material on a high-molecular weight polyoxymethylene base, and a hard-sintered ceramic disc on an aluminum oxide base, inserted in the housing adjacent the central portion for slidably supporting the slide.

### 3,463,193 SLIDE VALVE CONSTRUCTION

Oscar A. Yost, 302 W. 22nd St., New York, N.Y. 10011  
Filed Dec. 1, 1966, Ser. No. 598,483  
Int. Cl. F16k 3/02, 31/50  
U.S. Cl. 137—625.42

1 Claim

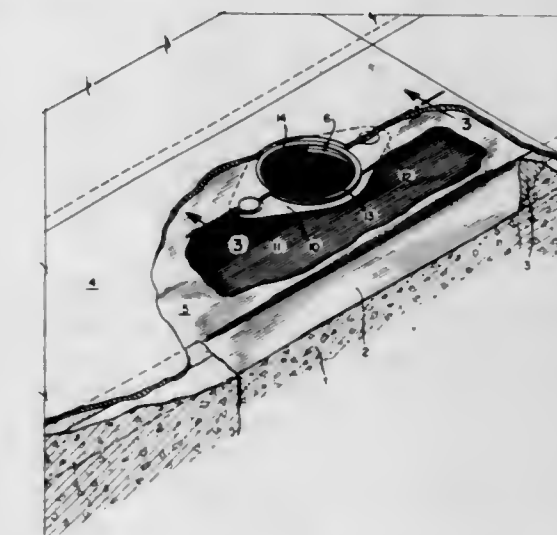


The disclosure describes a slide valve construction in which a valve plate is slidable to open and close an opening in a casing wall. The casing can be made of plates bolted or welded together.

### 3,463,194 FLUSH DUCT INSERT

Charles T. Flachbarth, Parkersburg, W. Va., assignor to Textron Inc., Providence, R.I., a corporation of Delaware  
Filed Aug. 17, 1967, Ser. No. 661,451  
Int. Cl. F16l 55/10; H02g 3/04, 3/10  
U.S. Cl. 138—92

5 Claims



A preset insert for a flush duct arranged to hold a plug or adaptor, the insert being inside of the duct and fixedly secured thereto.

### 3,463,195 PIPELINE PLUGGERS

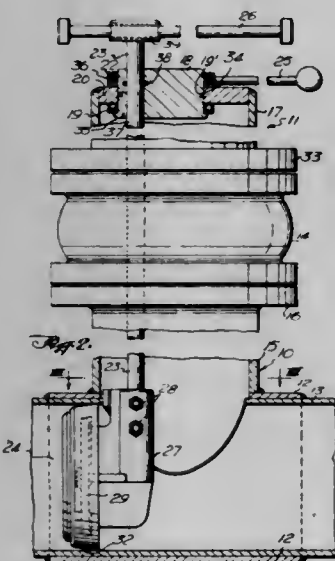
Frank Cooke, Mottram St. Andrew, near Macclesfield, England, assignor to E. Pass & Company Limited, a company of Great Britain, Northern Ireland and the Isle of Man  
Filed Jan. 10, 1966, Ser. No. 519,539  
Claims priority, application Great Britain, Jan. 30, 1965, 4,196/65  
Int. Cl. F16l 55/10, 55/18  
U.S. Cl. 138—94

4 Claims

Apparatus for plugging a pipe in which a hole has been drilled, the apparatus having a plug carried on a



shaft which may be inserted into the pipe, the shaft being eccentrically mounted in a rotatable hub which is itself eccentrically mounted in a body adapted to be



clamped on to the pipe whereby the plug may be positioned to seal the pipe by appropriate rotation of the plug carrying shaft and of the hub relative to the body.

3,463,196

**FLANGE PROTECTOR**

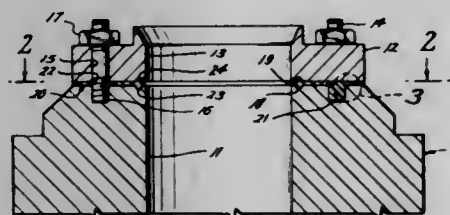
Ernest T. Richardson, Star Rte. B, Box 588,  
Morgan City, La. 70380

Filed Sept. 8, 1967, Ser. No. 666,343

Int. Cl. F16l 57/00; B65d 59/00

U.S. Cl. 138—96

5 Claims



A protector for a flange which has an annular groove and a circle of tapped holes arranged concentrically of the groove in one side of the flange. The protector comprises a thin ring for disposal over the one side of the flange and having plugs extending from the side thereof adjacent the flange for fitting closely within certain of the flange holes. Holes through the ring are adapted to be aligned with the remaining holes in the flange. Annular ridges extend from equal diameter portions of opposite sides of the ring, with the ridge on the same side of the ring as the plugs being adapted to fit closely within the groove of the flange.

3,463,197

**WIRE-BRAIDED HYDRAULIC HOSE**

Winton Lloyd Slade, Lancaster, Pa., assignor to Raybestos-Manhattan, Inc., Manheim, Pa., a corporation of New Jersey

Filed June 20, 1966, Ser. No. 558,926

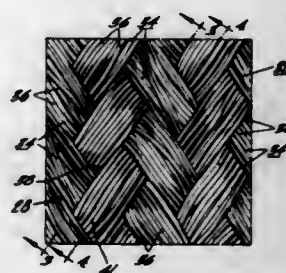
Int. Cl. F16l 11/02, 11/14, 11/16

U.S. Cl. 138—125

9 Claims

A tubular wire braided hose reinforcement characterized by a plurality of braided strands, each strand including a bundle of small diameter high tensile strength metal wires and filling substantially 100% of the available

strand space, each strand having a continuously varying permanent moulded shape adapted to conform with ad-



jacent and parallel transverse strands to provide a smoothly curving disposition of all of the strand wires.

3,463,198

**TERRY WARP FEEDING METHOD AND APPARATUS**

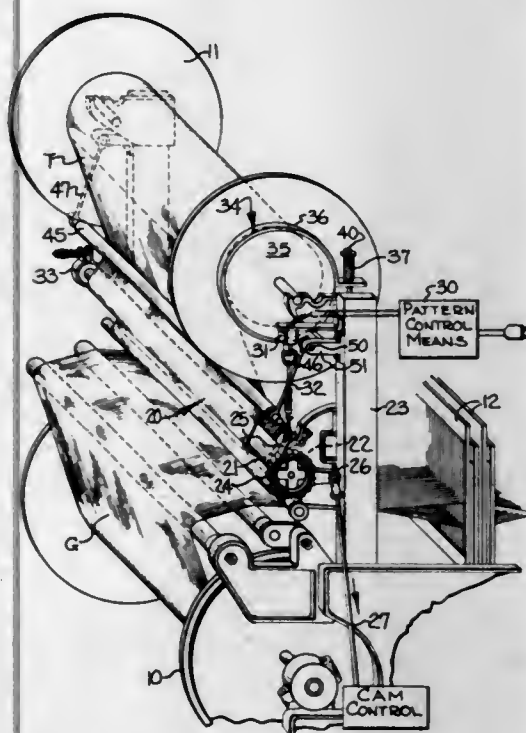
Johnny D. Harkey, Concord, N.C., assignor to Cannon Mills Company, a corporation of North Carolina

Filed Nov. 6, 1967, Ser. No. 680,858

Int. Cl. D03d 39/22

U.S. Cl. 139—25

7 Claims



To aid in feeding terry warps during each fast pick of a terry loom, predetermined lengths of terry warps are withdrawn from a terry warp beam during intervals between spaced feeding intervals of a positive terry warp feeding device, and in the course of the terry warp to the feeding device, so as to avoid breakage of the terry warps in this area. Such withdrawal of terry warps is effected by continuously applying a lateral yielding force to the terry warps through the medium of a pendulous bar engaging the terry warps between the beam and the feeding device.

3,463,199

**SELVAGE-FORMING APPARATUS FOR DOUBLE FABRIC LOOMS**

Walter J. Crenshaw, Clemson, Hoke S. Hicks, La France, and Efton O. Oakes, Sandy Springs, S.C., assignors to Riegel Textile Corporation, a corporation of Delaware

Filed Sept. 15, 1966, Ser. No. 579,698

Int. Cl. D03c 5/04, 7/06

U.S. Cl. 139—54

2 Claims

Apparatus for forming selvages on corresponding edges of upper and lower fabric layers being woven in which

3,463,201

**LOOM PROTECTOR MECHANISM**

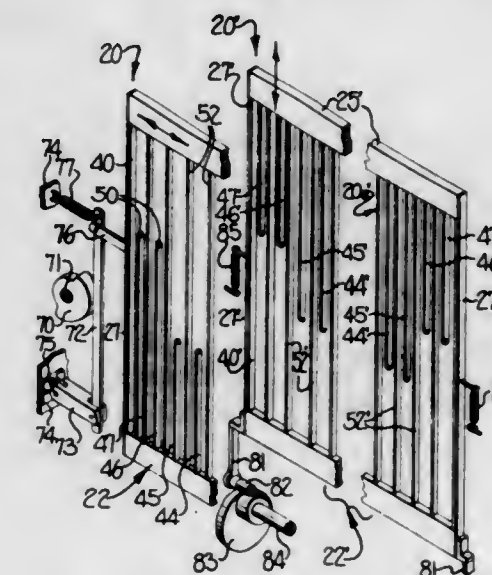
Gordon S. Robinson, North Smithfield, R.I., and Robert W. Anderson, Jr., Douglas, Mass., assignors to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware

Filed Jan. 11, 1968, Ser. No. 697,208

Int. Cl. D03d 51/40, 49/54

U.S. Cl. 139—346

5 Claims



tive first and second needles are moved relatively vertically and relatively transversely so that the upper and lower needles of the first pairs alternately occupy positions adjacent one side and the other side of respective upper and lower needles of the second pairs for crossing the selvage warp yarns during certain picks of the loom.

3,463,200

**STOP MOTION**

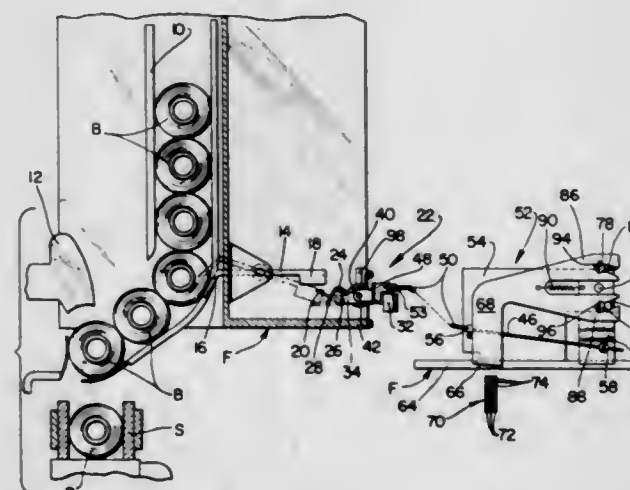
Robert McLachlan, Warwick, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts

Filed Feb. 5, 1968, Ser. No. 702,862

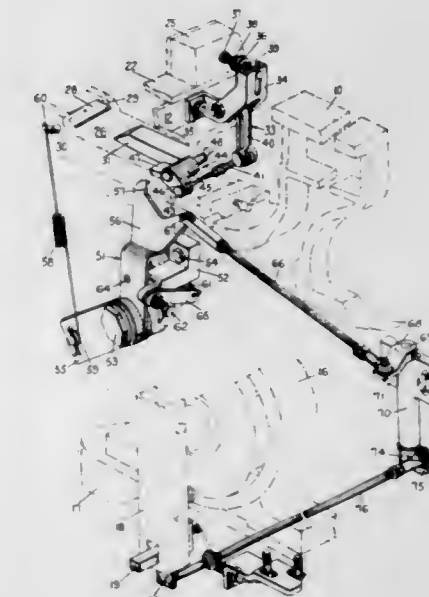
Int. Cl. D03d 51/20, 51/34

U.S. Cl. 139—336.4

3 Claims



A mechanism for stopping a loom when a supply of reserve bobbins has been depleted to a predetermined number. A sensing lever positioned in the path of the bobbins is held in an inactive position when engaged by a bobbin, but in the absence of a bobbin is free to swing and trip an actuating device including a trigger mechanism to cause a blade to engage oscillating bars on the loom, thereby stopping the loom.



A protector mechanism for looms powered by clutch-brake type transmitters in which on indication for bang-off, the transmitter is released to braking position prior to engagement of fixed dagger fingers with controlled pivotable abutments carried in the loom's slidable frogs.

3,463,202

**WOVEN TAPES**

Gerard C. Wildi, Hadlow Down, and Horace D. Brand, Selsdon, England, assignors to "W" Ribbons Limited, Croydon, Surrey, England, a British company

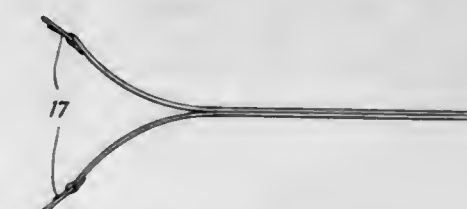
Filed July 27, 1967, Ser. No. 656,583

Claims priority, application Great Britain, July 27, 1966, 33,834/66

Int. Cl. D03d 25/00, 23/00

U.S. Cl. 139—383

10 Claims



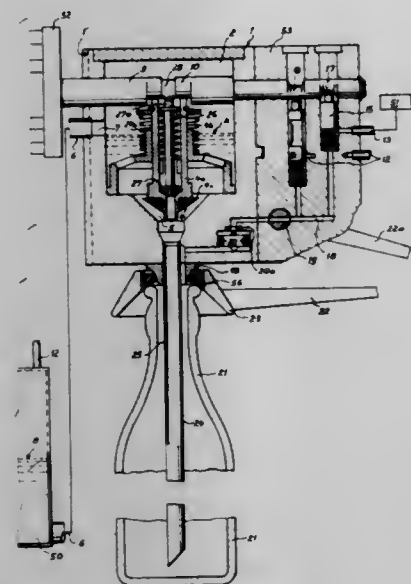
A woven tape adapted for the absorption of energy comprises two webs, each of which is woven from warp yarns and weft yarns and which are secured together in face-to-face relationship by at least binding warp yarns which are woven into both of said webs. The yarns which secure the webs together can be broken by forces acting to separate the webs thereby to part the webs without destroying them and to absorb energy from said forces. The invention also provides an energy absorption device comprising a pair of attachment elements which are respectively attached to the two webs of such a tape at a region in the length of the tape where the two webs are not secured together.



### 3,463,203 APPARATUS FOR FILLING BOTTLES OR THE LIKE

Hermann Wolf, Schriesheim, Germany, assignor to Holstein & Kappert, Maschinenfabrik Phönix GmbH, Dortmund, Germany  
Filed Dec. 27, 1966, Ser. No. 604,752  
Claims priority, application Germany, Dec. 29, 1965, H 58,098

Int. Cl. B65b 31/02, 3/04, 1/04  
U.S. Cl. 141—39 12 Claims



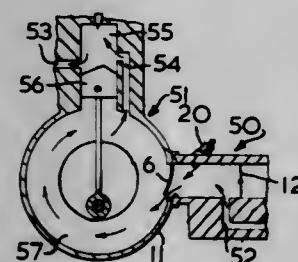
Apparatus for filling bottles with carbonated liquids wherein the counter-pressure stage of the filling cycle is followed by a filling stage which is carried out in a series of steps and includes establishing a pressure differential between the interior of the filling head and the interior of the bottle. A system of valves for each filling head and common actuating means for operating the valves in a desired sequence. Siphoning of surplus liquid from a filled bottle back into the filling head.

### 3,463,204 IDLE AIR CONTROL MEANS FOR TWO-CYCLE ENGINE-DRIVEN CHAIN SAWS

Julien Vivancos, Kapuskasing, Ontario, and André A. Corbin, Moonbeam, Ontario, Canada, assignors of one-fourth to Omer P. Raby and one-fourth to John E. C. Pringle

Filed Feb. 23, 1967, Ser. No. 618,007  
Claims priority, application Canada, Jan. 9, 1967, 979,894

Int. Cl. B65b 17/00; F02b 33/04  
U.S. Cl. 143—32 4 Claims

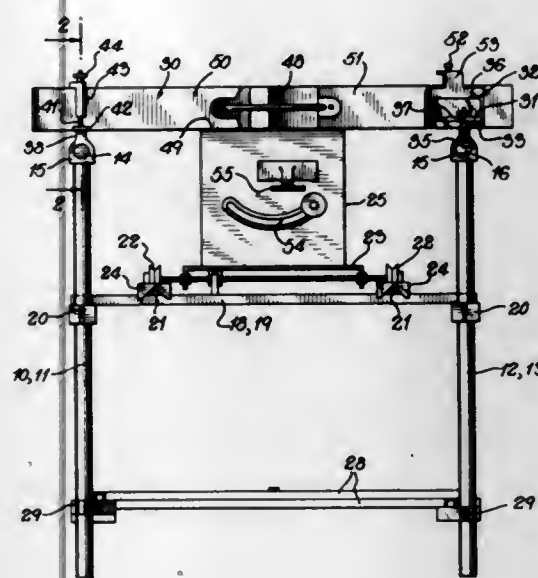


An automatically controlled air valve cooperating with the idle fuel port of a carburetor and responsive to the suction developed by an associated two-cycle internal combustion engine driving a chain saw to provide a proper idle fuel-air mixture for the operation of the internal combustion engine at an idling speed.

### 3,463,205 SAW SUPPORTING STRUCTURE

Abraham Pollak, deceased, late of Pottstown, Pa., by Henry Martin Pollak and Robert Samuel Pollak, executors, Pottstown, Pa. (both % American Machine and Tool Company, Inc., Royersford, Pa. 19468)  
Filed Dec. 5, 1966, Ser. No. 599,683  
Int. Cl. B27b 5/18, 27/06

U.S. Cl. 143—47 6 Claims



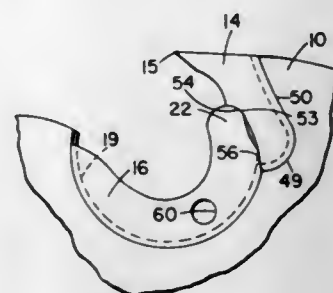
A structure which is adapted to receive a handsaw or tablesaw and to convert the regular operation thereof into the action of a radial-arm saw. The structure comprises a rectangular frame which includes a pair of adjustable lower beams adapted to mounting a saw thereon in movable relation and an adjustable workpiece backstop designed to be oriented in any angular relation with a saw and to hold the workpiece solidly as the saw is drawn through it.

### 3,463,206 TOOTH BIT FOR INSERTED TOOTH SAWS

William R. Briggs, Leominster, and Armas O. Haimila, Fitchburg, Mass., assignors to Wallace-Murray Corporation, Fitchburg, Mass., a corporation of Delaware

Filed May 17, 1967, Ser. No. 639,158

Int. Cl. B27b 33/12  
U.S. Cl. 143—151 2 Claims



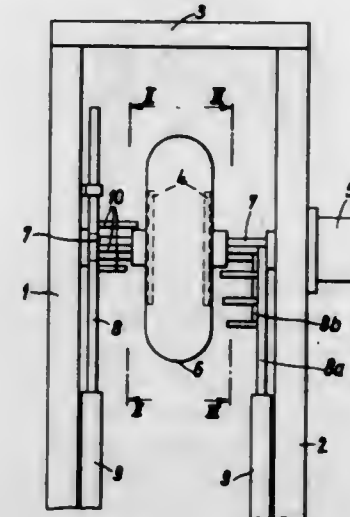
The rear wall of a tooth bit insert for a saw and the saw recess for the tooth bit are given novel reverse curvature configurations permitting their interface, for steady holding power, to be matchingly V-grooved and recessed throughout its length, yet holding the bit, when pre-seated in the recess, against rising out of the recess while a shank is being rotated in front of the bit into bit locking position. The reverse curvature configuration provides a narrowest front-to-back bit dimension in the middle section of the bit which, after rotation of the shank into locking position, is wedged against the saw plate by shank surfaces which bear against the front wall of the bit both above and below this narrowest bit dimension, thereby providing high resistance to seat-separating forces.

### 3,463,207 MACHINE FOR RECONDITIONING PNEUMATIC TYRES

Karl Beer, 46 Nabestrasse, Fischbach-Weierbach (Nahe), Germany

Filed Dec. 22, 1966, Ser. No. 603,828  
Claims priority, application Germany, Dec. 24, 1965, V 30,027

Int. Cl. B29h 21/00, 21/08  
U.S. Cl. 144—288 5 Claims



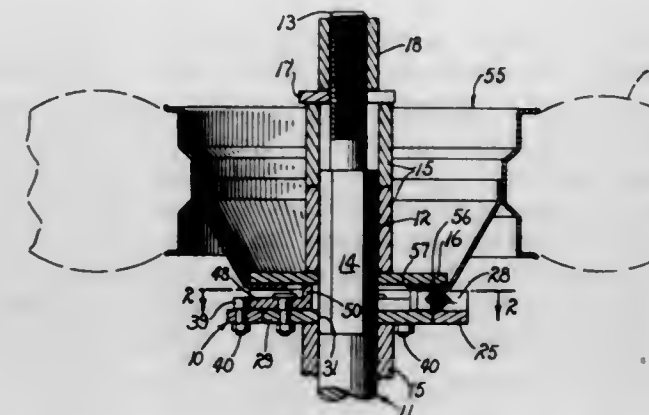
A machine for reconditioning pneumatic tyres comprising a pair of felly plates, means for inflating a tyre to be reconditioned, and one or more distance pieces mounted on a displaceable holder, said holder being movable so that the distance between the felly plates can be set by engagement of a distance piece with a felly plate.

### 3,463,208 WHEEL CENTERING TOOL

Eugene W. Turpin, 66 N. Academy, Sanger, Calif. 93657

Filed Sept. 20, 1966, Ser. No. 580,826

Int. Cl. B23q 3/12; B25h 5/00  
U.S. Cl. 144—288 10 Claims



A wheel positioning mechanism for a tire removing apparatus which includes a rotatable spindle receiving and supporting a centering plate, the plate in turn rotatably supporting a coplanar annular frame for relative movement thereto, camming members pivoted intermediate their ends to the centering plate and disposed 120 degrees apart, camming means on the annular frame engageable with the members for camming thereof incident to relative rotational movement between the frame and plate, and guide elements carried by the members engageable with the periphery of a central opening in a wheel received and supported on the annular frame for centering the wheel with respect to the spindle.

### 3,463,209 SCREW FASTENERS

Romain Podolsky, 6 Rue Basly, Asnières 92, France  
Filed May 12, 1966, Ser. No. 549,548  
Claims priority, application France, May 17, 1965, 17,298

Int. Cl. B25b 15/00  
U.S. Cl. 145—50 11 Claims



A screw and screw-driver adapted to be secured together temporarily in longitudinal alignment and with sufficient frictional engagement to resist accidental separation of the screw from the screw-driver. The screw has a socket in which the end of the screw-driver is received. The walls that define the socket extend substantially parallel to the central axis of the screw and a radial shoulder is provided in the socket between the open end of the socket and the bottom of the socket. The bottom aperture of the socket has a similar contour and shape as the portion of the socket above the shoulder, but a smaller transverse cross-sectional area. The end of the screw-driver has substantially the same size and shape as the socket in the screw head and when inserted in the socket, there is an interference fit between the screw socket and the end of the screw-driver. This interference fit resists accidental withdrawal of the end of the screw-driver from the socket and the shoulder in the socket and the lower socket aperture resist axial misalignment of the screw-driver relative to the longitudinal axis of the screw.

### 3,463,210 TOOL FOR HOLDING AND TURNING A BOLT OR SCREW

Daniel A. Gerardi, 157 Grove St., Stamford, Conn. 06902

Filed Feb. 1, 1968, Ser. No. 702,360

Int. Cl. B25b 23/08  
U.S. Cl. 145—52 2 Claims



An elongated screw holder and turner having an upper end with a ring shaped top serving as a handle and a bottom end with three flexible L-shaped prongs for engaging the slot and the underside of bolts or screws of different sizes.



3,463,211

**CUTTING APPARATUS**

Ernst Holz, Hauptstrasse 76, Heidenheim-Schnaitheim, Germany

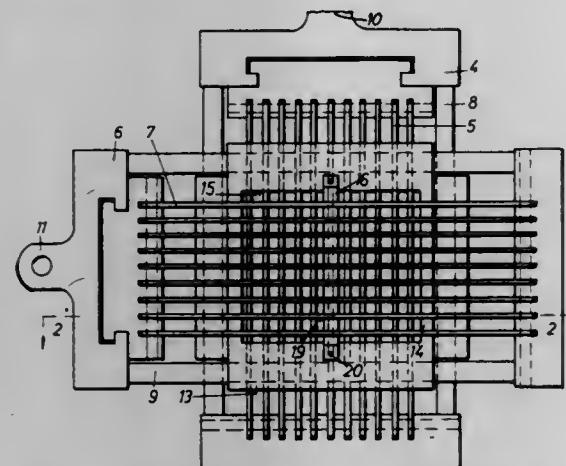
Filed Mar. 20, 1967, Ser. No. 625,560

Claims priority, application Germany, Mar. 23, 1966, H 58,877

Int. Cl. A22c 17/02

U.S. Cl. 146—78

9 Claims



The first cutting unit is provided with at least one elongated first blade against which material to be cut is fed in a given direction of advancement. A second cutting unit is arranged adjacent the first cutting unit downstream thereof and is provided with at least one elongated second blade inclined with reference to the first blade. Guide means is arranged for guiding material to be cut in the given direction and in a predetermined path and this guide means defines at least in the region intermediate the upstream edge of the first cutting unit and the downstream edge of the second cutting unit a plurality of channels each of which is adapted to receive a portion of the material which is divided by the first cutting unit, and to thereupon guide such portion toward and beyond the second cutting unit for further subdividing by the latter.

3,463,212

**OKRA ORIENTER AND TRIMMER**

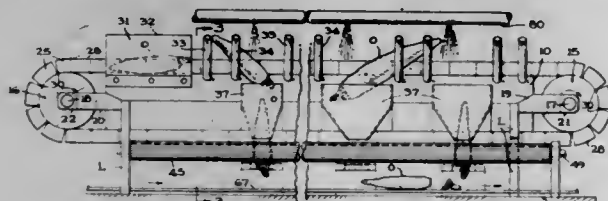
Arthur H. Morgan, Knoxville, Tenn., assignor to The University of Tennessee Research Corporation, Knoxville, Tenn., a corporation of Tennessee

Filed Nov. 2, 1967, Ser. No. 680,216

Int. Cl. A01d 23/04; 55/02; B02c 9/04

U.S. Cl. 146—81

10 Claims



This okra orieneter and trimmer comprises an elongate bed or beam, longitudinally of which is moved a V-shaped endless belt, laterally of which are disposed paired, spaced idler rollers, between which are vertically disposed bins into which okra carried by the belt are dropped from the rollers in vertical position, for trimming of their stalk ends by solenoid-actuated blades disposed beneath the machine. Parallel, counter-rotating, longitudinal rollers are mounted under the beam, aligned with the bins, above the solenoid-actuated blades, to pull the okra downwardly from the bins into engagement with the blades and, after trimming thereof, to pull the okra downwardly beneath the blades onto an endless conveyor which transfers the okra to a further processing station. The entire machine is preferably mounted on a shouldered base, to make it unitary.

3,463,213

**DUAL WIDTH TUBELESS TIRE RIM**

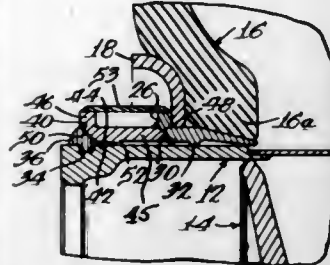
Ronald A. Wade, Chicago, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Oct. 20, 1966, Ser. No. 588,194

Int. Cl. B60c 5/16

U.S. Cl. 152—409

1 Claim



An adapter for use with a rim having a lock ring groove which permits the mounting of a tire thereon which is narrower than that the rim normally accepts, the adapter having an annular member with a beveled surface for engagement with a lock ring retained in said groove, an annular lip on said member spaced from the beveled surface a distance equal to the difference in the width of the tires, the lip being engageable with a bead seat flange to retain the narrow tire, and a tapered free end on said member for supporting the tire bead.

3,463,214

**TIRE CHAIN LINKS**

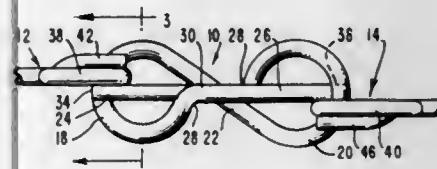
Frances Dolle, 530 W. 159th St., New York, N.Y. 10032

Filed Aug. 11, 1967, Ser. No. 660,889

Int. Cl. B60c 27/20, 27/06; F16g 13/08

U.S. Cl. 152—243

3 Claims



A link for the cross member of a tire chain, comprising a unitary rod member bent to form a pair of substantially circular, oppositely-facing loop portions having diagonally opposed ends interconnected with one another; the other end of each circular loop having a straight extension overlying said interconnecting rod section, and extending substantially diametrically across the opposed circular loop with its end overlapping the same on the side opposite to the side on which it overlies the connecting portion; the two extensions overlying opposite sides of said connecting portion.

3,463,215

**METHOD AND APPARATUS OF CONCENTRATING SOLUTIONS**

Henry Latta Pinkerton, Hatboro, and Arthur Kenneth Graham, Jenkintown, Pa., and Alphonsus Edward Ward, Lowell, Mich., assignors, by mesne assignments, to Arthur Kenneth Graham, Jenkintown, Pa.

Filed June 12, 1967, Ser. No. 645,177

Int. Cl. B01d 1/22

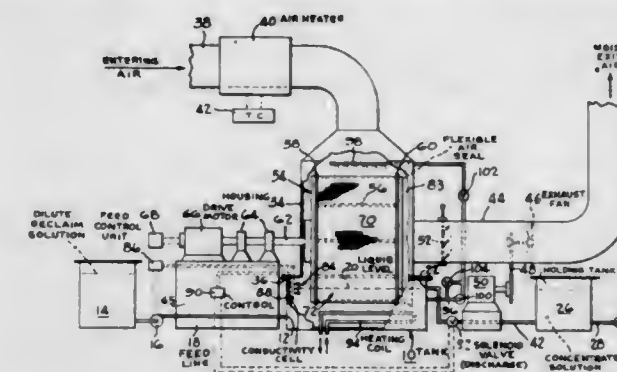
U.S. Cl. 159—10

10 Claims

An apparatus and method of concentrating solutions in which an air pervious member, is rotatably mounted to dip below the level of the solution to be concentrated and forcing a current of heated air through the member above the liquid level to evaporate the solvent from the

solution wetting the member, the member comprising an assembly of multiple screen members superimposed on each other in a manner to provide non-blinding passages for the air, and the rate of rotation of the member, air

position on the curtain rail extending across the top edge of the window between the front wing and the window. The members are disposed at either end of the curtain rail with their wings disposed one parallel to the window



velocity and number of screen members being correlated to yield a high rate of evaporation and overall heat efficiency with virtually no physical carry over of particulate droplets of solution.

3,463,216

**THERMAL SELF-SUSTAINING SYSTEM FOR SPENT PULPING LIQUORS**

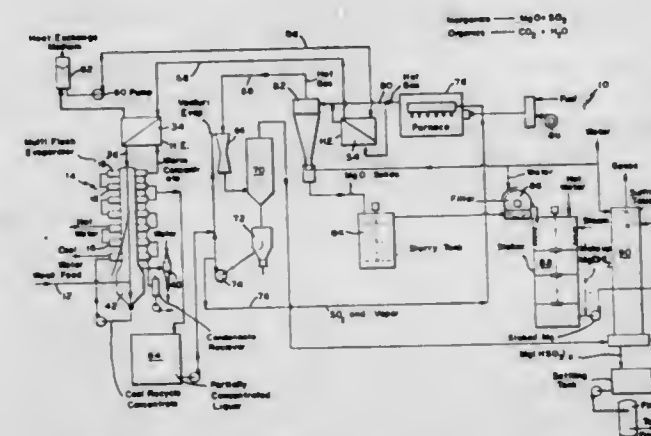
Harry V. Miles II, Westport, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware

Filed Dec. 21, 1967, Ser. No. 692,601

Int. Cl. B01d 1/26

U.S. Cl. 159—47

6 Claims



A thermally self-sustaining system for the conversion of spent pulping liquors to new cooking liquor. The spent liquor is concentrated first in a multi-stage flash evaporator and then in a venturi type concentrator to a solids concentration that will burn autogenously. A combustion stage incinerates the organics and oxidizes the inorganics. The evaporation-concentration stages do not require the generation of steam, deriving all their heat from the off-gasses exiting from the combustion stage.

3,463,217

**DEVICE FOR FASTENING HANGINGS OR A DECORATIVE STRIP ACROSS THE TOP OF A WINDOW**

Marcel Assael, 12 Place Maurice Gillet, Brest, Nord-Finistere, France

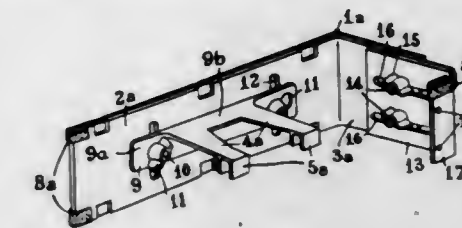
Filed Nov. 22, 1967, Ser. No. 685,156

Int. Cl. E06b 9/00; E04f 10/00

U.S. Cl. 160—39

6 Claims

A device for suspending hangings or a decorative strip across the top of a window, comprising two angle members each having a front wing and a side wing. The front wing is provided on its inner face at least two arms carrying at their free ends a clamp adapted to fit in straddle



and the other at right angles thereto. Both wings of each angle member are provided with means permitting a quick fastening of a valance of hangings or of a decorative strip thereto.

3,463,218

**SPACE DIVIDER**

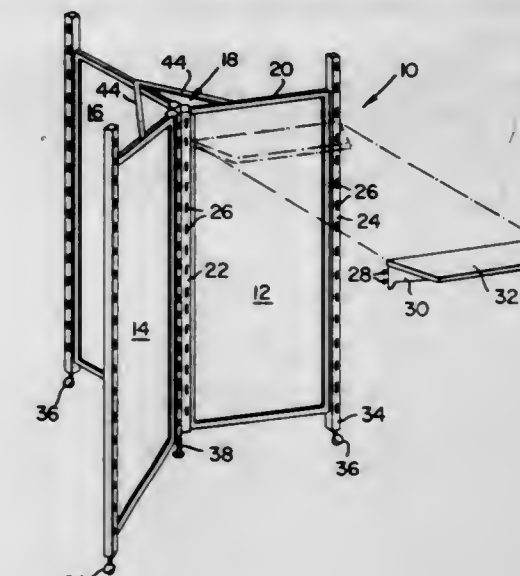
Ernest W. Cannon, Albany, and David W. Byrens, Oakland, Calif., assignors of sixteen and two-thirds percent each to James B. Aitken and Charles B. Collin, Berkeley, David F. Shapiro, Danville, and Jack C. T. Koo, San Francisco, Calif.

Filed May 18, 1967, Ser. No. 639,568

Int. Cl. A47g 5/00; G09f 7/02

U.S. Cl. 160—135

6 Claims



A self-sustaining modular partition unit comprised of three angularly disposed panels radiating from a common zone and adapted to be arranged with identical other units in end-to-end relationship to define a wall construction having a predetermined configuration. The three panels have means presenting a three-point contact with a floor or supporting surface to assure lateral stability and the panels, by hingedly interconnecting, can be moved into different angular positions and into side-by-side positions for storage and transit.

3,463,219

**BLIND FOR WINDOWS OR THE LIKE**

Manfred Osterholz, Schoenenwerd, Switzerland, assignor to Storen- und Maschinenfabrik Emil Schenker AG, Schoenenwerd, Switzerland

Filed Oct. 9, 1967, Ser. No. 673,585

Claims priority, application Switzerland, Oct. 10, 1966, 14,583/66

Int. Cl. E06b 9/36, 9/322

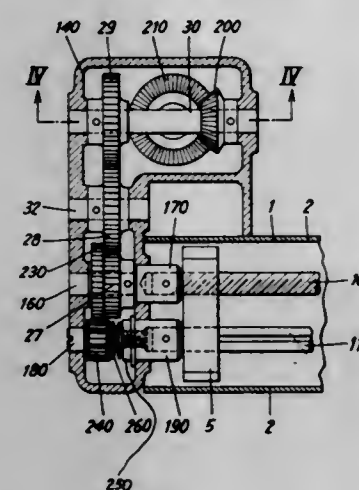
U.S. Cl. 160—172

11 Claims

A blind or shade for store windows wherein a horizontal rail which is installed above the window supports trunnions provided at the upper ends of vertical slats



which are moved lengthwise of the rail in response to rotation of a feed screw journaled in the rail and which are turnable about vertical axes in response to rotation of a spindle journaled in the rail in parallelism with



the feed screw. A friction clutch operates between the feed screw and the spindle so that rotation of the spindle by means of a motor or crank causes rotation of the feed screw.

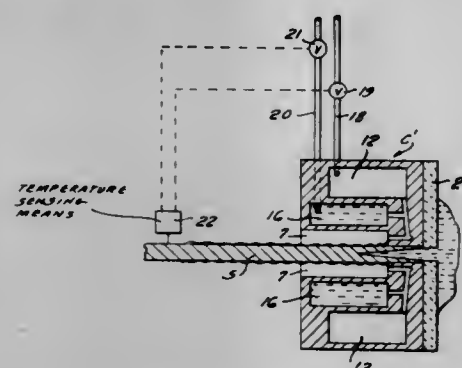
### 3,463,220 METHOD FOR CONTINUOUS CASTING OF THIN BANDS, PLATES

Guenther Moritz, Bad Godesberg, Germany, assignor to Vereinigte Aluminium-Werke Aktiengesellschaft, Bonn, Germany

Filed July 20, 1966, Ser. No. 566,589  
Claims priority, application Germany, July 25, 1965, V 28,969; Dec. 10, 1965, V 29,888; Dec. 11, 1965, V 29,909

Int. Cl. B22d 11/12

U.S. Cl. 164—4



A method for continuous casting of thin metal bands or plates in which a continuous stream of molten metal passing through a chill is first indirectly cooled in a first passage portion of the chill with a cooling fluid formed by a mixture of water and air so that outer surface portions of the stream of metal are solidified, whereafter the partly solidified metal strand is directly cooled in a second passage portion of the chill in which longitudinally extending portions of the strand are supported by feeding the mixture of water and air under pressure against unsupported portions of the strand.

### 3,463,221 MODULAR SAND MOLD

Cloyd Tillery, P.O. Drawer 1288, Phenix City, Ala. 36867

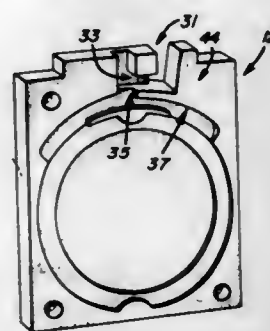
Filed July 27, 1967, Ser. No. 656,528

Int. Cl. B22c 9/02

U.S. Cl. 164—350

A modular sand mold adapted to be booked with a plurality of similar molds to simultaneously cast a plurality of metallic articles in generally vertically disposed mold cavities. Each mold is provided with an integral core

and wherein one side of the mold is provided with a pattern relief for one surface of an article to be cast and the other side of the mold is provided with a pattern relief corresponding to the configuration of the other side of the article to be cast. Thus in booked relation a plurality of mold cavities formed are in close proximity whereby the articles cast therein will tend to retain heat for a significant period of time so as to render the articles



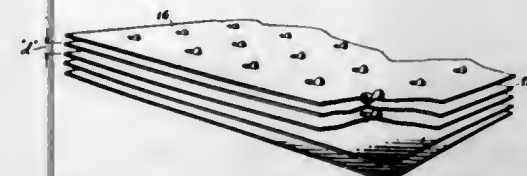
### 3,463,222 DOUBLE DIMPLED SURFACE FOR HEAT EXCHANGE PLATE

Lloyd Donald Grames, Wellsville, N.Y., assignor to The Air Preheater Company, Inc., Wellsville, N.Y., a corporation of Delaware

Filed Aug. 16, 1967, Ser. No. 661,091  
Int. Cl. F28d 19/00, 17/00; F28f 3/00

U.S. Cl. 165—10

3 Claims



A heat absorbent plate for use in a gas to gas heat exchanger wherein heat from one gaseous media is absorbed by a plate as an intermediate step before being transferred to another media. Each plate has formed thereon spacers in the shape of dimples. The dimples extend outward from opposite faces of each plate with a wall of a dimple which extends outward from one face of a plate being an unbroken extension of the dimple formed on the opposite side of said plate.

### 3,463,223 TERMINAL ROOM AIR CONDITIONER AND SYSTEM

Lawrence W. Marino, 4020 New York Ave., Seaford, N.Y. 11783

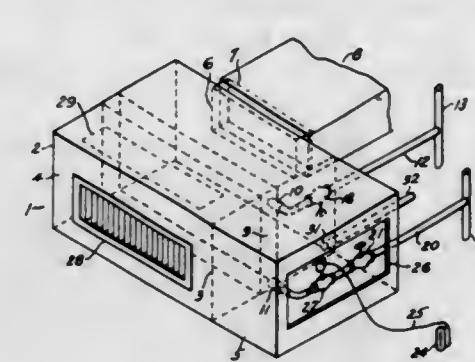
Filed Aug. 21, 1967, Ser. No. 662,040

Int. Cl. F24f 3/00; F28f 13/12

U.S. Cl. 165—22

Filtered ambient, heated or cooled air from central source supplied to plurality of terminal room air conditioners, each having compartment with water coil and

another compartment with thermostatically controlled aforesaid pipe being internally threaded to receive the ex- valve, each water coil being connected to central piped ternally threaded end of a typical electric arc lead through system of hot or cold water to heat or cool filtered air



### 3,463,224 THERMAL HEAT SWITCH

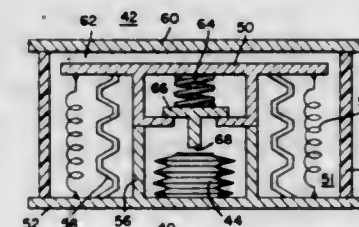
John Edmond Myers, Culver City, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

Filed Oct. 24, 1966, Ser. No. 589,056

Int. Cl. G05d 23/00; F28f 27/00, 7/00

U.S. Cl. 165—32

3 Claims



A heat transfer switch is provided which utilizes an expandable liquid in a container which when heated will expand to force one heat transfer element into heat transfer contact with another element. The device is temperature sensitive in that below a very narrow range of temperature, little heat transfer is accomplished while in and above this narrow range of temperature a great deal of heat is transferred. In addition, override springs are provided to prevent damage to the switch and to insure a gap between the heat transfer elements when it is not desirable to transfer heat.

### 3,463,225 ADAPTER FOR CONVERTING THE COOLING OF ELECTRIC ARC LEAD AND TORCH FROM AIR TO WATER COOLING

Jerry B. England, Rte. 2, Lot 31, Whispering Pines, Shreveport, La. 71108

Filed Oct. 30, 1967, Ser. No. 678,994

Int. Cl. B23h 9/00; F28f 7/02; F16i 59/00

U.S. Cl. 165—47

7 Claims

This invention consists of a piece of pipe having a separator therein that will prevent the air that flows in one side of the pipe from mixing with the water that flows in the opposite side and lower portion of the same pipe which is provided with an externally threaded nipple in that end of the pipe through which the air flows, the nipple being adapted to be screwed into one end of a typical electric arc torch, such as is used for cutting and welding metal and the like. The opposite end of the



which water flows to a drain, the water and the air that flows through the other end of the aforesaid piece of pipe cooperating to cool the arc torch and arc lead.

### 3,463,226 UNDERWATER WELLHEAD APPARATUS

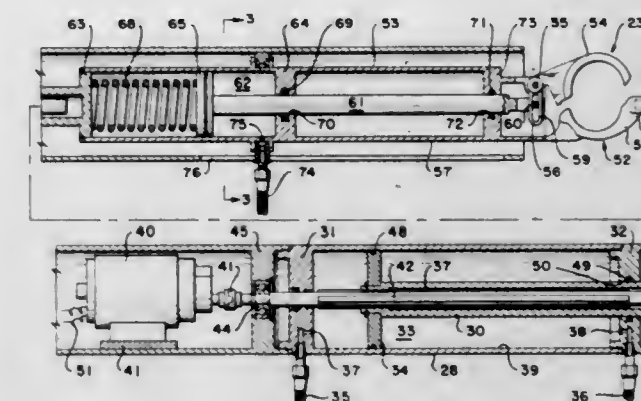
Glenn D. Johnson, Downey, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Nov. 29, 1967, Ser. No. 686,564

Int. Cl. E21b 33/035; B63c 11/00; B66c 1/62

U.S. Cl. 166—5

8 Claims



Apparatus for carrying out operations at a wellhead positioned below the surface of a body of water while controlling the operations from a base positioned above the body of water. The apparatus comprises a wellhead assembly positioned below the water surface and at the top of a well drilled into the earth formations underlying the body of water. The wellhead assembly includes component means having movable portions thereof and a string of pipe affixed near its upper end to the wellhead assembly. The string of pipe extends downwardly into the earth formation, anchoring the wellhead assembly to the earth formation. Manipulator means is lowered through the water, removably positioned adjacent the wellhead assembly and fixedly secured to the wellhead assembly. Arm means carried by the manipulator means includes grapple elements adapted to open and close about a piece of equipment. The grapple elements also include a wrench socket for turning bolts adapted to fit therein.



3,463,227

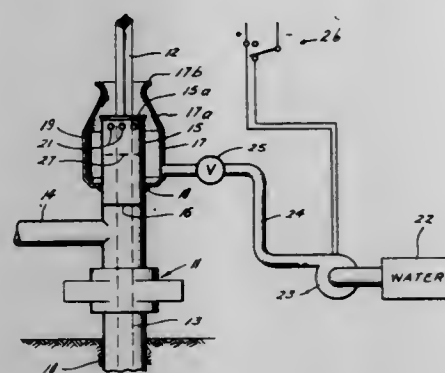
**FIRE ARRESTER FOR A PETROLEUM WELL**Alonzo L. Smith, P.O. Box 66252,  
Houston, Tex. 77006

Filed Aug. 4, 1967, Ser. No. 658,466

Int. Cl. E21b 33/03; A62c 3/04

U.S. Cl. 166—90

6 Claims



A fire arrester apparatus for introducing a fire extinguisher such as water into a housing surrounding a pipe from which gas passes at high velocity, with the housing forming with the end of the pipe a means for atomizing the fire extinguisher.

3,463,228

**TORQUE RESISTANT COUPLING FOR WELL TOOL**

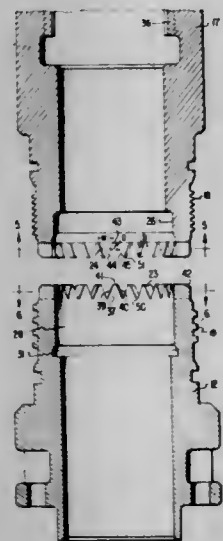
Hosea P. Hearn, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware

Filed Dec. 29, 1967, Ser. No. 694,458

Int. Cl. E21b 33/12; F161 25/00

U.S. Cl. 166—181

8 Claims



This invention pertains to a torque-resistant coupling incorporated in a well tool. In particular, it relates to such a coupling adapted to connect a packer shoe to a packer coupling portion to maintain the packer shoe integral with the packer while the packer shoe and packer are being partially drilled away. A well tool apparatus including first and second threaded coupling units interconnected by an integrally threaded sleeve. The threaded coupling units are provided with mutually facing, saw teeth structures. The saw teeth structures, which are symmetrical with respect to radial planes of the units, are interengaged so as to provide an effective, torque transmitting relation between the units.

**TRANSPORTER AND ANCHOR FOR WELL CASING INTERLINER OR BOOT**

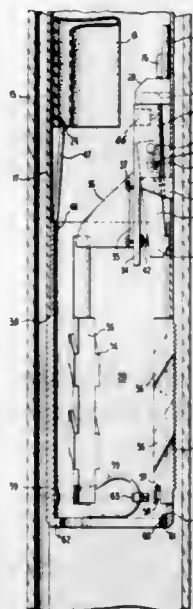
Donald L. Hinkle, Clarksburg, W. Va., assignor to William B. Berry, Clarksburg, W. Va.

Filed June 27, 1967, Ser. No. 649,190

Int. Cl. E21b 43/10, 23/00

6 Claims U.S. Cl. 166—207

14 Claims



An apparatus for introducing into and positioning within a perforated well casing an elongated tubular interliner or boot for engaging and effectively sealing the perforations in the casing. The interliner or boot, which is formed of resilient material, is crimped throughout its length and placed within a transporter that also carries an anchor member which is connected to the lower end of the boot or interliner. The anchor member is released from the transporter and engages the well casing to effect the removal of the boot or interliner from the transporter during the positioning of the boot or interliner to seal the perforated well casing.

3,463,230

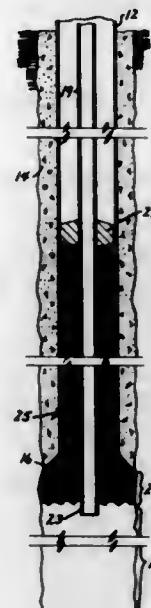
**METHOD OF MAKING A RELATIVE PERMEABILITY SURVEY USING A FLOATING PLUGGING MATERIAL**James L. Dodson, 2312 Sunset Lane,  
Henderson, Ky. 42420

Filed Apr. 10, 1967, Ser. No. 629,744

Int. Cl. E21b 47/00, 49/00, 33/00

U.S. Cl. 166—254

1 Claim



A method of selectively controlling and/or plugging a desired portion of an oil or gas well formation for various end purposes through the introduction of floatable

material particles. A relative permeability survey may be conducted by alternatively using such particles to plug an increment of the formation and making an injection test of the unplugged portion.

3,463,231

**GENERATION AND USE OF FOAMED WELL CIRCULATION FLUIDS**

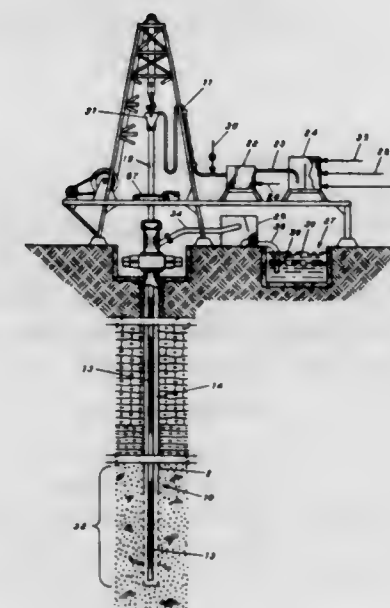
Stanley O. Hutchison, Bakersfield, Glen W. Anderson, Oildale, and John C. McKinnell, Taft, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Filed Feb. 12, 1968, Ser. No. 704,832

Int. Cl. E21b 43/24, 21/00; E21c 7/06

U.S. Cl. 166—303

28 Claims



Aqueous gas-in-liquid foams are generated using a gas and an aqueous solution of a foaming agent and are used as well circulation fluids. Foaming agents having a Ross-Miles initial foam height of at least 10 centimeters yield fluids useful for circulation in a well at a moderate velocity provided that the foam has a gas-to-liquid volume ratio, standard cubic feet per gallon, respectively, in the range 3 to 50.

3,463,232

**METHOD OF ACID TREATING WELLS**George E. Scofield, 19 Wakeman Road,  
Darien, Conn. 06820

No Drawing. Filed Nov. 3, 1967, Ser. No. 680,327

Int. Cl. E21b 43/27

U.S. Cl. 166—307

6 Claims

The productive capacity of a well is greatly increased by injecting a dilute acid solution containing the equivalent of from about 0.00003 percent by weight to 0.5 percent by weight hydrochloric acid continuously into the well for a period of at least several hours. When so treated, the solution scours and enlarges the pores of the formation for a substantial distance from the well, and not merely in the vicinity of the well bore.

3,463,233

**METHOD OF EXTINGUISHING DEEP FAT FIRES**

Walter M. Haessler, Chatham, N.J., assignor, by mesne assignments, to Norris Industries, Inc., Los Angeles, Calif., a corporation of California

Filed May 15, 1967, Ser. No. 638,325

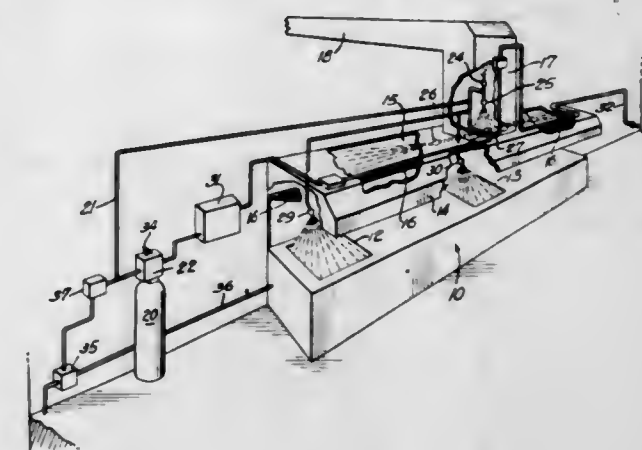
Int. Cl. A62c 35/52, 35/54; A62d 1/00

U.S. Cl. 169—1

10 Claims

A range and hood is shown including a fire extinguishing fluid tank piped to discharge nozzles some of which

are positioned over a deep fat receptacle, others being positioned adjacent filters in the plenum of the hood, and still others being placed in the duct. A temperature detecting system for release of the fire extinguishing fluid includes fusible links and cables. A manual release is also shown.



A method of extinguishing fire is disclosed in which a stream of aqueous alkali solution may be discharged into burning fat in the receptacle, in the filters or duct. The alkalis set out are potassium carbonate, sodium silicate, sodium hydroxide, dibasic potassium phosphate, tetrapotassium pyrophosphate, potassium acetate, and potassium hydroxide.

3,463,234

**METHOD AND APPARATUS FOR FIRE CONTROL**Carel C. van Baak, Jan van Eyckgracht 92,  
Eindhoven, Netherlands

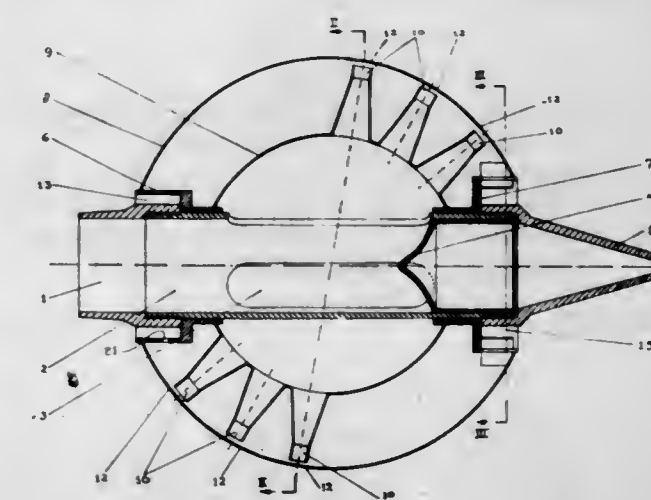
Filed June 13, 1967, Ser. No. 645,725

Claims priority, application Netherlands, July 6, 1966, 6609419

Int. Cl. A62c 31/30; B05b 3/10

U.S. Cl. 169—2

14 Claims



A method and apparatus for fire fighting wherein a fire-fighting agent under pressure is sprayed omnilaterally through a rotating nozzle head comprising a pair of concentric, spaced spheres. A fire retarding medium such as the fire combustion gases is drawn between the rotating spheres by the blades of a rotator whereby the medium is cooled by proximity to the fire-fighting agent and is entrained in the streams of the latter for introduction to the seat of the fire. Alternatively, means is provided for introducing a medium such as a negative catalytically working substance or CO<sub>2</sub> or the like, into the space between the rotating spheres for mixing with the agent and to be flung with the latter from the rotating nozzle head.

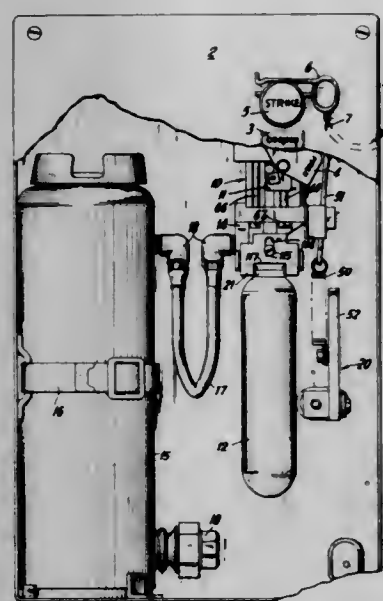


### 3,463,235 CONTROL UNIT FOR FIRE EXTINGUISHING SYSTEMS AND THE LIKE

Henry J. Flajole, Menominee, Mich., assignor to The Ansul Company, Marinette, Wis., a corporation of Wisconsin

Filed Dec. 5, 1967, Ser. No. 688,231  
Int. Cl. A62c 37/12, 37/18  
U.S. Cl. 169—9

19 Claims



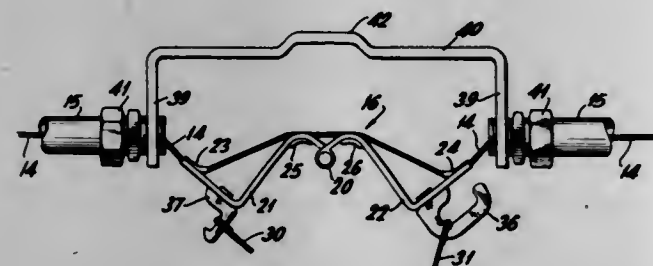
A control unit for fire extinguishing systems and the like including a high-pressure cartridge which is punctured to in turn actuate the fire extinguishing system and perform auxiliary functions. The trip lever, which normally holds the puncture pin of the cartridge in a retracted position, is statically balanced, normally positively held in position, and positively driven when actuated. A safety preventer structure precludes accidental discharge of the cartridge, a removable cocking handle eliminates unauthorized use, and locking bar prevents accidental firing of the unit while being serviced.

### 3,463,236 CABLE RELEASE FOR FIRE PROTECTION SYSTEM AND THE LIKE

Henry J. Flajole, Fred R. Andersen, and Dale A. Thompson, Menominee, Mich., assignors to The Ansul Company, Marinette, Wis., a corporation of Wisconsin

Filed Dec. 5, 1967, Ser. No. 688,041  
Int. Cl. A62c 37/30, 37/02  
U.S. Cl. 169—42

10 Claims



A cable release system for actuating a release mechanism. The system incorporates variable mechanical configurations, each of which are maintained by a sensor unit and about which a cable is maintained under tension in such a manner that when the sensor unit of the system detects a predetermined hazard it causes the mechanical configuration to change in such a manner that the continuous cable slackens, thereby actuating the release mechanism.

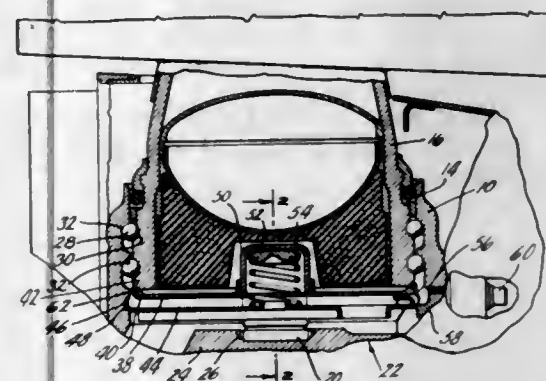
### 3,463,237 SEAL

Raymond N. Quenneville, Suffield, Conn., and Leonard L. Gaubis, Potomac, Md., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Apr. 17, 1967, Ser. No. 631,470  
Int. Cl. B64c 11/04, 11/02

U.S. Cl. 170—160.23

15 Claims



The propeller blade supporting hub is provided with a valve structure between the blade socket and the hub interior which is opened by insertion of the blade in the hub socket and automatically closed, to seal oil in and dirt out of the hollow hub interior, upon removal of the blade. The valve comprises a sealing disc cooperating with an emptied bearing race in the hub.

### 3,463,238 TURF CUTTER

Arthur E. Davies, 4226 Euclid Blvd.,  
Youngstown, Ohio 44512

Filed Dec. 4, 1967, Ser. No. 687,530  
Int. Cl. A01b 45/04

U.S. Cl. 172—19

1 Claim



A turf cutter having a cylindrical body with a tapered sharpened annular cutting extension and an elongated handle.

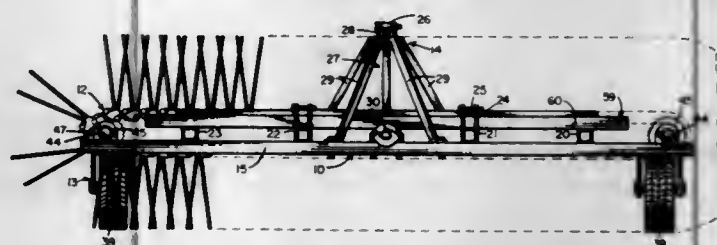
### 3,463,239 SPRING TOOTH CHAIN WEEDER

Joe F. Lindeman, 1006 N. 48th Ave.,  
Yakima, Wash. 98902

Filed Jan. 9, 1967, Ser. No. 608,066  
Int. Cl. A01b 33/10, 33/08; A01d 77/00

U.S. Cl. 172—100

2 Claims



An agricultural implement for weeding providing a wheeled frame vertically adjustable relative to the underlying supporting earth and having two spaced transverse

courses for motion of endless weeding elements transversely to the course of travel of the implement. Mechanical linkage is provided from an independent power source to cause one weeding element to move oppositely to the other. The weeding elements are provided with plural, elongate somewhat flexible teeth to communicate with and move through the earth therebelow.

sheave mounted on the implement frame and adjustable between right-hand and left-hand positions to accommodate raising and lowering of the respective outrigger frame.

### 3,463,242 TOOTHED BAR STRUCTURE FOR PEG TOOTH HARROW

James Morkoski, Clarendon Hills, Ill., assignor to International Harvester Company, a corporation of Delaware

Original application Dec. 2, 1964, Ser. No. 415,539, now Patent No. 3,325,879, dated June 20, 1967. Divided and this application Sept. 2, 1966, Ser. No. 630,145

Int. Cl. A01b 23/02, 15/02, 15/12

U.S. Cl. 172—713

3 Claims

3,463,240  
POWER DRAGGER  
Thomas C. Mascaro, West Point, Pa., assignor, by mesne assignments, to Kearny-National Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 17, 1966, Ser. No. 587,309  
Int. Cl. A01b 69/00

U.S. Cl. 172—256

8 Claims



A dragger comprising a power vehicle having a frame projecting forwardly therefrom to support a surface treatment device such as a mat or brush. Outriggers are provided on the opposite sides of the vehicle to support additional surface treatment means, the outriggers being mounted normally transverse to the path of movement of the vehicle and being freely pivotal forwardly so that when the vehicle turns, the outriggers do not cause the surface treating devices to tear into the surface. In the present instance, the outriggers are pivoted to the frame so that they may be pivoted forwardly to a storage position and elevated from the surface concurrently with the elevation of the frame to an inactive position.

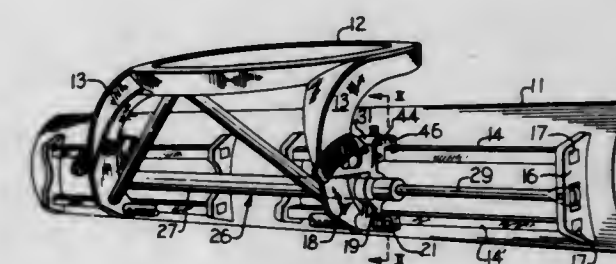
A toothed bar for a peg tooth harrow comprising a tubular bar with transversely aligned openings defined by flanges ruptured from the wall of the bar, each flange tapering downwardly and being of generally frusto-conical form and sphincterally embracing a tooth extending there-through.

3,463,243  
ADJUSTABLE SLIDE BEARING FOR MOTOR  
GRADER MOLDBOARD SUPPORTS  
William F. Fisher, Decatur, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed June 29, 1967, Ser. No. 650,011  
Int. Cl. E02f 3/12; F16c 23/02, 25/02

U.S. Cl. 172—781

6 Claims



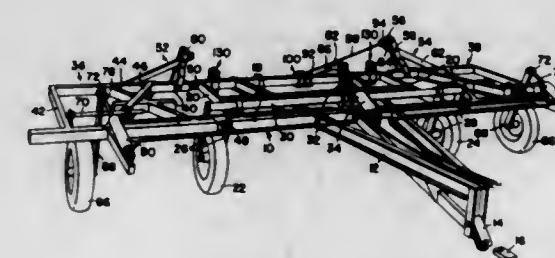
A pair of angled members with interleaved sections form a bearing or wearplate of U-shaped cross section for disposition between a rectangular slide rail of a motor grader blade and the bracket which supports the blade. A first set of screws bearing against one member provides for adjustment of fore and aft clearance, eliminating the need for shims for this purpose. An additional screw bears against the interleaved section of the other member to provide for adjustment of vertical clearance.

3,463,241  
MECHANISM FOR RAISING AND LOWERING OUT-  
RIGGER FRAMES ON IMPLEMENT CARRIERS  
Duane Arnold Essex, Des Moines, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Sept. 11, 1967, Ser. No. 666,873  
Int. Cl. A01b 63/14, 65/00; B62d 53/00

U.S. Cl. 172—311

4 Claims



A mechanism for raising and lowering pivotally mounted outrigger frames on an implement carrier, utilizing a single cable, one end of which is attached to an arm on the ground wheel supporting rockshaft and movable by the same cylinder used to control the height of the implement relative to the ground, and the other end of which is alternately securable to lift arms rigidly attached to the outrigger frames. The cable is supported by a single

3,463,244  
PLANT PULLER  
Joseph T. McFadden, 607 Medical Tower, Medical Center, Norfolk, Va. 23507

Filed Jan. 18, 1967, Ser. No. 610,052  
Int. Cl. A01b 1/16; A01d 7/10, 53/12

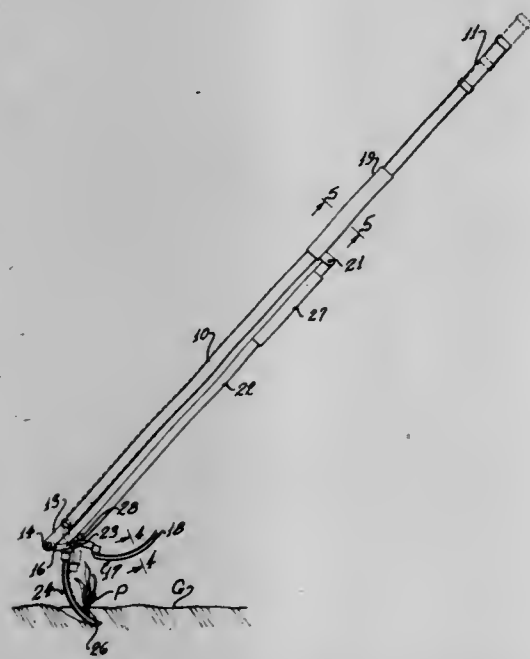
U.S. Cl. 172—378

5 Claims

A plant puller embodying an elongated handle having a depending link pivotally connected to its lower end

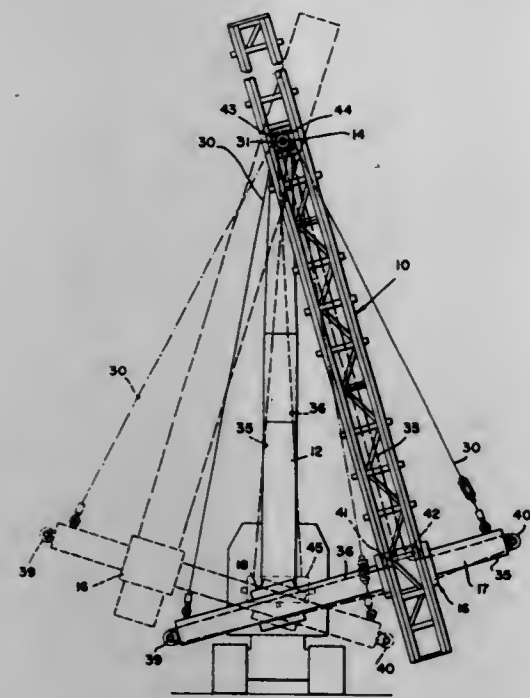


with the link carrying a first jaw set. A sleeve slides on the handle and is connected to an extension bar carrying a second jaw set. The bar is pivotally connected to the



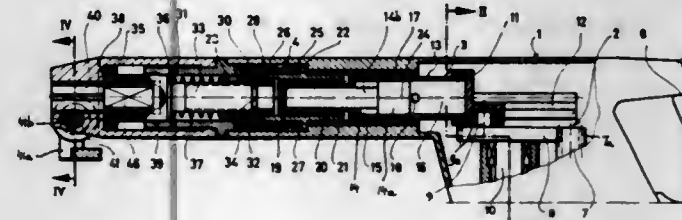
link whereby the second jaw set may be driven hoe-like into the ground and the jaw sets are moved toward each other by pulling the elongated handle.

**3,463,245**  
**EXTENSIBLE AND RETRACTABLE BATTER ADJUSTMENT OF PILE HAMMER LEADS**  
Everet Wataha, 171 New Dover Road, Colonia, N.J. 07067  
Filed Apr. 22, 1968, Ser. No. 729,485  
Int. Cl. E21c 9/00, 11/00  
U.S. Cl. 173-43 12 Claims



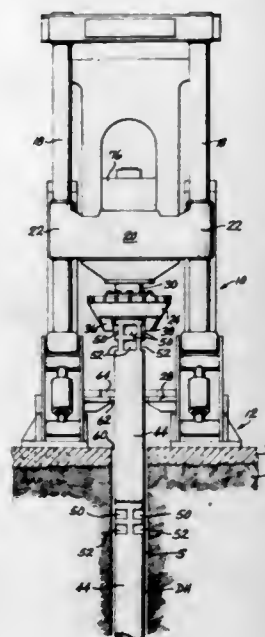
Pile hammer leads are adjusted side-to-side to full batter angles of inclination, being pivoted to a carriage which rides over a short straight beam pivoted in line with the bottom brace of the rig and which is extensible from this pivotal mounting to reach the leads out to the desired angles of inclination and retractable to reduce the sidewise projection, for operation in a restricted area.

**3,463,246**  
**ROTARY PERCUSSIVE POWER TOOL WITH CHANGEABLE DRIVE**  
Helmut Brounert, Stuttgart-Rohr, Germany, assignor to Metabowerke KG. Closs, Rauch & Schnitzler, Nürtingen, Württemberg, Germany  
Filed Dec. 27, 1967, Ser. No. 693,842  
Claims priority, application Germany, Dec. 28, 1966, M 72,222  
Int. Cl. E21c 3/04; B25d 9/04, 9/06  
U.S. Cl. 173-47 20 Claims



A power tool wherein the barrel of a housing accommodates a cylinder which is reciprocable axially in response to rotation of the output shaft of a motor and thereby turns back and forth a sleeve which is held in the housing against axial movement and transmits torque to a first clutch element which is biased against a second clutch element. The latter can rotate in one direction an axially movable tool holder which can be shifted axially of the housing to place its anvil into the range of reciprocating movement of a ram which is movable axially with and relative to the cylinder. The holder can accommodate tools which are rotatable therewith or are held against rotation by a suitably configured portion of the housing. The first clutch element is automatically disengaged from the second clutch element when the latter offers excessive resistance to rotation in the one direction.

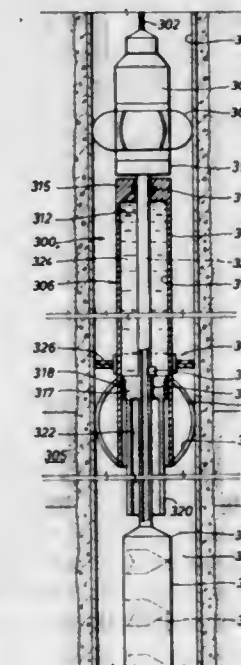
**3,463,247**  
**DRILL STEM BREAKOUT APPARATUS**  
Harold T. Klein, Bellevue, Wash., assignor to James S. Robbins and Associates, Inc., Seattle, Wash., a corporation of Washington  
Filed Aug. 7, 1967, Ser. No. 658,674  
Int. Cl. E21c 1/12; E21b 3/00, 19/00  
U.S. Cl. 173-164 16 Claims



A drill stem section having breakout wrench receiving depressions or flats formed on its outer surface substantially immediately axially inwardly of an end located

threaded tool joint component, and holding wrench receiving depressions or flats formed on its outer surface substantially immediately axially inwardly of the breakout wrench receiving depressions or flats. A reversible rotary drive head including a threaded tool joint component connectable to the stem section tool joint component and a breakout wrench connectable to the breakout wrench receiving depressions or flats. A breakout technique involving using the breakout wrench means to turn the stem sections in a threaded tool joint loosening direction, and using the drive head holding wrench means and the holding wrench receiving depressions of the first or second sections to loosen the threaded tool joint between the first section and the drive head.

**3,463,248**  
**APPARATUS FOR DISCHARGING FLUENT SUBSTANCES INTO WELL BORES**  
William T. Bell, Houston, Tex., assignor to Schlumberger Technology Corporation, New York, N.Y., a corporation of Texas  
Original application Nov. 6, 1967, Ser. No. 680,648.  
Divided and this application Oct. 23, 1968, Ser. No. 769,805  
Int. Cl. E21b 43/119, 43/11, 33/138  
U.S. Cl. 175-4.52 12 Claims

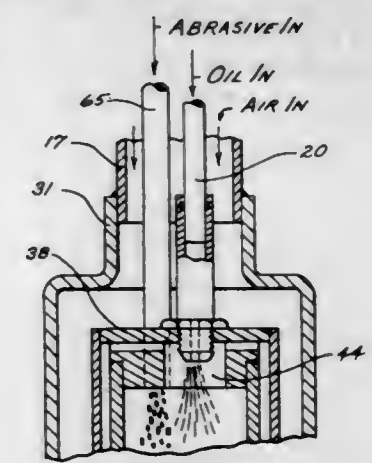


The particular apparatus described herein as illustrative of the invention are operative for replacing fluids in a selected interval of a well bore with suitable fluent substances. The various embodiments of apparatus of the invention described herein include a reservoir adapted to contain a fluent substance and a perforator for perforating earth formations adjacent to the selected well bore interval. Each of the disclosed tools are arranged so that selective movement of the perforator into the well bore interval is operative to induct well bore fluids into the reservoir as the fluent substance is discharged into the well bore interval around the perforator.

**3,463,249**  
**METHOD OF FLAME DRILLING WITH ABRASIVES**  
James A. Browning, Hanover, N.H., and Ernest M. Fitzgerald, Norwich, Vt., assignors to Browning Engineering Corporation, a corporation of New Hampshire  
Filed Apr. 29, 1968, Ser. No. 725,030  
Int. Cl. E21b 7/14, 21/00; E21c 21/00  
U.S. Cl. 175-14 6 Claims

This invention is in the field of cutting rock and other mineral materials. A high velocity flame jet is produced by

burning a hydrocarbon fuel with air in a combustion chamber under high pressure. The resulting jet stream

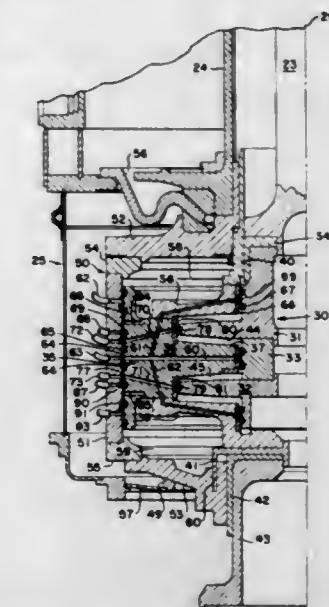


composed of the products of combustion and nitrogen is directed against the rock or mineral mass. Abrasive particles may be added as to aid in cutting where required.

**3,463,250**  
**PROCESS OF DRILLING A WELL WITH HOT SOUR GAS DRILLING FLUID**  
George H. Calhoun and William E. Bingman, Midland, Tex., and Theodore M. Swanson, El Cerrito, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Filed Jan. 25, 1967, Ser. No. 611,742  
Int. Cl. E21b 21/04, 7/18  
U.S. Cl. 175-17 11 Claims

An improved method of drilling boreholes and preventing sulfide stress corrosion cracking of equipment by use of hot sour gases maintained at a temperature of at least 150° F.

**3,463,251**  
**PNEUMATIC TRANSFORMER COUPLING FOR SONIC PILE DRIVER**  
Willard B. Goodman, Sherman Oaks, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Filed May 23, 1967, Ser. No. 640,553  
Int. Cl. E21b 11/02, 7/00; B06b 3/02  
U.S. Cl. 175-19 6 Claims



The force exerted on a pile member by a sonic oscillator may be multiplied at a proportionately smaller displacement amplitude by coupling a pneumatic transformer between the sonic oscillator shaft and the pile to be driven. The pneumatic transformer resiliently absorbs the force of the oscillator shaft over a long stroke and transmits the power thereof to the pile at a proportionately larger force and smaller displacement amplitude.



3,463,252

**AUTOMATIC DRILLER**

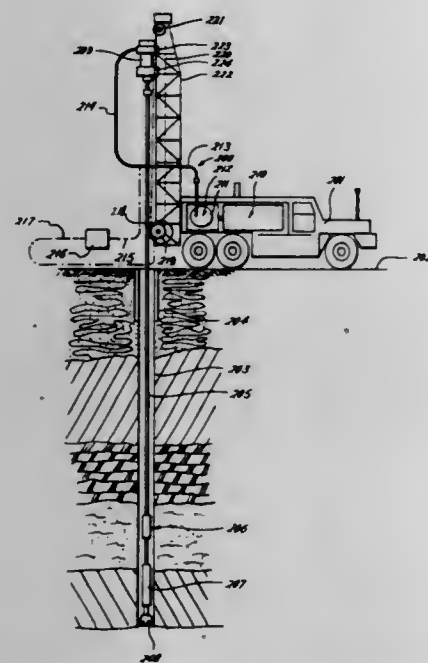
Charles E. Miller and William R. Garrett, Midland, Tex., assignors to Smith Industries International, Inc., a corporation of California

Filed Sept. 19, 1966, Ser. No. 580,392

Int. Cl. E21b 17/04; E21c 15/00

U.S. Cl. 175—27

24 Claims



Contraction and extension of a telescopic joint just above a down hole percussor and drill bit in a drill string generate signals to which responds mechanism for lowering drill string thereby to maintain constant the weight on down hole percussor. Signals may be air pressure changes, vibrations, or other types. On receipt of initiating signal the lowering mechanism may be operated for a predetermined distance or a predetermined time or so long as there is predetermined pressure rise or until a second predetermined signal to stop is received.

3,463,253

**WEDGE ORIENTATION DEVICE**

Edwin McInerney, Kalgoorlie, Western Australia, Australia, assignor to Western Mining Corporation Limited, Melbourne, Victoria, Australia, a company of Victoria

Filed Apr. 3, 1967, Ser. No. 627,849

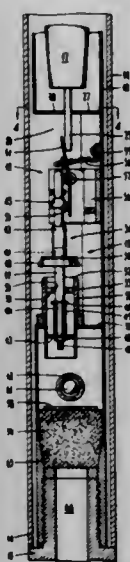
Claims priority, application Australia, June 16, 1966,

7,024/66

Int. Cl. E21b 47/024; G01c 9/18

U.S. Cl. 175—45

9 Claims



An orientation device to be fitted adjacent a wedging device at the lower end of a drill train having a flow passage, a valve movable between two positions in one of

which the passage is open and in the other it is closed and a pivotally mounted direction sensitive device having an extension which releases the valve to permit it to move from its open to its closed position. The components are arranged so that when the device moves to release the valve the wedge is correctly oriented and the operation is indicated at the head of the drill train by the increase in pressure of the fluid passage through the train.

3,463,254

**DRILLING APPARATUS**

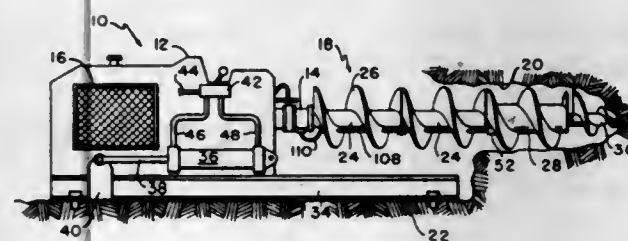
Robert W. Miller, Cincinnati, Ohio, assignor to Alaskaug, Inc., Cincinnati, Ohio, a corporation of Ohio

Filed Jan. 25, 1968, Ser. No. 700,506

Int. Cl. E21c 5/00, 9/00, 11/00

U.S. Cl. 175—102

10 Claims



The disclosure illustrates apparatus for drilling relatively hard material which includes a vibrator positioned in a rotatable auger mounting shaft for periodically impacting the auger into the material in the direction of the axis. Resilient means is positioned between the vibrator and the mounting shaft to prevent vibration in a drive shaft and intermediate extension shafts to which the mounting shaft is secured. The vibrator is conveniently actuated by air pressure which is supplied from a remote air pressurizing unit through a conduit adjacent the drive shaft, intermediate extension shafts and mounting shaft.

3,463,255

**CORE DRILLING SYSTEM**

Lyle J. Martinsen, Murray, Utah, and Stanton L. Matthews, Phoenix, Ariz., assignors to Boyles Bros. Drilling Company, Salt Lake City, Utah

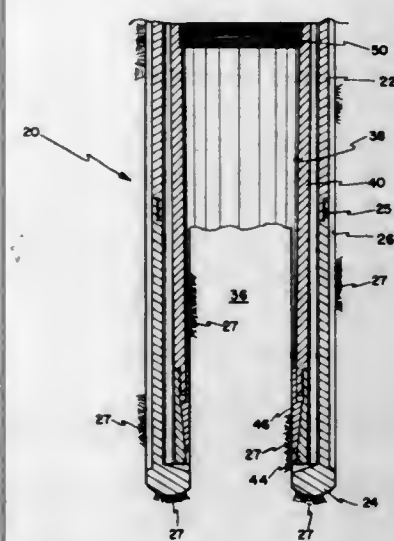
Original application Apr. 14, 1967, Ser. No. 630,907.

Divided and this application Aug. 23, 1968, Ser. No. 754,886

Int. Cl. E21b 9/20

U.S. Cl. 175—244

1 Claim



In a core drilling system, an inner tube having a minute interior taper converging toward the core-receiving opening of a core barrel assembly to enhance (1) the core displacement into the inner tube during drilling and (2) subsequent removal of the core from the inner tube.

3,463,256

**WELL DRILLING BIT**

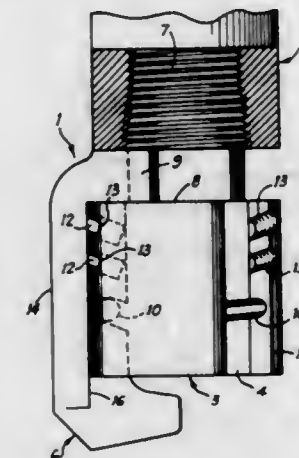
Clyde A. White, 905 Hughes St., Quanah, Tex. 79252

Filed Nov. 7, 1967, Ser. No. 681,221

Int. Cl. E21c 13/02; E21b 9/35

U.S. Cl. 175—412

3 Claims



Certain specific improvements in a bit as hereinafter described which has heretofore been employed for drilling comparatively shallow, small diameter holes in the earth such as shot holes, water wells and the like.

The invention is applicable to a bit as described having a plurality of three circumferentially spaced removable blades which are received in longitudinal channels therefor in peripheral portions of a tubular blade holder having an externally threaded shank portion for engagement with the lower end of a drill pipe. Each of the blades has a short circumferentially extending portion extending laterally outwardly from at least one side thereof, adjacent the upper end of the blade, which fits around the threaded shank portion of the blade holder and overlies a discontinuous upwardly facing external shoulder on the blade holder communicating with the upper ends of the longitudinal channels therein.

An important feature of the invention is that said circumferentially extending portions of the respective blades, which extend laterally outwardly therefrom, adjacent the upper ends of the blades, as above described, are clamped directly between the lower end of the drill pipe and said upwardly facing shoulder on the blade holder.

The invention contemplates an arrangement as described which includes mutually engaging means on the blade holder and the blades, respectively, whereby the blades are clamped securely to the holder, as the holder is advanced relative to the drill pipe, the blades are positively secured against displacement in any direction relative to the holder, and the structure is additionally reinforced so that the bit is characterized by its ruggedness and dependability as well as its efficiency.

3,463,257

**WEIGHT-RESPONSIVE DELAY-TYPE AUTOMATIC LIQUID FILLING APPARATUS**

Fujio Inomata, Tohru Inomata, Mamoru Inomata, and Tomi Inomata, all of 102 Iwase, Matsudo-shi, Chiba-ken, Japan

Filed Apr. 6, 1967, Ser. No. 628,942

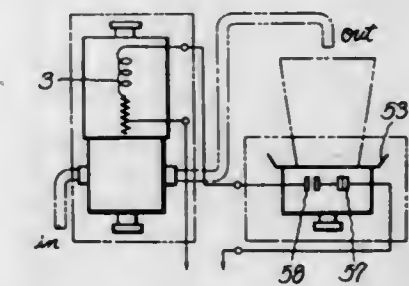
Int. Cl. G01g 13/02

U.S. Cl. 177—117

2 Claims

A delay-type automatic liquid-filling apparatus comprising a weight-responsive mechanism for supporting a tray on which a container is placed to be filled. Switch mechanism is controlled by the weight-responsive mechanism in accordance with certain conditions which are present during the filling operation. In series with the switch mechanism is a delay-type electromagnetic valve apparatus which comprises a valve, a spring acting upon the valve and tending to hold the valve closed, and an exciting coil. A plunger which is actuated by energization

of the exciting coil to open the valve is arranged in a casing which is adapted to hold a liquid and which surrounds the plunger with a close fit, so that the liquid retards the movement of the plunger. The plunger has a lost motion connection with the valve, and has a second spring



which acts upon the plunger in opposition to the valve-opening movement of the plunger, so that upon energization of the exciting coil, the opening of the valve is delayed while the plunger moves in opposition to the second spring to take up the lost motion connection.

3,463,258

**PRECISION BALANCE**

Johann Meier, Stafa, Switzerland, assignor to Mettler Instrumente AG, Zurich, Switzerland, a corporation of Switzerland

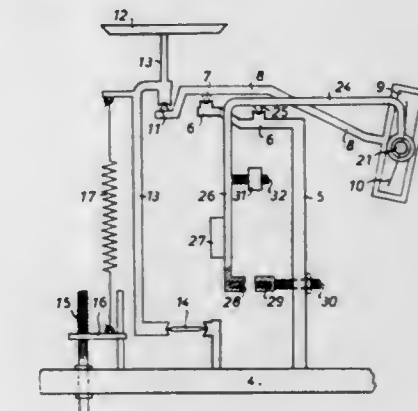
Filed June 30, 1967, Ser. No. 650,461

Claims priority, application Switzerland, Nov. 17, 1966, 16,520/66

Int. Cl. G01g 13/14, 23/14

U.S. Cl. 177—165

7 Claims



A precision balance of the type including a balance beam and an optical system for producing a magnified image of indicator scale means connected with one end of said balance beam, characterized by the provision of improved means including a pendulum provided with an objective lens to eliminate the reading errors caused by errors in levelling said balance frame. More particularly, the invention includes auxiliary biasing means connected between the pendulum and the frame for imparting to the pendulum an additional force independent of the force of gravity, thereby to compensate for errors and inconsistencies in the levelling of the balance frame.

3,463,259

**APPARATUS FOR BALANCING THE ENGINE OF AN AUTOMOBILE VEHICLE**

Marcel Dangauthier, Paris, France, assignor to Societe Industrielle et Commerciale des Automobiles Peugeot, Paris, France, a French body corporate

Filed July 28, 1967, Ser. No. 656,800

Claims priority, application France, Aug. 31, 1966, 74,722

Int. Cl. B60k 9/00; F16m 1/02

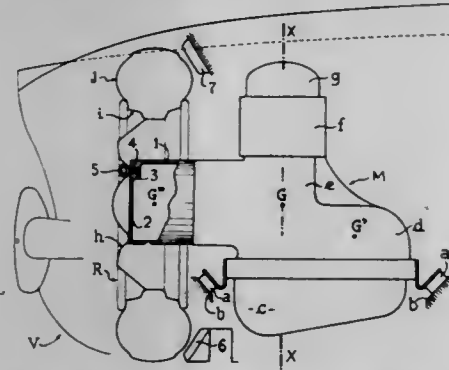
U.S. Cl. 180—54

7 Claims

Apparatus for balancing an unbalanced engine of a motor vehicle or the like, comprising at least one support



integral with engine case and on the support an accessory of the vehicle or the like, such as a spare wheel, battery or radiator, the orientation and the position of the sup-



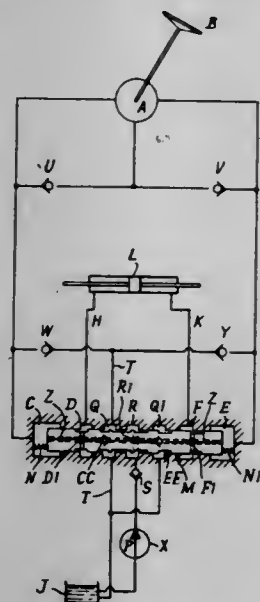
port being such that, bearing in mind the mass of the accessory, the centre of gravity of the assembly is brought into the plane containing the axes of the cylinders of the engine.

3,463,260

### HYDRAULICALLY STEERING DEVICES FOR VEHICLES

Frederick Baines and Frank Geoffrey Tunnell, Ilford, England, assignors to The Plessey Company Limited, Ilford, England, a British company  
Filed Aug. 8, 1967, Ser. No. 659,117  
Claims priority, application Great Britain, Aug. 10, 1966, 35,880/66

Int. Cl. B62d 5/00; F15b 13/16; F16h 35/00  
U.S. Cl. 180—79.2 2 Claims



A master-cylinder unit operated by a steering wheel hydrostatically operates a slave cylinder by a pressure difference which acts on a spring-centred power control slide valve which at a given pressure removes the unloading of a power pump, whose output it directs to the low-pressure side of the master unit while draining the low-pressure side of the slave cylinder to the sump of the pump. Non-return valves in the slide valve permit, when the valve is centered, fluid from the valve cylinder to operate the master-cylinder unit, thus allowing the vehicle to steer itself when being towed.

3,463,261

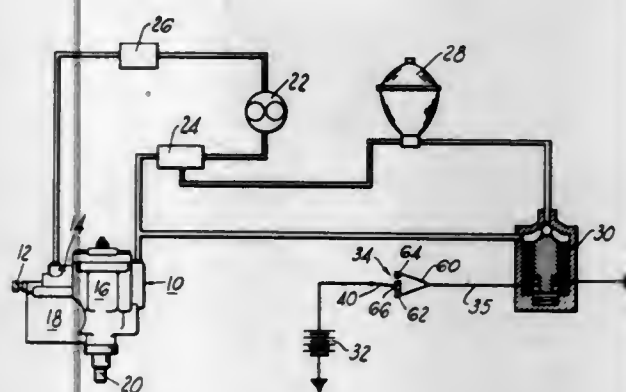
### FAILSAFE POWER STEERING SYSTEM

Deane E. Runkle and Donald J. Baker, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware

Filed Mar. 28, 1968, Ser. No. 716,789  
Int. Cl. B62d 5/10

U.S. Cl. 180—79.2 11 Claims  
The following relates to a failsafe power steering system for a ground vehicle having a primary pressure source

and a secondary pressure source which is rendered functional upon failure of the primary pressure source to provide the necessary power for steering the vehicle. The secondary pressure source actuating mechanism is located in a collapsible steering column formed of two telescoped

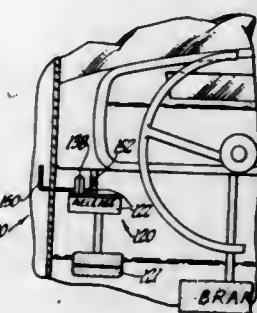


3,463,262

### VEHICLE CONTROL SAFETY LOCK DEVICE

Stephen J. Stortz, Sr., 12267 Marla Drive, Warren, Mich. 48093  
Original application Aug. 24, 1965, Ser. No. 482,178, now Patent No. 3,370,671, dated Feb. 27, 1968. Divided and this application Nov. 3, 1967, Ser. No. 680,400  
Int. Cl. B60t 7/12, 13/46; E05b 65/12

U.S. Cl. 180—82 6 Claims



A vacuum-operated safety locking mechanism in a vehicle to prevent the movement of the parking brake release lever when the engine of the automobile is not running.

3,463,263

### AIR CUSHION VEHICLES WITH HIGH PRESSURE PROPULSION AND LOW PRESSURE CUSHION CENTRIFUGAL PUMPS

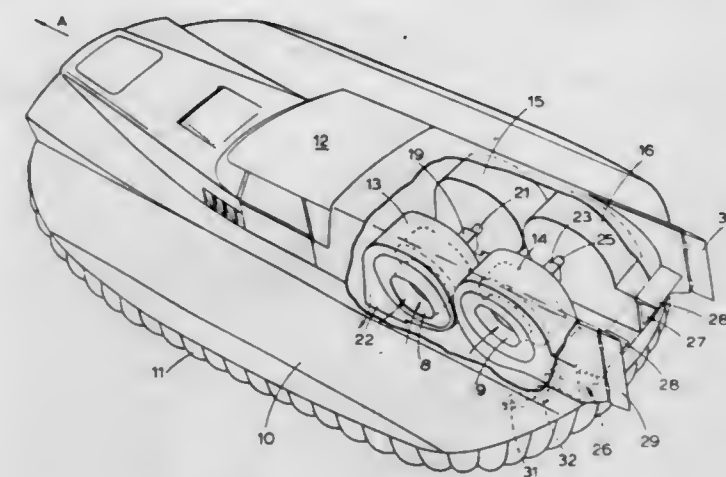
Peter Heron Winter, Cowes, Isle of Wight, England, assignor to Britten-Norman Limited, St. Helens, Isle of Wight, England, a corporation of the United Kingdom  
Filed Jan. 5, 1967, Ser. No. 607,479

Claims priority, application Great Britain, Jan. 6, 1966, 698/66

Int. Cl. B60v 1/04  
U.S. Cl. 180—117 2 Claims

An air cushion vehicle having low pressure air compression means, preferably centrifugal lift fans, to provide an air cushion, and independently driven high pressure air compression means, preferably centrifugal propulsion fans generating pressure of the order of twice that

of the lift fans to provide pressure air for propulsion and control of the vehicle, and means to bleed the high pressure air supply to supplement the low pressure air supply to the air cushion if desired.



3,463,264

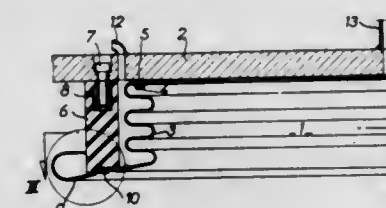
### BELLOWS TYPE FLUID CUSHION CONFINING DEVICE FOR SURFACE EFFECT MACHINES

Louis Duthion, Paris, and Claude Charles Doyotte, Le Plessis-Robinson, France, assignors to Bertin & Cie, Plaisir, France, a company of France

Filed July 10, 1967, Ser. No. 652,312

Claims priority, application France, July 15, 1966, 69,568

Int. Cl. B60v 1/16 6 Claims  
U.S. Cl. 180—127



The pressure fluid cushion of a ground effect machine is bounded by means of a device which comprises laterally a fluidtight endless wall surrounding the cushion and capable of undergoing substantial variations in size in the direction of the bearing surface against which the cushion is formed, and endwise a bottom closure at the end of said cushion remote from said surface, means being provided to damp the deformations of said endless wall.

3,463,265

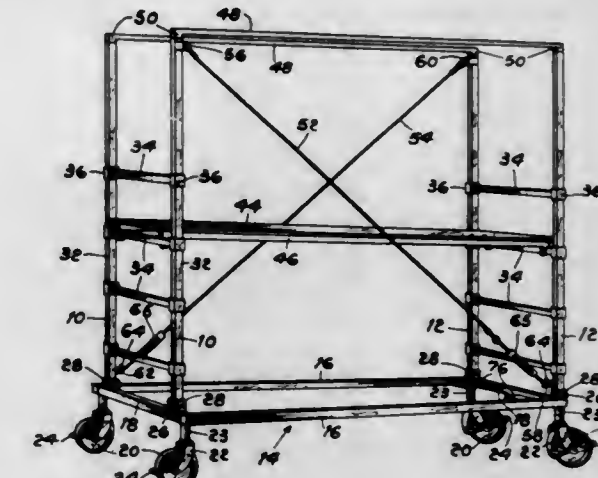
### TELESCOPING COLLAPSIBLE PLATFORM SUPPORT

Norvin Q. Clover, West Caldwell, N.J., assignor to Fairfield Industries, Inc., Cedar Grove, N.J.

Filed July 8, 1968, Ser. No. 743,214

Int. Cl. E04g 1/22, 1/24, 1/34 18 Claims  
U.S. Cl. 182—17

A supporting frame for a work platform has pairs of adjustable telescoping tubular legs mounted on opposite ends of a base with rungs connected between the upper extensible portions of adjacent legs. Horizontal members extending between opposite legs support the platform



pivotaly mounted to fold down onto the base for storage and portability.

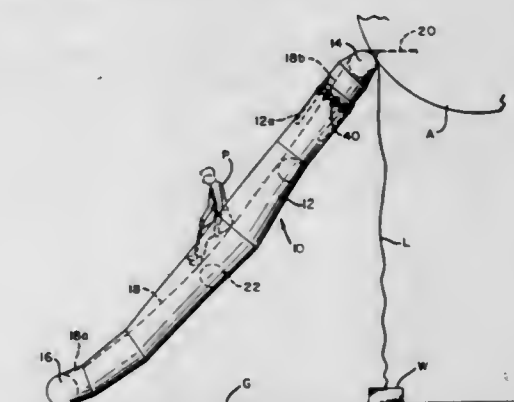
3,463,266

### EXTENSIBLE ESCAPE SLIDE

Ronald H. Day, Mill Valley, Calif., assignor to Industrial Covers, Inc., San Francisco, Calif., a corporation of California

Filed Apr. 29, 1968, Ser. No. 724,732

Int. Cl. A62b 1/20; B65g 11/10 8 Claims  
U.S. Cl. 182—48



An extensible escape slide having inflatable, tubular side beams with a portion of each beam being normally tucked and nested within an adjacent portion to shorten the beams. The nested portions of the beams are tied together by a series of interlocking tie links which are released in response to operation of an excess height indicator so that when the beams are inflated the nested portions extend to full length. A weighted line closes a normally open switch when under tension to energize a device for releasing the interlocking tie links as by severing a key link. Another normally open switch is closed momentarily during inflation long enough to energize the releasing means only if the other switch is closed, and thereafter remains open so that the releasing means cannot thereafter be energized inadvertently.

3,463,267

### OIL IMPREGNATING METHOD AND APPARATUS FOR CHAIN

James L. Dooley, Santa Monica, and Austin Gudmundsen, Inglewood, Calif., assignors to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin

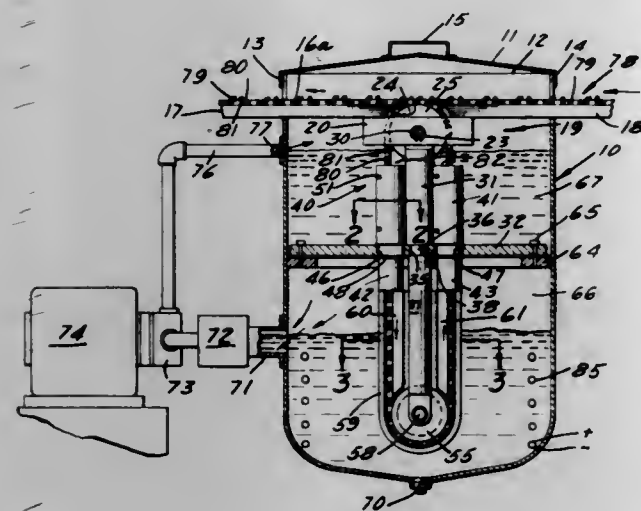
Filed Oct. 23, 1965, Ser. No. 503,864

Int. Cl. F16n 1/00; F01m 1/00, 3/00 6 Claims  
U.S. Cl. 184—1

Impregnating the wear surfaces of an articulate saw chain with a lubricating oil, in which the chain is longi-

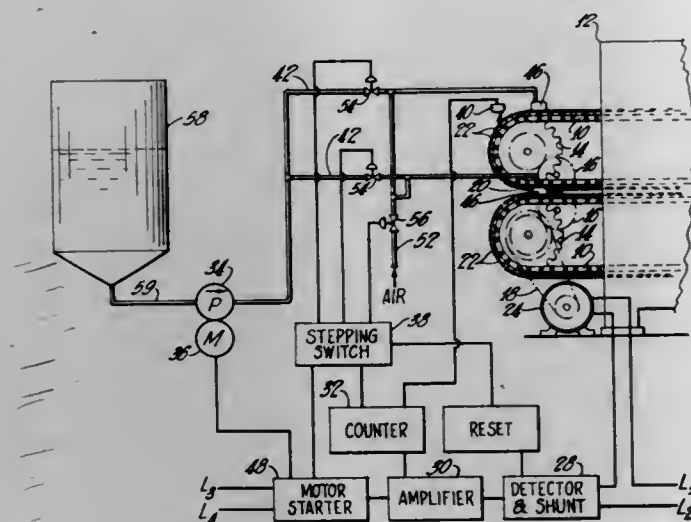


tudinally movably guided through restricted channels interconnecting an upper chamber open to atmosphere with a lower chamber partially filled with oil, a pump being provided to circulate the oil from the lower chamber into the upper chamber and by this means cause the lower



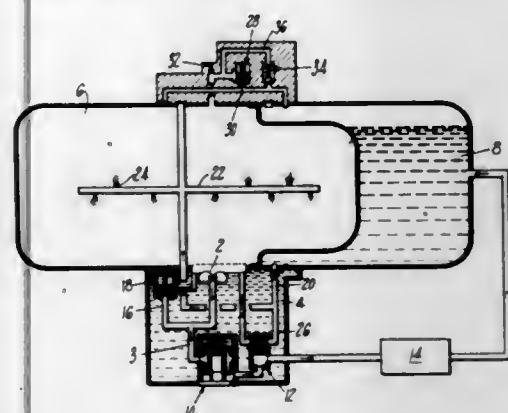
chamber above the oil therein to be evacuated, the oil in the upper chamber flowing through the restricted channels into the lower chamber to form a seal between the chambers and wash, lubricate and remove debris from the chain.

**3,463,268**  
**SELF-ACTUATED OILING SYSTEM**  
Richard J. Krause, Stratford, N.J., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware  
Filed Nov. 14, 1966, Ser. No. 594,100  
Int. Cl. F16n 1/00; F01m 1/00, 3/00  
U.S. Cl. 184-1 18 Claims



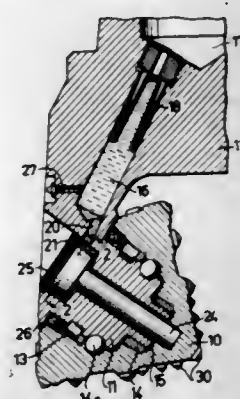
A self-lubricating electrically powered apparatus wherein the lubricity requirements of the apparatus are detected by determining an increase in the power required by the electric motor driving the apparatus. When an additional power requirement is indicated by the detector, a signal is dispatched therefrom to start a lubricating system which provides the required lubricity for the foregoing apparatus. After the lubricating system has been actuated and operated for a set period of time providing the apparatus with lubricant, a cyclic timing unit terminates any further operation of the lubricating system. The detector is then reset for detecting any further lubrication required.

**3,463,269**  
**LUBRICATION SYSTEM**  
Raymond N. Quenneville, Suffield, Conn., assignor, by mesne assignments, to the United States of America as represented by the Administrator of the Federal Aviation Administration  
Filed June 14, 1967, Ser. No. 645,917  
Int. Cl. F16n 7/38, 39/02  
U.S. Cl. 184-6 2 Claims



A lubrication system for a mechanism utilizes a single pump to transfer the lubricant from the mechanism sump to a pressure regulated accumulator. The accumulator provides constant oil flow to the spray bars located within the mechanism regardless of the particular pump speed. Lubrication of the mechanism is accomplished through orifices disposed in the spray bars at points where lubrication of the mechanism is desired.

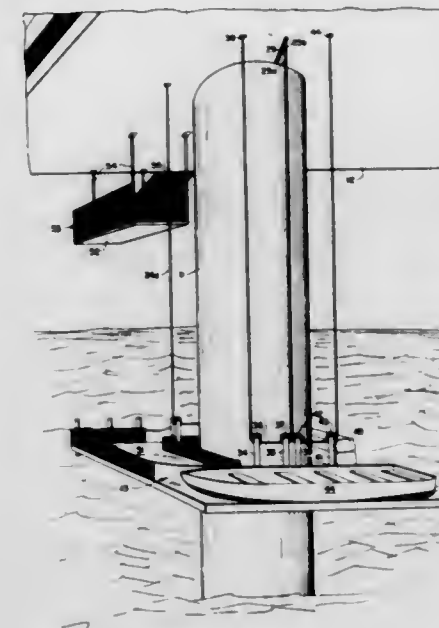
**3,463,270**  
**LUBRICATING MEANS FOR ROLLER DRILL BIT**  
Hans Per Olof Lundstrom and Ole Hilding Herrgard, Sandviken, Sweden, assignors to Sandvikens Jernverks Aktiebolag, Sandviken, Sweden, a corporation of Sweden  
Filed Feb. 17, 1967, Ser. No. 616,946  
Claims priority, application Sweden, Feb. 23, 1966, 2,314/66  
Int. Cl. F16n 11/10; E21b 9/08; B65d 35/04  
U.S. Cl. 184-39 1 Claim



For lubricating a bearing of a roller of a roller drill bit a container for lubricant under controlled pressure is arranged in the holder of the bit, with a channel communicating between the container and the bearing. Flow of lubricant from container to bearing is effected through a ball valve in said channel and actuated by an eccentric carried on the roller.

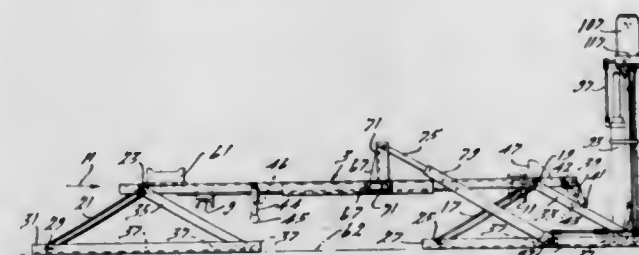
**3,463,271**  
**OFFSHORE ELEVATOR**  
Donald L. St. Louis, Anchorage, Alaska, assignor to Alaska Elevator Corporation, Anchorage, Alaska  
Filed Sept. 11, 1967, Ser. No. 666,602  
Int. Cl. B66b 11/04  
U.S. Cl. 187-27 9 Claims  
An elevator for an offshore drilling or like assembly having a vertical column on the upper end of which is a fixed operating platform comprises a lower platform

surrounding the column suspended from the upper platform and raised and lowered with respect to the upper platform by a system of cables controlled from a winding drum arrangement on the upper platform. Suitable guide



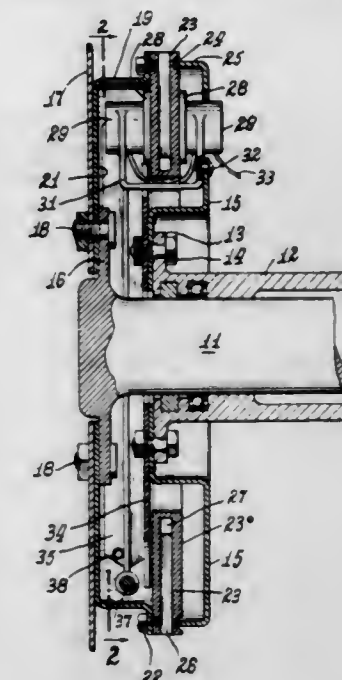
members on the lower platform carry rollers engaging the column, for stabilized movement. The lower platform may be dropped sufficiently to directly launch a boat and/or a life raft therefrom in case of emergency.

**3,463,272**  
**SMALL VEHICLE LIFT**  
David B. Prescott, Racine, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware  
Filed Nov. 9, 1967, Ser. No. 681,742  
Int. Cl. B60s 13/00; B66f 7/00  
U.S. Cl. 187-8.72 5 Claims



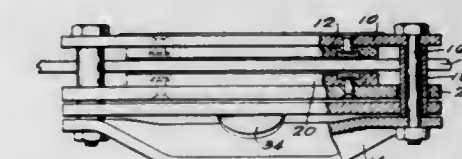
A relatively inexpensive lift for small vehicles, such as three wheeled trucks, is provided which is composed of a frame elevated by a pair of single acting cylinders in conjunction with a parallelogram linkage, the unit including safety features to prevent undesired lowering of the frame and a hydraulic arrangement to permit the cylinders to be operated by an air-hydraulic mechanism available on the open market such as disclosed in U.S. Patent No. 3,218,980.

**3,463,273**  
**VEHICLE BRAKE ASSEMBLY**  
Emmett G. Morrison, Willow Lake Estates, Elgin, Ill. 60120  
Filed Feb. 29, 1968, Ser. No. 709,330  
Int. Cl. F16d 63/00, 65/10  
U.S. Cl. 188-70 7 Claims  
A vehicle brake assembly comprising a brake disc and caliper pads to co-operate therewith and auxiliary brake



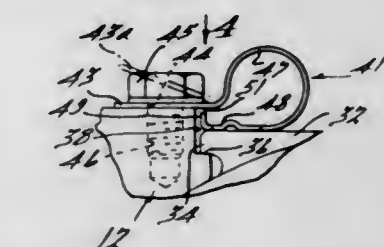
brake disc has cooling air passageways in communication with the exterior of the housing.

**3,463,274**  
**DISK BRAKE ASSEMBLY AND MOUNTING MEANS THEREFOR**  
Harold S. Hollnagel, Milwaukee, and Harold E. Hollnagel, Mequon, Wis., assignors, by mesne assignments, to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware  
Filed Sept. 26, 1967, Ser. No. 670,533  
Int. Cl. F16d 55/00; F16h 21/44, 21/54  
U.S. Cl. 188-73 8 Claims



The disk brake is applied by actuating the lever to obtain a camming action between the lever and the fixed bridge and thereby force the floating brake pad carrier towards the fixed brake pad carrier. The design is distinguished by its simplicity.

**3,463,275**  
**ANTI-RATTLE DEVICE FOR DISK BRAKES**  
Peter J. Soltis, Jr., Detroit, Mich., assignor to Kelsey-Hayes Company, a corporation of Delaware  
Filed Feb. 15, 1968, Ser. No. 705,726  
Int. Cl. F16d 55/04  
U.S. Cl. 188-73 3 Claims



A disk brake assembly having oppositely disposed brake pads that are brought into engagement with an associated disk by means of four hydraulically operated pistons. The pistons are carried by a caliper assembly and anti-rattle springs affixed to the caliper engage the backing

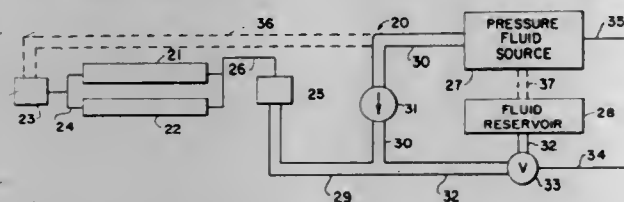


plates of the brake pads for yieldably resisting their movement. A positive stop is provided on the antirattle spring means for limiting the degree of such yieldable movement.

**3,463,276**  
**AUXILIARY BRAKE SYSTEM**  
Louie J. Brooks, Jr., 128 Knox Drive,  
Marietta, Ga. 30060  
Filed Oct. 5, 1967, Ser. No. 673,036  
Int. Cl. F16d 65/14; B61h 13/00

U.S. Cl. 188—106

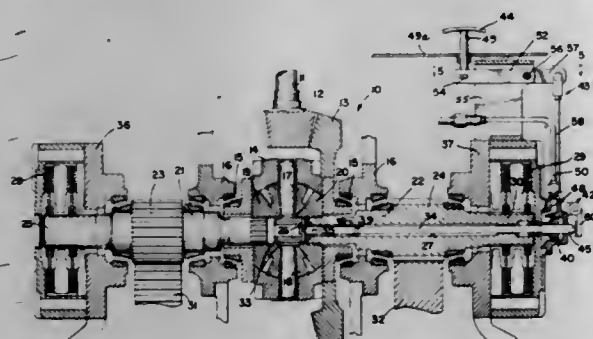
31 Claims



An auxiliary fluid brake system including a cylinder which, when loaded by fluid under pressure permits normal operation of a brake by a main brake actuator; and which, upon release of the pressurized fluid through a control valve to a reservoir, causes engagement of the brake either as an emergency safety brake or as a parking brake. Pressurized fluid may be supplied to the system through a suitable one-way valve from main fluid brake systems such as a fluid power brake or from the master cylinder of a conventional brake. The system includes various linkage means between the cylinder and the brake elements to permit operation of the invention on either a cylindrical drum brake or a disc brake.

**3,463,277**  
**BRAKE RELEASED DIFFERENTIAL LOCK**  
Aldo Allori, Brookfield, and John A. Wilger, Chicago, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware  
Filed Mar. 26, 1968, Ser. No. 716,176  
Int. Cl. F16d 41/24; F16h 57/00; B60k 17/00  
U.S. Cl. 192—4

8 Claims



A differential lock for use with tractors and having a mechanical linkage for shifting the locking member to the locked position, and a hydraulic cylinder connected in circuit with the tractor brake system for shifting the locking member to the unlocked position in response to actuation of the tractor brakes.

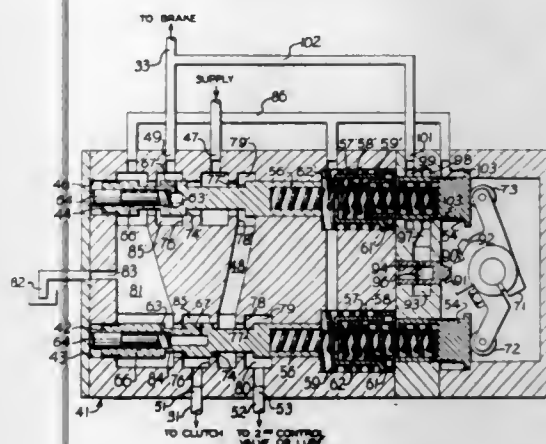
**3,463,278**  
**TRANSMISSION AND BRAKE FOR CABLE DRUM WITH MODULATING VALVE**  
Elmer W. Broeker, Washington, Shairyl I. Pearce, East Peoria, and Gerald D. Rohweder, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California  
Filed Nov. 2, 1967, Ser. No. 680,085  
Int. Cl. F16d 67/00

U.S. Cl. 192—4

4 Claims

A pressure modulating valve for controlling flow of hydraulic fluid to a brake within a clutch assembly of a cable control unit where fluid pressure actuates engagement of a

clutch assembly or brake release for winding in or reeling out, respectively, of cable on a drum. The valve includes a manually operated spool which has a nested captive spring assembly for resisting manual operation. Spring resistance for the spool is generally proportional to clutch assembly



pressurization and provides a pressure step when disengagement of the clutch assembly is commenced and a second pressure step upon reaching cable overload conditions. A similar valve is associated with the brake and has a detent mechanism for lockout of the brake in a released condition.

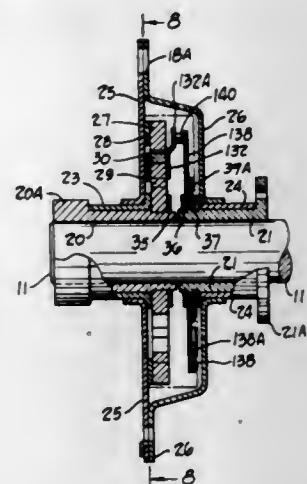
**3,463,279**  
**REVERSIBLE PAWL-TYPE CLUTCH MECHANISM**

John H. Breisch, Lakewood, Ohio, and Arnold E. Biermann, Redart, Va., assignors to Kendale Industries, Inc.

Filed Nov. 1, 1967, Ser. No. 679,912  
Int. Cl. F16d 41/12

U.S. Cl. 192—35

5 Claims



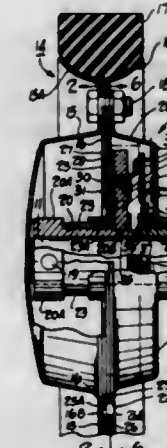
A clutch mechanism wherein a double-ended pawl is cocked to drivingly engage a ratchet wheel in accordance with the rotation of a rotatable shaft, the actuation of the pawl to engage the ratchet wheel for driving it in forward or reverse directions being accomplished by a lagging action of an element upon initial rotative movement of the shaft relative to a fixed part, the lagging action being induced by frictional resistance or drag of sliding elements, one tending to follow the rotation of the shaft and another resisting such rotation. In the preferred form there is a lost-motion interconnection between elements movable one relative to the other during such initial rotative movement. In a modified form there is a magnetic attraction between such relatively movable elements tending to hold them together but yielding to such relative movement.

**3,463,280**  
**PAWL-TYPE CLUTCH ASSEMBLY**  
George J. Hoffman, Northfield, and James E. Abella, Maple Heights, Ohio, assignors to Kendale Industries, Inc.

Filed Nov. 1, 1967, Ser. No. 679,772  
Int. Cl. F16d 11/06, 13/04, 43/00

U.S. Cl. 192—43.1

10 Claims



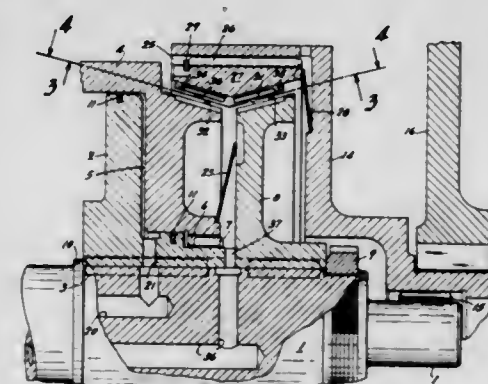
A pawl-type clutch assembly readily mounted on a rotatable shaft in the hub of a wheel to be driven by the shaft, the assembly including a first sleeve adapted to be secured to the shaft to rotate therewith, a second sleeve axially aligned with the first sleeve and rotatively mounted on the shaft but adapted to be secured to a fixed part to resist rotation with the shaft, a first annular member journaled on the first sleeve, a second annular member journaled on the second sleeve, a housing adapted to be secured to the said wheel and secured to said annular members to revolve therewith around the shaft axis, a ratchet wheel in the housing carried by a wall thereof, a pawl-carrier in the housing and secured to the first sleeve to revolve with the first sleeve about the shaft axis, a double-ended pawl carried by the pawl-carrier in position to drivingly engage the ratchet wheel in forward or reverse directions, an element mounted on the second sleeve and operatively connected to the pawl to actuate the same in accordance with the rotation of the shaft, the element through frictional resistance lagging the initial revolving movement of the carrier and pawl relative to the second sleeve to obtain actuation of the pawl during such initial revolving movement, the housing and said parts carried by said sleeves in said housing being mountable as a unit on a said shaft in the hub of a said wheel.

**3,463,281**  
**COMBINATION FRICTION CLUTCH AND FLUID COUPLING**

George R. Aschauer, Racine, Wis., assignor to Twin Disc Incorporated, Racine, Wis., a corporation of Wisconsin  
Filed Oct. 24, 1967, Ser. No. 677,584  
Int. Cl. F16d 31/00, 25/00, 51/08

U.S. Cl. 192—57

10 Claims



Power transmitting mechanism, such as clutches or brakes having interengaging friction plates, cones or other shaped faces which are abutable together to cause a

driving engagement therebetween. The engageable faces have opposed fluid pockets or recesses which are supplied with fluid that circulates between the faces of the opposed plates so as to act as a fluid coupling during the engaging period.

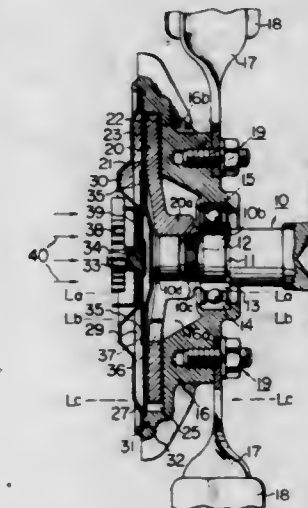
**3,463,282**  
**CONTROLLED TYPE FLUID COUPLING**  
Saburo Fujita and Uichiro Kobashi, Kariya-shi, Japan, assignors to Aisin Selki Company Limited, Kariya-shi, Aichi-ken, Japan

Filed Jan. 22, 1968, Ser. No. 699,719  
Claims priority, application Japan, Jan. 21, 1967, 42/5,679

Int. Cl. F16d 31/00, 11/00, 19/00

U.S. Cl. 192—58

5 Claims



A controlled type fluid coupling wherein pumping means comprising a plurality of axially extending liquid weiring and blocking means are provided within the peripheral pumping chamber defined between the outer periphery of a driving member and the inner periphery of a driven member, said both members being arranged relatively rotatable through the intermediary of at least an antifriction bearing.

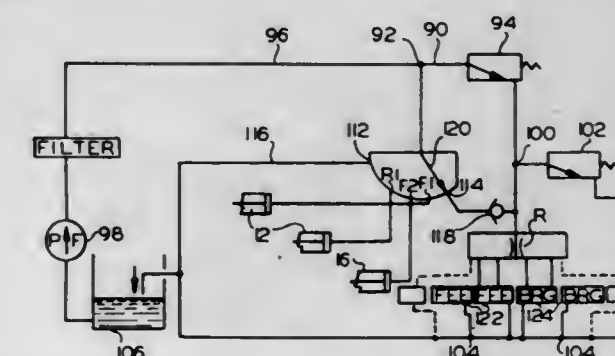
**3,463,283**  
**HYDRAULIC PRESSURE CONTROL SYSTEM FOR CLUTCHES**

Robin J. W. C. Stow, Freerton, Ontario, Canada, assignor to International Harvester Company, a corporation of Delaware

Original application Jan. 6, 1966, Ser. No. 519,156, now Patent No. 3,391,767, dated July 9, 1968. Divided and this application Jan. 23, 1968, Ser. No. 726,257  
Int. Cl. F16d 21/08, 25/00, 19/00

U.S. Cl. 192—87.19

2 Claims



Hydraulic pressure control system for clutch packs and having a single pump and an unloader valving circuit supplied thereby and containing a single range-selector valve for unloading the pump, when necessary. In either of two or more operating positions of the range-selector valve, the oil supply to the selected clutch pack is insured by the right flow routing, at adequate pressure, and in



adequate volume by the range-selector valve and a high maximum pressure valve provided, whereas all excess oil not necessary to be admitted to the flow routing by the high maximum pressure valve is diverted thereby (for lubricating and cooling purposes in the clutch packs) at a lubricating pressure insured by valving provided and in predetermined volume insured by at least one restriction. In the neutral position, the range-selector valve bypasses the high maximum pressure valve so as to substantially unload the pump and divert the flow to go to lubricating and cooling purposes to the clutch packs in the described way at a lubricating pressure insured by the valving and in predetermined volume insured by said one restriction.

3,463,284

## CLUTCH ENGAGED BY BELLOWS

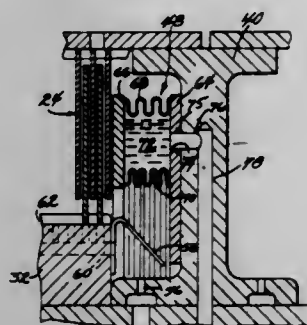
Keith W. Kampert, Libertyville, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Feb. 27, 1967, Ser. No. 618,672

Int. Cl. F16d 21/08

U.S. Cl. 192—88

1 Claim



A clutch actuator having an annular bellows adapted to extend and retract responsive to control fluid pressure to engage and disengage a clutch pack for selectively connecting and disconnecting a driving member with a driven member. The walls of the bellows are formed of a spring metal material having a corrugated configuration in longitudinal cross section to provide axial resilient flexing to automatically retract the bellows when the fluid pressure is reduced.

3,463,285

## ELECTRIC CLUTCH WITH SPEED CONTROL

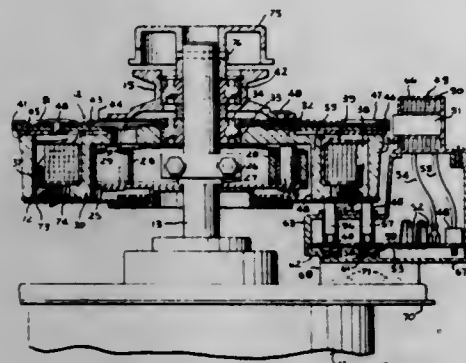
Robert R. Sklar, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Apr. 22, 1968, Ser. No. 723,085

Int. Cl. F16d 23/10, 43/24

U.S. Cl. 192—104

4 Claims



An electromagnetic friction clutch for a washing machine including an electric speed control mounted in a housing attached to a driving motor adjacent the clutch.

and including means sensing the speed of the clutch output for regulating a coil on the clutch input. Brushes extend between the housing and clutch. A centrifugally engaged clutch is connected between the motor and electromagnetic clutch. The speed control includes trim means for adjusting prior to installation.

3,463,286

## PRESS WITH ADJUSTABLE BRAKE CAM TO COMPENSATE FOR CHANGE IN STROKE

Daniel Jeavons, Coseley, near Bilton, England, assignor to Taylor & Challen Limited, Birmingham, England, a British company

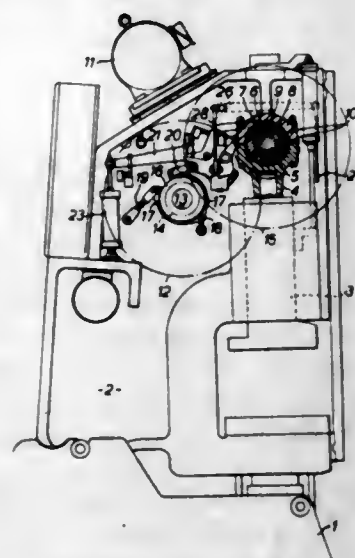
Filed Dec. 6, 1967, Ser. No. 688,469

Claims priority, application Great Britain, Dec. 6, 1966, 54,505/66, 54,506/66

Int. Cl. F16d 7/00, 9/00, 67/00

U.S. Cl. 192—134

8 Claims



In a mechanical press with a double eccentric arrangement for adjusting the stroke and with a safety brake operated by a cam on the crankshaft and coming into action if the press over-runs top dead centre or reverse-runs, the cam is angularly adjustable to allow for the alterations in top dead centre position caused by altering the stroke. Where there is a pawl serving to prevent reverse-running a fluid cylinder can be energised to hold this out of the way to allow release of the brake by reversing the motor after emergency application of the brake.

3,463,287

## AUTOMATIC INFLATION SYSTEM FOR EVACUATION SLIDE

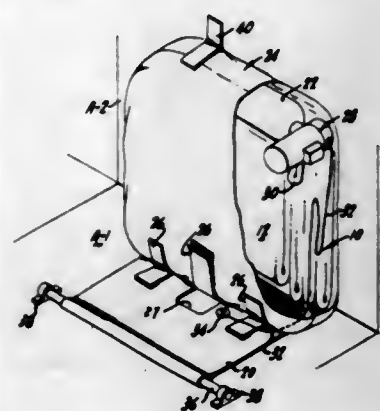
Eric P. Smith, San Francisco, Calif., assignor to Industrial Covers, Inc., San Francisco, Calif., a corporation of California

Filed Apr. 8, 1968, Ser. No. 719,400

Int. Cl. B65g 11/10; A62b 1/20

U.S. Cl. 193—25

6 Claims



Automatic inflation system for evacuation slide including a valve connected to a source of pressure fluid for

inflation of longitudinal beam. The valve is operated by a cable which is anchored to the aircraft so that when the slide is dropped from the aircraft, the weight of the slide or inflation means to which the valve is secured opens the valve and inflates the beam automatically. The cable may be set to operate the valve at the earliest possible moment but not until it reaches a predetermined level below the floor of the aircraft to insure that it is not accidentally triggered by a short drop as, for example, an inadvertent drop onto a passenger loading platform.

3,463,288

## ONE-WAY COIN CONDUIT

Arnold S. Rifkin, % A. Rifkin & Co., 39 E. Northampton St., Wilkes-Barre, Pa. 18701

Filed Dec. 20, 1967, Ser. No. 692,207

Int. Cl. G07L 3/00; B65g 11/16

U.S. Cl. 194—97

8 Claims



This invention is essentially concerned with coin-handling apparatus in the nature of a one-way conduit wherein a coin passageway is provided with a flexible elongate pendant located for free gravitational movement of a coin along the pendant in one direction, while pendant movement upon inversion of the device obstructs coin movement in the other direction.

3,463,289

## DATA READING SYSTEM

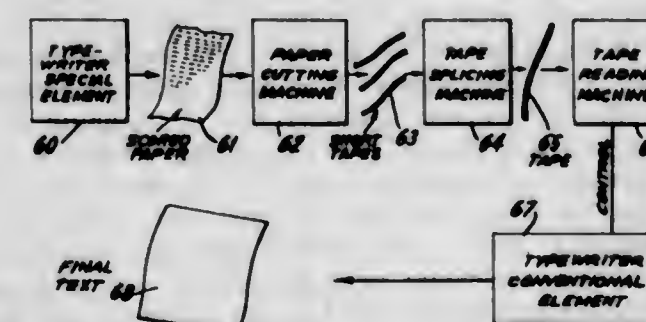
David C. Prince, 3009 P St. NW., Washington, D.C. 20007

Filed Oct. 10, 1967, Ser. No. 674,223

Int. Cl. B41j 3/516, 3/16

U.S. Cl. 197—1

4 Claims





align the bars against a vertically adjustable gate and then quickly discharge the rows to a second belt against a stop strip arranged at right angles to said first belt to form a continuous unbroken row, the slow and high speeds of the first belt, and the operation of the gate, being coordinated by the operations of a photoelectric detection and control means.

3,463,292

## DEVICE FOR ALIGNING EGGS

Jan G. Boolj, The Hague, and Halbe Algra, Papendrecht, Netherlands, assignors to Avirolanda Maatschappij voor Vliegtuwbouw N.V., Papendrecht, Netherlands, a Dutch manufacturing company

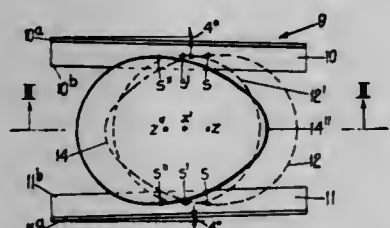
Filed Apr. 21, 1967, Ser. No. 632,781

Claims priority, application Netherlands, May 3, 1966, 6605937

Int. Cl. B65g 47/24

U.S. Cl. 198—33

7 Claims



Eggs are successively delivered to an aligning device which supports the eggs such that they will gravitate to a position in which the axis of the egg is horizontally disposed with the small end pointing in one direction. The device consists of a pair of spaced plates which receive an egg therebetween and which present downwardly and laterally converging surfaces to effect the alignment action.

3,463,293

## GYRO CONVEYANCE METHOD

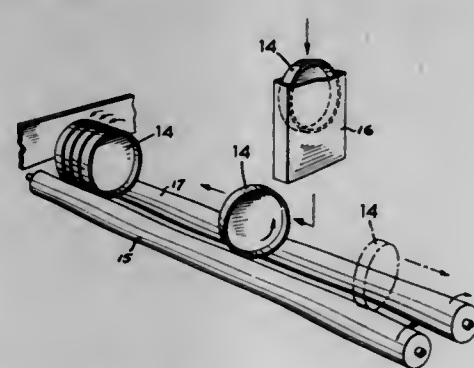
George H. Lederer, 75 Gordon Road, Willowdale, Ontario, Canada

Filed May 18, 1967, Ser. No. 639,529

Int. Cl. B65g 47/24

U.S. Cl. 198—33

6 Claims



The invention uses the gyro principle to sort or convey articles with circular rims and a centre of gravity offset from such rim, when such articles are supported (or partially supported) and rotating relative to a rotating cylinder.

3,463,294

## SELECTOR FOR CAPSULES AND OTHER HOLLOW OBJECTS HAVING AN END WALL

Daniel Emile Henri Bouzereau, Taverny, France, assignor to Centre de Recherches de Pont-a-Mousson, Pont-a-Mousson, France, a French body corporate

Filed May 29, 1967, Ser. No. 641,975

Claims priority, application France, June 17, 1966, 65,886; Mar. 22, 1967, 99,766

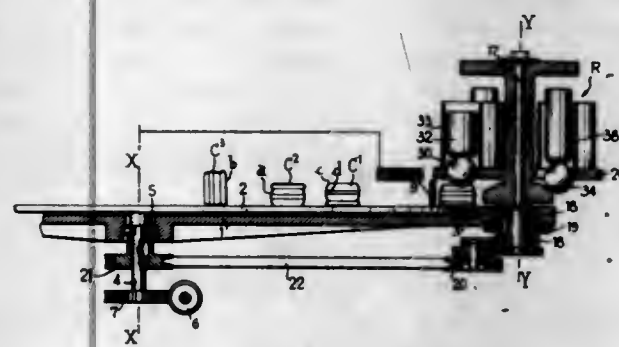
Int. Cl. B65g 47/24

U.S. Cl. 198—33

8 Claims

A selector comprising a rotor carrying, at a level higher than that of cavities of objects to be selected carried by

a rotary plate, selecting elements which are upwardly retractable but biased downwardly and adapted to drive the objects which have their cavities facing upwardly



3,463,295

## APPARATUS FOR OVERLAPPING SCARFED VENEER SHEETS

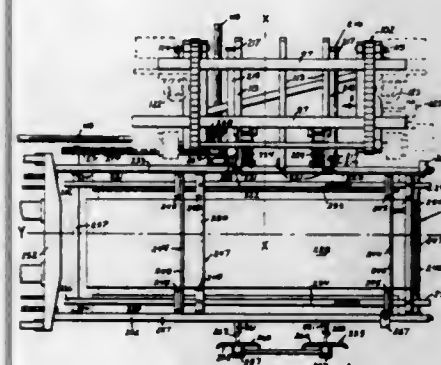
Norman Thomas Shelton, Lewiston, Idaho, assignor to Potlatch Forests, Inc., Lewiston, Idaho, a corporation of Delaware

Filed July 31, 1967, Ser. No. 657,099

Int. Cl. B65g 57/00

U.S. Cl. 198—35

16 Claims



The disclosure describes an assembly apparatus for overlapping scarfed veneer sheets to form a continuous veneer strip. The apparatus has an indexing device and an alignment and overlapping device. The alignment and overlapping device has a stationary platform for receiving the sheets. Pusher members are mounted on conveyor chains for engaging the trailing ends of the sheets. The pusher members are evenly spaced along the chains at distances less than the length of the sheets so that each sheet overlaps the preceding sheets. A stripper plate is mounted across the front of the alignment and overlapping device for stripping the sheets from the pusher members. Support members are mounted to the chains behind the pusher members for supporting the forward end of the sheets. The indexing device has transfer members reciprocally mounted for movement perpendicular to the alignment and overlapping device. The transfer members are timed to feed a sheet onto the alignment and overlapping device immediately ahead of the pusher members.

3,463,296

## DEVICE FOR FEEDING PLASTIC CONTAINERS IN PAIRS

Carl F. Eisen, 35 W. 9th St., New York, N.Y. 10011

Filed Sept. 15, 1967, Ser. No. 668,127

Int. Cl. B65g 47/00

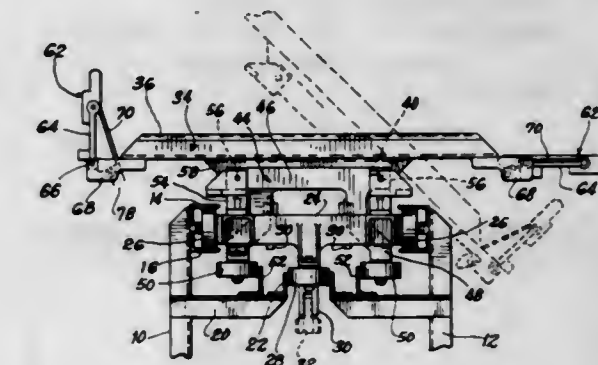
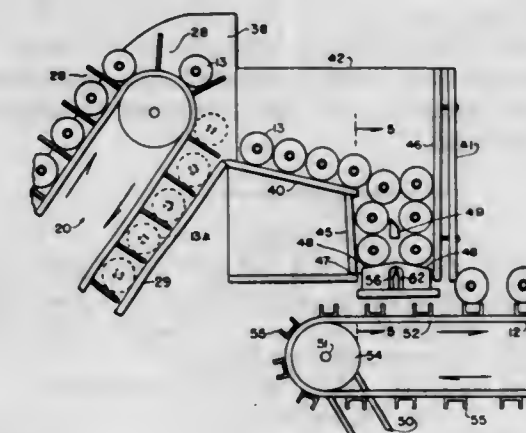
U.S. Cl. 198—43

4 Claims

Plastic bottles are conveyed to a sloping ramp from which they roll to form two vertical column on a longi-

tudinally movable reciprocating bottle delivery shuttle which withdraws to drop the two lowermost bottles in

The articles are carried in the trays to unloading stations while the trays are in a tilted position. Discharging of the articles is accomplished by releasing latching means



front of it and advances to push these two lowermost bottles onto a conveyor.

3,463,297

## SKEW ASSEMBLY TABLE

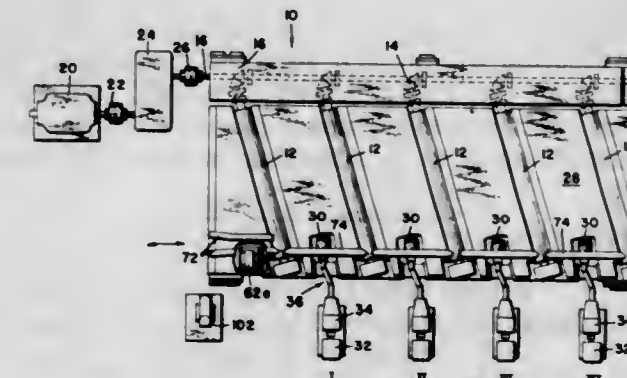
Myles Morgan, Worcester, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts

Filed Sept. 21, 1967, Ser. No. 669,647

Int. Cl. B65g 13/02

U.S. Cl. 198—127

6 Claims



A skew assembly table for assembling sequentially moving billets into packs of parallel billets having aligned leading ends. The assembly table has a plurality of parallel, horizontally spaced, driven rollers that are skewed with reference to the longitudinal table axis. The skewed table rollers force the billet to move both transversely and longitudinally along the table until the billet strikes the table side guides whereupon it moves longitudinally downstream to a combination sliding, disappearing stop. Succeding billets are assembled against the stop to form a pack of parallel billets having a common leading edge. A plurality of selectively operable kickoff rollers are employed to discharge the billets onto the table rollers at a predetermined location downstream from the entry end of the assembly table.

3,463,298

## TRAY CONSTRUCTIONS FOR CONVEYORS

John Harrison, Lincolnwood, Ill., assignor to The Spra-Con Company, Chicago, Ill., a corporation of Illinois

Filed May 16, 1967, Ser. No. 638,876

Int. Cl. B65g 47/40

U.S. Cl. 198—155

10 Claims

An article delivery system of the type including article carrying trays supported on a conveyor. Each of the trays is provided with gates at the discharge ends of the trays.

for the gates. When the gates are unlatched, they swing down to positions which permit the articles to slide off the trays.

3,463,299

## LAMINATING PRESS FEEDER

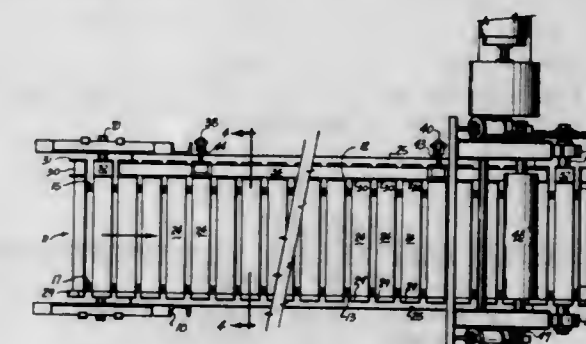
Royce Poole, Warren, Ark., assignor to Potlatch Forests, Inc., Lewiston, Idaho, a corporation of Delaware

Filed Mar. 3, 1967, Ser. No. 620,349

Int. Cl. B65g 15/00, 17/00, 19/00

U.S. Cl. 198—179

4 Claims



The disclosure describes a laminating press feeder having a continuous chain conveyor with transverse slats attached to the chains. A stationary clamping member is affixed to one end of each of the slats and a movable clamping member is slidably mounted to the other end of each slat. The movable clamping members have wide grooves formed therein for receiving a pusher bar. The pusher bar moves the upper flight of movable clamping members toward the stationary members to clamp the lamina therebetween.

3,463,300

## SCREW CONVEYOR

Ned Murray, 1116 E. Royalton St., Waupaca, Wis. 54981

Filed July 20, 1967, Ser. No. 654,824

Int. Cl. B65g 33/32, 33/14, 33/34

U.S. Cl. 198—213

4 Claims



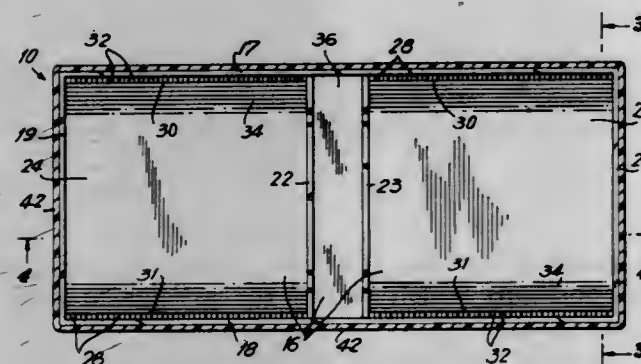
A helical screw conveyor which may be of many feet in length, for example 100 feet, which has no internal bearings but only externally mounted bearings. The conveyor is made up in sections of alternately opposite rotation and offset axially from one another. Cross-over sections connect the oppositely rotating sections together and efficiently transfer the material from one section to the next and permit the use of external bearings only.



**3,463,301**  
**SLIDE SHIPPING AND STORING CONTAINER**  
 Irving A. Speelman, Roslyn Heights, N.Y., assignor to  
 Propper Manufacturing Co., Inc., Long Island City,  
 N.Y., a corporation of New York  
 Filed Dec. 5, 1967, Ser. No. 688,105  
 Int. Cl. B65d 19/02

U.S. Cl. 206—1

3 Claims



A container having a receptacle defining a slide compartment having a first and second pair of laterally spaced side walls for receiving said slides for shipping in abutting face-to-face relation parallel to said first pair of laterally spaced side walls, a cover removably engaged over said receptacle and slides enclosing said receptacle, and retaining means in said compartment for storing said slides in spaced face-to-face relation normal to said first pair of laterally spaced side walls. The spacing between each of said first and second pair of side walls substantially corresponds to the length of the slides.

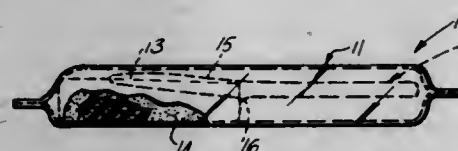
**3,463,302**  
**PACKAGED DISPOSABLE LOTION FILLED APPLICATOR**

Pearl M. Preston, 3641 Townsend Drive,  
 Dallas, Tex. 75229

Filed Sept. 20, 1967, Ser. No. 669,021  
 Int. Cl. B65d 65/42, 65/44

U.S. Cl. 206—46

1 Claim



A disposable device in the form of a packaged lotion or oil-filled applicator having a circular lotion or oil contained sponge made of foam rubber or similar material with an elongated handle attached thereto in order to easily apply the lotion or oil to various parts of the body.

**3,463,303**  
**CONTAINER WITH SOUND RECORDING**  
 Harry Gorman, 2717 Holland Ave., Bronx, N.Y. 10467,  
 and Seymour Fohrman, Lincolnwood, Ill. (1171 Long  
 Meadow Lane, Glencoe, Ill. 60022)

Filed Aug. 7, 1967, Ser. No. 658,684  
 Int. Cl. B65d 79/00

U.S. Cl. 206—47

8 Claims



A phonograph sound-recording structure in which an advertising or other phonograph-type sound-recording surface is embossed in a thermoplastic-coated substrate

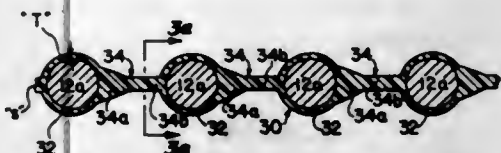
of paper wrapped about a cylindrical container, the substrate having a width at least twice that of the recording surface and being provided with means for separating the wrapping intact from the container and for securing a folded underportion of the substrate to the underside of the embossed portion whereby the folded wrapper has counteracting bowed portions. The fold line can run along the generatrix of the container or circumferentially therearound.

**3,463,304**  
**ASSEMBLY OR PACKAGE OF FASTENERS**  
 George J. Gallee, Rosemont, and Edward J. Novak, Franklin Park, Ill., assignors to Fastener Corporation, Franklin Park, Ill., a corporation of Illinois

Filed Sept. 6, 1967, Ser. No. 665,788  
 Int. Cl. B65d 69/00

U.S. Cl. 206—56

5 Claims



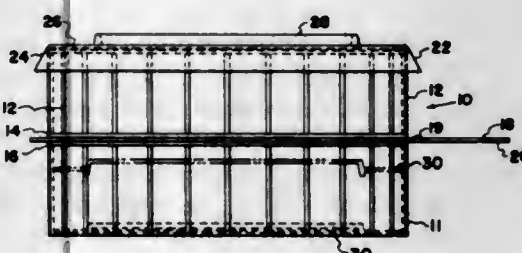
A nail strip in which the nails are held in spaced parallel positions by a plastic strip extending transversely across the spaced shanks of the nails. The plastic strip includes a series of spaced sleeves which receive the fastener shanks and which are joined by webs having a thickened portion adjacent one sleeve and a thinner section contiguous to the adjacent sleeve. The thin section insures shearing of the web adjacent the next-to-the-end nail when the end nail is driven by a tool, and thus prevents any web projecting from this next-to-the-end nail from interfering with its centering in the drive track of the tool.

**3,463,305**  
**FOOD DISPLAY PACKAGE**  
 Jack V. Cline, Hinsdale, Ill., assignor to Tee-Pak, Inc., a corporation of Illinois

Filed Dec. 11, 1967, Ser. No. 689,544  
 Int. Cl. B65d 77/00

U.S. Cl. 206—56

4 Claims



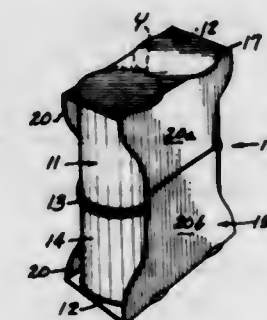
A food package is provided with features allowing for easy stacking and hanging under display conditions and providing additional surfaces for advertising indicia. The construction of the display package comprises a generally cylindrical longitudinally ribbed semi-rigid plastic film having a snap-on cover, a thin sealing film beneath the cover and an adjustable bottom plate for aiding in the removal of food product from the package. The package includes a removable apertured back board secured in spaced peripheral ribs on the package and adapted to support the package above its center of gravity. The package is provided with a recessed bottom adapted to fit over the cover of an adjacent package for improved stacking.

**3,463,306**  
**PACKAGE OF STACKED CONTAINERS**  
 Halford E. Taylor, Bedford Hills, N.Y., assignor to  
 Packaging Corporation of America, Evanston, Ill.,  
 a corporation of Delaware

Filed Apr. 29, 1968, Ser. No. 724,877  
 Int. Cl. B65d 85/62

U.S. Cl. 206—65

3 Claims



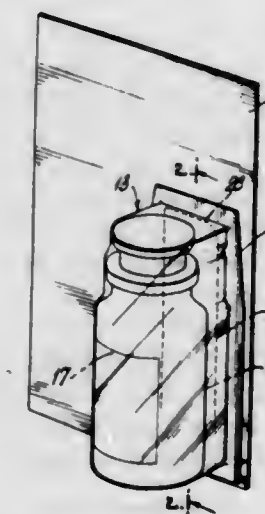
A package is provided which includes stacks of cylindrically shaped containers, said stacks being of equal height and arranged in abutting side-by-side relation to form a row, and a sleeve-like wrapper snugly encompassing said stacks. The wrapper includes a top panel which overlies and is in contact with the upper end limits of the accommodated abutting stacks, a bottom panel which subtends and is in contact with the lower end limits of said stacks, and side wall panels which foldably interconnect corresponding peripheral portions of said top and bottom panels. The foldline connections between the side wall panels and the top and bottom panels are interrupted by slots. Corresponding slots in the top or bottom panel accommodate diametrically opposed peripheral portions of the end limit of an adjacent stack.

**3,463,307**  
**DISPLAY PACKAGE**  
 Earl H. Caplan, Bayville, N.Y., assignor to Nysco Laboratories, Inc., Long Island City, N.Y., a corporation of New York

Filed Oct. 6, 1967, Ser. No. 673,452  
 Int. Cl. B65d 73/00, 5/52

U.S. Cl. 206—78

5 Claims



A tamperproof display package includes a backing sheet having a section which is coated with a thermoplastic resin, and a bottle having a front label and a panel attached to its rear face and coated with said thermoplastic resin, the bottle being secured to the backing sheet by the heat fusion of the thermoplastic resin coatings. The bottle is enclosed in a transparent plastic shell secured to the backing sheet.

**3,463,308**  
**VENDING DEVICE FOR PINS, NEEDLES, HARDWARE OR THE LIKE**

Karl-Heinz Deneke, Auf dem Rott, Gressenich,  
 near Aachen, Germany

Filed Nov. 8, 1967, Ser. No. 681,496  
 Claims priority, application Germany, Nov. 11, 1966,  
 MR 2,988; Dec. 5, 1966, R 34,043

U.S. Cl. 206—78

8 Claims



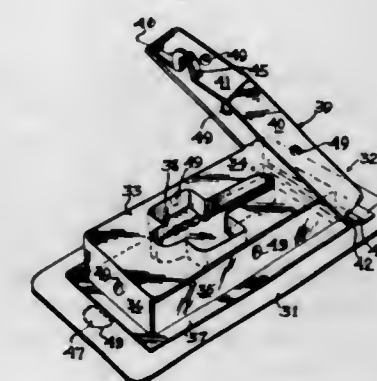
A vending display device including an elongated card with a case secured to one end for holding pins or the like and closeable by a transparent lid embracing and frictionally fitting about the outer periphery of the case with the lid and case being in the form of an octagon and with the lid having interior clamping ribs engaging the case and with the lid being in the shape of a dome formed of a plurality of planar facets forming a jewel-like design. A second embodiment matingly mounts the case in an aperture in the card in a recessed manner with the rear of the case being secured by an adhesive tape.

**3,463,309**  
**REUSABLE PACKAGE**  
 Joseph John Szostek, 911 S. Candota,  
 Mount Prospect, Ill. 60056

Filed Mar. 18, 1968, Ser. No. 713,982  
 Int. Cl. B65d 73/00

U.S. Cl. 206—78

3 Claims



A reusable package for general merchandising of small articles consisting of a transparent plastic sheet vacuum-formed or molded into a preformed package consisting of an article-holding compartment and a reclosable cover therefor, both carried by a semi-rigid panel.

**3,463,310**  
**SEPARATION METHOD**  
 Sabri Ergun and Martin Berman, Pittsburgh, Pa., assignors  
 to the United States of America as represented by the  
 Secretary of the Interior

Filed Feb. 27, 1968, Ser. No. 708,627  
 Int. Cl. B03c 1/16, 1/00

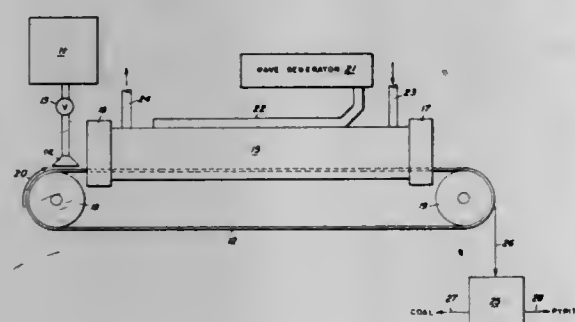
U.S. Cl. 209—8

14 Claims

A process for separating a mixture of finely divided particulate materials by subjecting the mixture to electro-



magnetic radiation having a frequency such that one of the components in the mixture is selectively heated and charge end of the conveyor and through which gap the nuts downwardly gravitate while the oriented or length-



its magnetic properties enhanced. Separation is then accomplished by magnetic means.

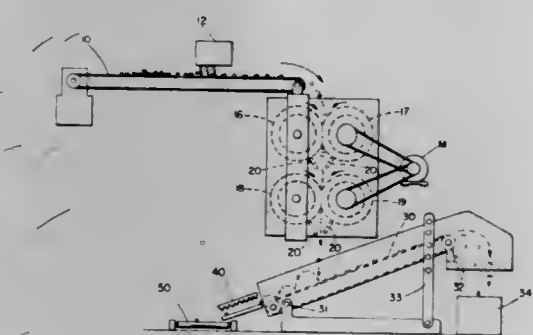
### 3,463,311 CRUSHER SEPARATOR APPARATUS AND METHOD

J. Frank Coneybear, Rockville, Md., Charles H. Chandler, Princeton, N.J., and John J. Andrisin, Jr., Parma Heights, Ohio, assignors, by mesne assignments, to Ocean Spray Cranberries, Inc., Hanson, Mass., a corporation of Massachusetts

Filed Nov. 7, 1967, Ser. No. 681,154  
Int. Cl. B07c; B07b 13/10

U.S. Cl. 209—73

6 Claims



Crusher-separator apparatus salvages firm, discrete particles from an admixture thereof with softer materials, e.g. a cranberry harvest, by crushing the softer particles without crushing the firm particles to be salvaged and then firm particles in one general direction for collection separates the material against a bounce target (an endless conveyor) at an angle of incidence which bounces the rate from the remainder of the material which remains on the target and is continuously moved out of the target area for separate collection.

### 3,463,312 TRASH SEPARATOR

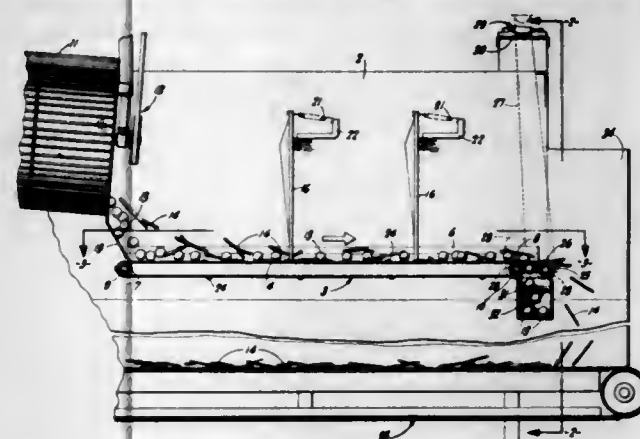
Hugh Perry Barton, Modesto, Calif., assignor to R. P. Barton & Company, Escalon, Calif., a corporation of California

Filed Dec. 4, 1967, Ser. No. 687,615  
Int. Cl. B07b 13/02, 13/04

U.S. Cl. 209—103

10 Claims

A trash separator, for separating twigs from mechanically harvested nuts, comprised of an endless conveyor onto the receiving end of which the nuts—after hulling and initial cleaning but having twigs remaining intermingled therewith—are fed; there being means cooperating with the conveyor to orient the twigs so that the same extend generally lengthwise on the conveyor before reaching the discharge end thereof, and other means forming a full width but longitudinally narrow gap at said dis-



wise extending twigs are caused to span such gap and fall in a zone clear of the gravitating nuts.

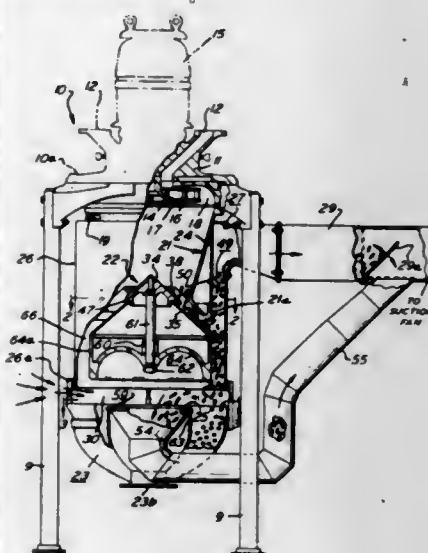
### 3,463,313 ASPIRATING MACHINE AND METHOD

Wolfgang Peter Guenther, Cheshire, Conn., assignor to Entoleter, Inc., Hamden, Conn., a corporation of Delaware

Filed Sept. 15, 1967, Ser. No. 668,045  
Int. Cl. B07b 7/01

U.S. Cl. 209—135

7 Claims



A centrifugal impacting mill particle classifier is shown for milling soya beans and the like. Pre-cracked soya beans are fed to the mill, which splits the beans into hulls and meats. The mixture of the hulls and meats passes down and outwardly over a conical distributor and over a first aspirating gap. In this gap, there is an upward draft of air which carries most of the larger but lighter hulls outside the apparatus. The meats and the residual hulls proceed downward past a peripheral opening in the apparatus through which ambient air flows inwardly toward the center of the apparatus. This inward flow is angled at 90°–120° with respect to the flow of meats and residual hulls and carries the residual hulls to an inner suction means which removes them from the apparatus. The heavier meats fall down outwardly of the residual hulls and are collected in a hopper or bag.

### 3,463,314 GRAIN CLEANING MECHANISM

Leon G. Feterl, Salem, S. Dak. 57058  
Continuation-in-part of application Ser. No. 630,329, Apr. 12, 1967. This application May 13, 1968, Ser. No. 728,559

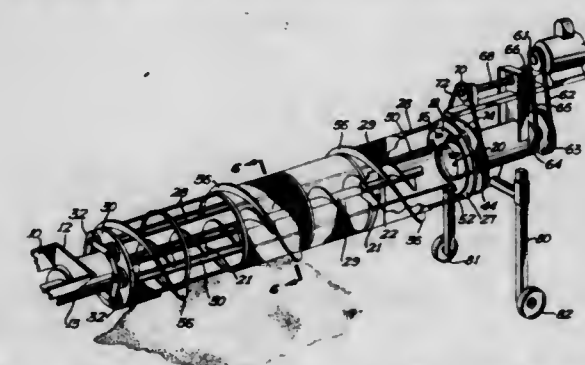
Int. Cl. B07b 1/18

U.S. Cl. 209—284

4 Claims

Grain cleaning apparatus having a rotary separating screen of cylindrical shape, an auger conveyor extend-

ing longitudinally within the screen, and a baffle element in the form of a segment of a cylinder positioned between the separator screen and the auger conveyor and



partially enclosing the conveyor. The baffle serves to contain and guide particles of grain and distribute them evenly over the length of the separator screen.

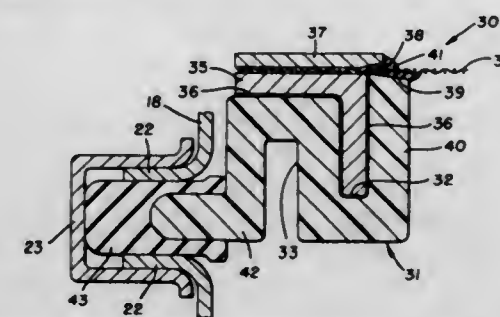
### 3,463,315 MOUNTING RING FOR VIBRATING SCREENS

Laverne J. Riesbeck and Willis A. Blackwell, Canton, Ohio, assignors to Midwestern Equipment Co., Inc., Massillon, Ohio, a corporation of Ohio

Filed Dec. 13, 1967, Ser. No. 690,318  
Int. Cl. B07b 1/28

U.S. Cl. 209—323

16 Claims



An annular frame for mounting a vibrating screen in a material separator. The frame is made of a rigid thermoplastic material and has two recesses therein. A top recess is available for receiving a screen mounting apparatus when a frame in the material separator is used to mount a single screen. A bottom recess is available for receiving a second screen or plate making a single frame adaptable as a self-cleaning apparatus.

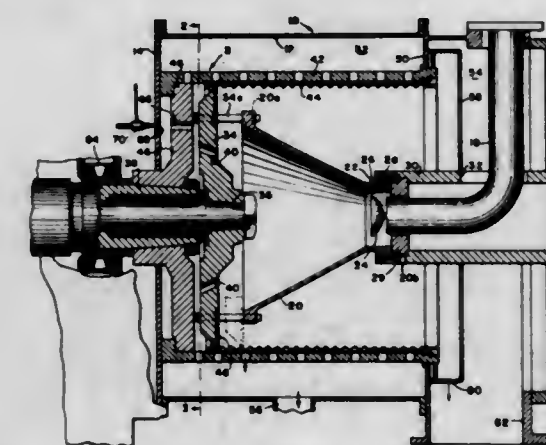
### 3,463,316 CENTRIFUGAL SEPARATING SYSTEM

Burton A. Fierstine, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York

Filed June 19, 1968, Ser. No. 738,175  
Int. Cl. B04b 3/00; B01d 33/02

U.S. Cl. 210—78

19 Claims



A centrifugal separating system for separating solid materials from liquid slurries or mixtures containing the

same wherein the slurry or mixture is rotated in a circumferentially enclosed space for a time interval while liquid is axially drawn off and then is released to a rotating perforated surface for another time interval during which the remainder of the liquid is drawn off. The efficiency of the separating function in the first instance is controlled by a transducer which monitors the density of the effluent liquid of the system.

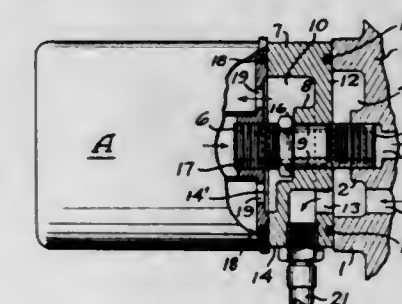
### 3,463,317 ADAPTER UNIT FOR A FLUID FILTER AND A FLUID COOLER

Walter R. Prier, 7245 SW. 82nd Ave., Portland, Oreg. 97223

Filed Aug. 7, 1967, Ser. No. 658,724  
Int. Cl. B01d 35/18

U.S. Cl. 210—152

1 Claim



An adapter unit for a fluid filter for attachment thereto of a fluid cooler.

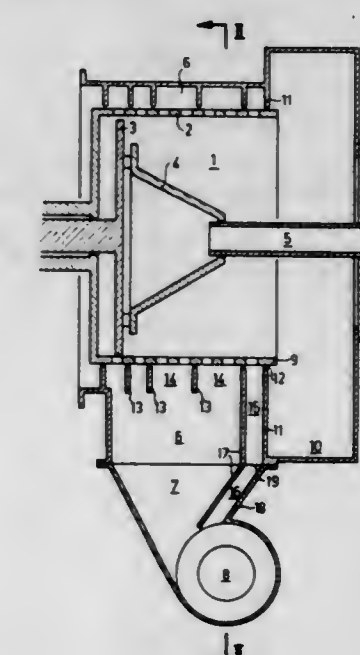
### 3,463,318 CENTRIFUGING DEVICE FOR SEPARATING A MIXTURE INTO SOLIDS AND LIQUID

Alexander Lutter, Weissenau, Germany, assignor to Escher Wyss, Limited, Zurich, Switzerland, a corporation of Switzerland

Filed June 10, 1968, Ser. No. 735,713  
Claims priority, application Switzerland, June 9, 1967, 8,197/67

Int. Cl. B04b 3/00; B01d 33/06, 19/00  
U.S. Cl. 210—188

4 Claims

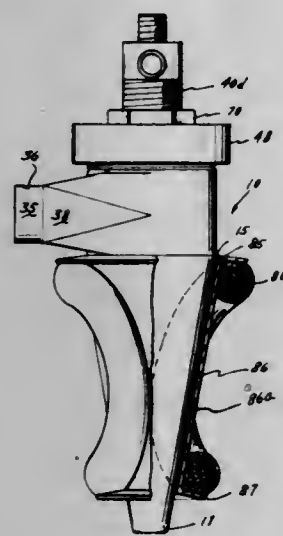


A centrifuging device for separating a mixture into solid matter and liquid, having a rotatable sieve drum through which said mixture flows; a collecting space for said solid matter being discharged at the rear edge of said drum; a collecting space for said liquid, surrounding said drum and axially subdivided by one or more partitions; a device for degasifying said liquid, connected



to said liquid collecting space; one of said partitions extending, in the direction towards said degasifying device, to a point at which the excess pressure relatively to the pressure in said solid matter collecting space is practically equalised.

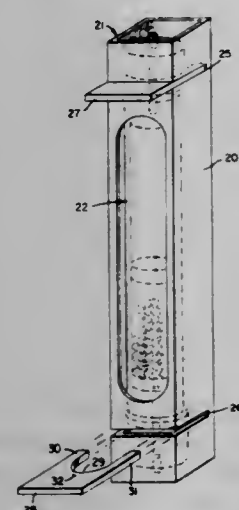
**3,463,319**  
**ELECTROMAGNETIC SEPARATOR**  
Edward L. Moragne, 4723 Nenana, Houston, Tex. 77035  
Filed Oct. 6, 1967, Ser. No. 673,508  
Int. Cl. B01d 35/06; B03c 1/02  
U.S. Cl. 210-223 10 Claims



Matter is inserted between two concentrically positioned cones at a desired velocity and the velocity of the matter between the cones increases due to a decreasing radius of the cones. The cones are subjected to a shaped concentric electromagnetic field which causes ions to be attracted toward the inner surface of the outer cone and pions to be attracted toward the outer surface of the inner concentric cone. A plurality of holes in the inner cone enables the pions to be removed and separated from the ions which are then removed from the separator.

Also, matter having a heavier mass is thrown to the outside of the downwardly spiraling mass as it is removed with the ions while lighter mass is skimmed off and removed from the separator along with the pions.

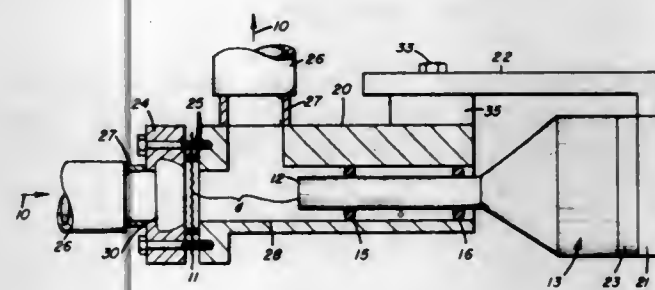
**3,463,320**  
**MICROSPHERE FILTER**  
James A. Patterson, Los Altos, Calif., assignor to Sondell Research & Development Company, Palo Alto, Calif.  
Filed Feb. 25, 1966, Ser. No. 530,051  
Int. Cl. B01d 29/08, 29/00  
U.S. Cl. 210-232 2 Claims



An apparatus for separating colloidal particles from pressurized fluid comprising a column packed with uni-

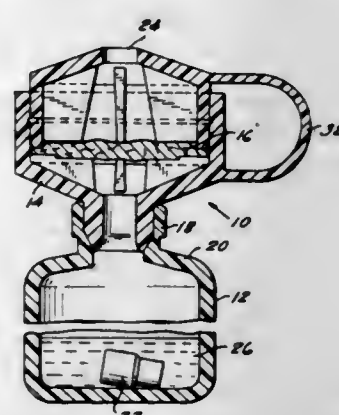
form spherical beads. The beads are incompressible and are formed from cross-linked co-polymer of polyvinyl aryl compound and a monovinyl aryl compound. The column walls are electrically neutral. The apparatus includes further a support frame and releasable interlocking means cooperating with the frame and the column.

**3,463,321**  
**ULTRASONIC IN-LINE FILTER SYSTEM**  
Jack A. Van Ingen, Webster, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Continuation-in-part of application Ser. No. 618,471, Feb. 24, 1967. This application Feb. 28, 1968, Ser. No. 708,822  
Int. Cl. B01d 35/06  
U.S. Cl. 210-388 3 Claims



A small planar surface fine mesh screen filter has its useful life extended by focusing thereon a beam of ultrasonic energy. The beam is from an ultrasonic transducer surface placed parallel to and spaced an antinodal distance from the small filter. On the upstream side of the filter and adjacent thereto is located an annular recess to collect filtered particles.

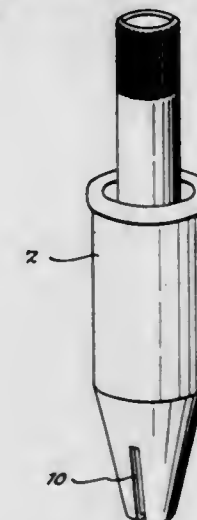
**3,463,322**  
**PRESSURE FILTRATION DEVICE**  
Horace W. Gerarde, 40 Knoll Road, Tenafly, N.J. 07670  
Continuation-in-part of application Ser. No. 426,527, Jan. 19, 1965. This application July 28, 1967, Ser. No. 656,783  
Int. Cl. B01d 29/42, 29/00  
U.S. Cl. 210-455 3 Claims



A pressure filtering device to quantitatively separate liquid filtrate from insoluble or particulate components of a liquid suspension. A pressurizable container having an outlet together with a cap received in direct communication at the container outlet to form a closed system and including a dispensing opening together with a filter member carried within the cap in the liquid flow passage

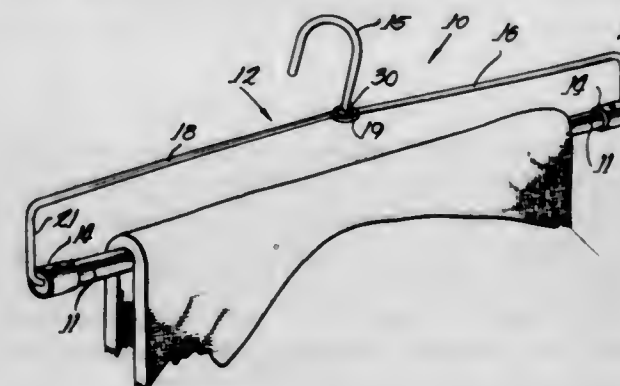
whereby the liquid suspension, upon pressurization of the container, may be expressed therefrom for filtering and collection of both filtrate and precipitate.

**3,463,323**  
**STAND FOR TUBE WRITING PENS**  
Helmuth Riepe, Hamburg, Germany, assignor, by mesne assignments, to Rapidograph, Inc., Bloomsbury, N.J., a corporation of New Jersey  
Filed Apr. 14, 1967, Ser. No. 630,957  
Int. Cl. A47f 7/00; B43i 27/02  
U.S. Cl. 211-69.5 3 Claims



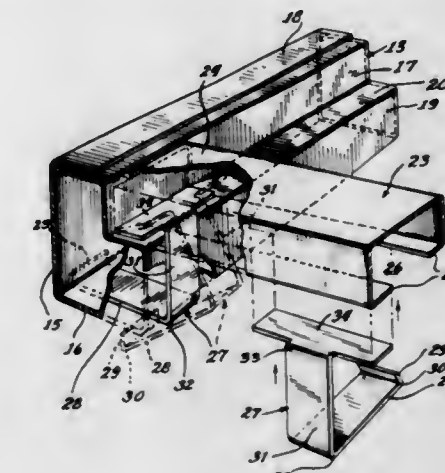
This invention is directed to a stand for tube writing pens that includes a container filled with water-absorbent material and provided with a plurality of tubular holders inserted therein. The bottoms of the tubular holders are provided with one or more openings to permit passage of moisture and their inner walls are provided with a plurality of radial fins for receiving and retaining the writing heads of the pens inserted in the holders.

**3,463,324**  
**DISPLAY HANGER WITH CROSSBAR AND REMOVABLE SUPPORT ASSEMBLY**  
Robert G. Schaefer, Highland Park, Ill., assignor to Central Specialties Company, Chicago, Ill., a corporation of Illinois  
Continuation of application Ser. No. 604,208, Dec. 23, 1966. This application Aug. 13, 1968, Ser. No. 755,018  
Int. Cl. A47j 51/08; A47h 1/14  
U.S. Cl. 211-123 4 Claims



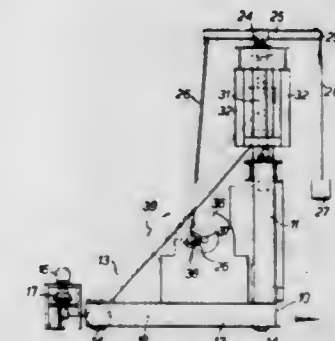
The disclosure includes a display hanger having a tubular crossbar with apertured barrel shaped end caps at each end of the crossbar. A two-piece support member is employed, one piece having its end portion anchored within the crossbar, and the other piece having a closed eye for attachment to the hanger at a hanger crotch portion, its free end having a lock member which fits into one of the end caps. The support member is removed by means of grasping the anchor portion and crossbar, squeezing the same, and removing or inserting the lock end of the hanger support into its respective end cap.

**3,463,325**  
**PALLET RACK BEAM RETAINER**  
Nicholas A. Zagotta and Charles J. Rogers, Chicago Heights, Ill., assignors to Interlake Steel Corporation, Chicago, Ill., a corporation of New York  
Filed June 22, 1967, Ser. No. 648,005  
Int. Cl. A47f 5/00, 5/10  
U.S. Cl. 211-148 8 Claims



A rack structure including a plurality of uprights carrying front and rear transverse beams and one or more front to rear support members removably secured to the beams by readily installable and removable retaining members.

**3,463,326**  
**MANUFACTURE OF CRANKSHAFTS**  
George Herbert Asbridge, Shrewsbury, England, assignor to Mitchell Shackleton and Company Limited, Patricroft, Manchester, England, a British company  
Filed Nov. 6, 1967, Ser. No. 680,896  
Claims priority, application Great Britain, Dec. 6, 1966, 54,503/66; Feb. 11, 1967, 6,633/67  
Int. Cl. B66c 23/72  
U.S. Cl. 212-1 4 Claims



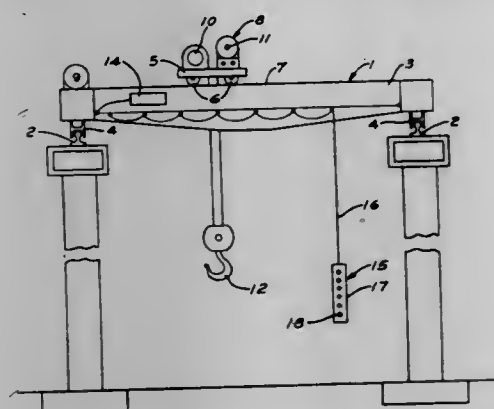
In the machining of a shaft of substantial length and weight in a machine in which the shaft is rotated while it is located between centres or equivalent means the shaft is suspended from an elevated support independent of the machine by mechanical means which continuously counterbalance the weight of the shaft as it rotates.

**3,463,327**  
**PENDANT CONTROL FOR OVERHEAD CRANES**  
John C. Lester, R.D. 1, Baden, Pa. 15005  
Filed Sept. 25, 1967, Ser. No. 670,227  
Int. Cl. B66c 17/00; H04q 9/00  
U.S. Cl. 212-21 7 Claims

This invention is an improvement in overhead traveling crane pendant controls of the type employing heavy and large pendants with pushbuttons operable for sending 110-220 volt signals to a controller on the crane through one or more heavy, relatively stiff and unwieldy, multi-wire cables.



The improvement is characterized in that the large pendants and cables which have been employed heretofore are replaced by a single light flexible coaxial cable connected at one end to a controller on the crane and at the other end to a small light pushbutton pendant having a plurality of pushbuttons. Each pushbutton controls a low voltage energizing circuit for an oscillator which, when activated, emits a signal of predetermined radio



frequency different from the frequency of the oscillators controlled by the other pushbuttons. These signals are transmitted over the coaxial cable to receivers on the controller. Each receiver has a frequency response corresponding to a different one of the oscillators, and each is connected in a different control circuit from the others and controls a different power switch for causing a selected operation of the crane motors.

3,463,328

**DRAFT GEAR TRAIN ACTION CONTROL VALVE**

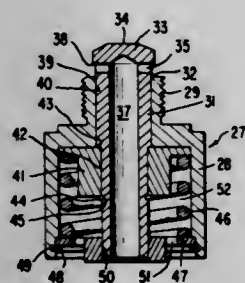
William T. Blake, 4424 Morris Court,  
Fort Worth, Tex. 76103

Filed Jan. 26, 1967, Ser. No. 611,931

Int. Cl. B61g 9/06, 9/04, 11/02

U.S. Cl. 213-43

2 Claims



A valve apparatus for inclusion in railway draft gear of the type which includes a fluid shock absorbing assembly comprising cylinder means and piston means. The valve means is disposed to regulate an outflow of fluid from a piston biasing fluid zone of the assembly. In the context of this draft gear, the valve is characterized by port means carried by a movable valve member. This port means causes the movable valve member to be closable in response to fluid flow therethrough emanating from the piston biasing zone of the assembly. Resilient means tend to bias the movable valve member to an open port position.

3,463,329

**MATERIAL TRANSFER DEVICE WITH PARALLEL LINK FRAME**

Stanley J. Gartner, Emporium, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed May 18, 1967, Ser. No. 639,422

Int. Cl. B25j 5/02; B66c 1/02, 19/00

U.S. Cl. 214-1

A carrier depending from a roller carriage riding in a trackway has a universal connection with the carriage so

that the carrier may at will be moved to any rotative position. The carrier supports at its lower end a suction head for causing objects as television picture tubes to adhere to the head, the carrier itself comprising a parallel



link frame with means for enabling contraction and elongation of the frame. Said means and the varied movements of the frame is under control of a handle on the lower end of the frame.

3,463,330

**METAL SHEET HANDLING DEVICE**

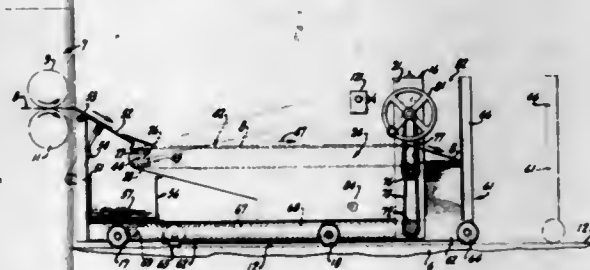
Joseph A. Roberts, San Francisco, Calif., assignor to Reliance Sheet & Strip Co., a corporation of California

Filed May 12, 1967, Ser. No. 638,062

Int. Cl. B65g 57/112; B65h 29/18

U.S. Cl. 214-6

3 Claims



A metal sheet handling device receives metal sheets from a shear or the like and directs them to scrap or alternatively onto a substantially horizontal conveyor one end of which moves vertically to deposit the metal sheets onto the top of a stack disposed on an adjacent carriage. A feeler on the conveyor frame senses the height of the stack and controls movement of the adjacent end of the conveyor up to a corresponding height.

3,463,331

**AUTOMATIC ASSEMBLY MACHINE**

Frederick R. Neff, 2993 Curtis Ave.,  
Des Plaines, Ill. 60018

Filed Apr. 12, 1968, Ser. No. 720,844

Int. Cl. B65g 59/00; B23p 19/00

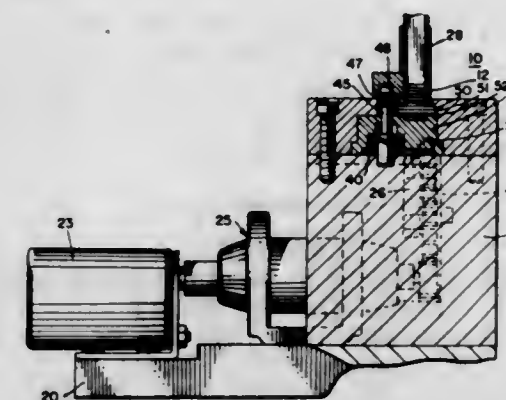
U.S. Cl. 214-8.5

10 Claims

There is provided a device for loading a selected number of thin flat elements such as electrical spacers and the like from a supply chute. The loading device includes a guide surface and the supply chute defines an opening

above the guide surface of sufficient size to discharge a selected number of spacers. Blade means are provided moving through the feed opening so that a desired num-

movable wagon chassis-engaging members carried by the platform, means on the platform for moving said wagon-chassis-engaging members from a disengaged to an engaged position and vice versa, holding down means for



3,463,332

**BIN ASSEMBLY**

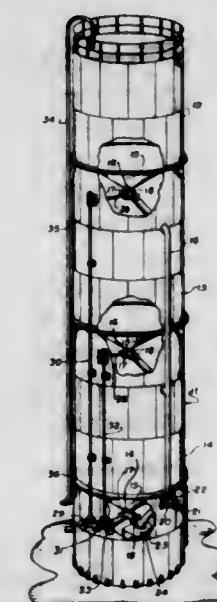
Nicholas Quadrel, 168 Colonia Road, Colonia, N.J. 07067, and Louis Quadrel, 115 Christopher St., Montclair, N.J. 07042

Filed Mar. 21, 1968, Ser. No. 715,054

Int. Cl. B65g 1/60

U.S. Cl. 214-16

4 Claims



A bin assembly in which there is a storage compartment having a plurality of superposed bins, each of which has a separate batch input and a separate, controlled batch outlet means for: (a) discharging material from a superposed bin into the next lower bin; or (b) discharging material from a superposed bin to by-pass the lower compartment or bin; or (c) discharging material from any bin into a system.

3,463,333

**METHOD OF AND APPARATUS FOR HANDLING RAIL WAGONS**

Ronald Bellinger and Graham Edward Bayley, Bristol, England, assignors to Strachan & Henshaw Limited, Bristol, England, a company of Great Britain and Northern Ireland

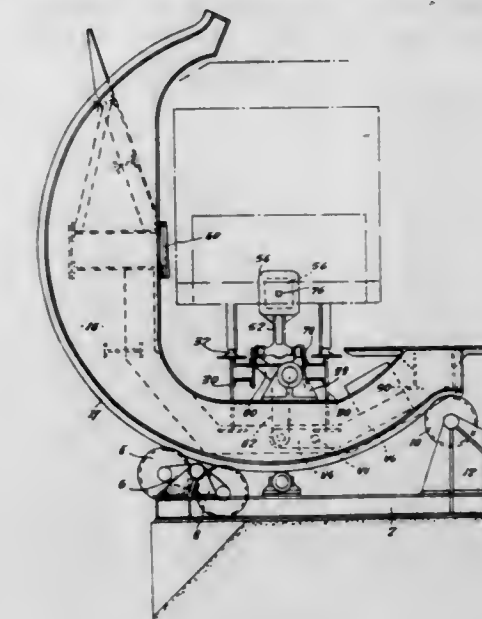
Filed Jan. 30, 1967, Ser. No. 612,542

Int. Cl. B65g 67/42

U.S. Cl. 214-55

11 Claims

Apparatus for holding a wagon on its rails while being inverted or tilted, which comprises a supporting chassis, a tiltable platform having wagon-receiving-rails thereon,



drawing the wagon chassis-engaging members towards the rail while engaged with said wagon chassis, and counterweight actuating means associated with said holding down means and sensitive to the tilt of the platform.

3,463,334

**CARGO LOADING APPARATUS**

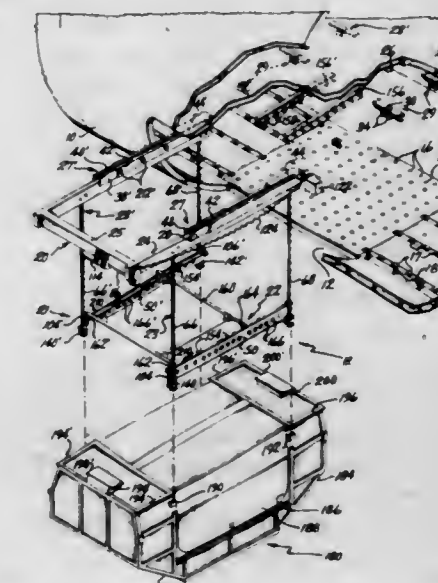
Carl Frederick Blakely, Bellevue, Wash., and Donald E. Longmire, West Los Angeles, Calif., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Apr. 17, 1967, Ser. No. 631,476

Int. Cl. B65d 9/00; B64c 1/22

U.S. Cl. 214-75

3 Claims



A cargo loading apparatus mounted in an airplane cargo compartment for sliding movement between a stowed position inside the compartment and an operating position outside of the airplane. The apparatus includes a hoist beam assembly mounted on transversely extending rollers on the ceiling of the cargo compartment, a lift rail assembly including cargo container engaging hooks, and a cable assembly connected between the hoist beam assembly and the lift rail assembly for raising and lowering the latter. Transversely extending rollers are provided on the lift rail assembly and on the ceiling of the cargo compartment for transferring cargo containers laterally between the compartment and the lift rail assembly when the latter is in its raised position.

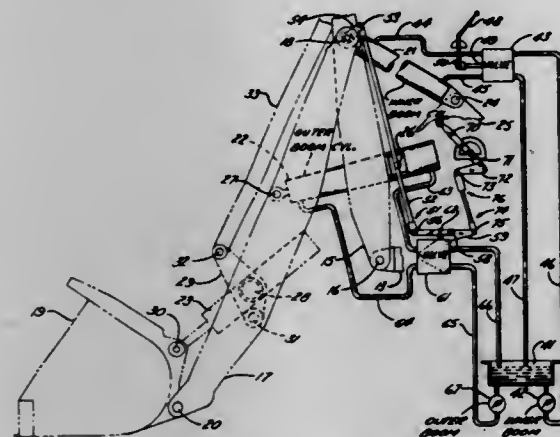


3,463,335

**LEVEL-CROWD CONTROL SYSTEM FOR MATERIAL HANDLING LOADERS**  
Roy D. Brownell, Aurora, and Granville Woolman, Naperville, Ill., assignors to Baldwin-Lima-Hamilton Corporation, Chicago, Ill., a corporation of Delaware  
Filed Aug. 28, 1967, Ser. No. 663,815  
Int. Cl. E02f 3/00

U.S. Cl. 214—138

15 Claims



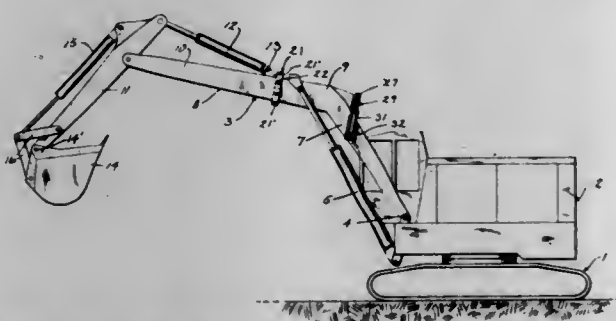
A control system for providing level-crowd operation for loaders of the type having an inner boom pivotally connected to the loader frame, an outer boom pivotally connected to the inner boom, a loader bucket pivotally connected to the outer boom, and separate hydraulic motors to pivot each of the booms and the loader bucket. To provide operator control over the extension and retraction of the loader bucket, the control system includes a single level-crowd control lever which is connected to operate a valve for actuation of the inner boom motor. In order to maintain the bucket pivot i.e., the pivotal connection between the loader bucket and the outer boom, along a predetermined level, the control system also includes detector means for sensing any departure of the bucket pivot from the level and an angle adjusting servo valve means operated by the detector means for actuating the outer boom motor so that the departure is eliminated. The operation of the angle adjusting valve may be effectuated by the detector means electrically, hydraulically, or mechanically. To enable the operator to change the elevation of the level along which the bucket pivot is maintained, the angle adjusting servo valve is also connected to be independently operated by an elevation control lever.

3,463,336

**BACKHOE EXCAVATOR OR THE LIKE WITH POWER ACTUATED SIDE TILTING HANDLE**  
George W. Mork, South Milwaukee, Wis., assignor to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware  
Filed Nov. 15, 1967, Ser. No. 683,202  
Int. Cl. E02f 3/00

U.S. Cl. 214—138

10 Claims



A backhoe includes a hydraulically actuated boom, handle, and bucket. The boom is L-shaped to define a vertical foot portion and a horizontal reach portion, and

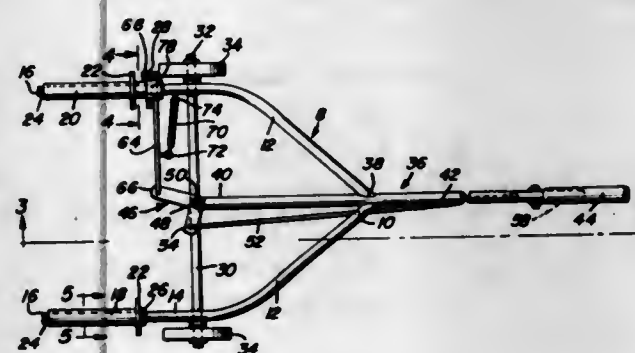
the reach portion is divided transversely to define inner and outer boom sections. The outer section is rotatable with respect to the inner section, and a tilt shaft extends rearwardly from the outer section through the remainder of the boom reach portion to terminate at an arm in line with the boom foot. A tilt cylinder on the foot is connected to the arm and is thereby operable to rotate the outer section. The dig cylinder which actuates the handle is connected to the outer boom section, so that it and the handle and bucket all move as a unit.

3,463,337

**WHEEL ASSEMBLY SUPPORTING AND POSITIONING CART**  
Frank Reznicek, 1412 7th St., Columbus, Nebr. 68601  
Filed Sept. 28, 1967, Ser. No. 671,474  
Int. Cl. B60b 29/00; B65g 7/00

U.S. Cl. 214—332

4 Claims



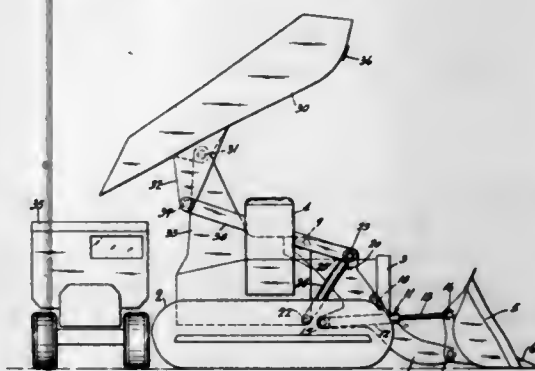
The cart shown can be handled by one workman. A wheel supported yoke-type frame can be maneuvered to lift, support and cradle a heavy duty vehicle wheel assembly. The balanced handle not only handles the cart, it carries a trip lever which transmits motion to a bellcrank on the wheel-equipped shaft. The bellcrank actuates pawl and ratchet means which in turn revolves one of a pair of vehicle wheel cradling rollers on the frame. Accordingly, the vehicle wheel can be cradled and carted into a ready-to-mount position where the stud holes can be correctly lined up and shoved into place, whereupon the usual nuts can be applied and tightened.

3,463,338

**FRONT TO REAR LOADER**  
Karl Schneider, Milwaukee, Wis., assignor to Harnischfeger Corporation, West Milwaukee, Wis., a corporation of Wisconsin  
Filed Mar. 26, 1968, Ser. No. 716,052  
Int. Cl. E02f 7/04, 3/82; B60p 1/04

U.S. Cl. 214—504

11 Claims



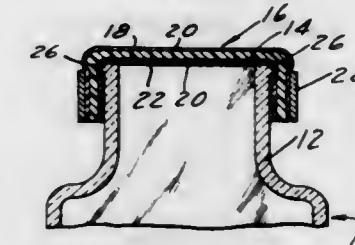
A self-propelled front end loader which gathers a load of material, such as earth, elevates it overhead and dumps it rearwardly onto a conveyor chute also mounted on the loader.

3,463,339

**SEALING ELEMENT**  
Melvin E. McGuckin, Rowland Heights, Calif., assignor to Hamilton Company, Whittier, Calif., a corporation of California  
Filed Apr. 25, 1966, Ser. No. 544,950  
Int. Cl. B65d 41/02

U.S. Cl. 215—38

2 Claims



A seal for containers such as bottles, flasks and the like having an opening, the seal being a laminated, self sealing diaphragm having layers of resilient material to which is bonded a very thin sheet or film of chemically inert material such as Teflon which is adapted to be placed over the container opening to protect the contents of the container from contaminants.

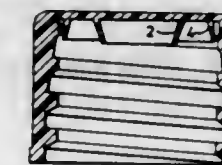
3,463,340

**SCREW CAP WITH LOCKING MEANS**  
Alrik Cliver Lindstrom, Harpsundsvagen 164, Bandhagen, Sweden  
Filed Sept. 18, 1967, Ser. No. 668,417  
Claims priority, application Sweden, Sept. 28, 1966, 13,083/66

Int. Cl. B65d 53/02

U.S. Cl. 215—40

5 Claims



A screw cap provided with one or more sealing flanges which project from the top of the cap for cooperation with the end of the mouth wall of a bottle or the like, according to the invention is provided with an additional flange, or has one of its sealing flanges extending in close proximity to the wall of the cap, whereby an elastic attachment or locking of the screwed cap is effected due to elastic engagement of said sealing flange or said additional flange with the outside of the mouth wall of the bottle and with the wall of the cap. Tests have proved that in case of equal tightening moments the moment required for unscrewing a screw cap according to the invention from a bottle is about 75% greater than the corresponding moment required for a conventional screw cap having sealing flanges only.

3,463,341

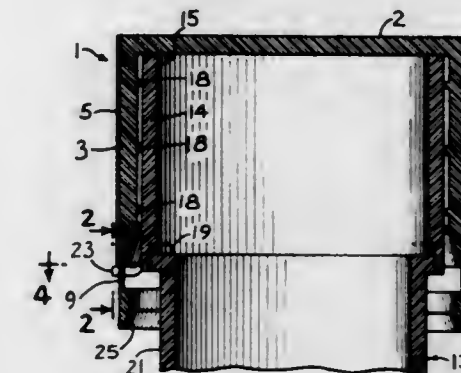
**TAMPER-INDICATING CLOSURE**  
Mack R. Fields, Lighthouse Point, Fla., assignor to Roehr Metals & Plastics Company, a limited partnership of Connecticut  
Filed Dec. 18, 1967, Ser. No. 691,496  
Int. Cl. B65d 17/16

U.S. Cl. 215—42

6 Claims

A molded plastic cap has a tamper-indicating skirt joined to the end of the cap sidewall by spaced frangible

bridges of the plastic. The cap is mounted on a plastic container that has radial tongues that project through the gaps between the bridges. Rotation of the cap incident its

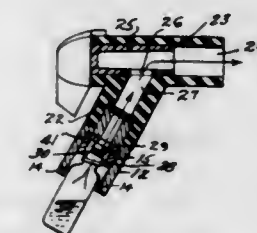


3,463,342

**ADAPTER FOR CONTROLLED CLOSURE OF EVACUATED CONTAINERS**  
Charles E. Bender, Douglas S. Fraser, and Taylor N. Thompson, New Paltz, N.Y., assignors to The Virtis Company, Inc., Gardiner, N.Y., a corporation of New York  
Filed Jan. 26, 1967, Ser. No. 611,941  
Int. Cl. B65d 47/20

U.S. Cl. 215—73

5 Claims



An adapter for automatic closure of freeze drying containers which permits stoppering while the container is evacuated. The adapter includes a body which receives a threaded sleeve. The body includes a shoulder engageable with the cap to limit axial movement. A sealing means is provided at the lower end of the adapter to seal the container while permitting axial movement relative to the adapter. A split stopper is disposed within the apertured container sleeve and, upon rotation of the container relative to the sleeve, seats the rubber stopper in the container without breaking the vacuum.

3,463,343

**ADJUSTABLE CIRCUIT BOARD BOX**  
Donald J. Asenbauer, Whittier, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Filed Aug. 28, 1967, Ser. No. 663,840  
Int. Cl. B65d 19/06, 19/12, 19/16

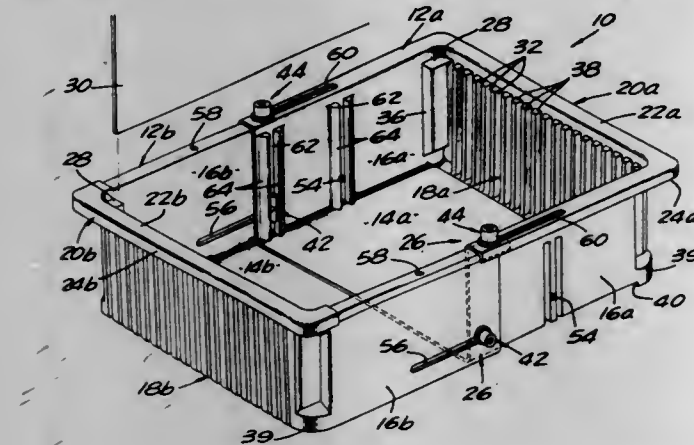
U.S. Cl. 220—8

19 Claims

An adjustable stacking container adaptable for use as a circuit board box, the container including a pair of telescoping container sections having confronting open sides disposed in interfitting relation, whereby the sections may be telescopically adjusted to vary the overall length of the container, connecting means joining the sections for



securing the latter in adjusted positions, and stacking lid members, and capable of being nested with like boxes when said lid members are swung open, and being stackable with like boxes when said lid members are closed.



containers, when adjusted to approximately the same overall length, to be stacked one on top of the other.

3,463,344

## BAKING PAN UNIT

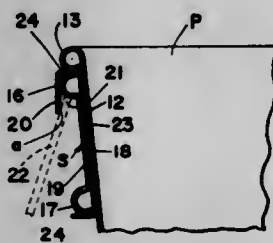
Hiram E. Temple, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York

Filed July 21, 1967, Ser. No. 655,028

Int. Cl. B65d 21/02

U.S. Cl. 220-23.2

13 Claims



A baking pan unit adapted for use with lift plate, stacking mechanism and comprising a plurality of parallel arranged, upright baking pans connected by a pan strap assembly which includes a downwardly opening socket means for receiving upwardly extending lift plate members.

3,463,345

## LIDDED TOTE BOX

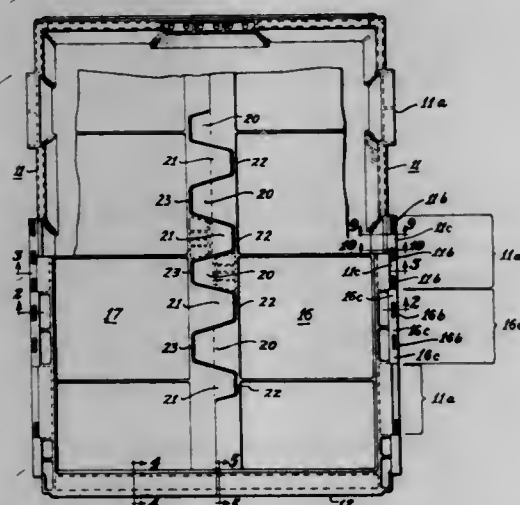
Kenneth R. Bockenstette, Cincinnati, Ohio, assignor to MS Industries, Inc., Cincinnati, Ohio, a corporation of Ohio

Filed Aug. 28, 1968, Ser. No. 755,936

Int. Cl. B65d 51/18

U.S. Cl. 220-29

4 Claims



A tote box of plastic or other suitable material, having hinged to opposed sides complementary interdigitating

lid members, and capable of being nested with like boxes when said lid members are swung open, and being stackable with like boxes when said lid members are closed.

3,463,346

## RADIATOR FILLER CAP

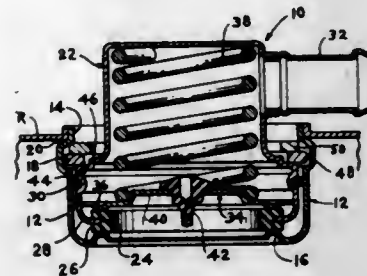
William Colton Mitchell, Cheshire, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut

Filed July 26, 1968, Ser. No. 747,886

Int. Cl. B65d 51/16

U.S. Cl. 220-44

5 Claims



A filler cap especially for sealed vehicle radiator systems in which the plug includes pressure release means and is itself held down in the radiator fill opening by a pair of stacked C-rings. The first of these can be readily removed permitting the plug to raise and vent pressure. The second C-ring can only be removed after the plug is pressed down in its opening so that the ring can be raised to clear removal blocking means on the plug.

3,463,347

## CLOSURE AND OPENER FOR CANS

Charles Joseph Kerr, 4122 Prospero Drive, Covina, Calif. 91722

Filed Apr. 24, 1968, Ser. No. 723,747

Int. Cl. B65d 17/18; B67b 7/30

U.S. Cl. 220-48

7 Claims



This patent describes a novel closure normally for use in combination with the conventional can, said closure comprising an end closure member adapted to be crimped with the flared can body to form a flange and thereby seal the end of the can, said closure having an annular groove in the underside thereof in proximity to said flange, cutting means received in said groove, said cutting means having an upstanding cutting edge, said cutting means also having a portion thereof projecting through said closure, a torsion bar carried diametrically on the outer side of said closure and being secured to a portion of said cutting means extending through said closure.

3,463,348

## SAFETY CAN

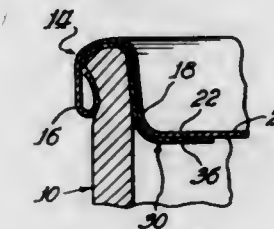
James R. Pound, St. Louis, and Edward A. Ellison, Berkeley, Mo., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Filed Apr. 1, 1968, Ser. No. 717,781

Int. Cl. B65d 17/20

U.S. Cl. 220-54

2 Claims



A tubular container having an end wall with a removable central portion and protective shoulder for covering the exposed edge of the remaining portion of the can end wall after the central portion has been removed.

3,463,349

## TIGHTLY SEALED CAN WITH REMOVABLE LID AND METHOD

Armando Podesta, 4 via Petrarca, and Carlo Vignati, 3 Piazza Sicilia, both of Milan, Italy

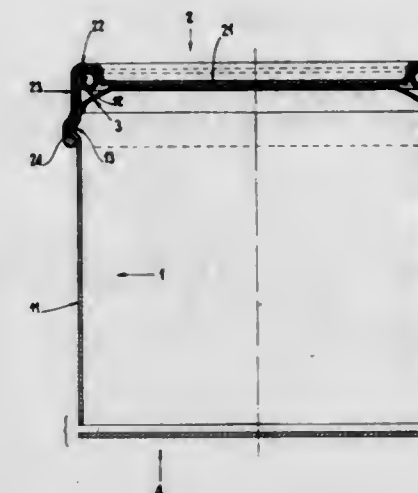
Filed Dec. 14, 1967, Ser. No. 690,499

Claims priority, application France, Dec. 19, 1966, 87,904

Int. Cl. B65d 43/04, 43/10

U.S. Cl. 220-60

12 Claims



The manufacture of a tightly sealed can with a removable lid in which the can body is of tubular shape having a coiled upper end portion and a first locking portion in the form of outward projections in spaced relation from the coiled end portion, a lid having a body portion dimensioned to correspond with the cross-section of the can body and a depending skirt having an intumed second locking portion in position resiliently to engage the first locking portion when the lid is in position of use on the can body, a sealing means at the juncture between the underside of the can lid and the inside of the can body to effect a sealing relationship therebetween and a bottom on the lower end of the can body and in which the first locking portion and the coiled upper end portion on the can body constitute the same element in the can body.

3,463,350

## PLASTIC CONTAINER FOR FOODSTUFFS SUSCEPTIBLE TO OXIDATIVE DETERIORATION

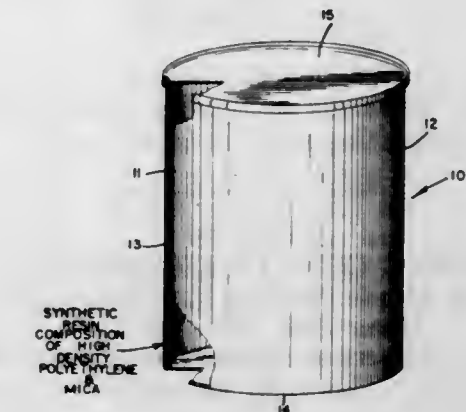
Harold W. Unger, Oakbrook, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Oct. 19, 1967, Ser. No. 676,543

Int. Cl. B65d 7/42

U.S. Cl. 220-83

6 Claims



A sealable synthetic resin container characterized by enhanced resistance to permeation by oxygen is molded from a mixture of high density polyethylene and mica.

3,463,351

## SAFETY PRESSURE RELIEF DEVICE

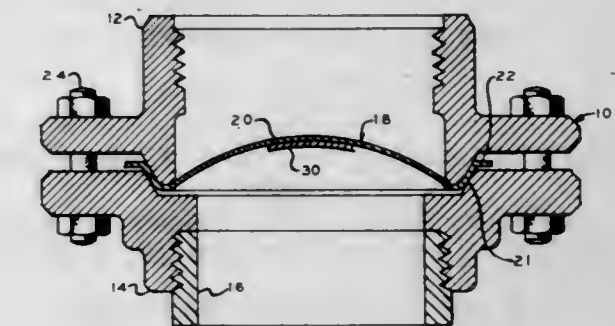
Stanley M. Mills, Kansas City, Mo., assignor to Black Sivalls & Bryson, Inc., Kansas City, Mo., a corporation of Delaware

Filed Feb. 6, 1967, Ser. No. 614,371

Int. Cl. F17c 13/06; F17b 1/14; B65d 25/00

U.S. Cl. 220-89

6 Claims



The present invention relates to an improved safety pressure relief device of the rupturable type, and more particularly, to a safety pressure relief device which includes a dome-shaped rupturable disc containing lines of weakness set up by grooves milled or impressed on its concave or convex surface, and having a member or members attached to its concave surface, to achieve full opening without fragmentation.

3,463,352

## TAB EAR FOR TAPERED CONTAINERS

Raymond A. Heisler, 657 Dakota Trail,

Franklin Lakes, N.J. 07417

Filed Mar. 21, 1968, Ser. No. 715,052

Int. Cl. B65d 25/32, 21/00

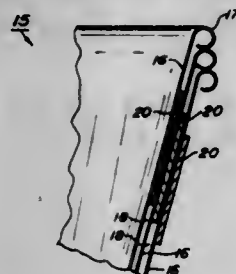
U.S. Cl. 220-91

5 Claims

A tab member is attached to the sides of a tapered metal container so that the tapered metal containers with their upper rims or bead protrusions arranged in a supporting manner may be stacked in a nested array with the



tabs lying in the space between the interior wall of a lower container and the exterior wall of the container



to which the tab is attached. These tabs are disposed so as to be bent outwardly to provide bail-attaching members or as a supporting base for a bail ear.

### 3,463,353 NESTING CONTAINER ASSEMBLY

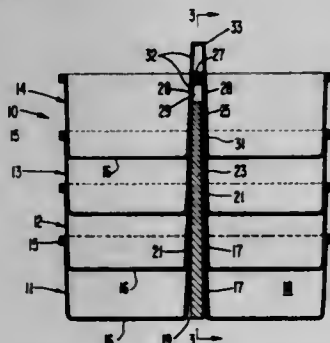
David Meade Peebles, 321 Marcy Ave.,  
Oxon Hill, Md. 20021

Continuation-in-part of application Ser. No. 630,086,  
Apr. 11, 1967. This application May 21, 1968, Ser.  
No. 730,800

Int. Cl. B65d 21/02, 1/24

U.S. Cl. 220—97

3 Claims



A plurality of separately formed containers adapted to be stacked in nested relation so as to constitute a unit, and a common carrying handle for the unit enabling the plural containers to be carried without accidental separation and allowing purposeful separation at any time.

### 3,463,354 SEPARATOR MEMBER FOR A BASKET-TYPE CARRIER

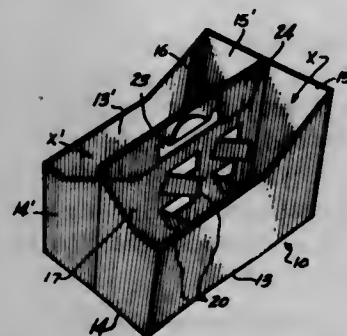
Robert J. Hickin, Seville, Ohio, assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware

Filed Mar. 6, 1968, Ser. No. 711,086

Int. Cl. B65d 75/00, 71/00, 5/46

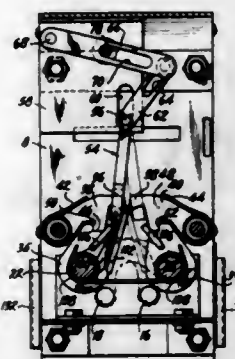
U.S. Cl. 220—115

12 Claims



A separator member for use with an open-top basket-type carrier to separate articles from one another when accommodated within the carrier. The separator member includes a panel which forms a wall of a compartment in the carrier in which the articles are disposed when the latter are arranged in upright side-by-side relation and form a row. The panel includes an elongated struck-out tab which is foldable about a foldline the axis of which is in oblique relation with respect to the longitudinal axis of the tab.

3,463,355  
**CAN AND BOTTLE VENDER**  
William E. Ural, Harper's Ferry, W. Va., assignor to Dixie-Narco, Inc., Charles Town, W. Va., a corporation of West Virginia  
Filed Feb. 16, 1968, Ser. No. 706,130  
Int. Cl. G07f 11/08; B65h 3/50; B65g 60/50  
U.S. Cl. 221—67 16 Claims



A vending machine selectively adjustable to vend either cans or bottles. When cans are vended they are arranged in two columns, both supported by a single swinging bail. When the bail is swung only part way the lower can of one column can pass the bail by entering a pocket in a side wall of the compartment while the lower can of the other column is retained by the bail, for subsequent release upon further bail movement. The compartment confines at least two vertically staggered columns of articles with a swingable bail below each column. Each bail is separately latched in its upper position and the bails are further held in that position by a common control member. When a vending cycle starts one latch is released and the control member is then moved, at a controlled rate, to permit only one bail to swing. When the next vending cycle starts the other latch is released to alternate release of articles from the columns.

### 3,463,356 AUTOMATIC DISPENSING MACHINE FOR MAGAZINES, NEWSPAPERS, BOOKS AND THE LIKE

Giancarlo Gatti, 1 Via Vela,  
2100 Varese, Italy

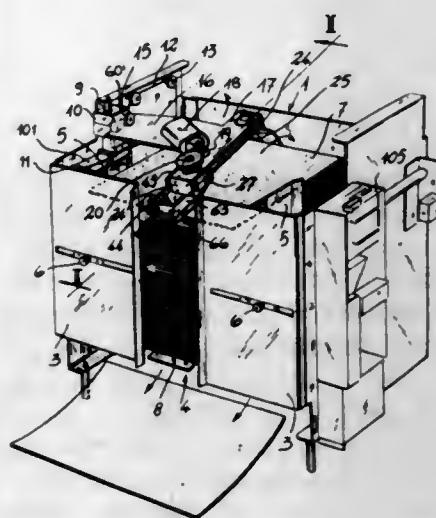
Filed Sept. 26, 1967, Ser. No. 670,562

Claims priority, application Italy, Sept. 30, 1966,  
777,747/66

Int. Cl. B65h 3/22; G07f 11/04

U.S. Cl. 221—213

7 Claims



An automatic dispensing machine for magazines, newspapers, books and the like, wherein said magazines are piled on one another within said dispensing machine and are dispensed one at a time by introducing a coin into

a coin operated mechanism. The dispensing machine comprises two hooks, one of which causes that magazine which is above the other magazines in the pile to rearwardly slide and to exit from the dispensing machine, whereas the other hook rests and presses on the magazine underlying that being ejected.

3,463,357  
**PLASTIC BAG WITH SAMPLING POUCH**  
Archibald MacLean, Jr., Glen Ellyn, and Richard M. Maskell, Downers Grove, Ill., Thomas E. Sill, Seattle, Wash., and William F. Wagner, Atlanta, Ga., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Filed Feb. 8, 1968, Ser. No. 703,993

Int. Cl. B65d 35/22; G01n 1/00

U.S. Cl. 222—94

4 Claims



A plastic bag having a filling spout portion communicating with the interior of the bag main body portion and a sampling pouch portion communicating with the filling spout portion.

### 3,463,358 MATERIAL SPREADER MEANS

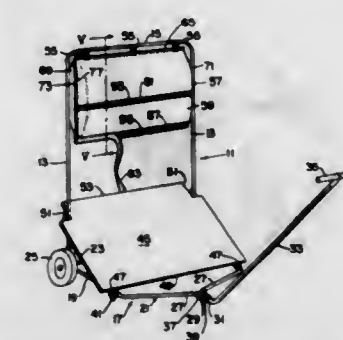
Roy F. Wenzler, 936 Hiawatha St.,  
Memphis, Tenn. 38117

Filed Jan. 11, 1968, Ser. No. 697,053

Int. Cl. B65d 37/00

U.S. Cl. 222—105

4 Claims



An apparatus for dispensing comminuted material such as fertilizer, including a rollable cart adapted to support a bag-like container having a pair of nested bags containing the material; the inner bag having two rows of perforations aligned under slots in the outer bag, with removable tear strips carried by the outer bag over the slots, and a deflector carried by the cart below the bags to spread the material over a selected area.

### 3,463,359 COLLAPSIBLE TUBE SUPPORT AND COILER

Henry H. Piggush, 194 W. River St.,  
Bourbonnais, Ill. 60914

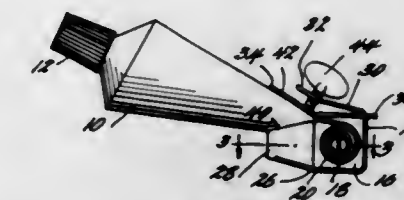
Filed Nov. 15, 1967, Ser. No. 683,232

Int. Cl. B65d 35/28, 35/34

U.S. Cl. 222—103

5 Claims

The invention is a collapsible tube support and coiler comprising an elongate channel, an elongate slotted key receiving the closed end of the tube and insertable into



so that the key and spent collapsible tube may be withdrawn for replacement of the tube without dismantling the invention, and by one of the walls being movably mounted and provided with lock means for securing the tube firmly in the device.

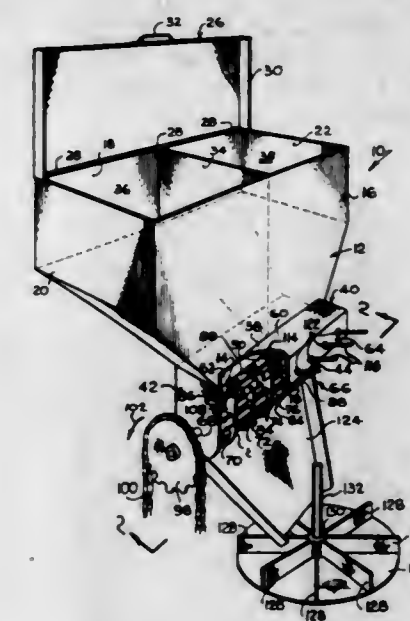
3,463,360  
**VARIABLE RATE PARTICULATE DISPENSER**  
Daniel Dorfman, Woodbury, N.Y., assignor to Lawn-A-Mat Chemical and Equipment Corporation, Mineola, N.Y., a corporation of New York

Filed Aug. 10, 1966, Ser. No. 571,569

Int. Cl. G01f 11/24

U.S. Cl. 222—139

3 Claims



A dispenser of particulate material which includes a plurality of passages between outlet means and a storage hopper so that material moves from the hopper through at least one of the passages to the outlet means where the rate of the dispensed material is controlled. It is to be understood that this abstract shall in no way constitute a limitation upon the scope of the invention and that the Letters Patent shall be limited solely by the granted claims.

### 3,463,361 FLAVORING DEVICE

Donald L. Cook and Douglas R. Hansen, Santa Monica, and Richard L. Gillespie, Sr., San Gabriel, Calif., assignors to Wham-O Mfg. Co., San Gabriel, Calif., a corporation of California

Filed Jan. 26, 1968, Ser. No. 700,812

Int. Cl. B67d 5/60; A23g 3/00; A47g 21/18

U.S. Cl. 222—144.5

10 Claims

A self-contained device for adding one or more different flavors to a liquid during intake by the drinker. The



device operates on a drinking straw principle and incorporates at least one compartment interposed in the path of liquid through which the liquid to be drunk is



circulated. Flavoring material is placed in the compartment to impart a particular taste to the liquid before exit from the device.

3,463,362

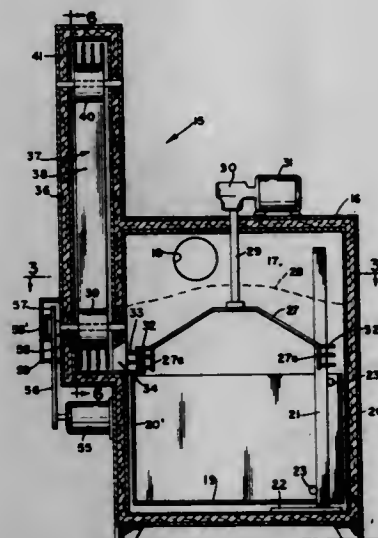
## ICE DISPENSING MACHINE

Howard A. Garber, 1010 Forest Ave.,  
Richmond, Va. 23229

Filed Dec. 5, 1967, Ser. No. 688,060  
Int. Cl. B67d 5/52; G01f 11/10

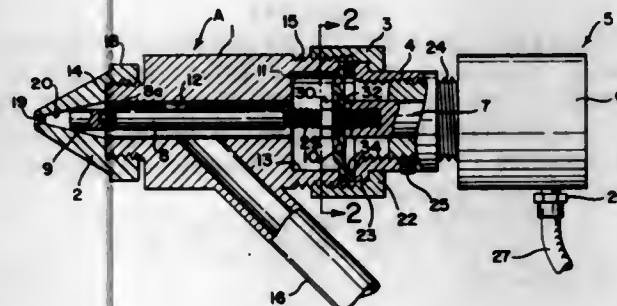
U.S. Cl. 222-254

10 Claims



An insulated housing forming a storage chamber for ice in cube, crushed or other particulate form, the ice being supported by an upwardly and downwardly movable platform which is biased upwardly in the chamber by springs. The upper portion of the chamber is provided with an outlet opening and contains a rotary impeller having sets of spaced prongs. Fixed prongs at a side of the outlet opening project into the path of the impeller prongs for discharging ice from the chamber through the outlet opening. In a more elaborate embodiment, a vertically elongated endless conveyor delivers the discharged ice to a dispensing spout and also to an ice return duct, movable deflectors being provided so that the ice may be delivered either through the dispensing spout or returned through the duct into the storage chamber, the latter procedure serving as an agitating cycle to prevent the machine from being blocked by freezing.

3,463,363  
APPLICATOR GUN  
Robert P. Zelma, Willoughby, Ohio, assignor to Fusion Incorporated, a corporation of Ohio  
Filed Oct. 12, 1967, Ser. No. 674,861  
Int. Cl. G01f 11/06, 11/30, 11/36  
U.S. Cl. 222-334 1 Claim



An applicator gun for solder paste having a pressure-operated plunger (8) mounted to reciprocate in a bore (12) of a main body (1) and a special diaphragm (10) with a central portion clamped to the piston (7) and an outer marginal portion clamped against the main body (1) by a slip ring (34) and by the flanges (22 and 23) of a cylinder support (4) and a locking ring (3). The main wall of the diaphragm (10) may be generally conical in the unstressed condition and is deformed in the assembly to provide a large axially projecting bulge (35) so that the diaphragm has an extremely long life.

3,463,364

## DISPENSING CONTAINER COVER AND SPOUT ASSEMBLY

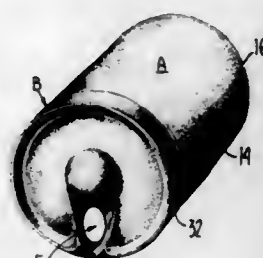
Lawrence J. Rehag, San Francisco, Calif., assignor to Logan, Carey and Rehag, San Francisco, Calif., a corporation of California

Filed Jan. 2, 1968, Ser. No. 695,250

Int. Cl. B65d 47/06

U.S. Cl. 222-480

4 Claims



This invention relates to a cylindrical container cover which is formed with its peripheral edge coincident with the side wall of the cylinder of the container to provide a means whereof the cover can be rotated thereupon, in which the cover is deformed to form a spout for pouring of contents from the container.

3,463,365

## METAL CASTING APPARATUS WITH ELECTROMAGNETIC NOZZLE

Jacques Dumont-Fillon, Metz-Queuleu, France, assignor to Institut de Recherches de la Siderurgie Française, Saint-Germain-en-Laye, France

Filed July 18, 1967, Ser. No. 654,096

Claims priority, application France, July 26, 1966, 70,807

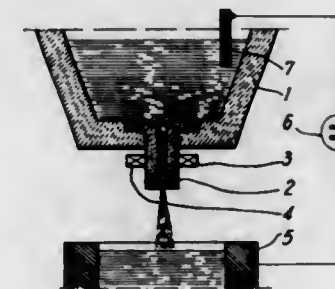
Int. Cl. B65d 47/04; B22d 11/10; F16l 55/241

U.S. Cl. 222-544

8 Claims

A metal casting apparatus having a downwardly extending nozzle formed with an axial flow passage there-

through which communicates at the upper end thereof with a container so that molten metal in the container may flow out of the same through the axial flow passage of the nozzle, and in which electromagnetic means cooperate with an electric current which is passed through



3,463,366  
PAINT CAN ATTACHMENT RING WITH POURING LIP

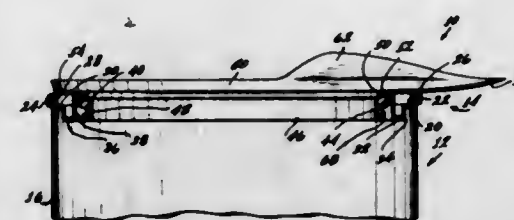
Francis D. Spencer, 5855 E. Fostoria St.,  
Bell Gardens, Calif. 90201

Filed Jan. 24, 1968, Ser. No. 700,058

Int. Cl. B65d 47/40

U.S. Cl. 222-570

1 Claim



Paint is prevented from accumulating in the gutter of a paint can brim by an attachment ring having a depending skirt which carries a first annular shoulder adapted to engage the inner periphery of the brim on a first sized paint can and a second, thicker annular shoulder adapted to engage the inner periphery of the brim of a second sized paint can. The attachment ring includes a pouring lip facilitating the pouring of paint from the paint can.

3,463,367

## PRESSING MACHINE

Rollin E. Campbell, Anderson, Ind., and Harry D. Forse, 220 Woods Road, Edgewood Addition, Anderson, Ind. 46011; said Campbell assignor to said Forse

Filed Jan. 23, 1967, Ser. No. 611,106

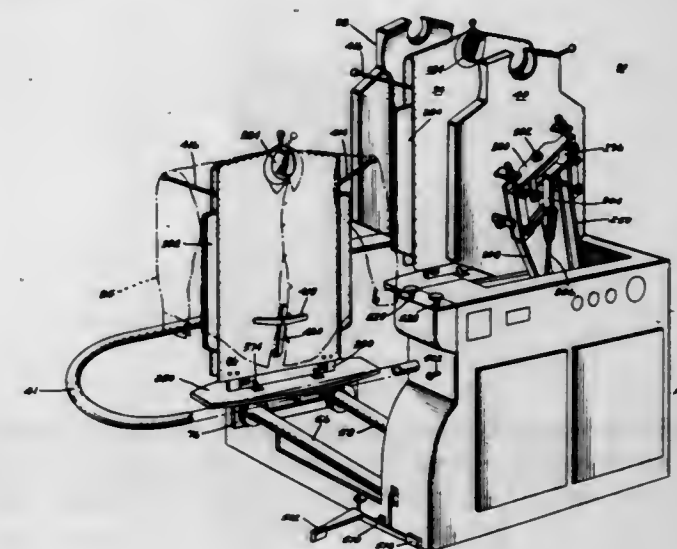
Int. Cl. D06c 15/02

U.S. Cl. 223-57

40 Claims

A pressing machine having a horizontal base frame and a pair of upright pressing bucks each movably supported above the base frame by a pair of elongated parallel arms having their lower ends pivotally connected to the base frame and their upper ends pivotally connected to the buck, each buck thus being pivotally movable in an

arcuate path between a dressing station and a pressing station. The two paths of arcuate movement of the bucks coincide at the dressing and pressing stations, but are transversely spaced apart therebetween, thus permitting the two bucks to pass each other during simultaneous re-



versing movement; i.e., movement of one buck from the dressing to the pressing station and of the other buck from the pressing to the dressing station. Pneumatic cylinders are provided for simultaneously moving the bucks in opposite directions, and a pair of heated pressing heads is provided at the pressing station.

3,463,368

## CLOTHES HANGER

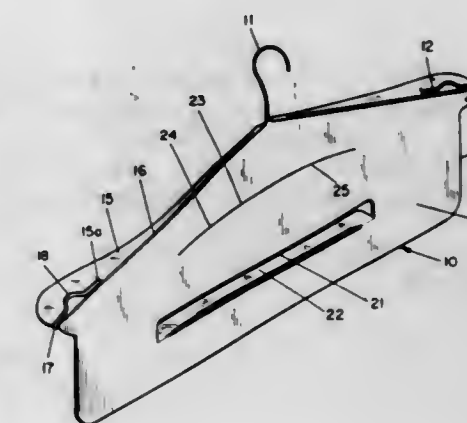
Sverre Quisling, 1240 Sherman Ave.,  
Madison, Wis. 53703

Filed May 8, 1968, Ser. No. 727,451

Int. Cl. A47j 51/08, 51/097

U.S. Cl. 223-88

5 Claims



A clothes hanger having a wire hooked portion with a pair of side shoulder extensions which extend through sloping shoulder flanges formed from a semi-rigid blank having a substantially vertically disposed flat body portion. The side shoulder extensions of the wire hook each have a loop portion engaging the top of the shoulder flanges to hold them in transversely disposed relationship with respect to the body portion of the blank. The body portion has a tab and a curved slit formed therein, the bottom edge of the tab is rolled outward to form a smooth lip for hanging folded pants at the knee with the curved slit for hanging pants at the cuff ends.



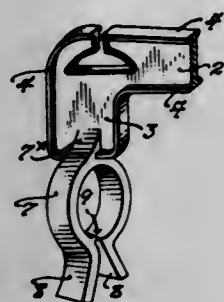
### 3,463,369 HANGER FOR GIRDLES

Murray Moskowitz, Westfield, N.J., assignor to Maidenform, Inc., New York, N.Y., a corporation of New York

Filed Mar. 27, 1967, Ser. No. 632,136  
Int. Cl. A47j 51/14

U.S. Cl. 223-91

1 Claim



A girdle hanger having a relatively wide central portion and two outwardly projecting arms, and a gripper member at the end of each arm and integral therewith, each gripper member merging into a thickened area of said arm, thence bounding approximately half of a circle, thence extending outwardly in the form of two short legs, the two legs extending in opposite directions to form levers for spring action on said semicircular portions in the passage between them of a girdle area, and the inner ends of said legs being slightly spaced for such passage.

The girdle hanger of the invention consists of a body of plastic having a relatively wide central area at the top of which is a curved hanger element. From the central area, two arms extend outwardly and thence downwardly for a short distance. The margins of the central area and arms are ribbed. To each arm extension is integrally connected a gripper in the form of two wings, each having an initial rounded formation, terminating in an arm, the two arms being slightly spaced at said rounded areas, and the arms extending in angular reverse relationship, providing a narrow slot at the bottom of the rounded areas. The flexible nature of the plastic material enables the arms to spread apart with spring action sufficient to enable insertion of a girdle body which is thus gripped by the tension of the said gripping elements.

### 3,463,370 DEVICE AT GARMENT HANGERS

Stig Erland Samuelsson, Porsevangen 27-29, Falkenberg, Sweden

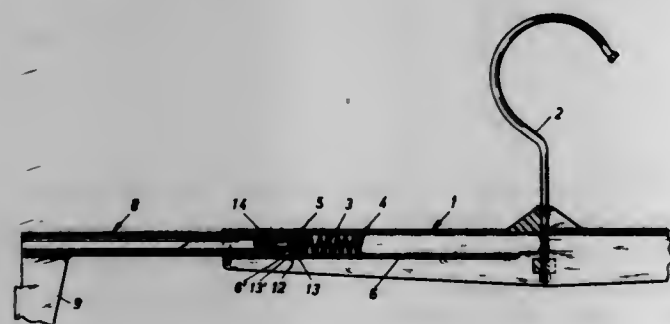
Filed Feb. 23, 1967, Ser. No. 617,987

Claims priority, application Sweden, Feb. 28, 1966, 2,559/66

Int. Cl. A47j 15/098

U.S. Cl. 223-95

2 Claims



A garment hanger manufactured entirely of plastic has means provided on the end portions for the purpose of relieving, at the adjustment operation, the stresses on the end parts gradually so that the movement of the end parts in the outward direction is safely and softly braked.

### 3,463,371 DISPENSER DEVICE

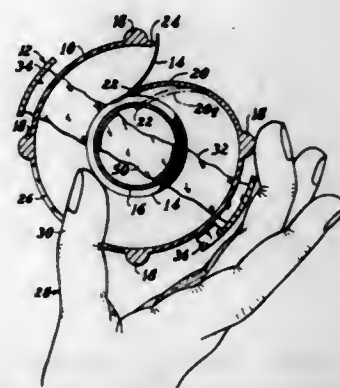
Hans F. Geiger, 5845 N. New Jersey St., Indianapolis, Ind. 46220

Filed June 13, 1966, Ser. No. 556,996

Int. Cl. B26f 3/02

U.S. Cl. 225-44

7 Claims



A dispenser device for the storing and dispensing of rolled sheeting, as from a roll-type core or tube upon which the sheeting is wrapped.

### 3,463,372 FILM PULL DOWN AND CONTROL MECHANISM FOR A MOTION PICTURE PROJECTOR

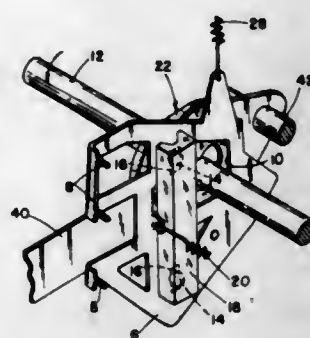
Thomas G. Kirm, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed June 23, 1967, Ser. No. 648,282

Int. Cl. B65h 17/40; G03b 1/22

U.S. Cl. 226-49

8 Claims



A film pull down and control mechanism comprising a unitary, unidirectional rotary cam and a pair of cam followers, one of which is movable relative to the cam by the control mechanism to provide "forward," "reverse" and "still" projection of the film.

### 3,463,373 LOAD EQUALIZING MECHANISM FOR A FILM PULL DOWN SYSTEM

Robert B. Johnson and Thomas G. Kirm, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed June 23, 1967, Ser. No. 648,283

Int. Cl. G03b 21/14

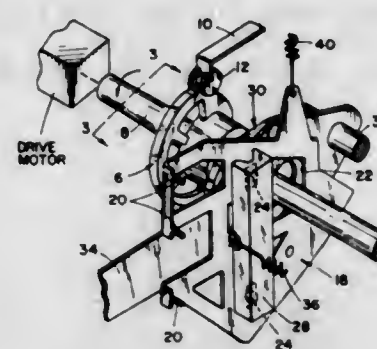
U.S. Cl. 226-49

8 Claims

A load equalizing mechanism for the fluctuating load of a film pull down system of a motion picture projector for reducing the starting torque requirements of the projector. This is accomplished by decreasing the load on the film pull down system by imparting energy to the film pull down system when the load is substantially at its maximum

value, and increasing the load on the film pull down system by absorbing energy therefrom when the load is substantially at its lowest value, thereby producing a more

advance cigars in a steady stream in spaced relation to each other over an infeed platform from which the cigars are successively elevated, one at a time, to the higher level of a discharge platform. Wrapping of the cigar begins at the elevator position to which a web of cellophane (or



### 3,463,374 WIRE THREADER IN AN ELECTRIC WELDING APPARATUS

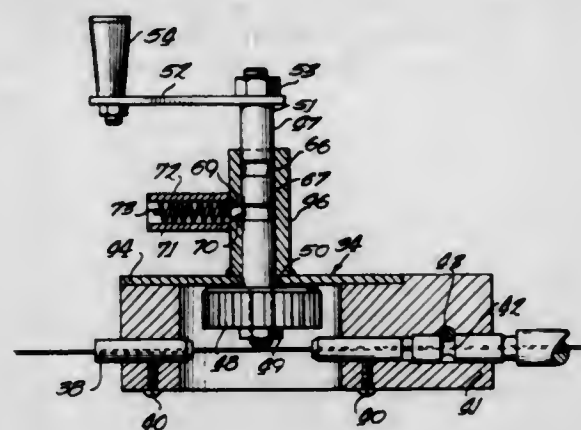
Gilbert F. Meyer, Greendale, Wis., assignor to Machinery and Welder Manufacturing Corporation, Greendale, Wis., a corporation of Wisconsin

Filed Dec. 5, 1967, Ser. No. 688,138

Int. Cl. G03b 1/56; B65h 17/20

U.S. Cl. 226-91

10 Claims



Wire threader for an electric welding apparatus for threading welding wire through a flexible conduit wherein the threader includes a body member carrying a drive shaft having a drive roll and a pressure roll mounted thereon. Detent means is provided on the drive shaft for cooperating with transverse positioning means for holding the drive roll relative to the body member, so that after the wire has been threaded the desired distance, the drive roll may be transversely moved out of contact with the wire and away from the pressure roll.

### 3,463,375 FEED MEANS FOR CIGAR OVERWRAPPING AND BANDING MACHINE

Dale R. Smith, York, Pa., assignor to York Production Engineering Co., Inc., Windsor, Pa., a corporation of Pennsylvania

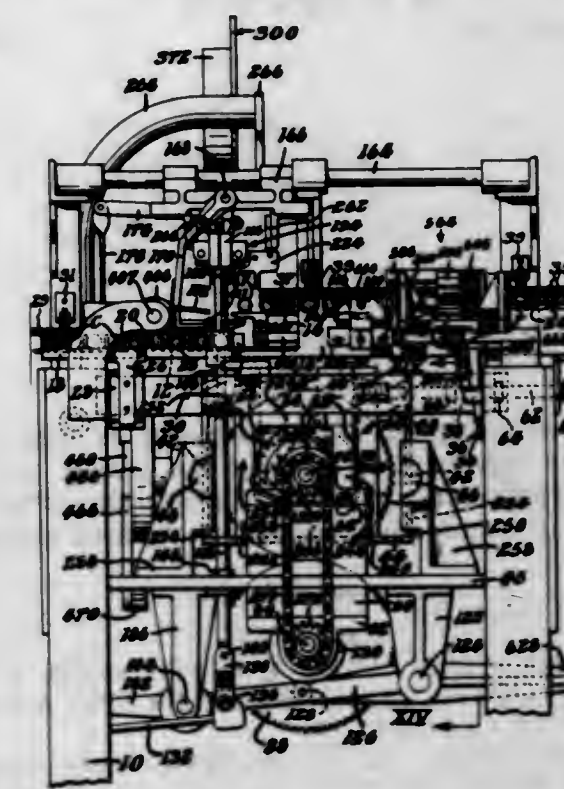
Original application July 26, 1965, Ser. No. 474,754, now Patent No. 3,411,616, dated Nov. 19, 1968. Divided and this application Oct. 4, 1967, Ser. No. 706,727

Int. Cl. B65h 17/18

U.S. Cl. 226-95

1 Claim

A cigar overwrapping and banding machine is disclosed in which a square motion finger rack is employed to



similar material) is intermittently fed by a feed mechanism. Stationary and movable suction heads coact to handle the leading end of the cellophane web to the position over the elevator, at which time it is severed from the web to form an individual wrapper.

### 3,463,376 COIL WINDING APPARATUS AND METHOD

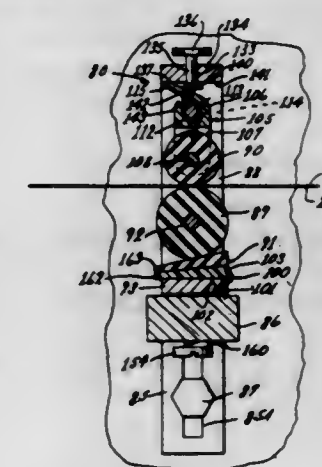
Benton A. Whiteman, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed June 27, 1967, Ser. No. 649,173

Int. Cl. B65h 17/44, 39/16

U.S. Cl. 226-148

6 Claims



This disclosure relates to an apparatus for and method of controlling material means such as an elongated strip or ribbon of material used to define a coil construction wherein such elongated strip is moved in a first direction during the winding thereof on a coil winding mandrel and across roller means while in pressure contact with such roller means to cause rotation thereof in a direction corresponding to such first direction and upon stopping the winding operation wedge means is provided and operated by the roller means in response to a change in rotation thereof caused by a change in the direction of movement of the elongated strip to thereby prevent backlash of the elongated strip.



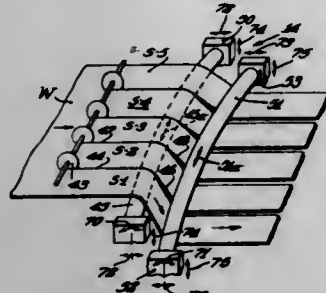
### 3,463,377 WEB SEPARATOR

Robert G. Lucas, Downingtown, Pa., assignor to Beloit Eastern Corporation, Downingtown, Pa., a corporation of Delaware

Filed Nov. 9, 1966, Ser. No. 593,085  
Int. Cl. B65h 23/26

U.S. Cl. 226—197

1 Claim



The present invention relates to a strip or sheet separator of the type used in a slit and winder arrangement and particularly to means for laterally separating a plurality of immediately contiguous separate elongated strips.

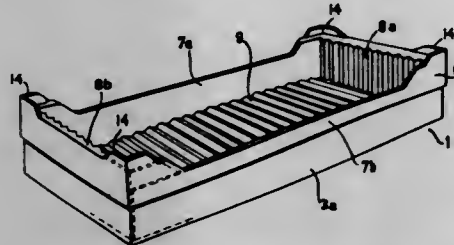
### 3,463,378 STACKABLE CONTAINER CONSTITUTED BY A CARDBOARD OUTER CONTAINER AND A PLASTIC INNER CONTAINER

Leendert van Daalen, Slikkerveer, Netherlands, assignor to N.V. Plastic Industrie van Daalen, Sliedrecht, Netherlands

Filed Dec. 12, 1966, Ser. No. 601,120  
Claims priority, application Netherlands, Dec. 16, 1965, 6516447; Oct. 3, 1966, 6613907  
Int. Cl. B65d 19/40, 21/00

U.S. Cl. 229—14

4 Claims



Container comprising a relatively strong plastic inner container surrounding a cardboard outer container in such a way that the bent-over upper edges of its upstanding walls surround the upstanding walls of the inner container.

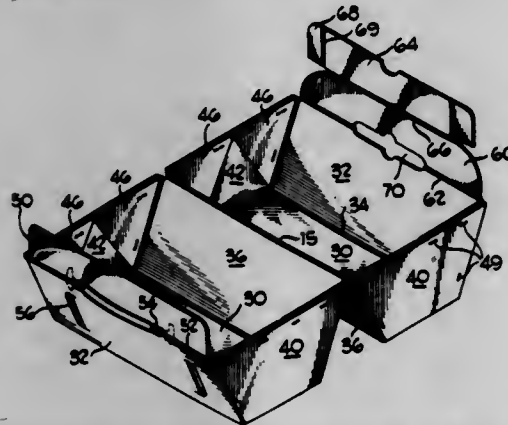
### 3,463,379 RECLOSABLE CARRYING CASE

Joseph J. Dlugopolski, Lombard, Ill., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Filed Feb. 16, 1968, Ser. No. 705,991  
Int. Cl. B65d 5/22, 5/46

U.S. Cl. 229—33

4 Claims



A paperboard, reclosable carrying case comprising a pair of box-like sections hinged interconnected at the

bottom and having, at the top, handle means and interlocking flap means.

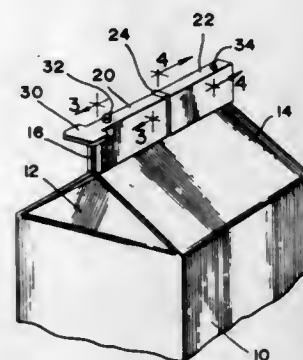
### 3,463,380 CLOSURE DEVICE FOR MILK CARTON

Mitchell Cooperstein, 320 Blue Hill Parkway, Milton, Mass. 02187

Filed Mar. 15, 1968, Ser. No. 713,383  
Int. Cl. B65d 45/04, 45/16

U.S. Cl. 229—45

1 Claim



An inverted channel member is mounted on the top ridge of a milk carton to pinch shut the forward portion of the ridge which has been split to unfold a spout for pouring the milk, the spout having been refolded to close the carton, the member being movable to an inactive position without being detached from the carton.

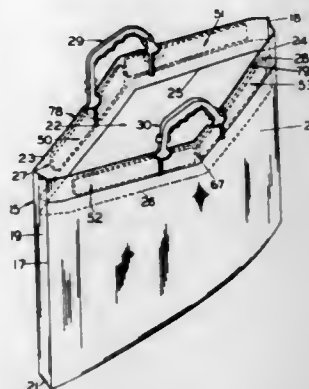
### 3,463,381 BAGS AND CARRYING HANDLES THEREFOR

Daniel Wainberg, 4755 Blvd. des Grande Prairies, St. Leonard, Montreal 38, Quebec, Canada

Filed Feb. 8, 1968, Ser. No. 704,025  
Int. Cl. B65d 31/00, 33/06

U.S. Cl. 229—54

10 Claims



The invention refers generally to a bag and carrying handle therefor, which consists of a bag body portion that may be made from polyethylene or equivalent material, and is formed from a sheet of such material which is folded in half and heat-sealed at its opposing vertical edges to complete opposing walls and a bottom wall and having an open end or mouth. The upper portions of the opposing walls terminate in borders forming opposing longitudinal channels and surrounding the mouth of the bag, the borders having slitted gaps, suitably spaced apart from one another, and located approximately intermediate of their lengths, the carrying handle consisting of a pair of handle units made from a semi-stiff flexible material, each handle unit having a hand grip from which are suspended a pair of elongated base members which are inserted through the gaps of the borders into the longitudinal channels thereof and are independently flexible and movable from each other in a cross-sectional plane and interdependently movable with one another in a longitudinal plane, and provided with integral fastening means for detachably securing the handle units together to complete the handle.

### 3,463,382 MEANS FOR OPERATING AIR COMPRESSORS IN PARALLEL WITH ALTERNATE LEAD DUTY CYCLING

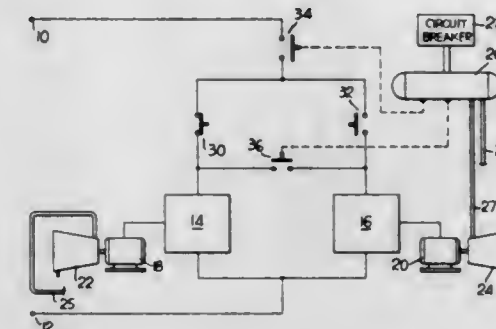
John J. Wastaney, Stoughton, Mass., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Apr. 11, 1967, Ser. No. 630,092

Int. Cl. F04b 49/06, 49/02

U.S. Cl. 230—2

2 Claims



A system for supplying compressed air to operate an air blast electric circuit breaker comprises a pair of air compressors. Each compressor is driven by its own motor which is controlled by its own motor controller. Two pressure responsive switches and a sequence relay having a pair of contacts control operation of the motor controllers so that first one and then the other of the compressors has the "lead duty" and "lag duty." For example, if system pressure is below 2400 p.s.i., both pressure switches are closed and one sequence relay contact is closed and both compressors operate. When pressure reaches 2800 p.s.i., one pressure switch opens and one compressor stops. At 3000 p.s.i., the other pressure switch opens and the other compressor stops. When pressure falls to 2600 p.s.i., the last mentioned pressure switch closes thereby causing the said one sequence relay contact to open and the other to close thereby causing the said one compressor to start up and operate until system pressure reaches 3000 p.s.i. If pressure drops to 2400 p.s.i., both compressors operate till it reaches 2800 p.s.i. and then the said other compressor continues until 3000 p.s.i. is reached.

### 3,463,383 REGULATION SYSTEM FOR GAS COMPRESSORS

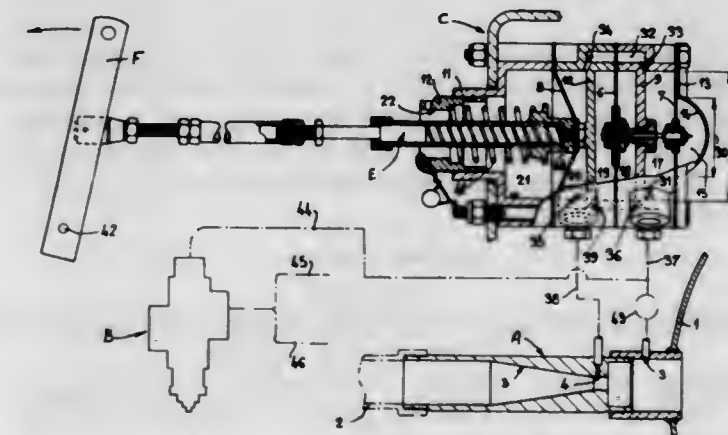
Albert Maurs, Lyon, France, assignor to Compresseurs Bernard, Curle, Venissieux, Rhone, France, a French joint-stock company

Filed Oct. 9, 1967, Ser. No. 673,601

Int. Cl. F04b 49/08; F04d 27/00

U.S. Cl. 230—10

6 Claims



A regulation system for a gas compressor has a detector A in the form of a venturi meter, and this operates a control box C which controls an operating lever F adapted to regulate the speed of the compressor motor. Because

the detector A functions independently of the absolute pressure in the reservoir 1, the compressor is regulated only in response to the flow of gas through the detector A. A sensitive diaphragm system is used in the control box C.

### 3,463,384 WEAR SENSING MEANS FOR ROTARY COMPRESSOR

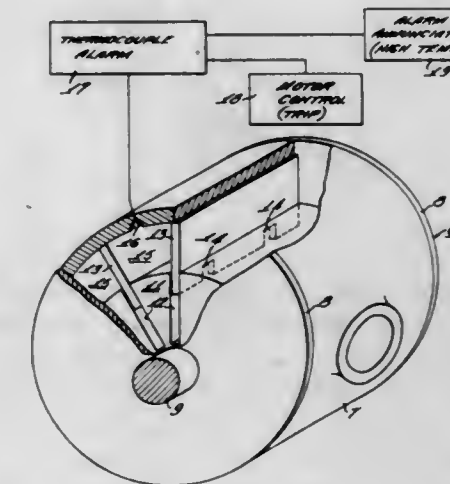
John K. Kilbane, Wauwatosa, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed July 26, 1967, Ser. No. 656,274

Int. Cl. F04b 39/00, 49/00

U.S. Cl. 230—138

5 Claims



A sliding vane rotary compressor with openings at the bottom of the vanes which short circuit adjacent pressure chambers after a predetermined amount of wear has taken place on the vanes, and means for indicating when the short circuit has occurred.

### 3,463,385 END FACE SEALING IN ROTARY PISTON VACUUM PUMP

Hansen Pfaff and Hartmut Sinn, Hanau am Main, and Maximilian Wutz, Grosskrotzenburg, Germany, assignors, by mesne assignments, to Leybold-Heraeus Verwaltung GmbH, Cologne-Bayenthal, Germany

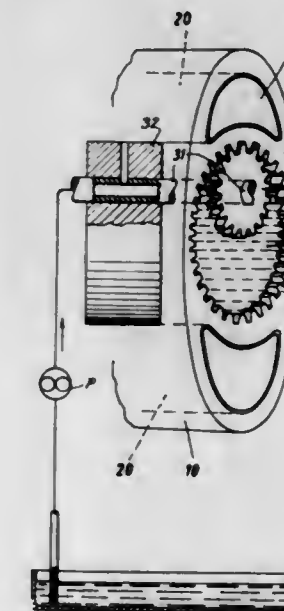
Filed Oct. 6, 1967, Ser. No. 673,337

Claims priority, application Germany, Oct. 26, 1966, H 60,864

Int. Cl. F04c 17/02, 27/00

U.S. Cl. 230—145

6 Claims



An eccentrically operated hollow piston has oil ducts formed therein for the continuous supply of oil to the piston hollows from an oil supply source. The ducts may be supplied with oil through a hollow driving shaft for the piston.



3,463,386

## FLUID SUPPORTED PISTON

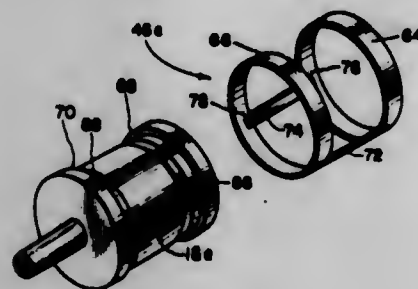
Frank D. Howe and Allen D. Groves, Painted Post, N.Y., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Filed Oct. 6, 1967, Ser. No. 673,424

Int. Cl. F04b 39/02, 39/00

U.S. Cl. 230-188

14 Claims U.S. Cl. 233-1



A reciprocating piston movably disposed in a cylinder bore and carrying sealing means peripherally enclosing a chamber which extends circumferentially along the piston for a substantial portion of the length thereof. A passage means, formed through the wall of the cylinder bore, communicates with the chamber throughout the reciprocation of the piston and supplies pressurized fluid thereto, whereby such fluid supports the piston within the cylinder bore.

3,463,387

## OIL CIRCULATION IN ROTARY PISTON VACUUM PUMP

Hansen Pfaff and Hartmut Sinn, Hanau am Main, and Maximilian Wutz, Grossrotzenburg, Germany, assignors, by mesne assignments, to Leybold-Heraeus-Versorgung GmbH, Cologne Bayenthal, Germany

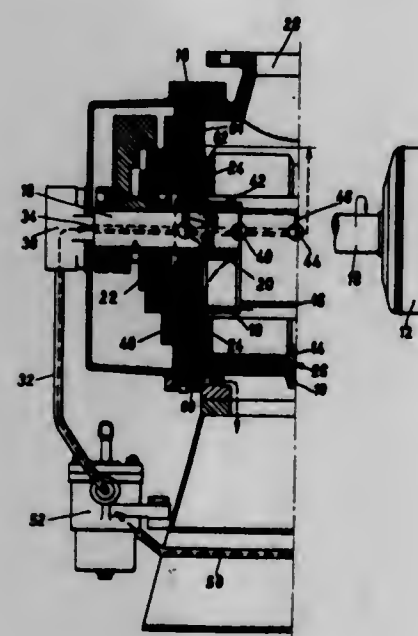
Filed Oct. 6, 1967, Ser. No. 673,336

Claims priority, application Germany, Oct. 29, 1966, H 60,894

Int. Cl. F04c 29/02; F04d 29/06

U.S. Cl. 230-207

3 Claims U.S. Cl. 235-201



A lubricating and sealing fluid circuit comprises at least one duct in the rotary piston and a third guide channel in each end surface of the piston.

3,463,388

## CENTRIFUGES

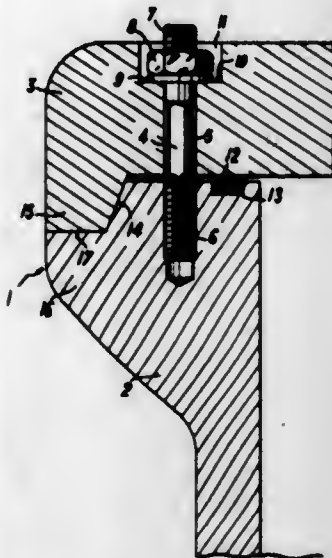
Benjamin Salmon, Suresnes, France, assignor to Commissariat à l'Énergie Atomique, Paris, France

Filed Dec. 27, 1967, Ser. No. 693,996

Claims priority, application France, Jan. 6, 1967, 90,301

Int. Cl. B04b

4 Claims



Improvement made in centrifuges for the interassembly of the lateral shell and of the bases of the bowls or rotary elements of machines of this type. The improvement consists in joining said shell to each of said bases with interposition of a seal by means of studs which are spaced around the periphery of said shell and traverse said base at right angles to its plane, as well as in assembling said shell and each base in interfitted relation along a contact surface which is inclined to the center-line of said bowl and along a second surface which is perpendicular to said center line.

3,463,389

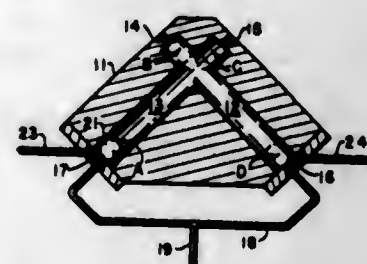
## FLUID ACTUATED LOGIC DEVICE

Richard C. Mott, Harwood Heights, Ill., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Nov. 21, 1967, Ser. No. 684,655

Int. Cl. G06m 1/12; G05d 11/02

7 Claims



A pneumatic ball-type logic device that performs a bistable function in response to a series of fluid pressure pulses. The ball is disposed in a chamber consisting of two intersecting passages and causes the output pressure to be switched in accordance with its movement from one passage to the other.

3,463,390

## PNEUMATIC AIR TEMPERATURE CONTROL FOR AIRCRAFT CABINS

Edward William Radtke, Bloomfield, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Jan. 23, 1968, Ser. No. 699,865

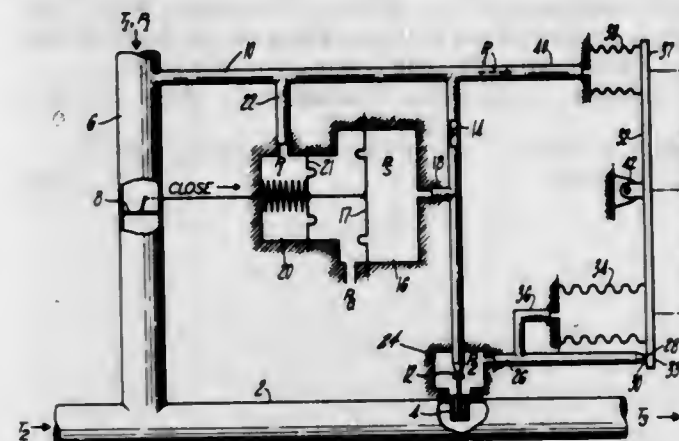
Int. Cl. G05d 11/16, 23/13; F15c 3/14

U.S. Cl. 236-13

9 Claims

Means are provided for maintaining an artificial ambient pressure surrounding the variable area orifice of a

pneumatic temperature control system (which heretofore exhausted to a widely varying low pressure sink) such



that the ratio of the pressure of the source of servo fluid and the artificial ambient pressure is substantially constant.

3,463,391

## AIR DUCT ASSEMBLY, PARTICULARLY FOR A STABLE OR THE LIKE

Antonius J. T. Haegens, Horst, Limburg, Netherlands, assignor to Big Dutchman International, A.G., Wezep, Netherlands, a corporation of Switzerland

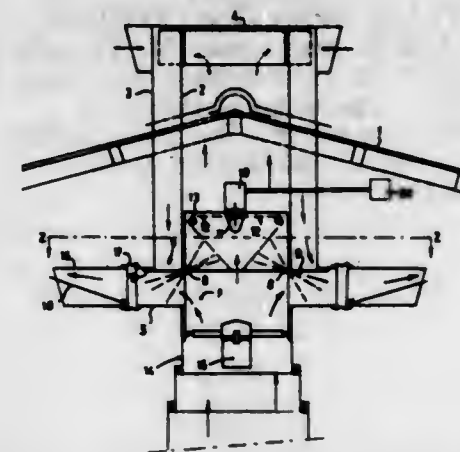
Filed Apr. 24, 1968, Ser. No. 723,653

Claims priority, application Netherlands, Apr. 26, 1967, 6705872

Int. Cl. F24f 7/06, 13/06

U.S. Cl. 236-49

11 Claims



An air duct assembly for replenishing air in a stable or the like while removing warm air therefrom, and/or recirculating warm air in the stable, in variable proportions and in a continuous manner, said assembly being mounted centrally in the roof of the stable and being controlled by a temperature regulator. The assembly includes a pair of vertical coaxial tubes extending through the roof of the stable and valving means for controlling the volume of air drawn in through and expelled out from such tubes.

3,463,392

## AUXILIARY HEATER FOR AUTOMOTIVE VEHICLES

Heino Schallert, Stuttgart-Wellmendorf, Germany, assignor to Robert Bosch GmbH, Stuttgart, Germany

Filed June 19, 1967, Ser. No. 646,858

Claims priority, application Germany, Aug. 16, 1966, B 88,497

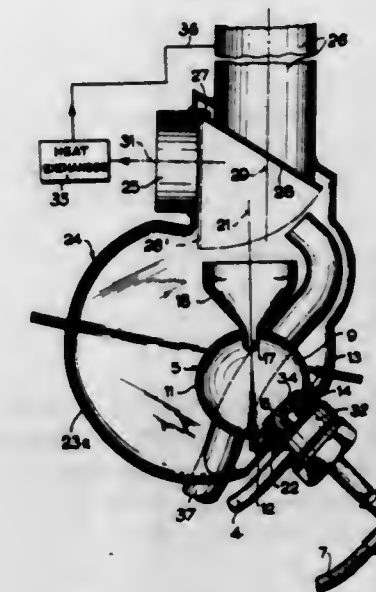
Int. Cl. F23c 3/02; B60h 1/02

U.S. Cl. 237-12.3

10 Claims

A hollow spherical combustion chamber of an auxiliary heater is installed in the resonance chamber of the muffler in an automotive vehicle and the resonance cham-

ber has a valve-controlled outlet which can admit combustion products to a heat exchanger which heats air that is being admitted into the passenger compartment or cabin of the vehicle. The combustion chamber has a slit-shaped discharge aperture for admission of combustion products into the resonance chamber and an inlet opening which accommodates certain parts of an assembly serving to ad-



mit and burn a fuel-air mixture in the combustion chamber. Such assembly comprises a carburetor, a pump which conveys a mixture of fuel and air from the carburetor to the combustion chamber, and a spark plug which is energized to produce sparks at desired intervals so as to effect pulsating ignition of the mixture which is being supplied to the combustion chamber.

3,463,393

## TRACK FOR TOY RAILWAYS OR THE LIKE

Artur Fischer, 133 Gruenmettstr.,

7241 Tumligen, Germany

Filed Dec. 27, 1966, Ser. No. 664,819

Claims priority, application Germany, Jan. 19, 1966, F 48,201; Feb. 3, 1966, F 48,332

Int. Cl. E01b 23/00

U.S. Cl. 238-10

15 Claims



A track for toy railways or other types of miniature conveyances. Comprises two or more parallel H-shaped rails each having a flat web and two wheel-supporting heads extending along the edges of the web. The web has openings to receive coupling members of building blocks which are used as cross ties, either singly or in end-to-end arrangement.

One or both heads of a rail may consist of two current-conducting portions and a separator of insulating material therebetween. Building blocks may be used as stiffeners between the cross ties, as supports for overhead conductors, and/or as supports for the track.



### 3,463,394 INSULATED RAIL FASTENER

Alfred Iltyd Webber Jones, Surrey, and Trevor Paul Brown, Kent, England, assignors to Lockspike Limited, London, England, a British company

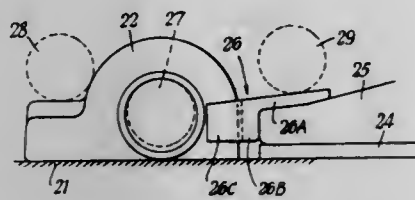
Filed Nov. 15, 1967, Ser. No. 683,203

Claims priority, application Great Britain, Oct. 11, 1967, 46,480/67

Int. Cl. E01b 9/28

U.S. Cl. 238—338

6 Claims



A device for electrically insulating a railway rail from parts for securing it consists of an elongate metal member of substantially L-shaped cross-section and an electrically insulating member snap-fitted on the metal member and extending across those faces of the limbs of the L which are on the inside of the angle of the L and around the tip of each limb. Projections on one of the two members prevent the device from sliding along the rail. The device is placed on the edge of the rail flange with one limb of the L between a resilient rail-fastening member and the top of the flange and the other limb of the L between the edge of the rail flange and an anchoring member. The rail-fastening member engages said metal member and the insulating member insulates the flange from the rail-fastening member and from the anchoring member.

### 3,463,395 SPRAY GUN NOZZLE HEADS

Michel L. Binoche, Paris, France, assignor to S.K.V., Societe Anonyme, Stains, Seine St. Denis, France, a French company

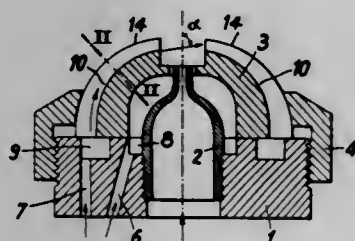
Filed Jan. 3, 1967, Ser. No. 606,798

Claims priority, application France, Jan. 6, 1966, 45,031

Int. Cl. B05b 5/08, 1/26

U.S. Cl. 239—15

7 Claims



An atomizing head for paints, varnishes or other liquids comprises a nozzle positioned coaxially within an orifice of a spherical cap. The cap has a pair of grooves lying upon a great circle of the cap with one pair of groove ends adjacent the nozzle and the other pair adjacent the cap base. Compressed gas flows between the nozzle and the cap, drawing paint from the nozzle. A second stream of compressed gas flows around the cap in the grooves because of the wall effect and is used to control the paint.

### 3,463,396 TEMPERATURE-CONTROLLED SPRAYER APPARATUS

George Borel, Bennekom, Netherlands, assignor, by mesne assignments, to Plessey Fabrieken N.V., The Hague, Netherlands, a corporation of the Netherlands

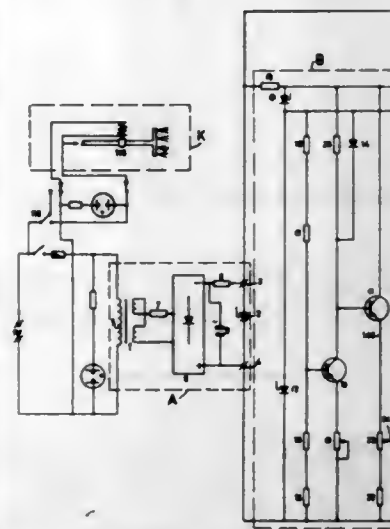
Filed Aug. 22, 1967, Ser. No. 662,521

Claims priority, application Netherlands, Aug. 26, 1966, 6612025

Int. Cl. B05b 17/04; F16k 17/38; G04c 23/10

U.S. Cl. 239—70

7 Claims



The invention relates to a sprayer apparatus for spraying slips and plants with water, the duration of the spraying time and of the pauses between sprayings being exclusively determined by the environmental temperature.

### 3,463,397 FLUID SPRAYING SYSTEM

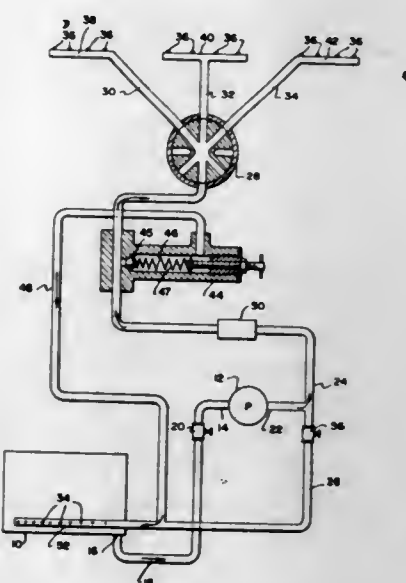
Charles D. Mecklin and James M. Francis, Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed July 3, 1967, Ser. No. 650,806

Int. Cl. B05b 1/16, 9/00

U.S. Cl. 239—126

1 Claim



A fluid spraying system in which means are provided to recirculate a fluid mixture during the time that chemicals are being replenished by dissolution or dispersal in a fluid carrier to form a homogeneous mixture in order to prevent clogging of various parts of the system or applying a concentration of chemicals before complete mixing is accomplished. It is important that the pressure regulator, strainer, and distribution valve be kept as free from clogging as possible. This invention includes means for insuring that all the chemicals are completely dispersed before the fluid mixture is allowed to circulate through the whole system.

### 3,463,398 MATERIAL SPREADER DEVICE FOR HELICOPTERS

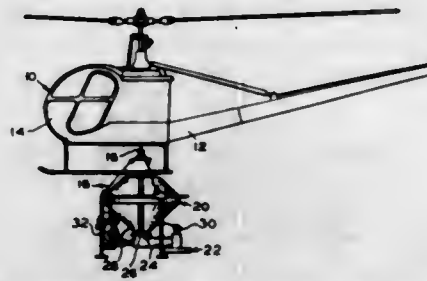
Delford M. Smith and Ward Eason, McMinnville, Oreg., assignors to Evergreen Helicopters, Inc., McMinnville, Oreg., a corporation of Oregon

Continuation of application Ser. No. 632,696, Apr. 21, 1967. This application Nov. 21, 1968, Ser. No. 785,434

Int. Cl. B64d 1/18; B05b 17/02; A01c 19/00

U.S. Cl. 239—171

17 Claims



This specification discloses a granular material spreading apparatus for helicopters which includes as its central component a single material supply tank which is suspended by a three-cable sling from the depending cargo hook on the underside of a helicopter. The sling can be readily released from the cargo hook with the tank either suspended in flight or supported on the ground. Legs attached to the tank support it in an upright position when resting on the ground surface. The tank has a top filler opening and a bottom opening through which granular material flows by gravity directly into the forward end of an auger housing fixed to the bottom of the tank. The auger housing extends rearwardly from the bottom tank opening to a slinger device, and an auger within the housing feeds material from beneath the tank opening into the slinger, with the rate of feed being determined by the speed of rotation of the auger. The auger and slinger are independently driven by separate hydraulic powered motors so that the rate of feed and width of swath can be separately controlled.

In one modification of the apparatus, the hydraulic system which supplies pressure fluid to the auger and slinger motors is carried by the supply tank. The flow of pressure fluid to the motors is controlled remotely from the helicopter through an electrical switch which operates a solenoid valve in the hydraulic circuit incorporating the slinger and auger motors. In a second modification of the apparatus, pressure fluid is supplied to the auger and slinger motors beneath the tank through flexible hydraulic supply and return lines extending to power takeoff connections in conjunction with a pressure source on the helicopter.

### 3,463,399 DIE LUBRICANT SPRAYING APPARATUS

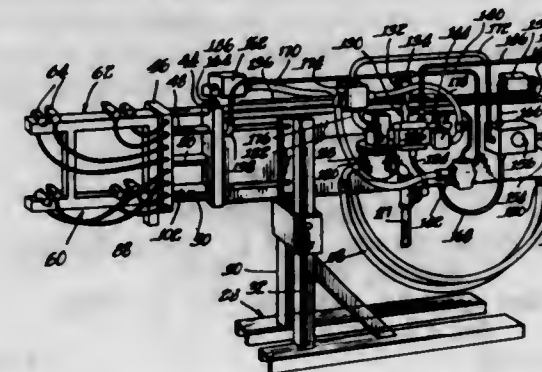
Richard J. Ott, Baroda, Mich., assignor to Respond Inc., Baroda, Mich., a corporation of Michigan

Filed June 26, 1967, Ser. No. 648,615

Int. Cl. B05b 3/18

U.S. Cl. 239—186

7 Claims



There is disclosed an apparatus including a readily replaceable manifold and spray head assembly for simul-

taneously delivering a plurality of lubricant sprays to predetermined areas of dies in a die casting machine. The manifold and spray head assembly may be easily changed for adapting the system to different dies and for servicing. Lubricant and air control means are included for selectively delivering the fluid at the desired time and for directing air blasts only against the dies for cooling purposes.

### 3,463,400 SPRAY DRYER

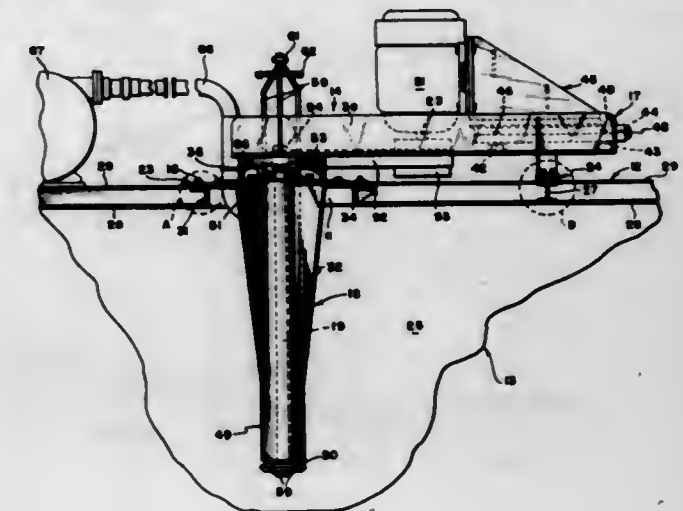
Roland E. Miller, Orangeville, and Clyde D. Wayne, Wilmette, Ill., assignors to National Dairy Products Corporation, Chicago, Ill., a corporation of Delaware

Filed Jan. 17, 1968, Ser. No. 698,634

Int. Cl. B05b 3/10; B01d 1/22

U.S. Cl. 239—223

5 Claims



Atomizing apparatus is described for mounting in an opening in the top wall of a drying tank. The apparatus includes a rigid frame assembly mounted by a flange portion over the opening in the top wall by vibration damping means distributed about the opening. The frame supports a centrifugal atomizer which extends through the opening. A motor is mounted rigidly on an outrigger portion of the frame assembly and drives the atomizer. Vibration damping means are also positioned on the outrigger outwardly of the motor thereon and secure the outrigger to the top wall of the drying tank.

### 3,463,401 AUTOMATIC SPRINKLING DEVICE

Henri Cobigo, 15 Rue Leon Morane, Paris 15, France

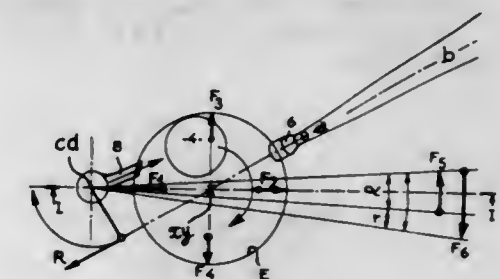
Filed Jan. 9, 1967, Ser. No. 608,182

Claims priority, application France, Jan. 11, 1966, 45,427; June 6, 1966, 64,264

Int. Cl. B05b 3/08, 3/18, 3/16

U.S. Cl. 239—231

12 Claims



This invention relates to an automatic sprinkler comprising a sprinkling nozzle carried by a body member pivoted on a fixed support member and formed with an internal cavity of revolution in which water is made to whirl and thus to drive into rotation a ball enclosed

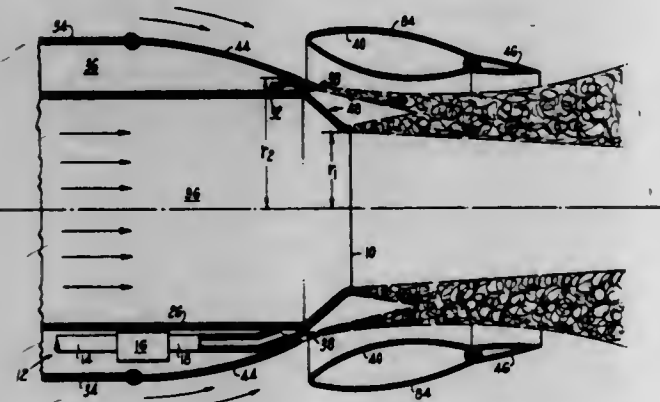


within said cavity. The rotating ball periodically impedes the flow of water, and imparts to the body member an oscillatory motion around its support. A rotary motion may be additionally imparted to said body member, either by the reaction of the water jet, or by transforming said oscillatory motion. The sprinkler may further incorporate means for periodic reversal of said rotary motion, and means for parting and deflecting the water jet.

3,463,402

## JET SOUND SUPPRESSING MEANS

Chandos E. Langston, Jr., North Palm Beach, Fla., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware  
Filed Dec. 28, 1966, Ser. No. 605,454  
Int. Cl. B64d 33/06; B64c 15/10  
U.S. Cl. 239—265.13 13 Claims

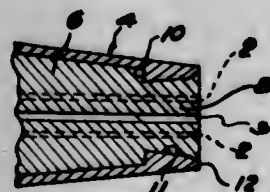


A gas turbine engine having an exhaust flow means which will reduce the perceived noise level associated with the discharge of a high velocity gas jet or jets. An exhaust duct having flaps at the rear end thereof having a pod thereon onto which blow-in doors are pivotally mounted to open inwardly toward said duct. An annular body being positioned rearwardly of said pod with its inner surface forming an inlet passageway with each blow-in door when it is in its inward position. Nozzles means are located in the annular body for a balance between engine performance and noise suppression. Means are provided for inducing turbulence where the blow-in doors end in an inward position. Said turbulence inducing means can comprise means for directing a gas flow into said passageways or involve some other devices which project into said passageways.

3,463,403

## TORCH TIP GUARD

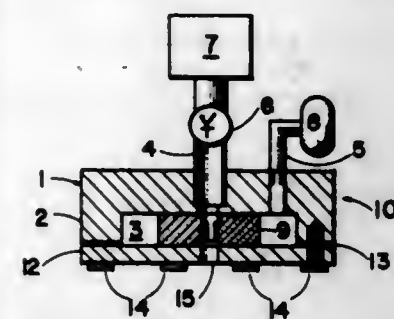
Daniel A. Marra, Sr., 641 E. Elm St., Palmyra, Pa. 17078  
Filed Aug. 2, 1967, Ser. No. 657,919  
Int. Cl. B05b 15/06; F23d 13/24  
U.S. Cl. 239—288.5 3 Claims



The invention resides in a protective metal cap or collar enclosing the exposed flame end of all forms of gas scarfing, gouging, cutting and welding torches.

3,463,404  
GAS BOUNDARY LAYER VARIABLE AREA ORIFICE

John L. Jennings, Palos Verdes, Calif., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware  
Filed Dec. 21, 1966, Ser. No. 603,502  
Int. Cl. B23d 11/10; B05b 17/04  
U.S. Cl. 239—418 1 Claim

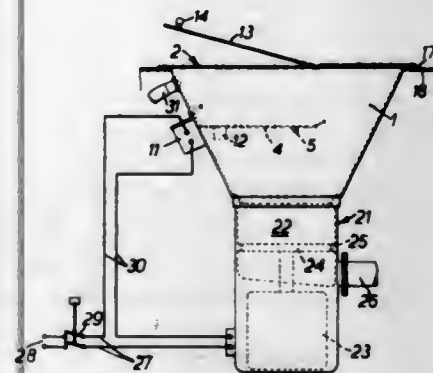


A system for maintaining flow patterns through an orifice in line throttled liquid flow systems. An orifice is drilled through a porous member and pressurized gas is caused to flow inwardly through the porous member forming a boundary layer around the orifice. The boundary layer automatically adjusts the effective area of the orifice with changes in liquid flow rate caused by line throttling.

3,463,405

## MATERIAL COMMUNION APPARATUS

Thomas Cropper Ryley Shepherd, Bridstow, England, assignor to Peter Scott Shepherd, Bridstow, England  
Filed Feb. 8, 1967, Ser. No. 618,264  
Claims priority, application Great Britain, Feb. 10, 1966, 5,823/66  
Int. Cl. B02c 7/14, 23/02  
U.S. Cl. 241—36 4 Claims



Hopper receiving waste material to be comminuted wherein the material passes downwardly of the hopper to an electrically driven comminutor. A pivoted platform across the hopper in its operative position retains cutlery and also prevents direct passage to the comminutor. A magnetic proximity switch in the electric motor circuit actuated by the platform prevents operation of the comminutor unless the platform is in its operative position.

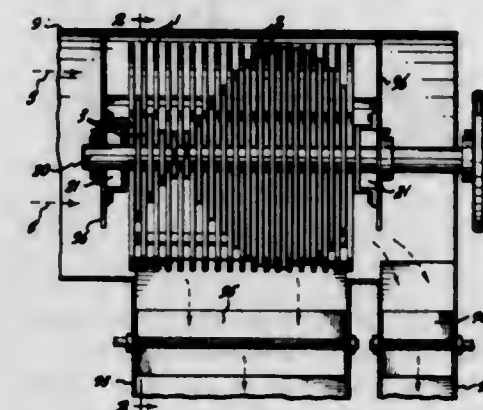
3,463,406

## NUT HARVESTER

Merrill N. Musgrave, 1610 E. Boston Terrace, Seattle, Wash. 98102  
Filed Aug. 24, 1967, Ser. No. 662,976  
Int. Cl. B02c 17/02, 23/02  
U.S. Cl. 241—86 6 Claims

Macadamia nuts grown in Hawaii are harvested by lifting them from the ground beneath the trees, where they have fallen. Suction is commonly employed, as it is elsewhere and for other nuts. Suction picks up husks,

leaves, twigs, and even bits of light volcanic rocks, as well as the nuts. It is necessary to separate such trash from the nuts in the simplest and most direct manner, and it is to this object that the present invention is directed. Such separation is effected in the suction duct, wherein all the material picked up passes through a cylindrical cage defined by non-rotative rings spaced axially by a distance approximating the smallest nut it is intended to collect, all such material being acted upon as it starts axially through the cage by a series of generally radially directed rotating blades, the tips whereof extend between adjacent rings, these blades being spaced axially by a distance less than the size of the smallest nut that is to be

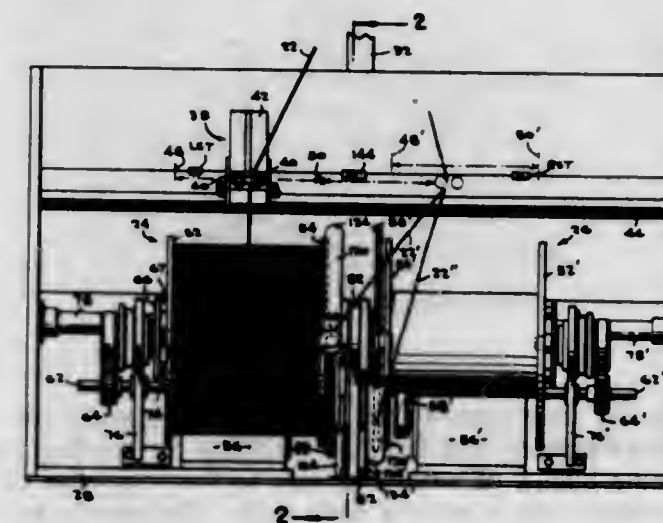


saved. The relative rotation of the blades and of the rings tends to effect some breaking up of the trash, while the blades, the leading edges whereof define a helix, advance the nuts that enter at one end towards an exit at the other end. Additionally, yet optionally, non-rotative teeth that lie in planes intermediate the rotating blades will engage bits of trash tending to rotate with the blades, and so will break up the same. Thereby nuts and trash are separated at a single point in the short suction duct, the nuts passing to bins or sacks, and the trash falling upon the ground or being otherwise disposed of. The length of the harvester is thereby kept short, and it is easily maneuverable.

3,463,407

## AUTOMATIC REEL WINDING CHANGEOVER METHOD AND SYSTEM

Oreste A. Minardi, Barrington, and Dickran Manoglian, Cranston, R.I., assignors to The Eastwistle Company, Providence, R.I., a corporation of Rhode Island  
Filed Apr. 3, 1968, Ser. No. 718,441  
Int. Cl. B65h 67/04  
U.S. Cl. 242—25 15 Claims



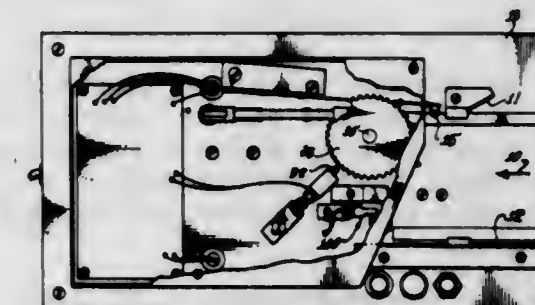
A dual-reel wire reel changeover system having first and second pivotable snagger shields respectively associated with snaggers adjacent first and second coaxial reels

with a wire guide shiftable from a wire delivery position adjacent a driven full reel to a wire delivery position adjacent a driven empty reel with control means for moving the shield associated with the full reel into shielding relation with the snaggers on the full reel to enable engagement of the wire solely by snaggers mounted adjacent the rim of the empty reel for movement of the wire into contact with a cutting knife on one edge of the shield associated with the empty reel and for subsequent reeling of the wire onto the empty reel.

3,463,408

## RECORDING TAPE CARTRIDGE RUN-IN APPARATUS

Kirk R. Armstrong, Costa Mesa, Edward C. Mikolczyk and Carl S. Nelson, Los Angeles, Calif., assignors to Capitol Records, Inc., Hollywood, Calif., a corporation of California  
Filed June 28, 1967, Ser. No. 649,501  
Int. Cl. G11b 15/32; B65h 25/32, 17/42  
U.S. Cl. 242—55.19 6 Claims

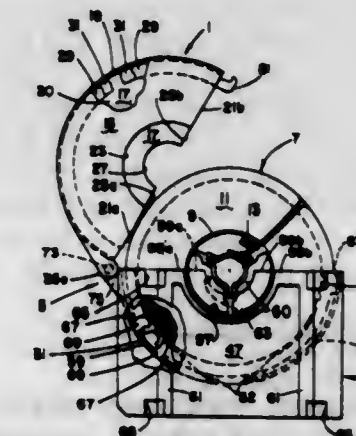


Apparatus for receiving a cartridge containing an endless loop of magnetic recording tape incorporating a short strip of sensing tape and automatically rapidly advancing the tape loop through a complete cycle to equalize and adjust tape tension and then ejecting the cartridge upon detection of the sensing tape strip. Electrical control circuitry is provided for acceleration of a capstan drive mechanism at a predetermined slow rate to a steady state high tangential velocity, independent of load variations, and for quickly actuating an ejection mechanism upon detection of the sensing strip.

3,463,409

## CARTRIDGE

Daniel J. Stark, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Filed Nov. 24, 1967, Ser. No. 685,683  
Int. Cl. G03b 1/04  
U.S. Cl. 242—71.1 8 Claims



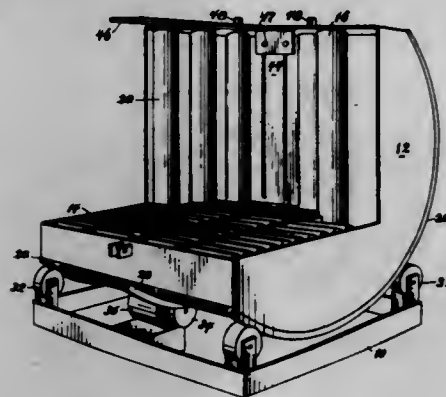
A cartridge for receiving a reel containing motion picture film or other strip material comprises two separate cartridge parts joined together by a hinge structure which opposes inadvertent separation of the cartridge parts.



3,463,410

**COIL HANDLING APPARATUS**

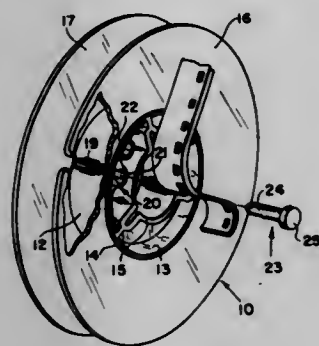
Peter William Carpenter, West Falls, N.Y., assignor to The Air Preheater Company, Inc., Wellsville, N.Y., a corporation of Delaware  
 Filed Dec. 21, 1967, Ser. No. 692,423  
 Int. Cl. B21c 47/24; B65g 7/00  
 U.S. Cl. 242—79 4 Claims



A device for handling heavy coils of metallic strip material on which the coils of strip material may be placed on one position, easily shifted to another position substantially normal thereto, and then unrolled therefrom with no intermediate handling to afford minimum handling before eventual use.

3,463,411

**REEL AND WEB RETAINING MEANS THEREFOR**  
 Morris E. Brown, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
 Filed Nov. 24, 1967, Ser. No. 685,589  
 Int. Cl. B65h 75/28 7 Claims  
 U.S. Cl. 242—74.1



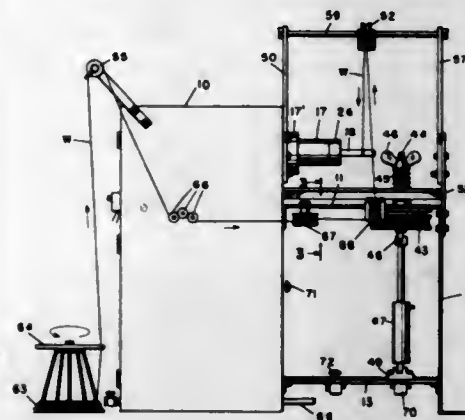
A retaining pin is provided for releasably retaining the end portion of a web to a reel therefor, and for preventing improper orientation of the reel when it is placed in a cartridge or other compartment. The end portion to be retained is inserted into a slot of a sleeve formed in the reel hub. The retaining pin is inserted into the sleeve to engage and resiliently bend the web end portion around the sleeve wall. A storage sleeve also is formed as a part of the reel, for storage of the pin when the latter is not in use.

3,463,412

**WIRE AND CORD WINDING MACHINE**

Edmund McCaffray, Jr., and John F. Kursevich, both of 2800 Sisson St., Baltimore, Md. 21211  
 Filed Nov. 9, 1967, Ser. No. 681,827  
 Int. Cl. B21f 17/00 4 Claims  
 U.S. Cl. 242—7.19  
 An apparatus for wrapping a wire or cord around the handle of a broom, mop, duster and the like and head to

attach the head to the handle, having a hollow power rotated spindle for receiving the handle therethrough, a chuck at one end of the spindle for gripping the said handle, a series of pulleys for guiding a wire or cord from

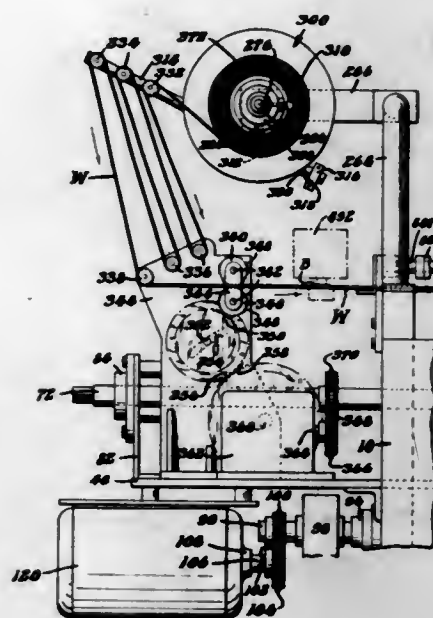


a storage reel to the vicinity of the rotating spindle and a number of fluid pressure actuated devices for operating a clutch between the source of power and rotating spindle and for braking the latter and for operating the spindle chuck and controlling the tension in the wire or cord.

3,463,413

**CIGAR WRAPPER TENSION MACHINE**

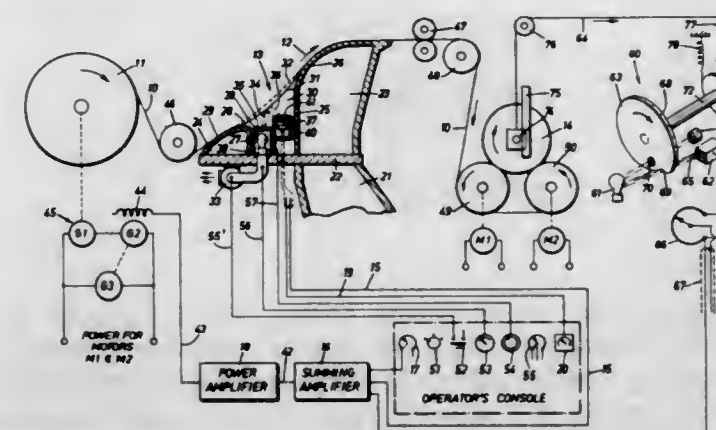
Dale R. Smith, York, Pa., assignor to York Production Engineering Co., Inc., Windsor, Pa., a corporation of Pennsylvania  
 Original application July 26, 1965, Ser. No. 474,754, now Patent No. 3,411,616, dated Nov. 19, 1968. Divided and this application Oct. 4, 1967, Ser. No. 706,726  
 Int. Cl. B65h 25/22 2 Claims  
 U.S. Cl. 242—75.43



Cyclically intermittent feed means are disclosed for a cigar overwrapping and banding machine for feeding the exact same length of wrapping web to the wrapping station during the feed part of each cycle. During the non-feed part of the cycle, energy stored in a spring during the feed part of the cycle is used to extract wrapping web from the supply roll and store it in a substantially inertialess storage area, thereby avoiding overfeeding by the supply roll due to inertia in an intermittent form of feed.

3,463,414

**SYSTEM FOR REGULATING WEB TENSION**  
 Peter de Hertel Eastcott, Peterborough, Ontario, Canada, assignor to Canadian General Electric Company Limited, Toronto, Ontario, Canada, a corporation of Canada  
 Filed Apr. 22, 1968, Ser. No. 722,873  
 Claims priority, application Canada, Apr. 29, 1967, 989,211  
 Int. Cl. B65h 25/22 9 Claims  
 U.S. Cl. 242—75.44

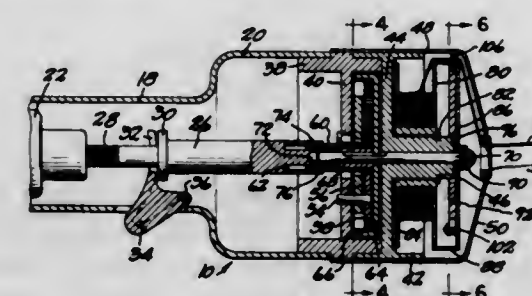


A closed loop system for regulating the tension in a moving web of paper compares an electrical reference signal representing a particular web tension with an electric signal representing a measure of tension to obtain a tension control signal. The measured signal is obtained by drawing a loop in the web with constant suction and beaming light onto its outer curved surface at an angle that reflects light from the surface according to curvature onto an array of solar cells which generate an electric signal representing web tension. The control signal is modified by a third electric signal obtained from a program synchronized with the web handling equipment. This third signal is varied according to the diameter of the roll of web being wound, and as a result, web tension now varies with roll diameter.

3,463,415

**ELECTRICALLY OPERATED SPIN TYPE FISHING REEL**

Jesse C. Lingle, R.R. 1, Box 508, Coloma, Mich. 49038  
 Filed July 7, 1967, Ser. No. 651,908  
 Int. Cl. A01k 89/00 10 Claims  
 U.S. Cl. 242—84.2

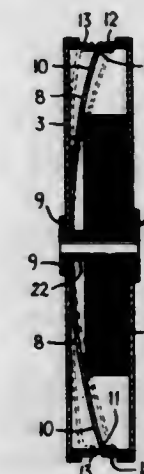


An electrically operated spin type fishing reel having a manual control for a drive motor and a manual actuator for adjusting a multiple part line retrieving mechanism between casting line snubbing and retrieving positions which manual parts are located adjacent each other for selective manipulation by a finger of a user's hand gripping the reel. The drive connection between the motor and the line retrieving mechanism includes gearing which remains in mesh in all operating positions of the device.

865 O.G.—44

3,463,416

**BRAKE FOR LINEAR MEASURING INSTRUMENT HAVING A METALLIC TAPE**  
 André Quenot, Doubs, France, assignor to Quenot & Cie S.A.R.L., Doubs, France, a company of France  
 Filed Aug. 29, 1967, Ser. No. 664,026  
 Claims priority, application France, Jan. 6, 1967, 90,208  
 Int. Cl. B65h 75/16, 75/32, 59/16 5 Claims  
 U.S. Cl. 242—84.8

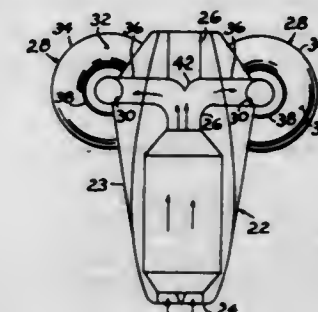


Brake for the metallic tape of a linear measuring instrument which brakes the last coil of the wound tape regardless of its state of unwinding. The brake can consist of at least one elastic branch centrally maintained and which is pre-curved to bear against this last coil.

3,463,417

**DIRECTIONAL CONTROL MEANS FOR HIGH TURBULENCE AND VELOCITY OF FLUID FLOW OVER AN AIRFOIL ASSEMBLY**

Luis Roberto Cruz, 2817 S. Dewey, Apt. C-10, Norman, Okla. 73069  
 Filed June 8, 1967, Ser. No. 644,622  
 Int. Cl. B64c 29/00, 15/06; B64d 27/18 3 Claims  
 U.S. Cl. 244—23



In an aircraft a substantially circular airfoil having an upper arcuate surface merging with a depending substantially semi-elliptical outer wall is connected with or positioned adjacent means providing a stream of heated fluid. Conduit means communicating with the stream of heated fluid directs the latter outwardly over the airfoil surfaces for generating a vertical thrust.

3,463,418

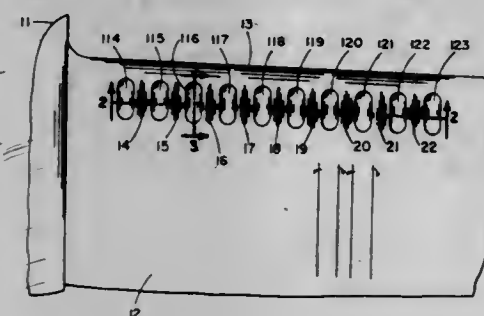
**VORTEX GENERATOR FOR AIRPLANE WING**

Edmond S. Milksch, 30K Pembroke Court, Rte. 286, Pittsburgh, Pa. 15239  
 Continuation-in-part of application Ser. No. 599,776, Dec. 7, 1966. This application Mar. 20, 1968, Ser. No. 729,855  
 Int. Cl. B64c 3/16 3 Claims  
 U.S. Cl. 244—41

Airplane wings and fuselages are described which have improved lift and less drag. Corrugations are placed upstream of regions where counterflow is expected. The alter-



nating grooves and ridges of the corrugations are so shaped that they deflect the air flowing along the surface,



forming vortices trailing downstream and serving to bring fast moving air into the boundary layer.

3,463,419

## VARIABLE-GEOMETRY VEHICLE

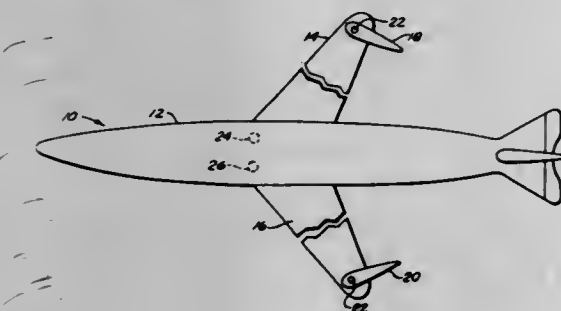
Rashid M. Rashidian, Pomona, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed Aug. 17, 1967, Ser. No. 661,324

Int. Cl. B64c 3/40

U.S. Cl. 244-46

4 Claims



An arrangement for positioning the wings of a variable-geometry aircraft by means of aerodynamic flow across vertical fins located at the wing tips; thus generating side-wise forces that deploy or retract the wings—and using said fins as control surfaces.

3,463,420

## INFLATABLE WING

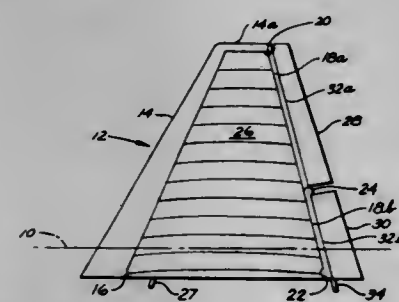
Charles A. Butler, San Pedro, and Dustin W. Carter, Anaheim, Calif., assignors to North American Rockwell Corporation

Filed Feb. 28, 1968, Ser. No. 709,001

Int. Cl. B64c 3/46

U.S. Cl. 244-46

12 Claims



Apparatus for providing an aircraft with a variable-area wing; the wing having a rigid leading edge, a rigid trailing edge that carries control surfaces, and an inflatable intermediate area—so that the wing may be deflated and retracted for high-speed flight, and may be inflated and deployed for low-speed travel.

3,463,421  
JET-PROPELLED AEROPLANES.  
Henryk Pypłuk, Preston, England, assignor to British Aircraft Corporation Limited, London, England, a British company

Filed July 19, 1967, Ser. No. 657,464

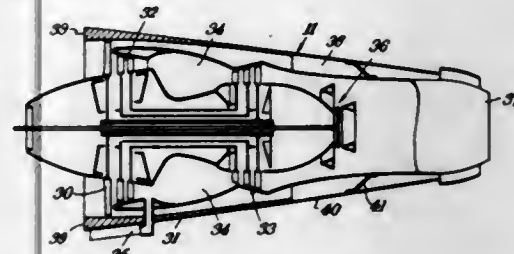
Claims priority, application Great Britain, July 27, 1966,

33,812/66

Int. Cl. B64c 1/16; F02k 3/00

U.S. Cl. 244-54

8 Claims



A jet-propelled aeroplane having a tail mounted gas turbine engine in which the engine outer shell forms a structural element of the fuselage, supporting and transmitting to the fuselage the engine thrust and weight and other loads while constituting a continuation of the fuselage surface. The shell is formed with a leading flange, or mounting ring for attaching it in cantilever to a bulkhead at the end of the fuselage.

3,463,422

## CONTROL OF AIRCRAFT

Ian A. Watson, Century Works, Lewisham, London, SE. 13, England

Filed Jan. 30, 1967, Ser. No. 612,537

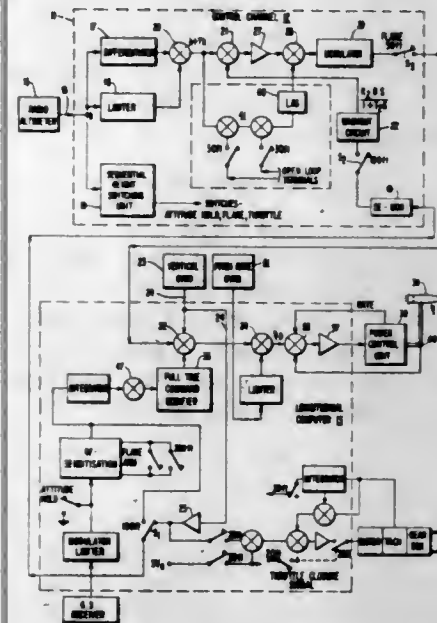
Claims priority, application Great Britain, Jan. 29, 1966,

4,057/66

Int. Cl. B64c 13/50, 19/00

U.S. Cl. 244-77

2 Claims



A height plus height rate signal and a lagged signal of height plus height rate are used with high gain without sacrificing dynamic stability in an aircraft automatic landing system, by additionally using a washed out pitch attitude signal.

3,463,423

## ELECTROMECHANICAL FORCE FEEL SYSTEM FOR AIRCRAFT CONTROL STICK

Bartlett Wong, Boston, Mass., and Harold H. Burke, Bel Air, Md., assignors to Martin Marietta Corporation, New York, N.Y., a corporation of Maryland

Filed Feb. 16, 1968, Ser. No. 706,012

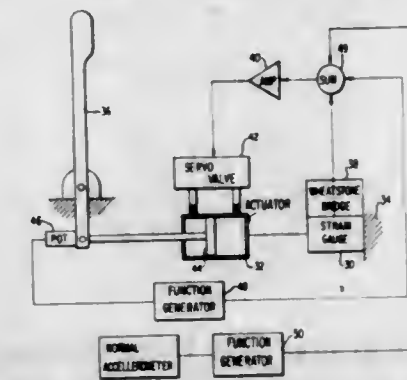
Int. Cl. B64c 13/46, 13/04

U.S. Cl. 244-83

4 Claims

A force feel is electromechanically generated on an aircraft control stick by applying a voltage function pro-

portional to desired force to a force follower loop. The force follower loop senses the applied voltage proportional to desired pilot force and develops via a servo valve



and actuator, having a piston connected to the control stick the desired feel force. The force sensor is connected between the actuator housing and mechanical ground to prevent stick oscillations from developing undesired forces.

3,463,424

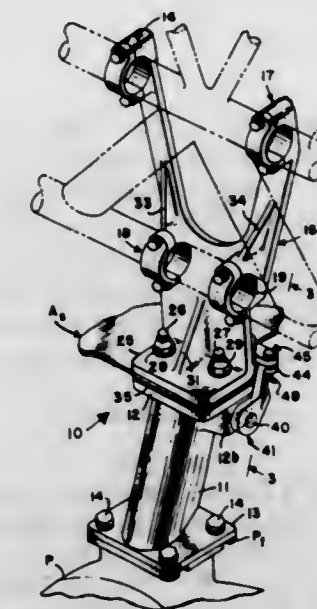
QUICK DISCONNECT MECHANISM FOR SECURING AUXILIARY EQUIPMENT TO AN AIRCRAFT  
Phillip R. Pickell, Las Vegas, Nev., assignor to Agricultural Aviation Engineering Company, Las Vegas, Nev., a corporation of California

Filed Feb. 23, 1968, Ser. No. 707,665

Int. Cl. B64d 1/00, 47/00

U.S. Cl. 244-131

5 Claims



A quick disconnect mechanism in which a fork mount is fixedly secured inside of an aircraft with a flange positioned against the inside surface of the aircraft skin. A pair of stud members secured to this flange project outside through the skin. The fork mounted stud members are releasably engaged inside passageways formed on opposite sides of a mating flange at one end of an aerodynamically-stabilized pylon. The other end of the pylon is fixedly secured to the auxiliary equipment. A locking shaft disposed transverse to the stud members is rotatably mounted in the pylon flange. In the open position of rotation of the locking shaft, recesses in the shaft circumscribe the stud member passageways so that the pylon flange is free to move relative to the stud members. And in the locked position of rotation, non-recessed solid portions of the locking shaft are seated in conforming recesses of the stud members, thereby retaining the stud members

in the passageways when it is desired to secure the auxiliary equipment to the aircraft. When it is desired to remove this auxiliary equipment, the locking shaft is rotated back to the open position and the pylon flange can be quickly withdrawn from the fork mounted stud members.

3,463,425

APPARATUS FOR STABLY LOWERING AIRCRAFT  
Tatsusaburo Hibi, 2735, 2-chome, Nishisugamo, Toshima-ku, Tokyo-to, Japan

Filed Feb. 23, 1968, Ser. No. 708,481

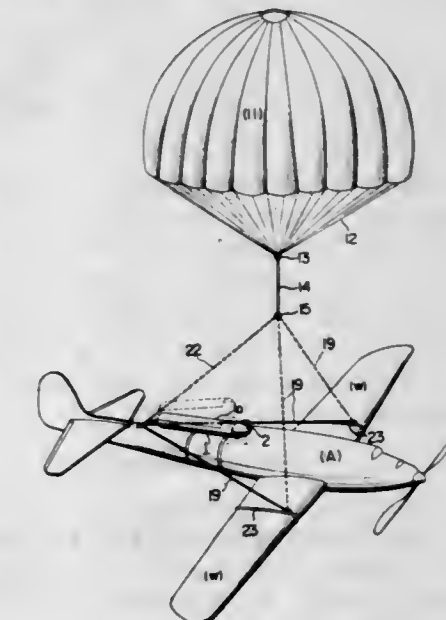
Claims priority, application Japan, Oct. 6, 1967,

42/64,467

Int. Cl. B64d 17/80

U.S. Cl. 244-139

3 Claims



A parachute mounted on an aircraft airframe can be operated in an emergency during flight from a point within the aircraft or from a remote point by radio to eject a parachute and its suspension gear from a storage housing, whereupon the parachute opens to suspend the aircraft through shroud lines, a load or suspending line, and a three-line bridle sling connected to the wings and tail portion of the aircraft and thereby to cause the aircraft to descend stably to earth.

3,463,426

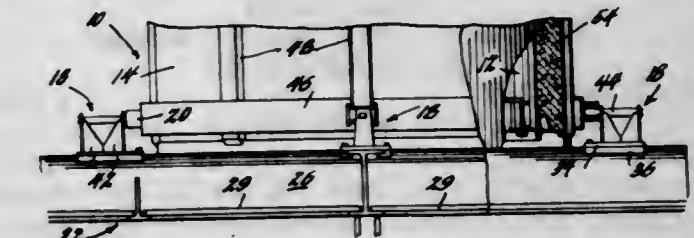
FLEXIBLE SUPPORT FOR CONCRETE PIPE MOLD  
Philip L. Waddington, Jr., Brantford, Ontario, Canada, assignor to Concrete Pipe Machinery Company, Sioux City, Iowa, a corporation of Iowa

Filed Sept. 30, 1966, Ser. No. 583,178

Int. Cl. E02d 27/44; F16f 15/04

U.S. Cl. 248-22

6 Claims



The invention disclosed is a concrete vibrating mold support comprising a plurality of radially, horizontally disposed rails, bracing means between adjacent rails, each rail having a mold supporting tongue adjustably mounted on the rail, and mating pockets for the tongues arranged circumferentially about the lower end of the mold.



3,463,427

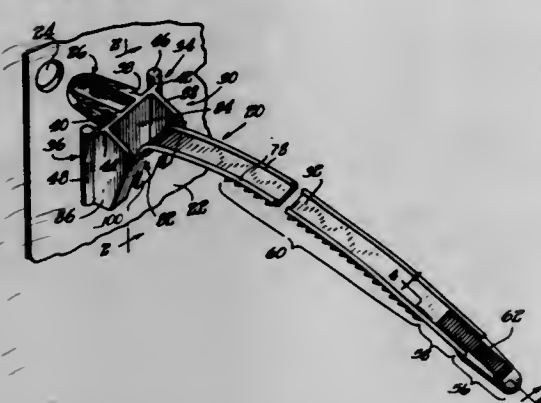
## CABLE STRAP

Julian V. Fisher, Carpentersville, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Aug. 7, 1967, Ser. No. 658,772  
Int. Cl. F16l 3/22

U.S. Cl. 248-68

16 Claims



This invention relates generally to a clamp assembly for encompassing a group or bundle of wires or cables. More specifically, this invention relates to an integrally formed cable strap including a body section having a latch tooth and a flexible strap section which extends from and is received in the body section to position one tooth of a plurality of teeth on the strap section for locking engagement with the latch tooth.

3,463,428

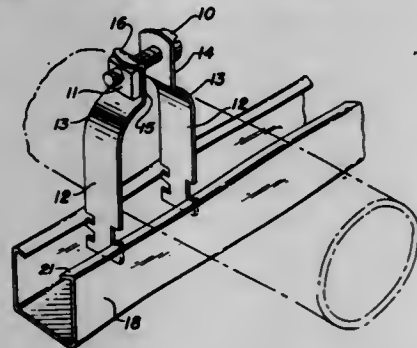
## MULTI-PURPOSE PIPE CLAMP

Robert D. Kindorf, 448 Scenic Ave., Piedmont, Calif. 94611, and David O. Kindorf, 6257 Glavin Drive, Oakland, Calif. 94611

Filed June 20, 1967, Ser. No. 647,558  
Int. Cl. F16l 3/24, 3/08; E04g 17/18

U.S. Cl. 248-72

2 Claims



A clamp for securing pipe to channel-shaped pipe supports of at least two different configurations and capable of being used with more than one pipe or conduit size on each type of channel.

3,463,429

## GARBAGE CAN COVER DEVICE

Joseph F. Novak, 220 N. First, East Grand Forks, Minn. 56721

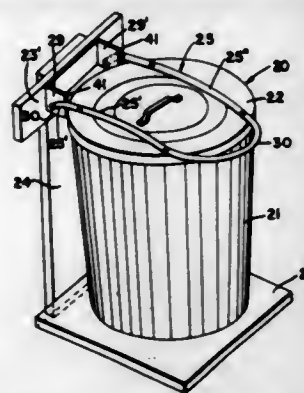
Filed Aug. 24, 1967, Ser. No. 663,100  
Int. Cl. A47g 23/02

U.S. Cl. 248-147

2 Claims

A garbage can cover device having a garbage can receptacle with an annular open top, an annular garbage can cover slidably fitted over the top of the receptacle, a platform for supporting the receptacle, said platform having a back wall mounted thereto, a U-rod extending over the top of the garbage can in flush relationship with the apex of the U-rod projecting beyond the forward edge of the garbage can cover, said back wall having a U-shaped bracket of resilient material with projecting flanges said legs of said U-rod being pivotally mounted to said projecting flanges of said U shaped bracket, said

flanges of said U-bracket being inclined downward toward one another from a vertical plane whereby said



flanges will tend to urge said U-rod downward to urge said cover into a closed position over the top of the receptacle.

3,463,430

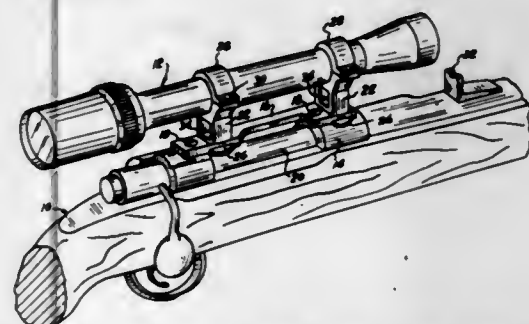
## MOUNTING MEANS FOR RIFLE TELESCOPIC SIGHTS

Irving Rubin, 21781 Stratford, Oak Park, Mich. 48237, and Ivan Jimenez, 1780 Outerlane Drive, Ypsilanti, Mich. 48197

Filed Nov. 24, 1967, Ser. No. 685,512  
Int. Cl. F41g 1/38

U.S. Cl. 248-205

1 Claim



A mounting system for a rifle telescopic sight comprises a pair of cradle type mounts in combination with a pair of upper clamps and a lower mounting plate. The cradle mounts are sufficiently high to raise the telescopic sight above the line of vision through the fixed rifle sights, and are provided with a large longitudinal aperture to permit sighting directly through these cradle mounts when it is desired to use the fixed sights rather than the telescopic sight.

3,463,431

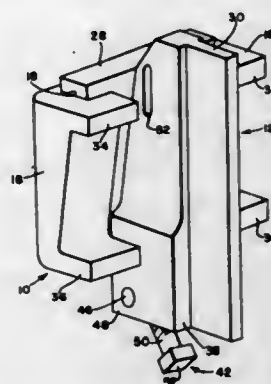
## WEDGE POCKET VIBRATOR MOUNTING

Carl G. Matson, 401 E. Central Blvd., Kewanee, Ill. 61443

Filed Nov. 2, 1967, Ser. No. 680,209  
Int. Cl. B65g 67/24; F16m 1/00

U.S. Cl. 248-224

2 Claims



A wedge pocket type of mounting for a vibrator useful in the field of materials-handling, in which a male member is insertable in the pocket of a female member and drawn therein and held in place by screw means as distinguished from the usual cross wedge means.

3,463,432

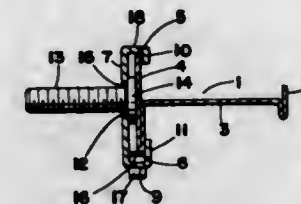
## SUSPENSION CLIPS

Willbur F. Ptak, Middleburg Heights, Ohio, assignor to Fastway Fasteners, Inc., Lorain, Ohio, a corporation of Ohio

Filed Dec. 11, 1967, Ser. No. 689,664  
Int. Cl. E04b 1/40; F16b 2/24

U.S. Cl. 248-228

4 Claims



A suspension clip is provided which is attachable to a beam by a simple lateral movement, and has incorporated therein means for resiliently bearing against one edge of the beam for securing the clip against removal from the beam in a direction perpendicular to the general plane of the clip.

3,463,433

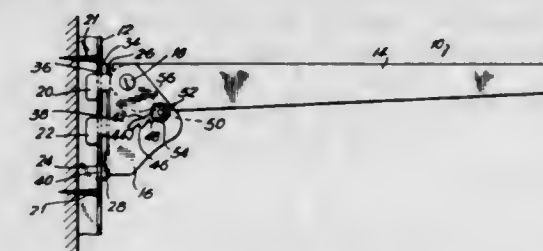
## ADJUSTABLE BRACKET

Robert R. Stein, Mamaroneck, and Stanley H. Coe, Sloatsburg, N.Y., assignors to Grant Pulley and Hardware Corporation, West Nyack, N.Y., a corporation of New York

Filed Aug. 8, 1967, Ser. No. 659,147  
Int. Cl. A47b 43/00, 55/00; A47g 29/02

U.S. Cl. 248-242

5 Claims



A boltless bracket having one part connectable to a slotted vertical support and a second part pivotally connected to said first part. The first part has a support member slidably positioned about an arc about the pivot point for adjustable supporting the second part in predetermined selected positions of tilted adjustment with respect to the vertical support.

3,463,434

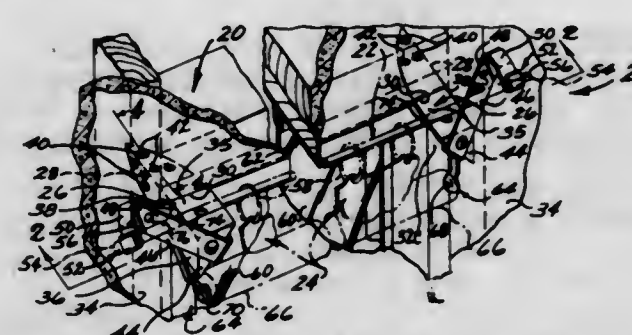
## CURTAIN-ROD-MOUNTING OR TRAVERSE-DRAPERY-ROD-MOUNTING BRACKET APPARATUS

Walter Kowalczyk, 14647 Brest, South Gate, Mich. 48192

Filed Oct. 19, 1967, Ser. No. 676,596  
Int. Cl. A47h 1/14

U.S. Cl. 248-257

9 Claims



The specification discloses bracket apparatus which includes a mounting molding-strip-corner-engaging penetrating member having a rear end adapted to be forcibly

driven into a junction region between a molding strip corner and a wall carrying same and having a forward end effectively provided with a forwardly-extending projection member having attached an engagement means co-operable for removable supporting attachment and engagement with respect to a corresponding portion of a horizontally directed supporting member, such as a curtain rod or a traverse drapery rod, in a position outwardly adjacent to a wall surface for use in supporting curtains, draperies, or the like, thereon.

3,463,435

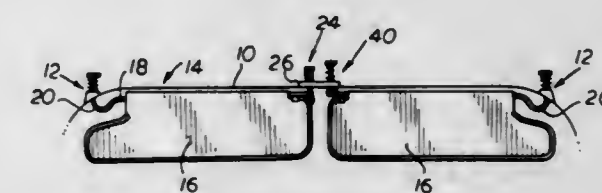
## SUN VISOR RETAINER FOR AUTOMOTIVE VEHICLES

Charles B. McGrew, Jr., Fort Wayne, Ind., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Nov. 2, 1967, Ser. No. 680,119  
Int. Cl. F16b 45/00; E04g 17/18; B60j 3/00

U.S. Cl. 248-305

4 Claims



Releasable retaining means for securing the swingable support arm of an automobile sun visor when the sun visor is in a normal position. The retaining means includes a slidably supported shaft member which is capable of moving between an extended position where it is capable of operatively engaging the sun visor support arm so as to secure the same in its normal position and a released and retracted or non-projecting position wherein it is substantially withdrawn from the interior of the automobile body.

3,463,436

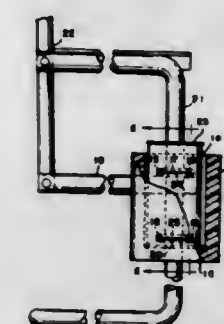
## COASTER

William A. Foster, Jr., % General Design Co., 2713 Goodwood Road, Baltimore, Md. 21214

Filed Nov. 21, 1967, Ser. No. 684,766  
Int. Cl. A47k 1/09

U.S. Cl. 248-311

9 Claims



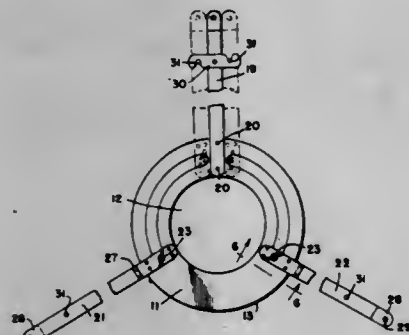
A coaster for conventional liquid containers, such as tumblers, cans of beer, cans and bottles of soft drinks, etc. is provided in the form of a tubular wall of foamed plastic material. One end of the wall is closed while the other end is open. Apertures are provided in the tubular wall for the reception of flexible linear members, such as beaded chains, having fastening means for attaching the device to a post. The interior of the wall is provided with channels between the apertures for the recessing of portions of the linear members therebetween to provide an un-



obstructed surface for liquid containers placed therein within the limits of its diameter. Alternatively, the wall may be upwardly tapered to provide a free space within the diameter limits of its upper end.

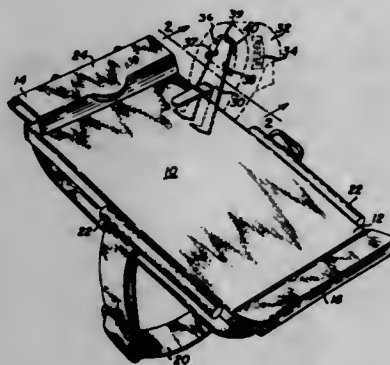
an inverted U-shaped brace rod supporting the rear of the seat. The invention includes rear reflector means including bracket means adapted for securement underneath the bicycle seat and between the downwardly pro-

**3,463,437**  
**TRIPOD STABILIZER**  
Rex E. Henderson, 14310 Yosemite Court,  
Rockville, Md. 20853  
Filed Aug. 17, 1967, Ser. No. 661,478  
Int. Cl. A47g 29/00; A47b 91/00  
U.S. Cl. 248—346 **2 Claims**



This invention relates to a collapsible apparatus designed to receive a standard tripod. The apparatus has one stationary leg and two movable legs, each leg being adapted to receive the foot of a standard tripod.

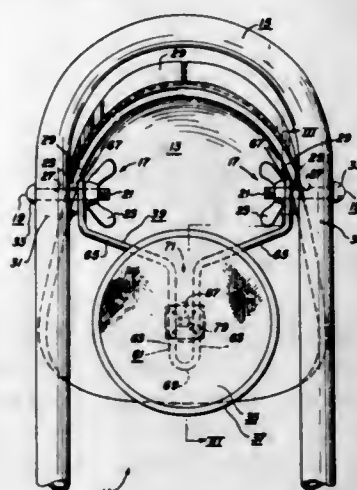
**3,463,438**  
**AVIATOR'S AEROBOARD MICROPHONE REST**  
Wayne A. Olson, Mountain View, Calif.  
(1341 Via Dondera, Santa Clara, Calif. 95051)  
Filed Mar. 22, 1967, Ser. No. 625,199  
Int. Cl. A47b 97/02  
U.S. Cl. 248—444 **4 Claims**



A rest for an aviator's microphone which is secured to an aeroboard fastened to the aviator's leg. The microphone rest has an upper portion shaped and positioned to be engaged by the resting nest of a conventional handheld microphone and a lower portion by which the microphone rest is secured to the aeroboard.

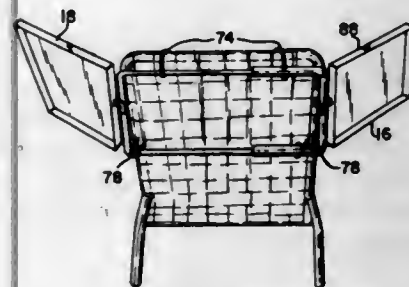
**3,463,439**  
**SAFETY REFLECTOR MEANS FOR BIKE SEAT STRUCTURE**  
Richard M. Timms, Memphis, Tenn., assignor to Troxel Manufacturing Company, Moscow, Tenn.  
Filed Oct. 20, 1967, Ser. No. 676,745  
Int. Cl. A47g 1/24; G02b 5/08  
U.S. Cl. 248—480 **4 Claims**

Rear reflector means especially adapted for use on a bicycle having an elongated bicycle saddle or seat and



jecting leg portions of the U-shaped brace. The reflector lens being adapted to be pivotally adjustable about a horizontal axis and also adapted to be translationally vertically adjustable.

**3,463,440**  
**REFLECTIVE PANELS FOR USE WITH LAWN FURNITURE AND THE LIKE**  
Arthur A. Libby, Jr., Rte. 2, Box 360,  
Arnold, Md. 21012  
Filed May 1, 1967, Ser. No. 635,027  
Int. Cl. A47c 1/00  
U.S. Cl. 248—487 **8 Claims**



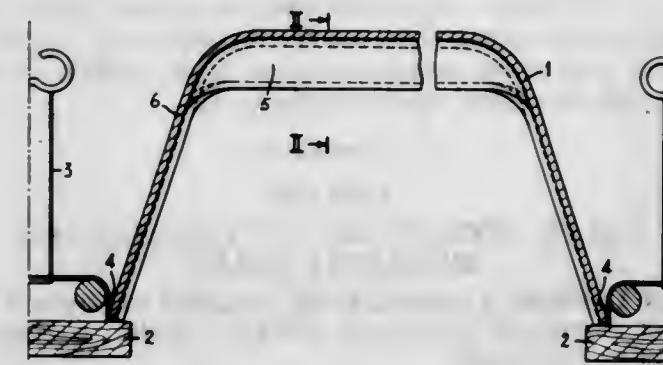
Reflective panels especially adapted for detachable mounting onto the sides of lawn furniture or the like to reflect sunlight onto a sunbather on the furniture; the panels being universally adjustable to insure maximum effect for the reflected sunrays, means also being provided for supporting the panels on the ground.

**3,463,441**  
**FORMS FOR CONCRETE RIB CEILINGS**  
Alfred Basalla, Bad Soden, Taunus, and Hans Ungemach,  
Frankfurt am Main, Germany, assignors to Willy Kaiser, Frankfurt am Main, Germany, a company of Germany

Filed Jan. 23, 1967, Ser. No. 610,953  
Claims priority, application Germany, Jan. 22, 1966,  
B 85,499  
Int. Cl. E04g 11/40; B28b 7/28

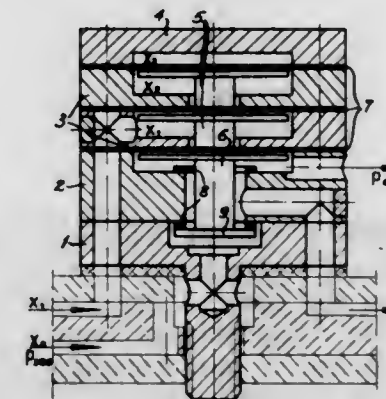
U.S. Cl. 249—28 **12 Claims**  
Forms for concrete ceilings are formed with lateral walls and a top wall having spaced transversely extending ribs separated by intermediate portions. Selected ones of these intermediate portions, e.g. alternate portions, are

offset the thickness of the material so that two form sections can be joined in longitudinal alignment with an offset portion overlapping a cooperating non-offset portion.



In one embodiment the two form sections interlock while in other embodiments they are slidable relative to one another while providing a concrete-tight joint.

**3,463,442**  
**MULTI-INPUT DIAPHRAGM LOGIC ELEMENT**  
Henryk J. Leskiewicz, Chadkiewicza 4 m 10, Jan  
Jacewicz, Madalinskiego 102 m 26, and Mariusz  
Olszewski, Al. Ujazdowskie 39 m 19, all of War-  
saw, Poland  
Filed July 28, 1966, Ser. No. 568,628  
Claims priority, application Poland, Aug. 3, 1965,  
P 110,325; Apr. 4, 1966, P 113,868  
Int. Cl. F16k 31/385; G06d 1/02  
U.S. Cl. 251—61.2 **8 Claims**

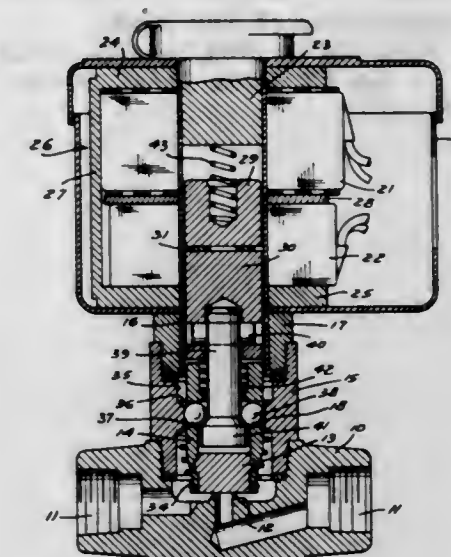


Logic element in which coupling of supply pressure to an output channel is controlled by a switching element, which closes or opens a hole in a seat under the control of a pusher in turn controlled by the cooperative action of a number of aligned pushers positioned in respective chambers.

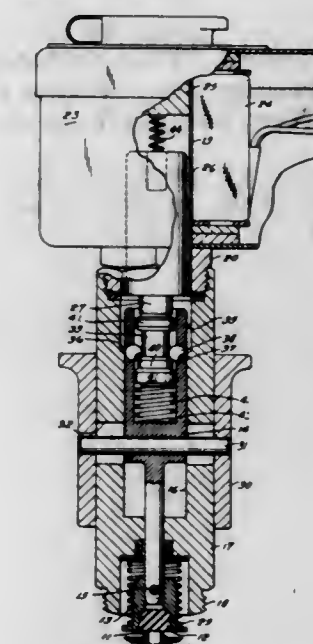
**3,463,443**  
**VALVE HAVING RELEASABLE LATCH MECHANISM**  
Alan W. Churchill, Morristown, N.J., assignor to Auto-  
matic Switch Company, a corporation of New York  
Filed Oct. 11, 1967, Ser. No. 674,462  
Int. Cl. F16k 31/10, 17/04  
U.S. Cl. 251—70 **7 Claims**

Valve body has seat and elongated opening slidably accommodating valve disk carrier. Inner wall of opening has recess, and carrier has transverse hole accommodating a ball. Stem within carrier is connected to armature of one solenoid, and has wedging portion which pushes ball into

recess to latch valve when stem is lifted. Armature of second solenoid forms part of magnetic circuit of first solenoid so that second solenoid must be energized before movement of first solenoid armature can be effected.



**3,463,444**  
**MANUALLY OPERABLE VALVE HAVING SOLENOID CONTROLLED RELEASABLE LATCH MECHANISM**  
Alan W. Churchill, Morristown, and Arthur W. Freeman,  
Saddle Brook, N.J., assignors to Automatic Switch Com-  
pany, a corporation of New York  
Filed Jan. 3, 1968, Ser. No. 695,431  
Int. Cl. F16k 31/46, 31/10  
U.S. Cl. 251—70 **7 Claims**



Valve body has seat and elongated opening slidably accommodating valve disk carrier. Inner wall of opening has recess, and carrier has transverse hole accommodating a ball. Manually slidable sleeve on exterior of valve body connected to valve disk carrier for manually opening valve. Wedging element within carrier urges ball into recess, when carrier is lifted, to latch valve open. In one embodiment, solenoid armature opposes operation of wedging element when solenoid is deenergized, and in another embodiment, armature opposes wedging element when solenoid is energized.



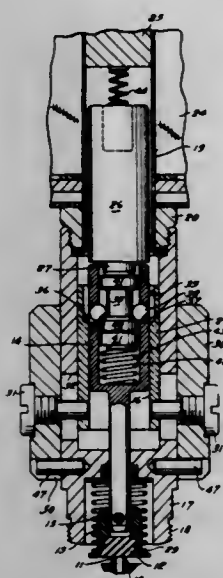
### 3,463,445 VALVE HAVING SOLENOID CONTROLLED CONNECTION BETWEEN MANUAL OPERATOR AND VALVE ELEMENT

Alan W. Churchill, Morristown, and Arthur W. Freeman, Saddle Brook, N.J., assignors to Automatic Switch Company, a corporation of New York

Filed Jan. 3, 1968, Ser. No. 695,434  
Int. Cl. F16k 31/46, 31/10

U.S. Cl. 251—70

6 Claims



Valve body has seat and elongated opening slidably accommodating a hollow sleeve. Inner wall of sleeve has recess, and valve disk carrier slidably within sleeve has transverse hole accommodating a ball. Manually slidable member on exterior of valve body connected to sleeve. Wedging element within carrier urges ball into recess to latch sleeve and carrier, when solenoid is energized.

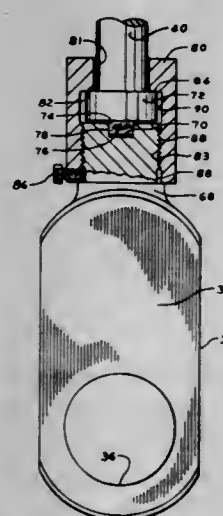
### 3,463,446 LOW STRESS STEM CONNECTION

Paul J. Natho, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Mar. 13, 1967, Ser. No. 622,579  
Int. Cl. F16k 25/00, 31/44, 31/00

U.S. Cl. 251—84

6 Claims



A stem connection structure for connecting the operating stem of a mechanical device to the movable element of the mechanical device. The connection structure includes interfitting structural elements which cooperate

to allow lateral movement of the movable element relative to the stem and is provided with a collar for retaining the stem and movable element in assembly. The interfitting stem and movable element parts and the collar are so related as to maintain the stress levels within the parts of the connection at a minimum to prevent stress corrosion of the parts. The connection structure is also designed to provide an exceptionally high strength connection with minimum space requirements.

### 3,463,447 VALVE STRUCTURE WITH PROTECTED RESILIENT SEALS

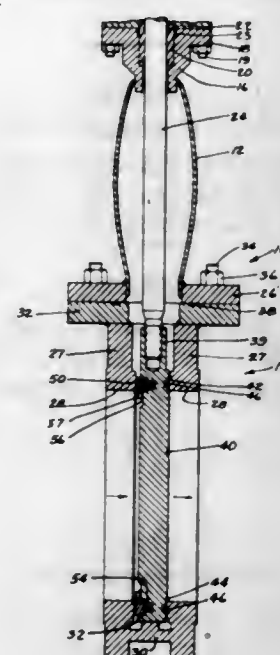
Roger L. Ripert, Concord, Calif., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California

Filed May 27, 1968, Ser. No. 732,345

Int. Cl. F16k 25/02, 31/16

U.S. Cl. 251—158

9 Claims



In a valve with a resilient main seal ring for sealing between opposing working surfaces on the valve closure member and on the body, a device for protecting the resilient seal ring comprising an annular recess in one working surface and a complementary protruding surface on the other working surface. The resilient seal is carried within the recess and is situated below the level of the adjacent surface so as to be free of sliding contact with the opposing surface until the recess and the protruding surface are moved relative to each other to be brought into alignment. The working surfaces have complementary wedging surfaces so that the closure member is cammed back as the valve is opened. In the case of a gate valve, one or more biased members on the upstream side of the gate augment fluid pressure in forcing the gate downstream when it is closed, in order to engage the seal.

### 3,463,448 FLOW BLOCKING DEVICE WITH PRESSURE SEAL MEANS

Jack E. Piccardo, Oakland, Calif., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California

Filed Nov. 24, 1967, Ser. No. 685,495

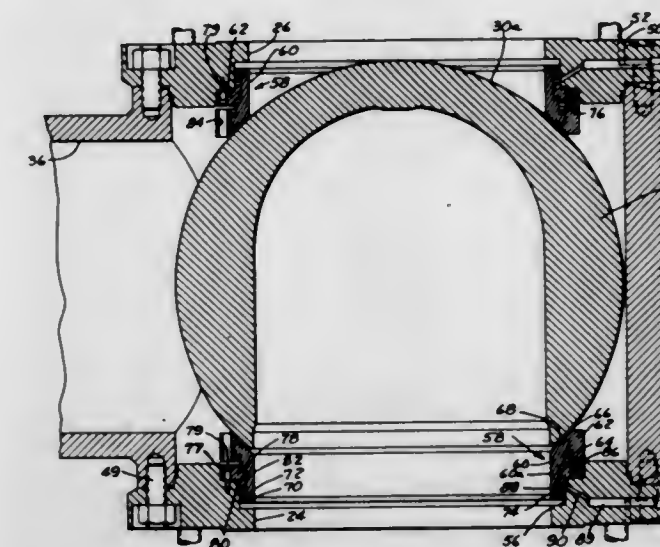
Int. Cl. F16k 25/00

U.S. Cl. 251—159

11 Claims

Valves and other flow blocking devices with seat ring seals which may be retracted prior to operation of the

movable flow blocking member so that any sediment which may be deposited on the member will not scratch or score the seal means. The seat ring has a forward seal ring, a relatively large tail portion and a relatively small intermediate portion with resilient seals being provided to seal against complementary surfaces on the body. The relatively large trailing portion is displaced rearwardly from the intermediate body portion to form an annular chamber in between them to which pressure fluid may



be introduced to retract the seat rings from engagement with the flow blocking member. In the case of an upstream seal, the large trailing portion presents a greater area at the rear than at the front so that a net force urges the seat ring against the flow blocking member. With pressure from the other direction, the fluid again acts against a larger area at the back of the seat ring inasmuch as it intrudes radially inward to the smaller intermediate portion.

### 3,463,449 PLUG FOR SPHERICAL PLUG VALVE

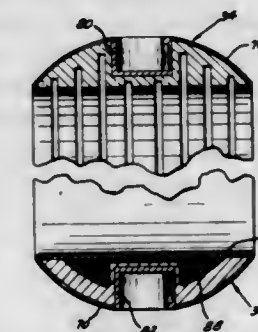
Norman A. Nelson, Henry C. Tooley, and Barney A. Ellers, Houston, and John Helenberg, La Porte, Tex., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed June 7, 1967, Ser. No. 644,269

Int. Cl. F16k 5/20, 15/04, 5/06

U.S. Cl. 251—309

2 Claims



A fabricated plug valve comprising a relatively thin generally spherical outer shell and having its interior formed by a mass of structural material disposed within the generally spherical shell which is of sufficient strength to support the shell against deflection or collapse by fluid under pressure which is controlled by the valve.

### 3,463,450 FABRICATED PLUG FOR SPHERICAL PLUG VALVE

Madden T. Works, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

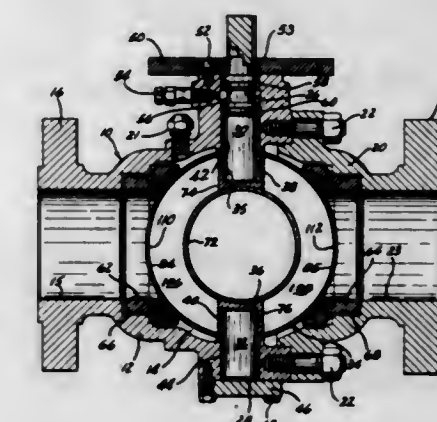
Filed Aug. 25, 1967, Ser. No. 663,936

Int. Cl. F16k 5/06, 5/20, 15/04

U.S. Cl. 251—309

9 Claims

A fabricated hollow generally spherical plug for spherical plug valves which has a tubular conduit extending



diametrically through the spherical plug to form a flow passage and has a partition disposed within the spherical plug defining a plurality of pressure balancing chambers. Apertures are formed in the wall structure of the plug communicating exterior fluid pressure into the pressure balancing chambers to prevent collapse of the plug by external fluid pressure.

### 3,463,451 VALVES

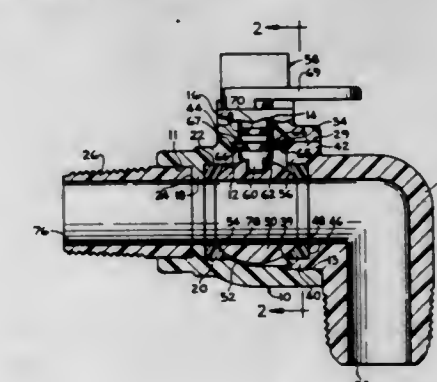
Peter A. Treadwell, Hayward, Calif., assignor to Haveg Industries, Inc., Wilmington, Del., a corporation of Delaware

Filed Nov. 20, 1967, Ser. No. 684,312

Int. Cl. F16k 5/06, 25/00, 15/04

U.S. Cl. 251—315

8 Claims



A ball valve comprising a valve housing with a hollow fitting having an outlet passage and having a round end with a radially extending projection received and secured in a round bore and a key slot at one end of the housing. The fitting carries one valve seat surrounding the outlet passage for the ball member while another valve seat for the valve member is on the housing and surrounds an inlet passage. A valve stem extends through a cross-bore and is connected to a ball valve member having a passage therethrough for actuating the same between open and closed positions for communicating or cutting off communication between the hollow fitting and the inlet port. The closed end of a U-clip retainer is located in the key slot and the open end straddles a grooved portion of the stem to hold the stem in operative engagement with the ball valve.



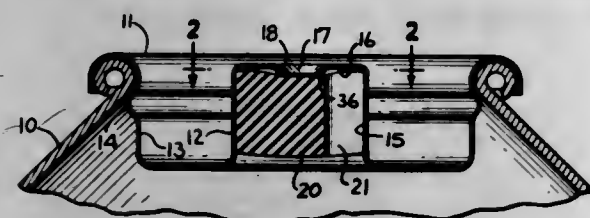
### 3,463,452 VALVE CONSTRUCTION FOR AEROSOL DISPENSER

Peter J. Nilsen and Walter M. Steide, Haines City, Fla., assignors to Nilsen Mfg. Co., Haines City, Fla., a corporation of Florida

Filed Oct. 31, 1967, Ser. No. 679,446  
Int. Cl. B65d 83/14; F16k 31/44

U.S. Cl. 251-339

5 Claims



A valve construction for an aerosol dispenser employing a one-piece valve member is of resilient material which is self retaining and in which the flow takes place through longitudinally extending grooves or clearance spaces about the periphery of the member.

### 3,463,453 HYDRAULIC MACHINE

Pierre Piguet, Onex, Geneva, Switzerland, assignor to Ateliers des Charmilles S.A., Geneva, Switzerland, a corporation of Switzerland

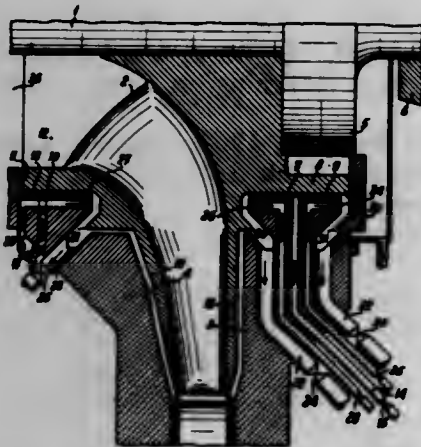
Filed Mar. 16, 1967, Ser. No. 623,628

Claims priority, application Switzerland, Apr. 1, 1966, 4,849/66

Int. Cl. F01d 25/00; F03b 11/00

U.S. Cl. 253-26

9 Claims



A hydraulic machine comprises a turbine-wheel which can be driven empty in unimmersed state and has joints subject to circulation of spray-water or running water. The wheel and/or the housing is provided with one or more splash-rings with a lip arranged to expel centrifuged water through discharge channels. Lips carried by the housing may be of resilient material in sliding contact with the wheel.

### 3,463,454 ANTENNA JACKING DEVICE

Ive Lee Martin, P.O. Box 2256, Modesto, Calif. 95351

Filed June 16, 1967, Ser. No. 646,608

Int. Cl. B66f 3/24

U.S. Cl. 254-93

3 Claims

This device is a jack for elevating television antennas to their full height when mounted on a roof or other support, so as to gain full distance television reception. It includes a hollow main jack tubular lower housing with several hollow telescoping elevatable upper jack sections

normally retracted inside the lower housing. An antenna clamp is carried by the uppermost jack section for grasping the topmost antenna mast section and holding it until the mast is fully elevated above the roof or support. Compressed air is fed into the main lower jack housing, causing the upper jack sections to be forced upwardly and lifting the antenna mast to its full height. The



antenna clamp is constructed for being released upon a pull by a cord dangling to the operator, and an air release valve at the top and bottom jack sections releases the air pressure, allowing the jack sections to be retracted inside the main jack base housing. The jack thus enables one service man to handle the erection and installation of a tall television antenna mast.

### 3,463,455 HELICAL BARBED TAPE UNIT

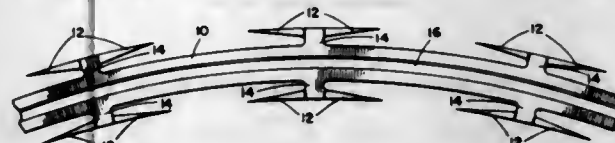
Paul T. Meckel, Lakeside, Calif., assignor to Physics Technology Labs., Inc., La Mesa, Calif.

Filed July 1, 1968, Ser. No. 741,603

Int. Cl. E04h 17/04; B21f 25/00

U.S. Cl. 256-8

9 Claims



Barbed tape is formed helically with coils of constant size and curved in the generally flat plane of the tape, so that the tape will pack in a tangle free, compact axial stack with the coils in face to face contact. The tape is self-supporting and the coils are helical rather than spiral. Spacer wires interconnecting the coils facilitate anchoring the extended barbed tape to the ground and a connecting wire along the upper portion of the coils prevents ready breaching of the obstruction by the usual flattening techniques. A simple dispenser will hold a considerable quantity of tape for immediate deployment and multiple concentric coils can be dispensed simultaneously in interconnected arrangement to compound the obstruction.

### 3,463,456 RAILING CONSTRUCTION

James Henry Walker, Falls Church, Va., assignor to Walker Iron Works, Inc., Woodbridge, Va., a corporation of Virginia

Filed Jan. 25, 1968, Ser. No. 700,471

Int. Cl. E04h 17/14, 17/20

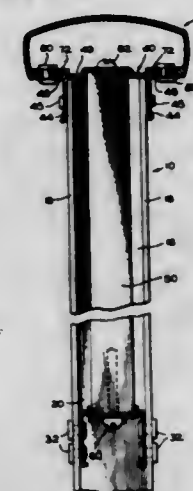
U.S. Cl. 256-22

9 Claims

A railing construction comprises laterally spaced apart vertical posts, each providing a pair of oppositely laterally outwardly facing channels into which the ends of

horizontally endwise aligned downwardly facing channel shaped lower rail members are fitted and riveted, with the tops of the posts fitted into horizontally aligned downwardly facing channel shaped upper rail members having horizontally projecting top side flanges to the top of

of bulbous form, each of which has a curved, intumed continuous flange which is disposed in opposed, coacting



which are riveted the inwardly directed flanges of horizontally aligned cap members, and a series of parallel up-right pickets span the vertical opening between the rails and have their ends fixed to the rails by screws threaded into axial bores in the pickets.

### 3,463,457 EXTENDIBLE HAND RAILING

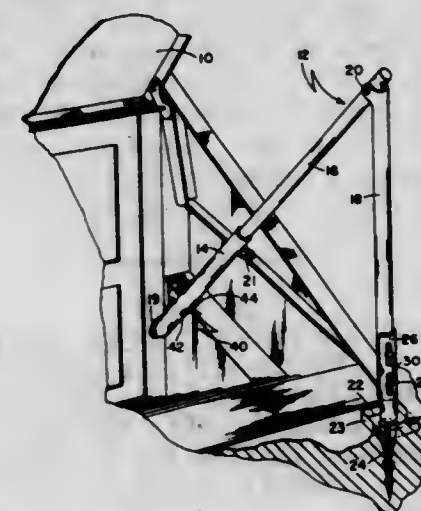
John F. Alexander, 72 Cross St., Foxboro, Mass. 02035

Filed May 7, 1968, Ser. No. 727,201

Int. Cl. E04f 11/18

U.S. Cl. 256-59

9 Claims



Hand railing having railing assembly including a fixed member for mounting and an extension member slidably supported thereby, and a support leg member pivotally attached to the extension member. The support leg member supports the extension member in extended position and pivots to fold-away position adjacent the railing assembly when the extension member is unextended.

### 3,463,458 VIBRATOR

Kenneth G. Becker, Cleveland, and John L. Crewse, Brook Park, Ohio, assignors to The Cleveland Vibrator Company, Cleveland, Ohio, a corporation of Ohio

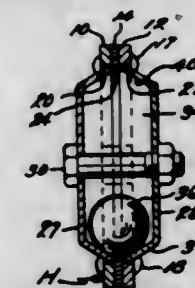
Filed July 18, 1966, Ser. No. 565,894

Int. Cl. B01f 11/02; B28c 5/08

U.S. Cl. 259-1

10 Claims

A mechanical vibrator of the type comprising a housing forming a chamber in which a ball or roller is urged cyclically at high speed in an orbital path by a high pressure tangential jet of fluid. The housing forming the chamber is constructed of substantially identical matched covers



relationship with the flange on the opposite cover to form an interior race around the periphery of the chamber.

### 3,463,459 AUTOMATICALLY OPERATED DOOR MECHANISM FOR A MIXER, KNEADER, REACTOR OR LIKE MACHINE

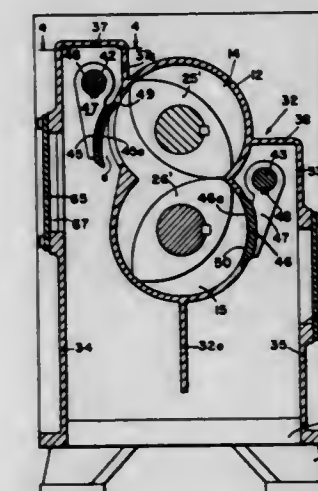
Bernard A. Loomans, Thomas I. Ross, Richard J. Balazer, and Clarence K. Scherping, Saginaw, Mich., assignors to Baker Perkins Inc., Saginaw, Mich., a corporation of New York

Filed Feb. 12, 1968, Ser. No. 704,601

Int. Cl. B01f 15/02

U.S. Cl. 259-41

15 Claims



A continuous mixer having housing means in the configuration of intersecting cylinders and a plurality of parallel shafts extending axially in the housing, radially aligned interwiping mixing paddles on the shafts shaped to also wipe the walls of the housing upon rotation of the shafts, doors for the housing curved to be wiped by the paddles when in closed position, one of the doors being normally maintained in at least partly open position to permit the passage of material out the door while the other is normally maintained in closed position, a control circuit for varying the position of the partly open door according to the power required to drive the shafts in the same direction of rotation and at the same speed, a control for periodically moving the partly open door to closed position to permit a paddle to wipe the door and remove any accumulation of material thereon, and a control for opening the normally closed door when the normally partly open door is substantially fully opened.

### 3,463,460 PNEUMATIC METHOD OF PRODUCING CEMENTING SLURRIES

Bill G. Taylor, Dallas, and Glenn T. Colomb, Wichita Falls, Tex., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware

Filed Dec. 29, 1966, Ser. No. 605,686

Int. Cl. B28c 5/06, 7/04

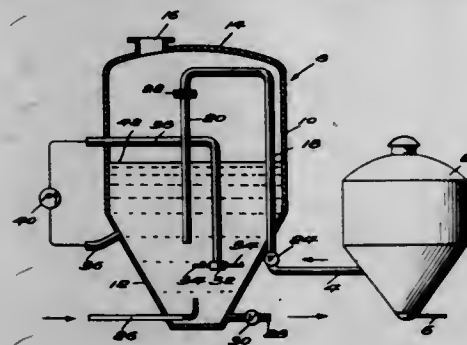
U.S. Cl. 259-147

14 Claims

A method and apparatus for preparing cementing slurries primarily for oil well operations. Water is placed in



a mixing tank with an air jet near the bottom of the tank directing a stream of air bubbles upwardly through the tank. Dry pulverulent cement is conducted into the mixing



tank where it mixes with the water to form a slurry. After thorough mixing, the entire contents of the tank may be pumped down a well.

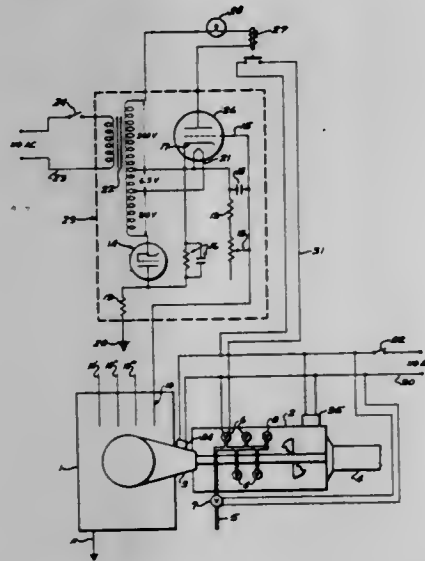
3,463,461

**AUTOMATIC TEMPERING**

Joseph M. Kirk, Jr., Bessemer, Ala., assignor to Dresser Industries Inc., a corporation of Delaware  
Filed Mar. 28, 1966, Ser. No. 537,740  
Int. Cl. B28c 7/04

U.S. Cl. 259—154

4 Claims



Apparatus for adding controlled amounts of a fluid to a granular material wherein the addition of the fluid is controlled by at least one valve operated by an electrical circuit. The electrical circuit employs the electrical conductivity of the granular material as a measure of the fluid already present in the granular material and in turn operates at least one valve to add additional material to the granular fluid if necessary.

3,463,462

**VOLUME AND CONSISTENCY MEASURING MECHANISM**

Forest M. Sarff, 19109 Newhouse St., Sausalito, Calif. 94350, and Silas B. Birch, Jr., 9284 Dornington Place, Arleta, Calif. 91332  
Filed Oct. 9, 1967, Ser. No. 674,021  
Int. Cl. B28c 7/04; G05d 11/12

U.S. Cl. 259—154

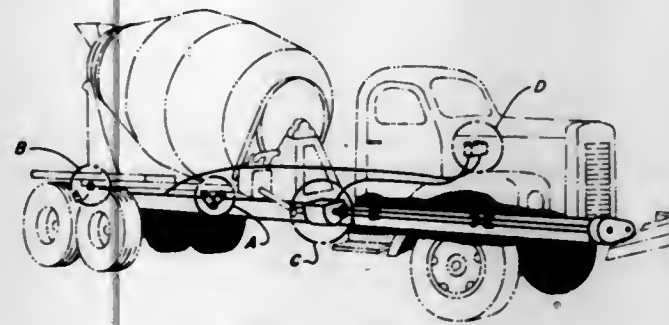
5 Claims

This invention relates to volume and consistency measuring mechanisms, and more particularly to accessories to a mixing machine for indicating the volume and consistency of mixtures composed of several components such as concrete, including a solvent or wetting agent.

By utilizing principles which will significantly increase the accuracy of the consistency measurement taken at

any instant, the present invention is in the nature of an improvement over previous devices such as were intended to continuously disclose the consistency of a concrete mixture in a mixing drum. In addition, the present invention provides for a simultaneous measurement of the volume of a mixture in a mixing drum at any instant by placing the mixing drum on a weighing device so that the total weight can be observed continuously.

Where a concrete mixture is involved, this invention will provide an accurate indication of the volume of concrete remaining in the mixing drum at any time, irrespective of how much concrete was in the mixing drum to start with, or how much has been discharged from the mixing drum. Simultaneously, it will continuously indicate the consistency of that mixture in the mixing drum and will indicate any change resulting from the addition of water, a wetting agent, or an admixture.



The need for the improvements provided in the present patent is apparent to all who are involved in determining the consistencies of mixtures existing in a mixing drum, particularly where the consistency must be modified to a prescribed value prior to discharging the mixture from the mixing drum. Where the volume of the mixture remaining in the mixing drum is critical with respect to the volume required in its intended use, there is a need to know the volume of the mixture in the mixing drum. The present patent also satisfies this need since it provides a means to continuously measure the volume remaining in the mixing drum.

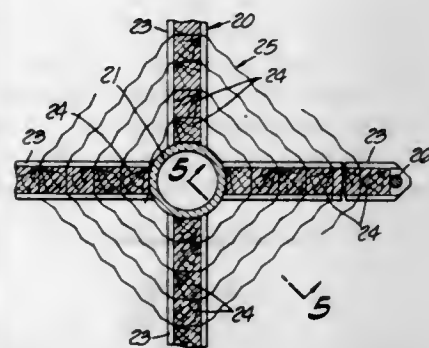
3,463,463

**MASS TRANSFER DEVICE FOR CONTACTING A LIQUID WITH A GAS**

Diven Meredith, 87-135 Ave. 56, Thermal, Calif. 92274  
Filed Mar. 14, 1968, Ser. No. 713,070  
Int. Cl. F28c 1/02

U.S. Cl. 261—24

12 Claims



A series of substantially horizontal tensioned filaments in a vertical plane is provided and each of the filaments is crimped in zig-zag fashion to form offset prominences along its length. A plurality of such series of filaments are laterally spaced so that their respective vertical planes are parallel.

3,463,464

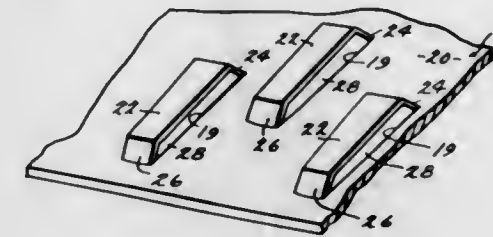
**FLUID CONTACT TRAY**

Irvin E. Nutter, 3847 S. 88 East Ave. 74145, and Dale E. Nutter, 1512 S. 77 East Ave. 74112, both of Tulsa, Okla.  
Continuation-in-part of application Ser. No. 360,494, Apr. 17, 1964. This application Sept. 26, 1967, Ser. No. 670,681

U.S. Cl. 261—114

Int. Cl. B01d 3/24

10 Claims



A fluid contact tray having a plurality of tapering apertures therein, the major dimension of the apertures lying in the direction of liquid flow across the tray. A deflector is supported above each aperture by a pair of transversely extending baffles one at each end of each aperture.

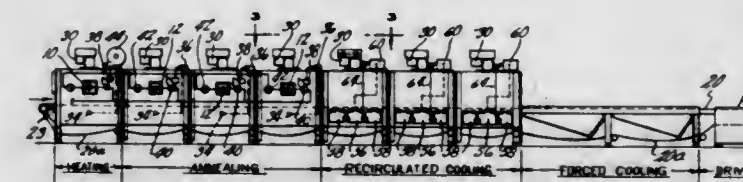
3,463,465

**GLASSWARE ANNEALING LEHR HAVING INDIVIDUAL MODULES WITH SELF-CONTAINED AIR RECIRCULATING MEANS**

Robert A. Fuller, West Hartford, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut  
Filed Nov. 30, 1967, Ser. No. 686,915  
Int. Cl. F27b 9/24

U.S. Cl. 263—8

12 Claims



A plurality of tunnel defining lehr units or modules are arranged in end toward end relationship, and an endless conveyor passes through the tunnel for carrying glassware downstream through the tunnel. Each module has a blower in a plenum chamber defined in its top portion for drawing air upwardly through a central inlet opening into the chamber and for discharging the air downwardly at high velocity through upstream and downstream sets of laterally extending outlet slots. The upstream modules either have burners mounted in their side walls to fire toward the inlet and hence heat the air entering the inlet, or they have heating coils located in the chamber itself. The downstream modules have air intake and exhaust chambers or compartments in their bottom portions, one of these compartments provides cool room air for the inlet of the blower plenum chamber when an associated damper valve is opened and two other compartments are controlled simultaneously to allow discharge of hot air from the module. Each module has its own temperature responsive control means for operating the burners or the coils and also for operating damper valves in order to maintain a predetermined temperature gradient along the lehr, which gradient can be made to conform to the usual requirements for annealing of glass.

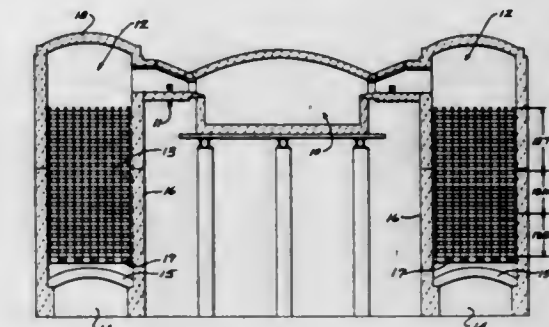
3,463,466

**GLASS TANK STRUCTURE**

George E. Brinkerhoff, Bethel Park, Pa., assignor to Dresser Industries, Inc., a corporation of Delaware  
Filed June 7, 1966, Ser. No. 555,880  
Int. Cl. F27d 17/00; F231 15/02

U.S. Cl. 263—15

4 Claims



A zoned refractory regenerator chamber for glass melting furnaces wherein each zone contains refractory compositions particularly resistant to the destructive mechanisms in that zone with specific emphasis being placed on utilizing an all basic refractory regenerator chamber.

3,463,467

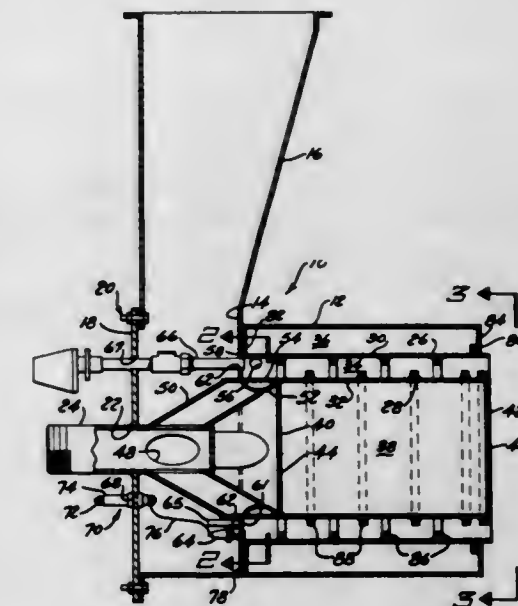
**ALL-METAL HIGH CAPACITY BURNER**

John D. Nesbitt, Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio  
Filed May 29, 1967, Ser. No. 641,907

U.S. Cl. 263—19

Int. Cl. F231 9/04

11 Claims



This invention relates to an all-metal, high capacity excess air burner that utilizes air to cool the burner parts, as well as combust and dilute the gas. The burner of this invention has an annular mixing and combustion chamber whose inside and outside diameter walls have radial air inlet ports through which air passes to mix with and ignite combustible gas that flows axially within the chamber. The air flowing about and through both diameter walls provides a cooling effect to these walls so that high capacity may be realized without a detrimental effect upon the metallic components. The burner of this invention has a short flame length, which length is independent of burner capacity.



3,463,468

## SUSPENSION MEANS

Arthur Frederick Hobbs, London, England, assignor to Humphrey & Glasgow Limited, London, England, a British company

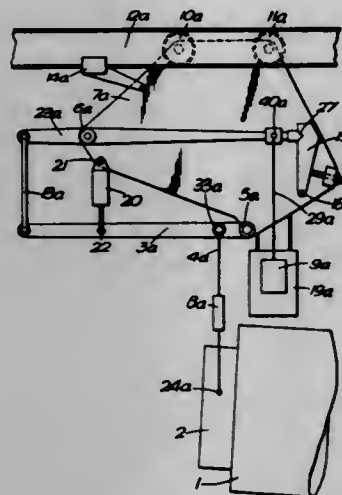
Filed Oct. 18, 1967, Ser. No. 676,306

Claims priority, application Great Britain, Oct. 20, 1966, 47,062/66

Int. Cl. F27b 7/00; F23m 7/00; F16c 1/10

U.S. Cl. 263—33

8 Claims



Suspension means for a non-rotating end cover for sealing a rotary kiln comprising a pair of levers, or lever systems, two frames for mounting the levers or systems respectively, means to mount each frame for horizontal movement along parallel paths whereby each lever or system may be moved individually with its respective frame, means for pivotally attaching an end cover at spaced locations on the cover to one end of each of the levers or systems respectively, and two counterbalancing means attached to the other end of each lever or system, the arrangement of the levers or systems being such that there is a mechanical advantage in favour of the counterweights.

3,463,469

## KILNS WITH ATMOSPHERE PROPULSION

Donald P. Shelley, 19 Airdale Road, Stone, Staffs, England

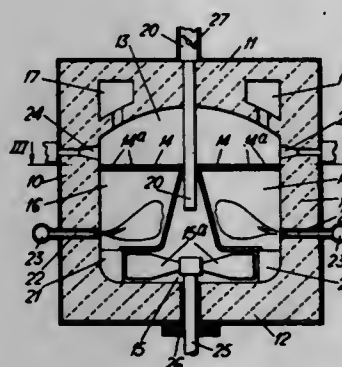
Filed Nov. 16, 1967, Ser. No. 683,709

Claims priority, application Great Britain, Nov. 17, 1966, 51,502/66

Int. Cl. F27b 9/00; F27d 3/12

U.S. Cl. 263—40

11 Claims



In a kiln having propulsion means for creating circulation of hot atmosphere through the kiln, a quantity of cool air is admitted into the circulating system immediately ahead of the propulsion means so that the air acts to maintain the propulsion means at a lower temperature than the highest operating temperature of the kiln, the higher temperature being restored by the consumption of fuel in a combustion zone between the propulsion means and the kiln chamber in which the goods are fired.

3,463,470

## FURNACES FOR TREATING CERAMICS

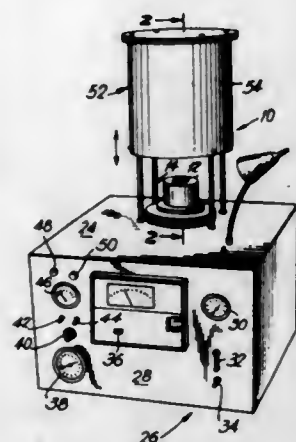
William Green, New York, and Jerzy Riazanow, Yonkers, N.Y., assignors to Ceramivac Mfg. Inc., New York, N.Y., a corporation of New York

Filed Dec. 28, 1967, Ser. No. 698,089

Int. Cl. F27b 5/10

U.S. Cl. 263—40

9 Claims



A furnace for treating ceramic materials. The furnace has a stationary support means which carries the work. A muffle means defines a heating chamber in which the work is treated, and a moving means is operatively connected with the muffle means to displace the latter from a rest position where it is situated beyond the support means and the work carried thereby to an operating position where it encloses the work and at least part of the support means in the heating chamber so as to heat the work therein. As a result of this construction, the work remains absolutely stationary so that all possible vibrations are avoided and any tendency for the work to crumble during treatment thereof or during displacement of the heating chamber into its operative location enclosing the work is reliably prevented.

3,463,471

## SLAG HAULER LINER

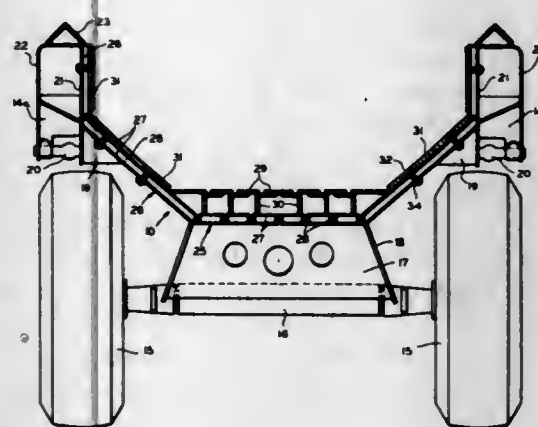
Chester L. Reid, Benton Harbor, Mich., assignor to Clark Equipment Company, a corporation of Delaware

Filed Dec. 28, 1966, Ser. No. 605,401

Int. Cl. C21b 3/10; F23j 1/02

U.S. Cl. 263—45

9 Claims



An expansion-compensating construction for slag receptacles employs headed fasteners to secure heavy liner plates in overlying relation to preferably hollow receptacle walls, with oversized apertures loosely receiving the fasteners, which have circumferential projections on their end portions so spaced as to permit slight longitudinal movement of the fasteners.

3,463,472

## APPARATUS FOR THE DIRECT SMELTING OF METALLIC ORES

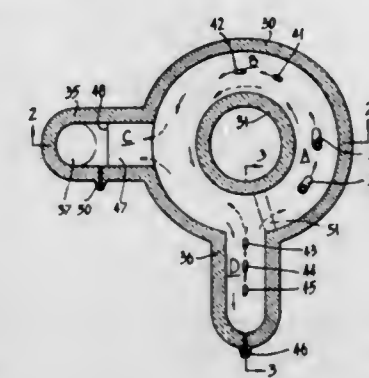
Howard K. Worner, North Balwyn, Victoria, Australia, assignor to Conzinc Riotinto of Australia Limited, Melbourne, Victoria, Australia

Application Aug. 4, 1966, Ser. No. 570,270, now Patent No. 3,326,671, dated June 20, 1967, which is a continuation-in-part of application Ser. No. 355,661, Mar. 20, 1964. Divided and this application Jan. 5, 1967, Ser. No. 619,108

Int. Cl. C21c 5/32; F27b 3/22

U.S. Cl. 266—11

21 Claims



Disclosed is apparatus for the continuous production of metals from ore and concentrates including a furnace chamber having intercommunicating smelting, refining and slag separation zones, means for continuously causing a stream of molten material to flow from the smelting zone to the refining zone, means for introducing the ore into the molten material in the smelting zone and oxygen-containing gas injection means for injecting gas into the stream of molten material in the smelting and refining zones to cause turbulence and circulation of the molten material. Outlets are provided in the refining zone for the removal of metal and in the slag separation zone for the removal of slag. The floor of the slag separation zone is sloped upwardly away from the entrance to the slag separation zone to facilitate return of metal to the refining zone.

3,463,473

## INSTALLATION FOR EXTRACTING ZINC FROM FUMES RICH IN ZINC VAPOUR

Pierre Moulin, Pamiers, France, assignor to Société Metallurgique d'Imphy, Paris, France, a company of France

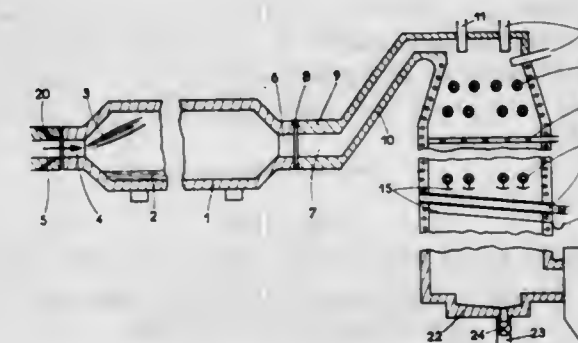
Filed Dec. 22, 1966, Ser. No. 603,959

Claims priority, application France, Jan. 7, 1966, 45,147

Int. Cl. C22b 19/08, 19/18

U.S. Cl. 266—18

6 Claims



This disclosure relates to apparatus for the production of zinc from fumes which are rich in zinc vapour and which are produced, for example, by direct reduction of zinc ores in a rotary furnace disposed with the axis substantially horizontal and heated by an oxidising-flame burner, this apparatus enables zinc to be collected in the

liquid state in an excellent yield and is characterised in that it comprises after the furnace outlet and in the path of the fumes a hood which is disposed with the axis substantially vertical and which is provided with tuyeres for the injection of nitrogen into the flow of fumes, means being provided to collect the zinc which passes into the liquid phase.

3,463,474

## DEVICE FOR SECTIONING CONTINUOUSLY WELDED PIPE COILS

Sebastian Muller, Gernsheim, Ewald Klarner, Frankfurt am Main, and Horst Wagner, Frankfurt am Main-Hochst, Germany, assignors to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

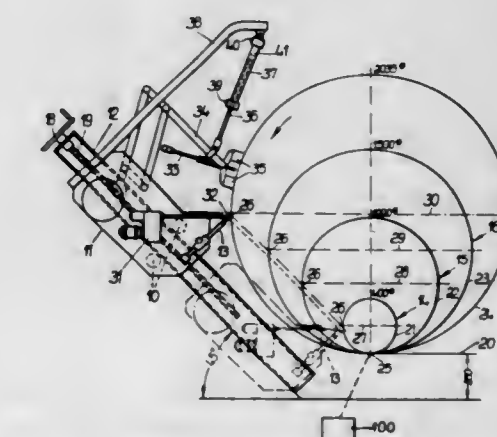
Filed Jan. 17, 1967, Ser. No. 609,906

Claims priority, application Germany, Jan. 18, 1966, M 68,034

Int. Cl. F23d 13/32

U.S. Cl. 266—23

7 Claims



A cutting torch is arranged for the same forward advance as the pipe with the pipe rotation permitting the cutting of the pipe to proceed. For accommodating different diameter pipes, the torch can be set in its desired position along a line 45° to the plane at which each pipe has a line of contact common to the other pipes.

3,463,475

## TAPHOLE CONSTRUCTION FOR METALLURGICAL VESSELS

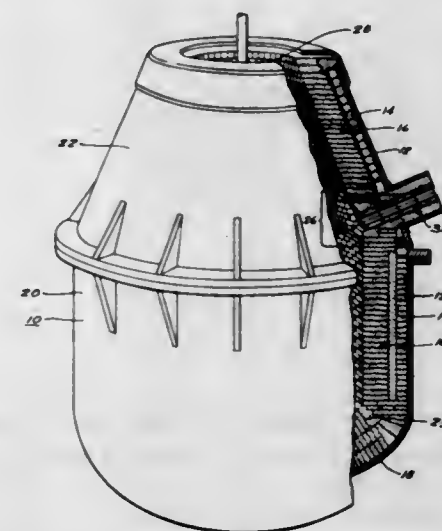
Russell A. Buchholz, Pittsburgh, Pa., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed Apr. 21, 1967, Ser. No. 632,688

Int. Cl. C21b 7/12; C21c 5/50; F27b 7/00

U.S. Cl. 266—42

5 Claims



The present disclosure relates to improved taphole construction and taphole refractories for metallurgical vessels, for example, oxygen converter vessels. Particularly, the

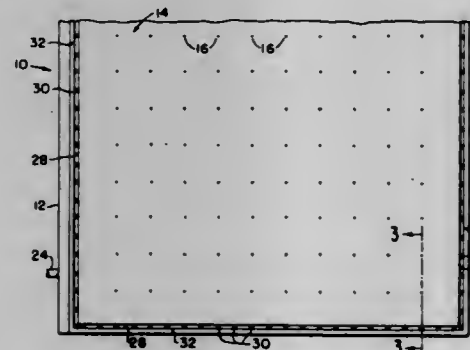


invention relates to a taphole fabricated from a plurality of prefabricated cylindrical conduit segments. Each segment has a substantially uniformly dimensioned molten metal passage of rectangular cross-sectional configuration, the longest surfaces of the passage being substantially in alignment with the vertical axis of the vessel.

3,463,476

**VACUUM CHUCK**

John De Maria, Providence, R.I., and Harlan A. Bentzinger, Rehoboth, Mass., assignors to Chemical Products Corporation, East Providence, R.I., a corporation of Rhode Island  
Continuation of application Ser. No. 347,748, Feb. 27, 1964. This application Apr. 18, 1966, Ser. No. 554,921  
Int. Cl. B25b 11/00; B41f 27/00  
U.S. Cl. 269—21 4 Claims

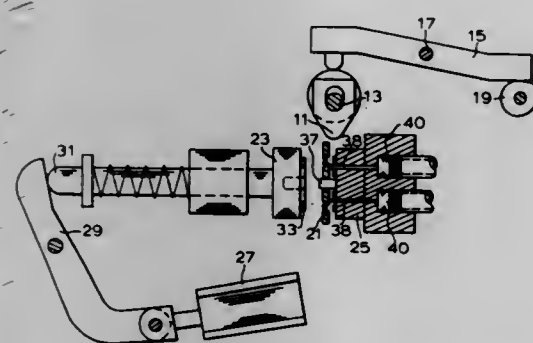


A vacuum base for holding a sheet on a printing press has a surface divided by a continuous groove into a smooth marginal portion and a roughened interior portion. Holes within the groove and throughout the interior surface portion are evacuated to obtain a tight seal about the edges of the sheet that overlie the margin, while the roughened interior surface portion frictionally resists creeping of the sheet relative to the base.

3,463,477

**WORKPIECE HOLDER**

Jakob Rech, Detroit, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan  
Filed Apr. 11, 1966, Ser. No. 541,782  
Int. Cl. B25b 1/24, 5/16; B21d 37/14  
U.S. Cl. 269—265 3 Claims



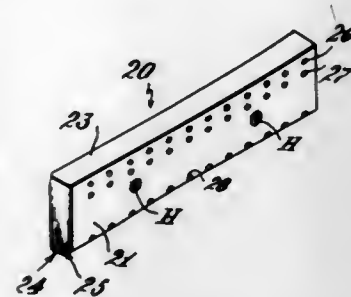
A special clamping mechanism for round metal blanks which are worked by pressure keeps the blank from being distorted by plastic flow or collapse during working. Both jaws have protrusions which indent the workpiece and transfer stress in the blank to the jaw itself, and the protrusions are on different circle diameters on the two jaws to better transfer the stress without weakening the blank worked upon.

3,463,478  
**WORKPIECE POSITIONING DEVICE FOR MACHINE TOOLS**

Everett T. Hennessey, Waltham, Mass., assignor to Zip Products, Inc., Waltham, Mass., a corporation of Massachusetts

Filed Nov. 3, 1964, Ser. No. 408,518  
Int. Cl. B25b 1/24; B23q 17/18

U.S. Cl. 269—271 9 Claims



9. In combination with a machine tool comprising relatively movable jaws for holding a workpiece for machining, means for supporting the workpiece in a predetermined position between the jaws comprising a block designed to be disposed between the jaws and having a plurality of holes formed therein in a predetermined pattern, and pins to be inserted in selected holes of said blocks to retain the workpiece in a predetermined angular position, the pins being of a length exceeding the thickness of the block.

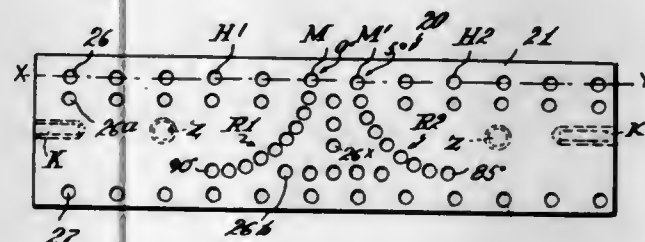
3,463,479

**WORKPIECE POSITIONING DEVICE FOR MACHINE TOOL VISES**

Everett T. Hennessey, Waltham, Mass., assignor to Zip Products, Inc., Waltham, Mass., a corporation of Massachusetts

Filed Dec. 9, 1966, Ser. No. 600,467  
Int. Cl. B25b 1/24, 5/16

U.S. Cl. 269—271 11 Claims



The invention provides a device of simple and inexpensive construction operative to facilitate the positioning of a workpiece in accurate relation to a machine tool while the workpiece is firmly held between the jaws of a machine tool vise.

3,463,480

**SPACING AND HOLDING DEVICE FOR SIDING**

Lloyd V. Edstrom, N. 5515 Fleming St., Spokane, Wash. 99208

Filed Nov. 17, 1966, Ser. No. 595,110  
Int. Cl. B23q 3/00; G01b 3/30

U.S. Cl. 269—309 2 Claims

A tool, to space upper sliding boards by reference to lower positioned boards, having a body with roller means for supporting the lower surface of a siding board to be placed, with an adjustably depending spacing arm

contacting a lower placed board and a hingably upper fastening arm releasably fastenable on a wall above the



edge means extending from the base. Air means located below the base direct air blasts upwardly from the base and toward the limp goods with the base having openings to allow the air blasts to reach the goods, such that the air means direct air blasts in a desired direction against the lower surface of the goods to urge the edge of the goods against the leg while also transporting the goods. Where desired, the transport of the goods can be aided by a conveyor belt.

3,463,483

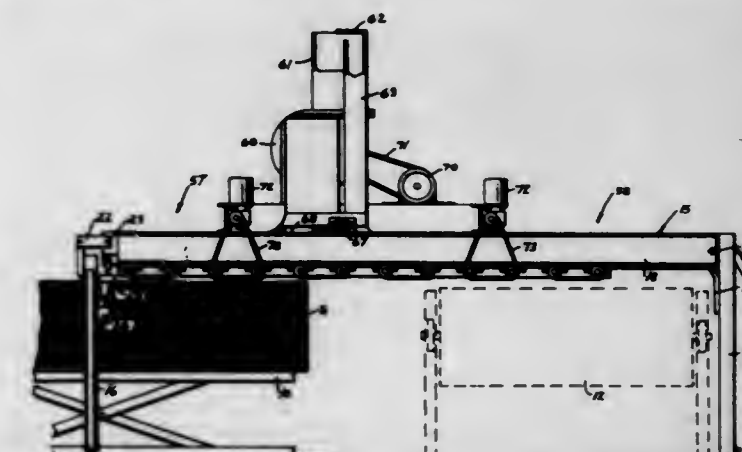
**VACUUM PROCESS AND APPARATUS FOR TRANSFERRING SHEETS**

Harold A. Keller and Dwight G. Seay, Clarkston, Wash., assignors to Potlatch Forests, Inc., Lewiston, Idaho, a corporation of Delaware

Filed July 18, 1967, Ser. No. 654,218

Int. Cl. B65h 5/08, 3/12; B65g 59/04

U.S. Cl. 271—11 22 Claims



board being placed and joined to the body so as to fold therein.

3,463,481

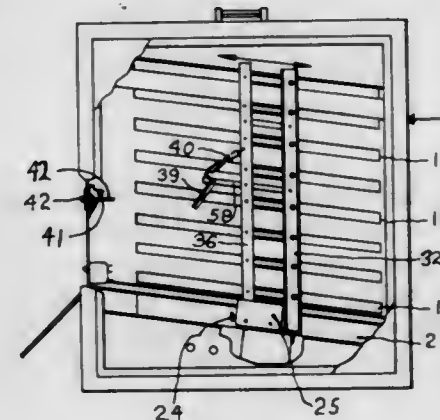
**COLLATOR**

Wilbur E. Thomas, 165 Hillcrest Drive, Wayne, N.J. 07470, and Arthur T. Nickolaus, 212 Colfax Ave., Pompton Lakes, N.J. 07442

Filed Jan. 31, 1967, Ser. No. 612,984

Int. Cl. B65h 39/04

U.S. Cl. 270—58 4 Claims



A collating device wherein the collating arms are linked together, and pivot collectively from the paper trays to a latched position, whereby paper may be loaded into the trays.

3,463,482

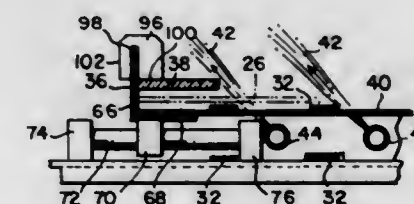
**ALIGNMENT BED AND FOLDER**

Herschel Baron, Philadelphia, Pa., and Arthur Schwenk, Glibbsboro, N.J., assignors to Jacobs Machine Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Sept. 30, 1966, Ser. No. 583,239

Int. Cl. B65h 45/22

U.S. Cl. 270—93 10 Claims



An alignment bed for orienting and transporting a piece of freely disposed limp goods having a straight edge, the alignment bed having a supporting base and

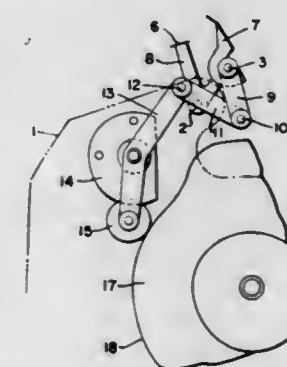
3,463,484  
**SHEET GRIPPING CONTROL MECHANISM FOR PRINTING MACHINES**

Otfried Rudolph, Dresden, Germany, assignor to VEB Druckmaschinenwerk Planeta, Radebeul, Germany

Filed July 12, 1967, Ser. No. 652,943

Int. Cl. B65h 29/02; B41f 1/30, 21/04

U.S. Cl. 271—82 4 Claims



A control mechanism for a sheet gripping system swinging on a transfer cylinder of a printing machine, compris-



ing a cam supported by the frame of said printing machine, a cam following rocker pivotably supported on said transfer cylinder, a gripper shaft lever keyed to said gripper shaft and a coupling rod linking said gripper shaft lever to said cam following rocker, whereby at closed sheet grippers the joint between the cam following rocker and the coupling rod is coaxial with the swing axis of the whole gripping system.

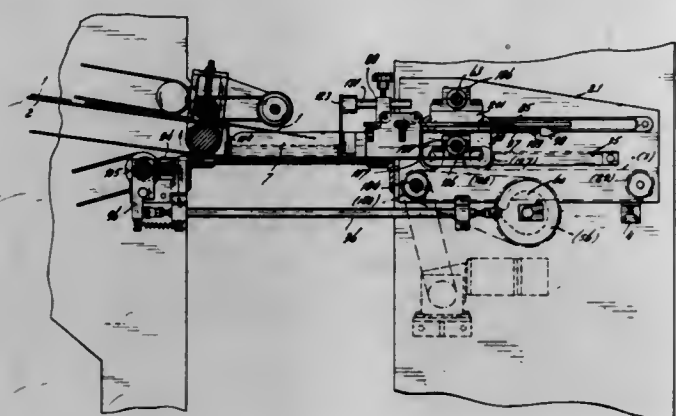
3,463,485

**METHOD OF REAM COLLECTING SINGLE SHEETS**  
Lamar T. Atwood, Cumberland Center, Maine, assignor to Southworth Machine Company, Portland, Maine, a corporation of Maine

Filed Oct. 2, 1968, Ser. No. 764,481  
Int. Cl. B65h 31/34; B65g 57/11

U.S. Cl. 271—89

9 Claims



Conveyors, an in-line method of collecting single sheets in a stack or ream.

Method of ream collecting a plurality of single sheets, including backstopping the sheets against advancing while laterally and vertically supporting the sheets in a stack and jogging the trailing edges of the stack against the backstopping. As the stack of the desired height is formed, backstopping, supporting and jogging are vertically withdrawn from the stack which is laterally removed from the conveyor line. By ream-collecting in superposed areas adjacent a single conveyor, the ream from one area can be removed while the other area is being stacked so as to provide continuous ream collecting.

3,463,486

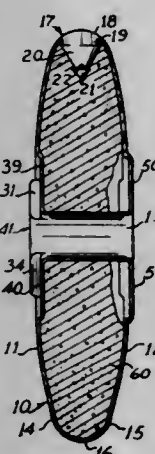
**BARBELL WEIGHT**

Forrest H. James, Jr., Opelika, Ala., assignor to Diversified Products Corporation, Opelika, Ala., a corporation of Alabama

Continuation of application Ser. No. 307,964, Sept. 10, 1963. This application July 31, 1967, Ser. No. 657,429  
Int. Cl. A63b 13/00

U.S. Cl. 272—84

8 Claims



A hollow housing formed of resilient shock resistant plastic is used as a barbell weight. It is generally disc

shaped and has a cylindrical transverse sleeve with a pair of opposed confronting side walls extending generally radially from the sleeve and joined by a rim. The side walls have a generally uniform thickness and have a series of complementary lands and grooves radially extending along the sidewalls from the sleeve toward the rim, but terminating intermediate the sleeve and rim in the central portion of the side walls. A cementitious material is inserted into the housing through a hole in the rim which is closed by a plug.

3,463,487

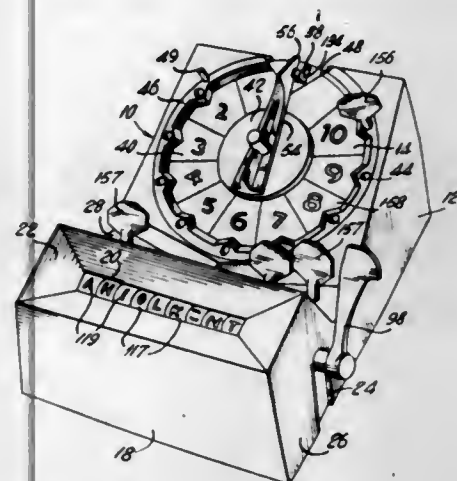
**DEVICE FOR PLAYING A WORD GAME**

Sidney Tepper, Millburn, N.J., assignor, by mesne assignments, to Topper Corporation, Elizabeth, N.J., a corporation of Delaware

Filed July 14, 1966, Ser. No. 565,158  
Int. Cl. A63f 9/18

U.S. Cl. 273—1

16 Claims



Device includes letter scrambler, and a timer which begins operation upon actuation of the scrambler. Scrambler includes plurality of letter-bearing wheels carried by a rod, and toggle mechanism for jarring rod to arbitrarily reposition wheels. Rod-jarring mechanism actuates pawl to permit movement of timer pointer upon completion of letter scrambling.

3,463,488

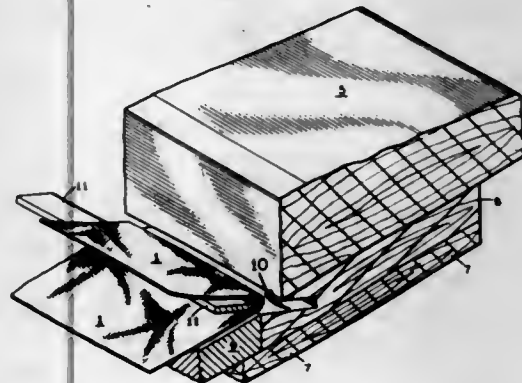
**RETAINING MEANS FOR SECURING FABRIC ON THE PLAYING SURFACE OF A POOL TABLE**

Charles Mills, Hialeah, Fla., assignor to All Tech Industries, Inc., Hialeah, Fla., a corporation of Florida

Filed July 19, 1967, Ser. No. 654,508  
Int. Cl. A63d 15/06

U.S. Cl. 273—7

3 Claims



The construction for securing the fabric covering on a pool table playing slab in which a downward depending groove is provided in the four marginal sides of the frame

of the table adjacent the edges of the slab and a marginal portion of each side of the fabric is folded around splines which are forced into mating grooves to stretch and tightly secure the fabric onto the surface of the slab.

surface; said platforms being of magnetic material; and U-shaped collapsible backrests spaced outwardly of three sides of each platform with portions thereof projected down into the ground surface.

3,463,489

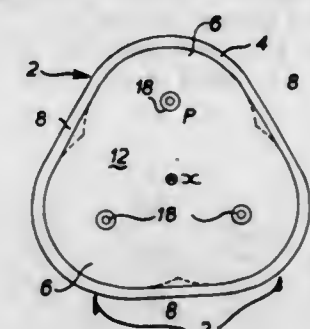
**POCKETED ELLIPTICAL PLAYING AREAS WITH COMMON FOCAL POINT**

Andre Tretow, 198 Three Valleys Drive,  
Don Mills, Ontario, Canada

Filed Sept. 15, 1966, Ser. No. 579,737  
Int. Cl. A63d 15/06

U.S. Cl. 273—9

5 Claims



A billiard table having a continuous playing surface comprised of a plurality of part-elliptical playing areas all bounded by a common continuous cushion and a ball pocket being provided at one of the foci of each of the elliptical areas. The other of said focal points for each elliptical area may be coincident with a similar non-pocket focal point of an adjacent elliptical playing area.

3,463,490

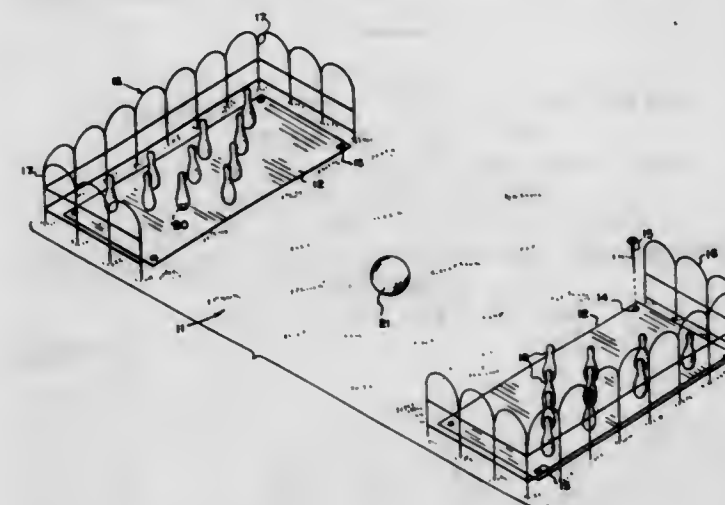
**BOWLING GAME WITH PIN PLATFORMS, MAGNETICALLY ATTRACTED PINS AND FOLDABLE BACKSTOPS**

Domenico Marcelli Annessa, Detroit, Mich., assignor to Manuel E. Arden, Detroit, Mich.

Filed July 26, 1966, Ser. No. 568,034  
Int. Cl. A63d 1/02

U.S. Cl. 273—37

1 Claim



A bowling game, including a pair of spaced-pin platforms, apertured at their corners, headed pins projected through said apertures to anchor the platform; spaced rows of equally spaced apertures in pyramid form in each platform for centering and locating a series of bowling pins; each pin having a magnetic disc within its under-

3,463,491

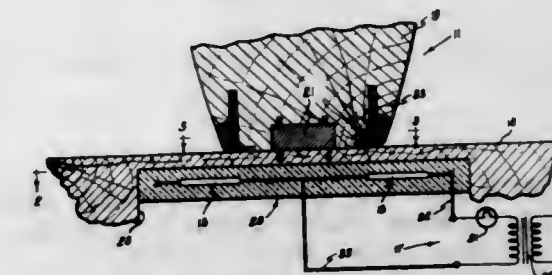
**PIN DETECTION SYSTEM WITH RADIALLY SYMMETRICAL PATTERN OF MAGNETIC REED SWITCHES**

Albert E. Shaw, 5646 Kimbark Ave.,  
Chicago, Ill. 60645

Filed Jan. 26, 1966, Ser. No. 523,094  
Int. Cl. A63d 5/06

U.S. Cl. 273—52

7 Claims



Apparatus for detecting and indicating the presence of a standing bowling pin in the proximity of its spot position is described which includes a plurality of parallel connected, magnetically operated reed switches below the surface of the bowling alley. A magnet is so positioned in the bowling pin that it actuates at least one of the switches whenever the pin is standing in a predetermined area around the spot position. The switches are arranged in a radially symmetrical pattern and spaced so that under such condition at least one is closed and an indicator is thereby activated.

3,463,492

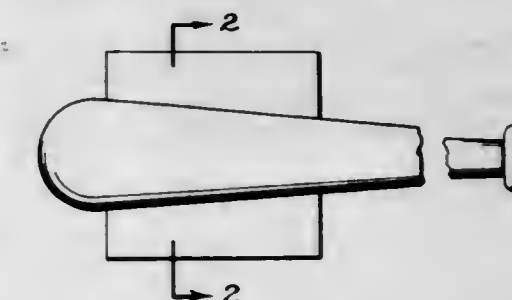
**BASEBALL BAT HAVING BLADES EXTENDING OUTWARDLY THEREFROM**

Ellsworth J. White, 10 Leaman Place,  
Lynbrook, N.Y. 11563

Filed Oct. 11, 1966, Ser. No. 589,480  
Int. Cl. A63b 59/06

U.S. Cl. 273—72

4 Claims



A plurality of elongated blades are secured to a bat such that the blades extend outwardly from the striking surface of the bat.

3,463,493

**ADJUSTABLE SOLENOID OPERATED STARTING GATES**

Charles E. Guild, Mount Healthy, Ohio  
(979 Hempstead Drive, Cincinnati, Ohio 45231)

Filed Apr. 11, 1966, Ser. No. 541,784  
Int. Cl. A63f 9/14

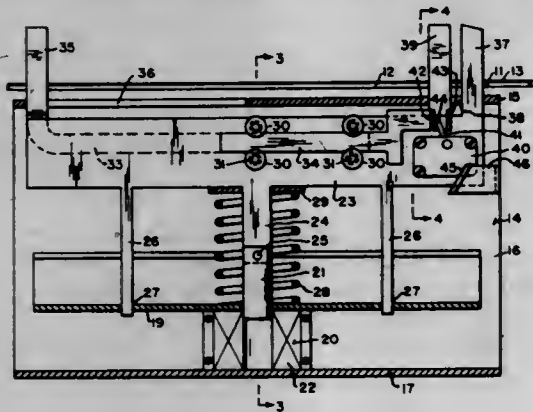
U.S. Cl. 273—86

6 Claims

A vertically operated starting gate for a slot car racer. A solenoid acts to move the gate plate downwardly out



of contact with the racer upon current being supplied to the racer. The gate plate has adjustable arms that are

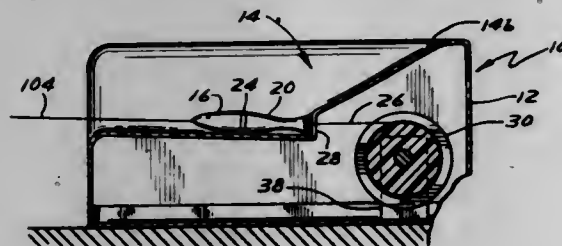


movable lengthwise of the track to position the racer between them.

**3,463,494**  
**PRACTICE DEVICE FOR CATCHING FISH**  
Patricia A. Stroh, 7009 S. Cedar Lake Road,  
Minneapolis, Minn. 55426  
Filed May 1, 1967, Ser. No. 635,030  
Int. Cl. A63b 67/10

U.S. Cl. 273-101

6 Claims



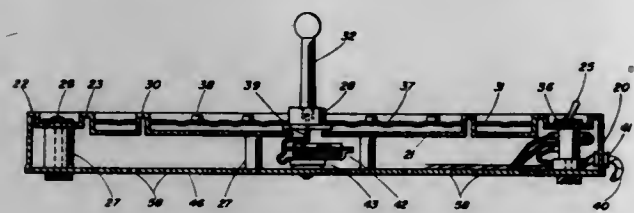
Two members, one of which is a magnet, simulate a fish. One of the members is attached to the end of a fishline and the other to a take-up line wound on a reel, the unwinding of which is opposed by spring action. Accurate casting of the fishline effects the engagement of the two members; a sufficient manual pull on the fishline thereafter effects their separation.

**3,463,495**  
**VARIABLE VIBRATION PATTERN GAME DEVICE**

Donald Ragnvald Christensen, 21790 Ybarra Road,  
Woodland Hills, Calif. 91364  
Continuation-in-part of application Ser. No. 450,046,  
Apr. 22, 1965. This application Oct. 11, 1967, Ser.  
No. 674,683

Int. Cl. A63b 67/14; A63f 9/14  
U.S. Cl. 273-110

3 Claims



A game board on which vibrations in a playing surface can be controlled and changed by a player in synchronous, but widely differing, interacting patterns of influence on game pieces. The surface is vibrated by an A.C. electrically operated magnetic coil located under the surface and operatively associated with a vibrating vertical armature. This armature is rigidly attached to a hub that protrudes through the center of and mounts

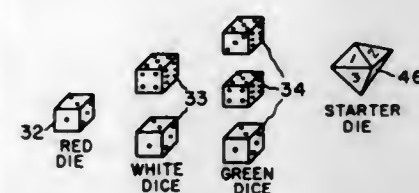
the vibrating game surface. On top of the hub and releasably attached to it, is a control stick by which a player may rotate, tilt, or exert downward pressure on the hub such that the vibrating playing surface is respectively, rotated, tilted, or made to cease vibrations. Suitable playing pieces or pawns are placed on the vibrating surface to play different games. By removing the control stick, different choice game sheets may be interchanged. In addition, control switches for each player may control the flow of alternating current to the magnetic coil.

**3,463,496**  
**RACING GAME APPARATUS INCLUDING COLOR MATCHED DICE AND TOKENS**

Albert A. Weinstein and Willa S. Weinstein, both of  
2486 Devoe Terrace, Bronx, N.Y. 10468  
Filed Mar. 11, 1966, Ser. No. 533,470  
Int. Cl. A63f 3/02, 9/04

U.S. Cl. 273-134

9 Claims

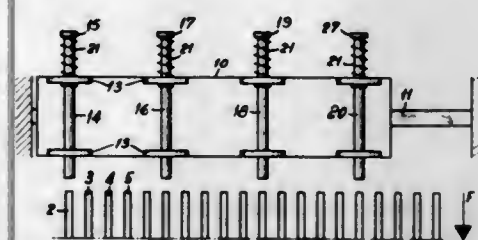


A racing game apparatus having a board with a racing course pictorially depicted thereon by longitudinal and transverse lines defining spaces for occupation by playing pieces. One feature includes a turn portion with more spaces in outer lanes than inner lanes combined with lane-changing means allowing rearward but not forward movements. Another feature provides plural dice sets color-matched to plural chip sets enabling the player by selecting a particular colored chip from a limited quantity to control the speed of his playing piece when all the dice are cast. This is accomplished by the number indicia on one dice set providing a range of numbers of movements some of which are greater and some of which are smaller than the maximum number provided by the number indicia on another dice set. The sets may differ in number of dice or the dice in one set may have more faces than those in another set. Still another feature includes a finishing sequence whereby players whose playing pieces arrive nearly simultaneously in designated spaces adjacent the finish line match cards to determine the finishing order.

**3,463,497**  
**SELECTION DEVICE FOR AUTOMATIC RECORD CHANGER**  
Jean Foufounis, 27 bis Chemin de Chene,  
1020 Renens, Switzerland  
Filed Sept. 18, 1967, Ser. No. 668,605  
Claims priority, application Switzerland, Sept. 20, 1966,  
13,566/66

Int. Cl. G11b 17/08, 17/22  
U.S. Cl. 274-10

9 Claims

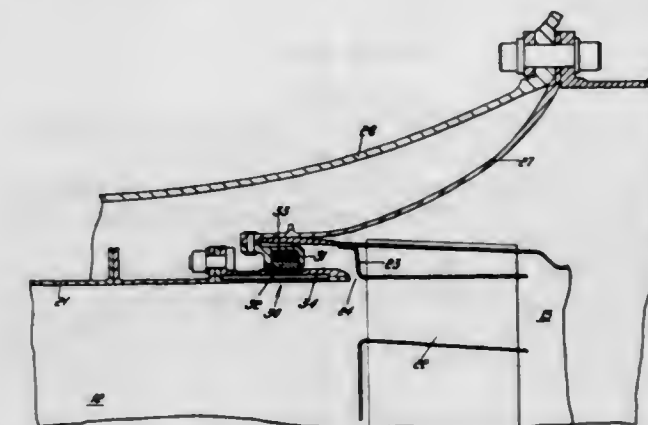


A mechanical selection device for an automatic record changer has two sets of movable elements, the elements of one are equidistantly spaced apart by the distance be-

tween spaced record positions in the changer, while the elements of the second set are equidistantly spaced by a distance corresponding to the spacing of the first set less the distance between two adjacent record positions, the two sets being so related and operated as to select any desired individual record positions for release of a record.

**3,463,498**  
**FLUID SEAL DEVICE**  
Arthur Bill, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company  
Filed Nov. 2, 1967, Ser. No. 680,104  
Claims priority, application Great Britain, Nov. 24, 1966,  
52,722/66  
Int. Cl. F16j 15/54, 15/44  
U.S. Cl. 277-138

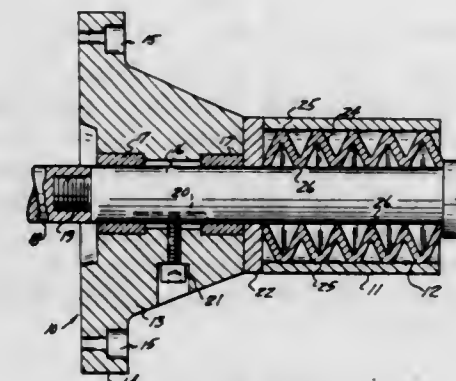
11 Claims



A gas turbine engine has its compressor casing sealed to its combustion equipment by a seal device in which a resilient packing of fibrous metallic material forces a sealing ring into a sealing position.

**3,463,499**  
**I.D. COLLET CHUCK**  
Walter F. Mott, St. Clair Shores, and Norman E. Rank,  
Birmingham, Mich. (both of 2160 E. Nine Mile Road,  
Warren, Mich. 48091)  
Filed July 10, 1967, Ser. No. 652,217  
Int. Cl. B23b 31/40  
U.S. Cl. 279-2

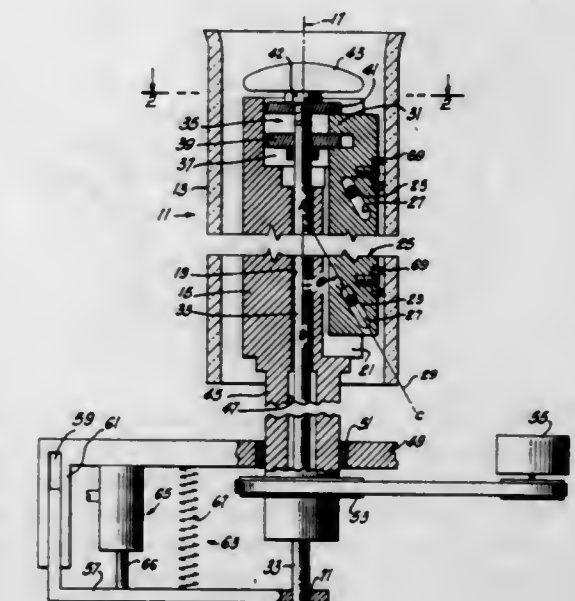
1 Claim



An I.D. collet chuck, for chucking against an internal opening in a workpiece, including an elongated, uniformly circumferentially corrugated, stiff, but relatively resilient, tube, having a headed drawbar extending there-through, with the tube located between the drawbar head and a workpiece seat, so that movement of the drawbar towards the seat compresses the length of the tube while uniformly expanding its outer diameter to thereby grip against the wall defining the opening in the workpiece.

**3,463,500**  
**MEANS FOR HOLDING AN ARTICLE HAVING AN OPEN CYLINDRICAL CAVITY**  
Floyd K. Collins, Ottawa, Ohio, assignor to Sylvania Electric Products Inc., a corporation of Delaware  
Filed Dec. 18, 1967, Ser. No. 691,641  
Int. Cl. B23b 31/40; B22b 5/22  
U.S. Cl. 279-2

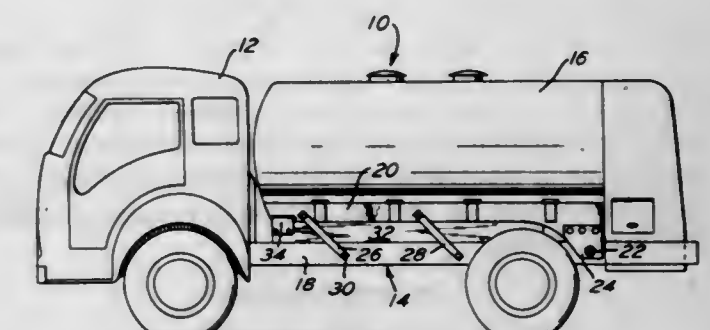
7 Claims



Chuck means formed to interiorly align and support an article having an open cylindrical cavity, such as a tube or collet, has a body portion with a center bore therethrough and a plurality of radially-oriented spaced apart slots longitudinally formed therein and opening on the periphery thereof. Longitudinal jaws, formed to be slidable within the body slots, are movably retained therein by traverse pins in the body slots cooperating with angled keyway slots formed in the jaws. A shaft having predetermined longitudinal movement is oriented to slidably extend within the center bore. The movable shaft has means formed thereon to engage a portion of each jaw and effect uniform radially related movement to each jaw thereby providing accurate alignment and support of the article being held.

**3,463,501**  
**VEHICLE BODY SECURING MEANS**  
Louis Field, % Allied Tank Truck Equipment Company,  
24th and Brown Sts., Philadelphia, Pa. 19130  
Filed Aug. 21, 1967, Ser. No. 662,181  
Int. Cl. B60p 3/22; B62d 23/00  
U.S. Cl. 280-5

10 Claims

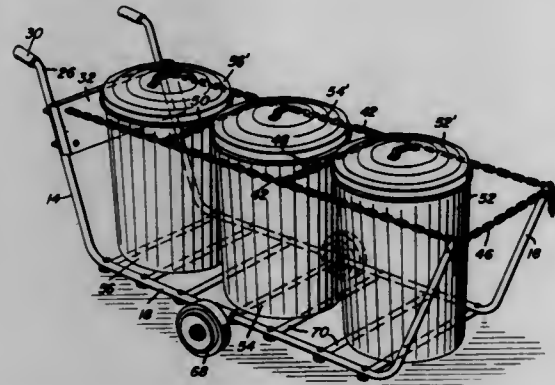


A vehicle construction wherein a body is coupled to a vehicle chassis by a rearwardly located transverse pivot, and by pairs of downwardly and rearwardly extending swivel bars coupled to the body and the chassis forwardly of the pivot.



### 3,463,502 GARBAGE CAN CART WITH REMOVABLE SNOW SKI

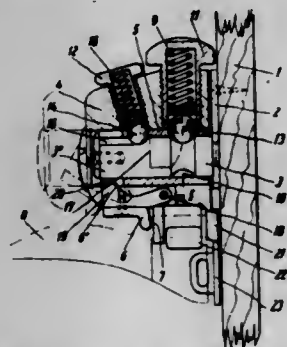
Boyd C. Gough, 4731 S. 2nd W.,  
Murray, Utah 84107  
Filed Apr. 19, 1967, Ser. No. 632,014  
Int. Cl. B62b 19/00, 13/18, 1/12  
U.S. Cl. 280—8 7 Claims



An elongated cart having handle means at one end and single transverse axle means intermediate its opposite ends provided with opposite end ground engaging wheels, the cart being adapted to support a plurality of upright trash or garbage cans thereon and including a skid plate attachment readily removably engageable with the undersurface portions of the cart adapted to form a substantially planar ski surface beneath the entire cart so as to enable the cart to be readily moved over ground which is covered by snow, the ground engaging wheels of the cart projecting only slightly below the planar ski surface of the attachment when the latter is secured to the cart.

### 3,463,503 SAFETY MEANS FOR SKI BINDINGS WITH VERTICAL BOLT

Paul Unger, 113 Bruckwiesenstrasse, 8501 Altenberg,  
near Nuremberg, Germany  
Filed Aug. 16, 1967, Ser. No. 661,117  
Claims priority, application Germany, Aug. 20, 1966,  
U 13,026  
Int. Cl. A63c 9/08  
U.S. Cl. 280—11.35 15 Claims

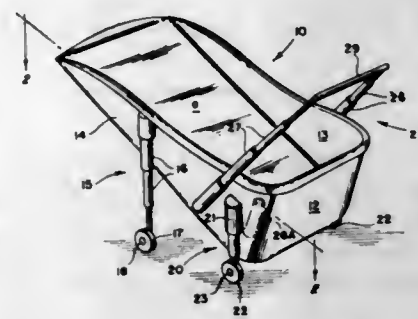


Ski binding with safety means comprising a vertical bolt, an element in the form of a housing disposed around the bolt which is rotatable around and longitudinally slidable relative to the bolt and adjustable spring biasing means intermediate the bolt and the element for retaining the binding in latched position up to the application of forward fall forces or lateral torsional forces of predetermined magnitude.

3,463,504  
WHEELED BABY SEAT  
Marvin Petry and Marilyn Belle Petry, both of 10232  
Rockville Pike, Rockville, Md. 20853  
Filed Aug. 18, 1967, Ser. No. 661,654  
Int. Cl. B62b 7/12, 1/04, 3/02  
U.S. Cl. 280—31 9 Claims

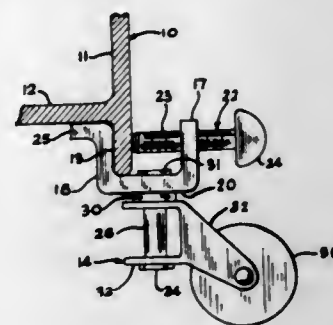
A baby seat of the type having a back, a base and opposed sides and designed for infants too young to sit or

to stand; including a frame structure movable between at least a first position whereat the elements of the frame are withdrawn to permit normal manually carrying of



the baby seat, and a second position whereat the elements of the frame are extended to permit transportation of the baby seat along the ground.

3,463,505  
COMBINED CONTAINER AND DETACHABLY MOUNTED ROLLER ASSEMBLY  
Israel Robert German, 1157 Moorlands, Richmond Heights, Mo. 63117, and Melvin Chervitz, 1235 Bardot Lane, St. Louis, Mo. 63141  
Filed Dec. 20, 1967, Ser. No. 692,029  
Int. Cl. B62b 3/02, 5/00; B60b 33/04  
U.S. Cl. 280—79.2 3 Claims

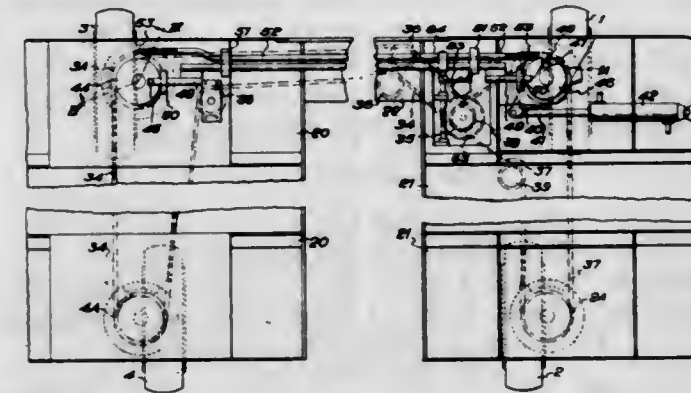


A combined container and detachably mounted roller assembly in which the container includes a bottom wall and depending flange, and in which the roller assembly includes a substantially U-shaped clamp having opposed flanges interconnected by a transverse base. The clamp receives the container flange adjacent one of the clamp flanges. A fastener threadably engages and extends through the other clamp flange to selectively engage the container flange and clamp such container flange to the said adjacent one clamp flange. A swivel means operatively connects a roller to the transverse clamp base. For stability, the clamp flange, fitting behind the container flange, is provided with an outwardly turned tab that engages the bottom wall of the container. Sufficient space is provided between the mounting means, attaching a swivel pin to the clamp base, and the said adjacent one clamp flange in order to receive the container flange therebetween. For even greater stability, the angular configuration of the clamp flange, including the tab, conforms substantially to that of the intersecting bottom wall and depending flange.

3,463,506  
STEERING MEANS FOR LIFT TRUCKS  
Ronald Drake, Wakefield, England, assignor to Joshua Shaw & Sons Limited, Batley, England  
Filed July 20, 1966, Ser. No. 566,517  
Claims priority, application Great Britain, July 30, 1965, 32,733/65  
Int. Cl. B62d 5/10, 7/16  
U.S. Cl. 280—91 2 Claims

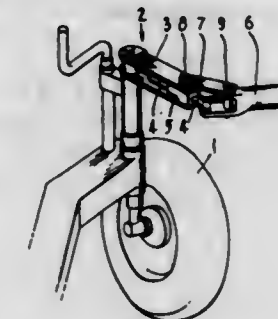
A vehicle steering drive mechanism operated by the driver which controls a pair of front steerable ground wheels and a pair of rear steerable ground wheels on

pivotable supports mounted to the chassis comprising two endless flexible chains, driving means, clutch means engaging the pivotable support with the chains and lock-



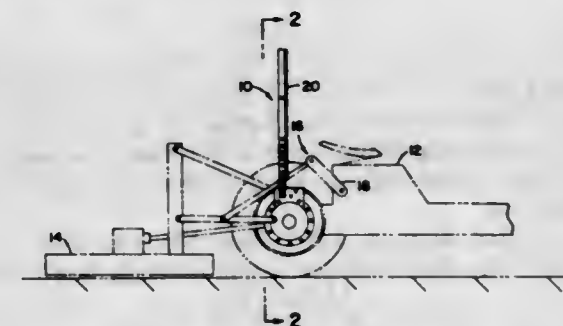
ing means so as to permit selection of a pair of end wheels or a pair of side wheels for movement of the vehicle longitudinally or laterally.

3,463,507  
STEERING LINKAGE FOR TRAILING AGRICULTURAL IMPLEMENTS  
James F. Butler, Belmont, Geelong, Victoria, Australia, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware  
Filed Apr. 20, 1967, Ser. No. 632,349  
Claims priority, application Australia, Apr. 21, 1966, 4,563/66  
Int. Cl. B62d 7/16, 9/00  
U.S. Cl. 280—103 14 Claims



A steering linkage, for trailing or powered wheeled vehicles, attached to a pair of wheels mounted for steering movement about respective vertical axes wherein at least one steering arm is telescopic whereby the length of the telescopic steering arm is increased as the included angle between it and the fixed length tie rod decreases such that correct steering along a smaller turning circle is imparted particularly in one predetermined direction of turning.

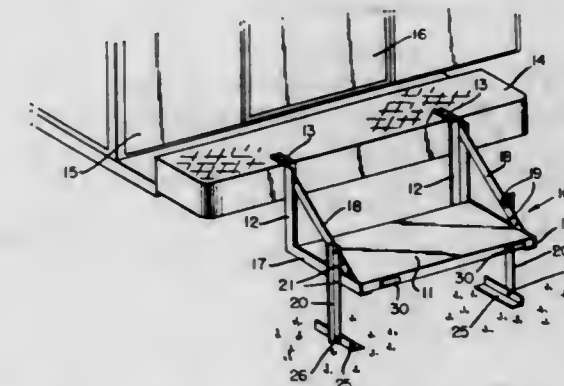
3,463,508  
BACKGUARD FOR TRACTOR  
William S. Killen, P.O. Box 29, Athens, Ala. 35611  
Filed Aug. 8, 1967, Ser. No. 659,058  
Int. Cl. B60r 21/02  
U.S. Cl. 280—152 3 Claims



A backguard protector for operator of tractor equipped rotary cutter wherein the backguard consists of a sheet

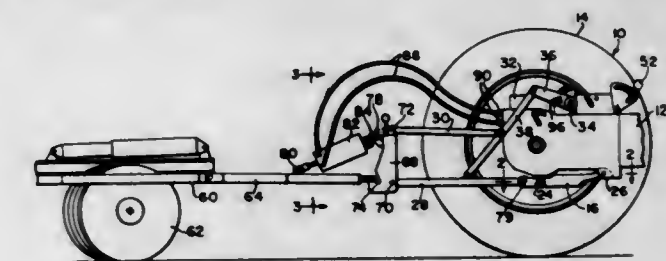
of fairly thin gauge metal supported by two spaced vertical upright members mounted on the differential housing of the tractor to provide a protective barrier for the operator from objects which tend to be thrown out by the rotary cutter.

3,463,509  
FOLDING CAMPER STEP  
Leland Schiffner, 1508 42nd St.,  
Sacramento, Calif. 95819  
Filed Nov. 28, 1967, Ser. No. 686,201  
Int. Cl. B60r 3/02 5 Claims



A folding camper step characterized by normally vertical supports hinged by removable pin hinges to the rear of a camper, and a normally horizontal step fixed to the lower ends of the uprights and reinforced by diagonal supports extending from the top of the uprights to the outer ends of the step sides. Adjustable legs are pivoted to the diagonal supports by single screws and wing nuts to accommodate the step to various ground levels and may be swung out of the way when the step is swung about its hinges to travelling position.

3,463,510  
TRACTOR-IMPLEMENT WEIGHT-TRANSFER DRAFT SYSTEM  
Wendell Mason Van Syoc, Cedar Falls, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware  
Filed Nov. 30, 1967, Ser. No. 687,007  
Int. Cl. B60d 1/00; B62d 53/00; A01b 63/112  
U.S. Cl. 280—405 13 Claims



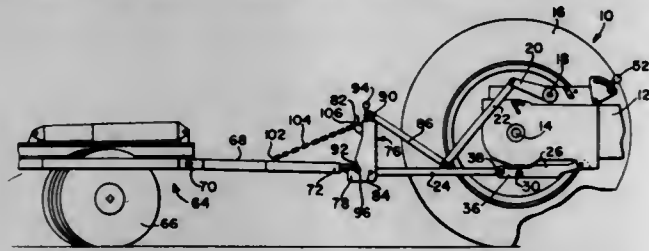
A weight-transfer mechanism for a tractor-implement unit in which the remote hydraulic motor of the tractor power lift system is employed to vary lifting forces on the trailing implement so as to selectively transfer part of the implement weight to the tractor to improve traction.

3,463,511  
WEIGHT-TRANSFER HITCH  
Kenneth Earl Murphy and Robert Deryl Miller, Cedar Falls, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware  
Filed Aug. 14, 1967, Ser. No. 660,353  
Int. Cl. B60d 1/00; B62d 53/00; A01b 63/112  
U.S. Cl. 280—405 9 Claims

A hitch coupler providing three hitch points on a tractor equipped with power operated vertically adjustable



trailing draft links for connecting a trailing implement to the tractor in such manner as to enable the transfer of at

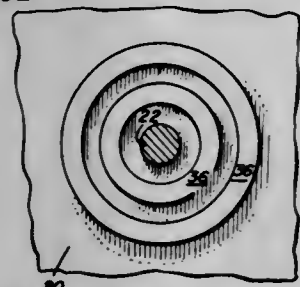


least part of the weight of the implement to the tractor upon raising of the draft links.

**3,463,512**  
**FIFTH WHEEL CONSTRUCTION**  
Donald W. Hodgson, 1646 10th St.,  
Arcata, Calif. 95521  
Filed Oct. 31, 1967, Ser. No. 679,482  
Int. Cl. B60d 53/06

U.S. Cl. 280—432

7 Claims

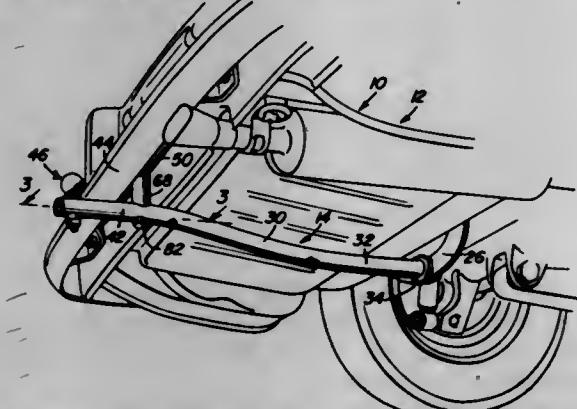


First and second plates for securement to a semitrailer and tractor, respectively, or alternatively to a tractor and semitrailer, respectively, the first plate having a plurality of concentric circular grooves opening outwardly of one side thereof and second plate including a plurality of concentric circular ridges projecting outwardly of one side thereof with the ridges snugly receivable within the grooves and the opposing side surfaces of the ridges and the grooves defining coating bearing surfaces journaling the plates from each other for relative oscillation about an axis concentric with the ridges and the grooves. One of the plates is provided with a fifth wheel pin projecting outwardly thereof and the other of the plates includes a bore concentric with the grooves and which the pin is rotatably and axially slidably received, means being provided to releasably engage the pin to prevent its axial withdrawal from the bore and to thereby maintain the ridges nested within the grooves.

**3,463,513**  
**TRAILER HITCH CONSTRUCTION**  
Charles A. Burton, 270 Idylwood Drive, SE.,  
Salem, Ore. 97302  
Filed Jan. 17, 1967, Ser. No. 609,952  
Int. Cl. B60d 1/00

U.S. Cl. 280—495

8 Claims



A hitch construction for a vehicle wherein a bracket member is mounted in a semipermanent concealed manner to the frame assembly forwardly of the rear crossbar and a support assembly is mounted in a semipermanent

manner so that it is concealed by the rear bumper assembly of the vehicle with an elongated hitch tongue, when in use, extending longitudinally under the vehicle and provided with an inner end portion detachably connected to the bracket member and detachably connected to the support assembly by a pipe socket connection and having an outer end portion projecting rearwardly beyond the bumper assembly and carrying a hitch coupling.

**3,463,514**  
**TRAILER HITCH ASSEMBLY**  
Richard E. Warner, Lodi, Calif., assignor to Valley Tow-Rite, Inc., Lodi, Calif., a corporation of California  
Filed Jan. 17, 1968, Ser. No. 698,604  
Int. Cl. B60d 1/00

U.S. Cl. 280—495

2 Claims

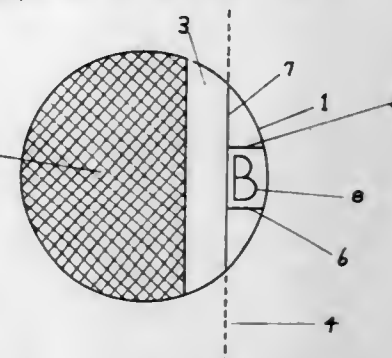


A trailer hitch mounting assembly for frameless type vehicles in which heavy metal L-shaped brackets are connected to large horizontal and vertical surface areas of the vehicle body to thereby afford a structural fastening of the trailer support assembly which is capable of carrying trailer loads.

**3,463,515**  
**INDEXING DEVICES**  
Edward W. Thompson, W. 3614 Rockwell Ave.,  
Spokane, Wash. 99205  
Filed Oct. 17, 1966, Ser. No. 587,135  
Int. Cl. B42f 21/04

U.S. Cl. 283—37

5 Claims



A disc-shape indexing tab having a chord line defining a minor segment to protrude from the edge of a page and a major segment to be adhesively secured to a page with the adhesive terminating spaced from the said chord line and therefore the page edge. Additional lines perpendicular to the chord line extend across the minor segment and form means for aligning successive tabs.

**3,463,516**  
**FLEXIBLE COUPLINGS FOR PROVIDING FLUID COMMUNICATION BETWEEN TWO MEMBERS**  
Rupert Munton, Croydon, England, assignor to Ship-owners Refrigerated Cargo Research Association, London, England, a corporation of the United Kingdom  
Filed Sept. 5, 1967, Ser. No. 665,496  
Claims priority, application Great Britain, Sept. 16, 1966, 41,445/66

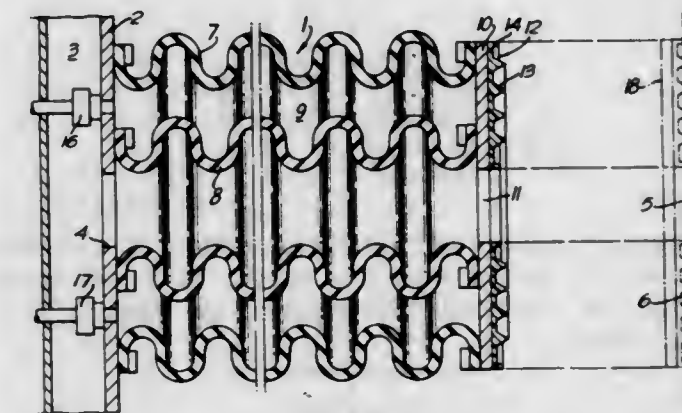
Int. Cl. F16l 25/00, 55/00

U.S. Cl. 285—9

5 Claims

A coupling for providing fluid communication between two members, and particularly between a refrigerated con-

tainer and a permanent refrigeration system in the hold of a ship, which coupling is flexible and extendable, and is insulated. The coupling is adapted to be permanently secured at one end to ducting of the refrigeration system,

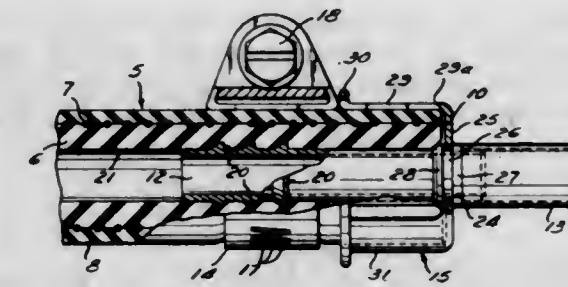


and adapted to be moved into and out of engagement with a wall of a container, the free end of the coupling being provided with an abutment seal which is adapted to engage around an aperture in said wall.

**3,463,517**  
**HOSE COUPLING HAVING CLAMP POSITIONING MEANS**  
Louis B. Courtot, Euclid, James R. Jeromsom, Jr., Willoughby, and Philip W. Morse, Cleveland Heights, Ohio, assignors to The Weatherhead Company, a corporation of Ohio  
Filed May 7, 1968, Ser. No. 727,315  
Int. Cl. F16l 55/00, 35/00

U.S. Cl. 285—93

4 Claims



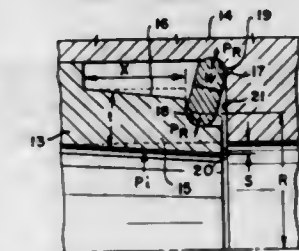
A reusable hose end assembly includes a tubular nipple having a major portion thereof inserted within the end of a length of hose, an adjustable clamp engaging the outer wall of the hose at an optimum position, and a cup-like cap snugly fitting over the cut end of the hose. The cap is constructed so that it provides a gauge for the optimum positioning of the clamp and provides windows through the wall thereof which facilitate the use of the hose end assembly.

**3,463,518**  
**SEALED PIPE COUPLING**  
Douglas E. Broussard, Dean P. Hemphill, Thomas J. Bolling, Jr., Thomas R. Beasley, and Erskine E. Roach, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware  
Filed Aug. 22, 1967, Ser. No. 662,366  
Int. Cl. F16l 19/06, 19/08, 17/00, 21/02

U.S. Cl. 285—340

8 Claims

A sealed pipe coupling having mating coupling members formed with shoulders to receive a frusto-conical shaped metallic sealing ring therebetween. One of the coupling members is formed with a wall of reduced thickness. As the coupling members are brought into mating relationship and joined by a threaded or flanged pipe con-

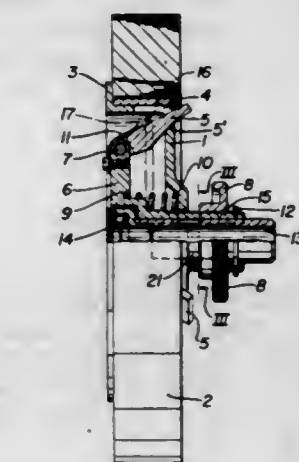


duced thickness and establishing a metal-to-metal seal between the coupling members.

**3,463,519**  
**SUPPORT STOCK FOR AN ANNULAR ARTICLE**  
John Charles Raymond, London, England, assignor to Molins Machine Company Limited, London, England, a corporation of Great Britain  
Filed Oct. 16, 1967, Ser. No. 675,452  
Claims priority, application Great Britain, Oct. 20, 1966, 47,093/66  
Int. Cl. F16d 1/06; F16c 3/10; B60b 27/06

U.S. Cl. 287—52.07

4 Claims

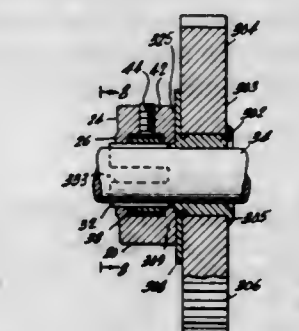


A stock having a hub for carrying bobbins of web material, especially cigarette paper for cigarette-making machines, and having a locking mechanism comprising a plurality of fingers movable out of the hub to clamp a bobbin against a stop under the action of a locking ring, to facilitate the removal and replacement of bobbins.

**3,463,520**  
**COMBINATION COLLAR-CLAMP AND SHAFT COUPLING**  
Jerome C. Turro, 245 Rumsey Road,  
Yonkers, N.Y. 10701  
Continuation of application Ser. No. 424,002, Jan. 7, 1965. This application Mar. 6, 1968, Ser. No. 711,134  
Int. Cl. F16d 1/06

U.S. Cl. 287—52.08

5 Claims

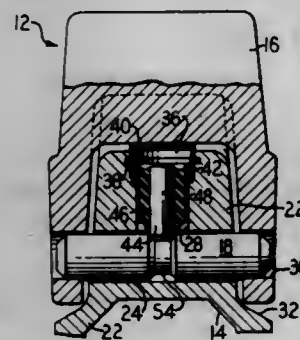


A shaft ring device as constructed which clamps around a shaft without creating a burr or disfigurement on the



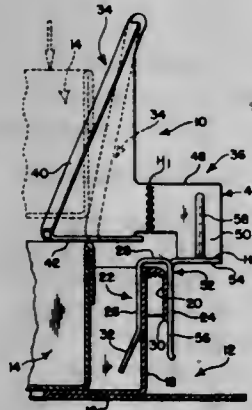
shaft itself by providing a split clamping ring held captive in a recess in the shaft ring and actuated by a radial screw element.

**3,463,521**  
**LOCK MECHANISM FOR TELESCOPIC MEMBERS**  
Eugene L. Hekon, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California  
Filed May 20, 1968, Ser. No. 730,529  
Int. Cl. F16c 11/10  
U.S. Cl. 287—100 4 Claims



A locking mechanism for retaining two elements in telescopic relationship employs a replaceable resilient locking device which engages a groove of a retainer pin in a manner such that the telescopic elements may be easily assembled and disassembled but whereby slight accidental movements of the retainer pin will not disengage the locking device from the groove of the retainer pin.

**3,463,522**  
**CEILING FASTENER**  
Clarence L. Meehan, Itasca, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware  
Filed Feb. 26, 1968, Ser. No. 708,004  
Int. Cl. E04b 5/52; E04c 2/00  
U.S. Cl. 287—189.35 6 Claims

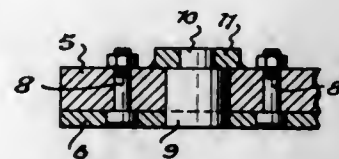


A fastener device for modular ceiling arrangements in which a frame element provides underlying support for a ceiling panel or the like, and the fastener device includes retention means for releasably holding the ceiling panel or the like to the frame element.

**3,463,523**  
**SCRAPER BLADE SUPPORTING MEANS**  
Peter Vasa, 12 Holmes St., Poughkeepsie, N.Y. 12601  
Filed Jan. 9, 1967, Ser. No. 607,950  
Int. Cl. F16b 1/00, 3/00, 5/00, 7/00  
U.S. Cl. 287—189.36 1 Claim

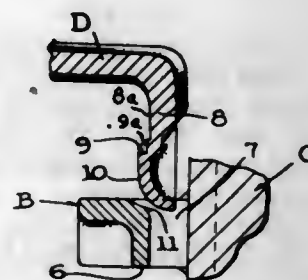
This invention is directed to a scraper blade assembly that includes a blade base having a scraper blade re-

movably attached thereto by a number of transversely spaced bolts. A mounting plate is affixed to the rear face of the blade base between each successive pair of bolts and carries a scraper blade supporting stud having



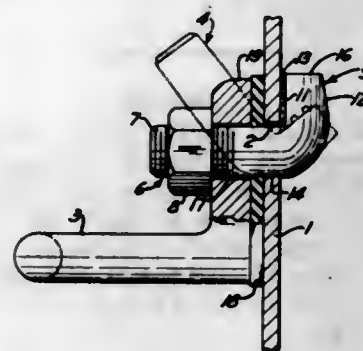
a forwardly projecting cylindrical portion of a diameter substantially greater than that of the bolts and extends through the combined thicknesses of the blade base and scraper blade.

**3,463,524**  
**BEAM CONNECTOR UNIT**  
Van Rensselaer P. Saxe, 1701 St. Paul St., Baltimore, Md. 21202  
Filed Aug. 23, 1967, Ser. No. 662,753  
Int. Cl. F16b 1/00, 5/00  
U.S. Cl. 287—189.36 1 Claim



A beam and column connector unit wherein the interlocking portions of the horizontal and vertical members of the unit are provided with mating portions preventing disengagement when subjected to movement in a direction opposite to that in which they become engaged.

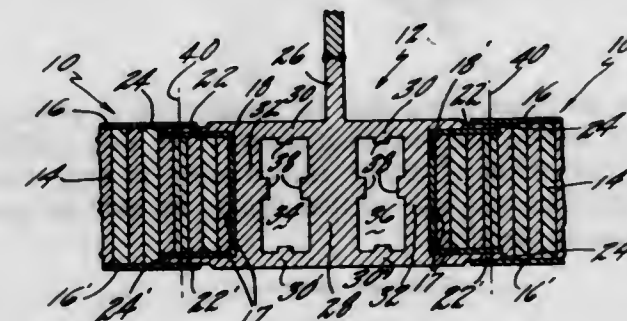
**3,463,525**  
**SECURING SAFETY EQUIPMENT TO RAILROAD CARS BY MEANS OF A BLIND HOOK BOLT**  
Frederick G. Stewart, Washington, D.C., assignor to Schaefer Equipment Company, Pittsburgh, Pa., a corporation of Pennsylvania  
Continuation-in-part of application Ser. No. 613,340, Feb. 1, 1967. This application Apr. 26, 1968, Ser. No. 724,581  
Int. Cl. F16b 1/00, 39/00, 45/00  
U.S. Cl. 287—189.36 2 Claims



Securing safety equipment, such as grab irons or ladders, to the outside of a side or end wall of a railroad car, where access is limited to the exterior of the car, and involves the use of a blind hook bolt that can be rockingly inserted head first in a circular hole in the car

wall, the bolt being retained therein when in operative position and resisting rotation relative to the wall when a mating threaded element is tightened on the bolt.

**3,463,526**  
**WELDABLE ATTACHMENTS FOR BONDED SANDWICH PANEL STRUCTURES**  
John J. Benincasa, Ellington, and Marvin L. Hage, Avon, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware  
Filed Sept. 25, 1967, Ser. No. 670,357  
Int. Cl. F16b 1/00; E04b 2/36  
U.S. Cl. 287—189.36 3 Claims



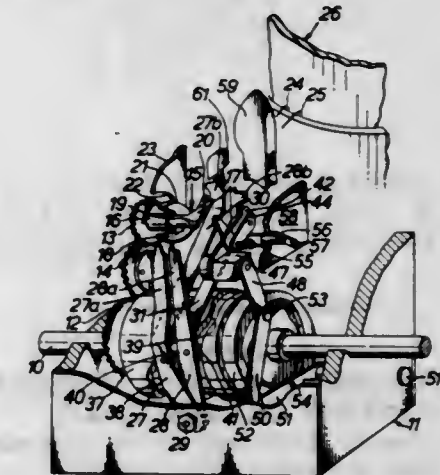
A weldable attachment having heat sink properties that enable heat sensitive honeycomb sandwich panels to be joined together without damage to their adhesive bonded surfaces. The internally cored attachment is mechanically fastened to the honeycomb sandwich panel through thin protruding flanges that have a greater resistance to heat flow from the weld on the attachment than the thicker ribs and cooling fins surrounding the internal core.

**3,463,527**  
**FAILSAFE EXPANDABLE BOLT ASSEMBLY**  
Ralph F. Baker, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Army and/or the Administrator of the Federal Aviation Administration  
Filed Apr. 18, 1968, Ser. No. 722,294  
Int. Cl. F16b 1/00, 7/00  
U.S. Cl. 287—189.36 3 Claims



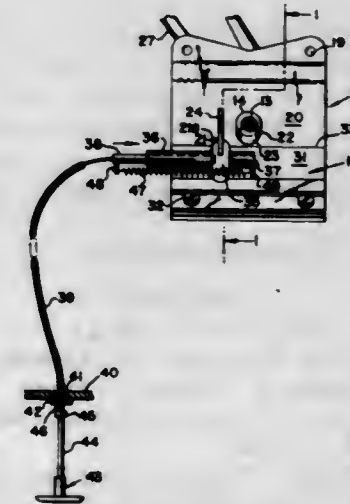
An expandable bolt assembly containing redundant components designed to maintain the joint formed by the bolt in the event one component breaks. The redundancy occurs through the use of two concentric wedging sleeves fixed to the joint independently of a tie-down bolt which assists in holding the sleeves in position.

**3,463,528**  
**AUTOMATIC KNOTTER**  
Koichiro Kubo, Fumitaka Omori, and Munehisa Mural, Kyoto, Japan, assignors to Shimadzu Selsakusho Ltd., and Todo Selsakusho Ltd., Kyoto, Japan, a corporation of Japan  
Filed Jan. 15, 1968, Ser. No. 697,971  
Claims priority, application Japan, Jan. 17, 1967, 42/3,287  
Int. Cl. D03j 1/16  
U.S. Cl. 289—3 14 Claims



An automatic knotting machine having a rotatable tying bill and yarn guiding levers that cooperate to tie two strands of yarn together into a weavers knot and a pair of cutter blades to trim the surplus yarn tails after the knot is tied.

**3,463,529**  
**SAFETY LATCH CONTROL MEANS FOR AUTOMOBILE HOODS**  
Salvatore Lo Rubbo, 1472 82nd St. 11228, and Carmine Pagliarulo, 2355 Ocean Ave. 11229, both of Brooklyn, N.Y.  
Filed Jan. 11, 1968, Ser. No. 697,148  
Int. Cl. E05c 19/10, 19/12  
U.S. Cl. 292—106 5 Claims



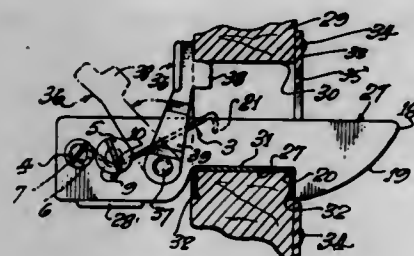
Means operable extending into the driver's compartment, for unblocking the safety secondary latch to permit full raising of the hood cover after the primary latch has been released, thus preventing full lifting of the cover from outside a locked vehicle.

**3,463,530**  
**SCREEN DOOR LATCH**  
Edward S. Modes, Glendale, Calif.  
(470 E. Angeleno, Burbank, Calif. 91501)  
Filed Feb. 16, 1968, Ser. No. 706,195  
Int. Cl. E05c 19/12; E05b 15/02  
U.S. Cl. 292—128 3 Claims

An auxiliary latch for screen doors and the like adapted to be installed sufficiently high above the usual knob

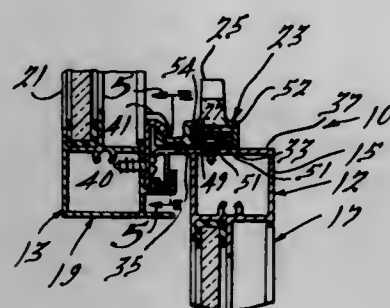


and latch means as to be out of the reach of children. The latch detent is pivotally mounted on the door frame and extends through a self closing opening formed in



the door and engages the outer surface of the door when the door is closed. The protruding end of the detent affords means for release of the latch from the outside of the door.

**3,463,531**  
**SLIDING MOVEMENT LATCH ASSEMBLY FOR WINDOW OR THE LIKE**  
Samuel Chester Reynaud, 17338 Veronica, East Detroit, Mich. 48021  
Filed Aug. 2, 1967, Ser. No. 657,953  
Int. Cl. E05c 1/04  
U.S. Cl. 292—152

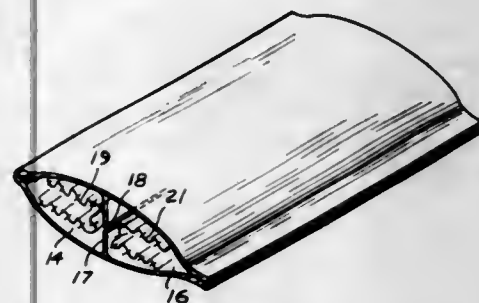


There is herein disclosed a latch assembly for preventing movement between relatively movable members, such as the upper and lower windows of a double hung window unit, including a latch slidably movable along a support surface on one member into and out of latching engagement with a keeper means fixed to the other member.

**3,463,532**  
**SECURITY SEAL**  
John S. Chidley, 970 Buckhorn E., Atlanta, Ga. 30338; George J. Nyilund, 6 Cubberly Place, Staten Island, N.Y. 10306; and Hyman Dolinsky, 40 W. 77th St., New York, N.Y. 10024  
Continuation-in-part of application Ser. No. 655,607 July 24, 1967. This application Feb. 14, 1968, Ser. No. 705,530  
Int. Cl. B65d 55/06, 33/34, 27/30  
U.S. Cl. 292—307

A security seal is taught for use with cartons, shipping containers and openings. Such a seal is generally connectable across an opening. The seal may be attached by adhesive to the article to be sealed or else ends of the seal may be joined together. The inventors teach an apparatus by which tampering with the seal and/or an opening can be detected easily. According to one embodiment the seal is furnished with a reservoir containing a suitable dye selected to change color vividly on exposure to air. The seal is constructed so that a seam (in contact with the reservoir) is arranged to rupture before the seal is broken, thereby exposing the dye to air. Because of the color change that results, one is alerted to

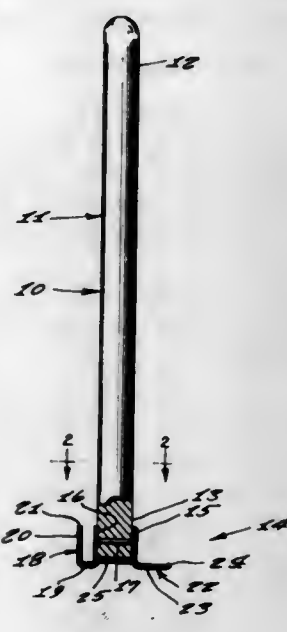
the broken seal. An alternate embodiment of this seal contemplates two reservoirs separated from each other by a diaphragm. Each of the reservoirs contains one of a pair of suitable chemicals which react together to produce a vivid color change. In this second embodiment



the seal is so constructed that the diaphragm is arranged to rupture before the seal is broken. It is also contemplated to use seals of either embodiment in tape form with adhesive on one side so that it may be used to wrap cartons or span openings.

**3,463,533**  
**ARM EXTENDER**  
Steve Repiscak, 2118 W. 54th St., Chicago, Ill. 60609, and Joseph H. Repiscak, 2620 W. 100 Place, Chicago, Ill. 60642  
Filed Aug. 3, 1967, Ser. No. 658,223  
Int. Cl. A47f 13/06; B60r 1/06  
U.S. Cl. 294—19

1 Claim



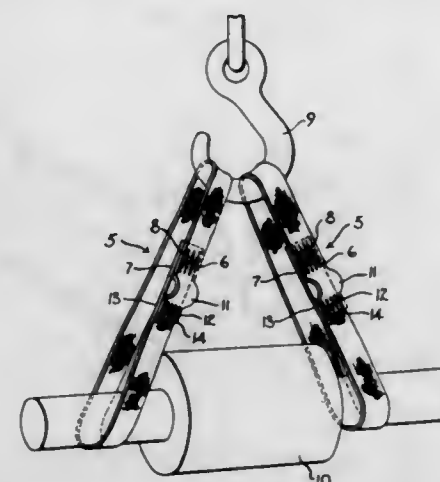
An extension handle with a hook assembly at one end for the purpose of allowing a truck driver to easily adjust a right side mirror of the truck while the driver remains seated in the driver's seat, the device being also practical for use to open and close the windows and door on the truck's right side.

**3,463,534**  
**LOAD LIFTING SLING WITH BUILT-IN LOAD INDICATOR**  
Roy Norton, Milwaukee, Wis., assignor to The Wear-Flex Corporation, Milwaukee, Wis., a corporation of Wisconsin  
Filed Oct. 5, 1967, Ser. No. 674,060  
Int. Cl. B66c 1/18, 1/12  
U.S. Cl. 294—74

7 Claims

A fabric load lifting sling made of nylon webbing which has an appreciable stretch factor and a known

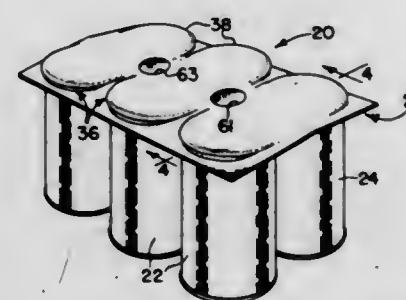
elongation per pound of tension load thereon, has overlying portions one of which is slack and displaced from the other when the sling is in its free unstretched condition, but is drawn into surface-to-surface engagement



with said other portion by elongation of the latter, initial surface-to-surface contact between the overlying portions indicating that the load on the sling is of a magnitude which should not be exceeded.

**3,463,535**  
**CAN CARRIER**  
Robert W. Beart, Park Ridge, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware  
Filed Oct. 12, 1967, Ser. No. 674,837  
Int. Cl. B65d 61/00  
U.S. Cl. 294—87.28

10 Claims



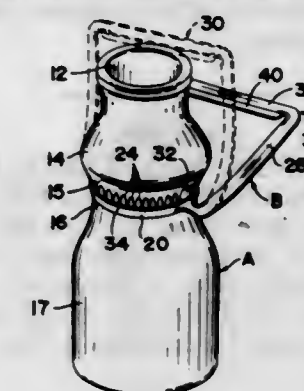
There is disclosed a can carrier comprising a plastic sheet having two rows of can bead engaging pocket means depending therefrom. Each of the pocket means is adapted to encircle at least 180° of the can rims and has an open side through which the can rims may be inserted and removed. The open side of the pocket means in each row faces inwardly or toward the pocket means of the other row. The carrier is constructed so that it may be folded or manipulated for permitting insertion of the cans in one row without interfering with the cans in the other row.

**3,463,536**  
**CONTAINER HANDLE**  
Alfred V. Updegraff, Lakewood, and Lawrence A. Beyer, Shaker Heights, Ohio, assignors to Haynes Manufacturing Company, Cleveland, Ohio, a corporation of Ohio  
Filed Jan. 10, 1967, Ser. No. 608,441  
Int. Cl. A47f 45/00; B65d 23/10  
U.S. Cl. 294—31.2

1 Claim

A plastic handle for bottles which is readily slipped over the top rim of a bottle and firmly locked in place.

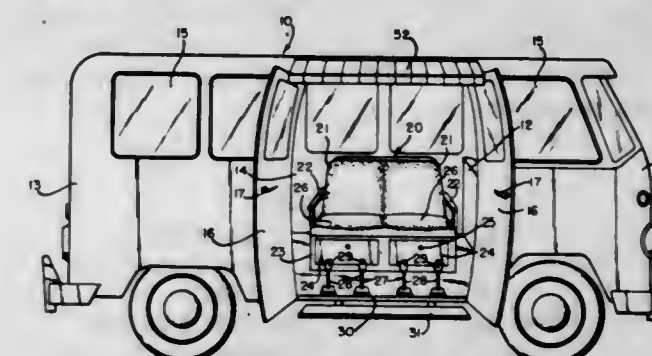
The handle is made flat and in one piece, and lies in a single plane. The handle includes a circular annulus having



ing inwardly projecting radial fingers which are deformable upwardly so that their ends bear against the bead of a bottle or the like.

**3,463,537**  
**TRANSPORTABLE SHOE SHINE STAND**  
Victor A. Pagley, 719 Franklin Ave., Steubenville, Ohio 43952  
Filed June 29, 1967, Ser. No. 650,112  
Int. Cl. B62d 63/00, 39/00  
U.S. Cl. 296—1

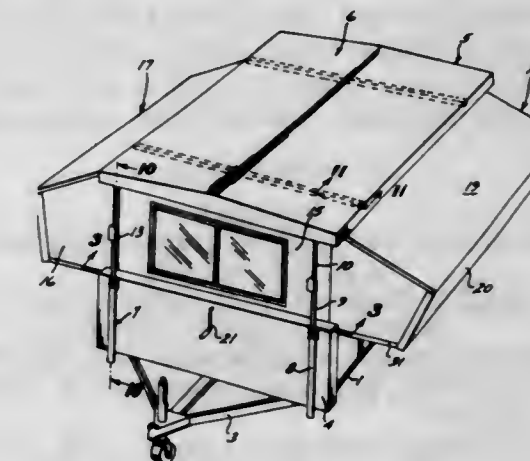
1 Claim



The combination of a motor vehicle having a relatively high floor and a double side opening door, and a shoe shine stand positioned interiorly of the vehicle facing the door and readily accessible from the exterior of the vehicle.

**3,463,538**  
**FOLDABLE TRAILER**  
William R. Koon, 9821 Bryson Ave., South Gate, Calif. 90280  
Filed May 11, 1967, Ser. No. 637,807  
Int. Cl. B60p 3/34  
U.S. Cl. 296—23

8 Claims



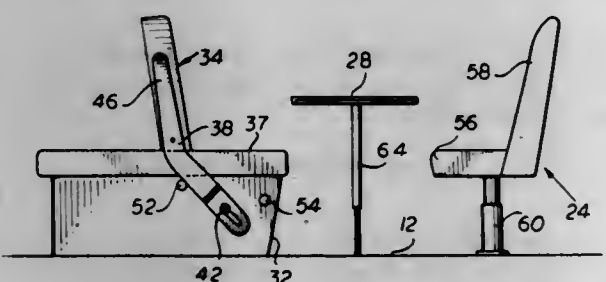
A foldable trailer of the type having living quarters and where the height of the trailer can be reduced when traveling on a highway. The roof and side of the trailer can be raised and lowered by the operator by means of a single crank. Also the sides of the trailer are posi-



tioned against the outside of the lower half of the trailer when folded, thus leaving the inner portion of the folded trailer entirely free for other articles which might be required when traveling.

### 3,463,539 CONVERTIBLE LOUNGE, TABLE AND SEAT ARRANGEMENT FOR VEHICLE

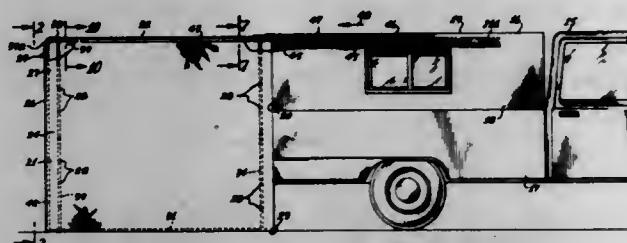
Richard W. Racine and Max E. Colchin, Fort Wayne, Ind., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware  
Filed June 14, 1967, Ser. No. 646,074  
Int. Cl. B60p 3/36; B60n 1/06, 1/10  
U.S. Cl. 296—23 6 Claims



An arrangement of lounges, tables and seats for a vehicle having restricted quarters to provide a number of alternative arrangements to serve different functions depending on the occasion. The arrangement includes seat units convertible to a lounge, foldable table panel sections and additional seat units which may be utilized for multiple purposes.

### 3,463,540 EXPANDABLE CAMPER

Harry E. Carr, 1438 E. Sunnyslope Lane,  
Phoenix, Ariz. 85020  
Filed Sept. 7, 1967, Ser. No. 666,139  
Int. Cl. B60p 3/34; E04b 7/16  
U.S. Cl. 296—23 2 Claims



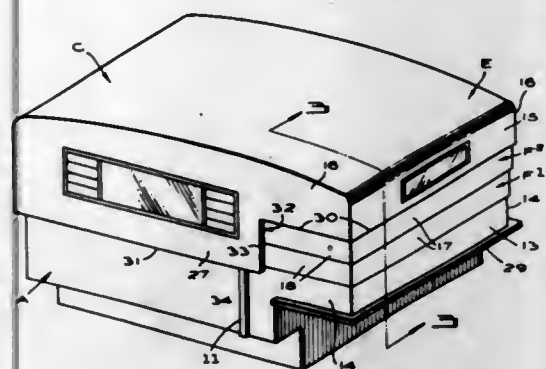
A retractable and expandable extension for campers having light weight material covering a tubular frame, with rigid roof and floor portions interconnected by inwardly folding side walls and having an upwardly folding back wall, the roof frame having extended rail members engaging rollers in a storage compartment in the top portion of the camper, so that the collapsed structure may be retractably stored within the compartment.

### 3,463,541 CAB-OVER TELESCOPIC CAMPER WITH SLIDING PANEL

Earl R. Garrison, 1445 Bellevue Ave.,  
Burlingame, Calif. 94010  
Continuation-in-part of application Ser. No. 597,346,  
Nov. 28, 1966. This application June 26, 1968, Ser.  
No. 744,252  
Claims priority, application Canada, Aug. 22, 1967,  
998,362  
Int. Cl. B60p 3/32; E04b 1/343  
U.S. Cl. 296—23 5 Claims

A cab-over telescopic camper with sliding panel and having a lower room section mountable on a load-carrying platform of a truck, with an upper room section telescopically arranged on the lower room section and being

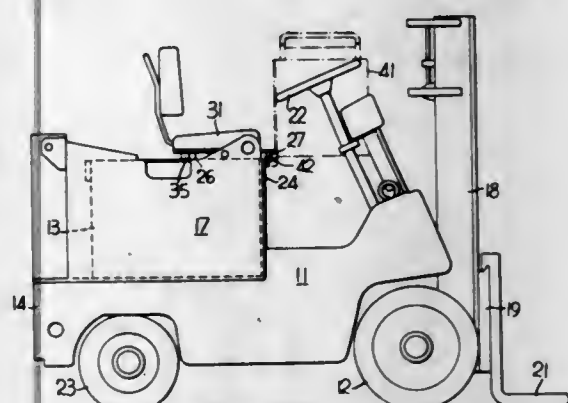
movable into raised position relative to the lower room section for occupying and into lowered position relative thereto for travelling. The upper and lower room sections are provided with cab-over cover and cab-over compartment, respectively, that overlie the cab of the truck. At



least one sliding panel is provided having a transverse front panel part and a pair of spaced longitudinal side wing panel parts extending rearwardly from the front transverse panel part, the sliding panel being made to bridge the space between the lower room section and the upper room section when the latter is raised.

### 3,463,542 SWING-AWAY SEAT

Russell W. Daniels, Park Forest, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.  
Filed Apr. 22, 1968, Ser. No. 723,035  
Int. Cl. B60n 1/04, 1/02  
U.S. Cl. 296—65 3 Claims



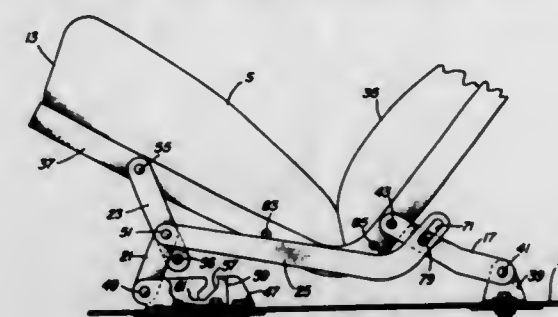
A seat support member is pivotally connected at its front end to the vehicle chassis for forward swinging movement and is pivotally connected at one lateral side to the operator's seat for tilting to one side. The seat may be swung forwardly and to one side of the steering wheel, in which position it will not interfere with removal of power apparatus, such as an electric storage battery of an electric lift truck.

### 3,463,543 SAFETY SEAT

William A. Zellar, 103 L St., Shula Vista, Calif. 92011  
Filed June 30, 1967, Ser. No. 650,452  
Int. Cl. B60r 21/10 7 Claims

A safety seat for use in a vehicle and including a forwardly facing seat portion having a normal, substantially horizontal position and actuated, inclined position, wherein such seat portion acts as a cushion to resist forward movement of a passenger seated therein. The back portion of the seat portion is supported by an upwardly and forwardly angling support arm which is pivotally connected to the vehicle body on its lower end and to the seat portion on its upper end. The front portion of such seat portion is supported by upper and

lower links that are pivotally connected together on their adjacent ends by a pivot pin. The upper extremity of the upper link is pivotally connected to the seat portion and the lower extremity of the lower link is pivotally connected to the vehicle body. The links are normally arranged with the lower link angling upwardly and rearwardly from its lower extremity. A push rod con-

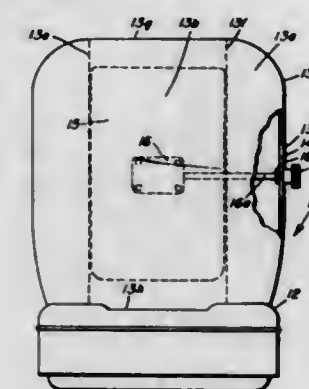


nects the pivot pin with the upper portion of the support arm and forces the pivot pin forwardly when the seat portion is moved forwardly, causing the upper portion of the support arm to rotate forwardly, thus pushing the upper extremity of the lower link forwardly to cause such link to assume an upright position and raise the forward portion of the seat portion.

### 3,463,544 ORTHOPEDIC SEAT BACK

Edward Froelich, 5408 Eastview Park,  
Chicago, Ill. 60615  
Filed Apr. 22, 1968, Ser. No. 723,217  
Int. Cl. A47c 7/46 5 Claims

U.S. Cl. 297—284



An orthopedic back rest for chairs, automobile seats, and the like, including an exterior portion with slotted opening along one side thereof and a portion interiorly of the front surface of the exterior portion, with longitudinally extending means securing the two together in such manner as to define a limiting edge therebetween, and a rigid and contoured orthopedic device disposed in vertical adjustable manner between the exterior and interior portions and against the limiting edge, with an arm secured to the orthopedic device and protruding laterally through the slotted opening in the side of the seat back, and a lock or latch for securing the arm to the seat back to maintain the orthopedic device in a selected vertical position suited to the individual user of the seat.

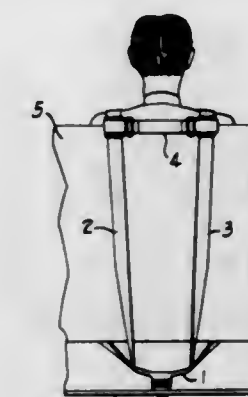
### 3,463,545 MULTIPLE-BELT SEAT HARNESS

Michael G. Curran, 11608 Detroit Ave.,  
Cleveland, Ohio 44102  
Filed Nov. 16, 1967, Ser. No. 683,669  
Int. Cl. B60r 21/10; A62b 35/02 8 Claims

U.S. Cl. 297—389

A multiple-belt upper body safety harness for use in automobiles and the like comprised of two generally parallel belts fastened to anchor means at the base of

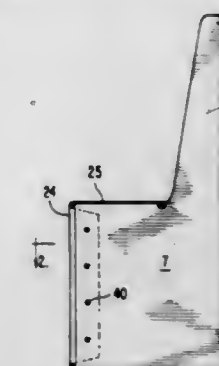
the vehicle seat; an adjustable transverse strap connecting the belts at the level of the wearer's shoulder blades; and a plurality of retaining members for maintaining the



### 3,463,546 KNOCKDOWN PAPERBOARD CHAIR WITH STORAGE SPACE

Buddy E. Giebel, Monroe, Mich., assignor to Union Camp Corporation, New York, N.Y. a corporation of Virginia  
Filed Aug. 28, 1967, Ser. No. 663,659  
Int. Cl. A47c 7/00, 4/00, 7/62 5 Claims

U.S. Cl. 297—440



A paperboard chair constructed from two blanks. One blank incorporates the back section, the side panels, seat flaps cut out from the side panels in such a manner that the assembled chair has the resemblance to a swing chair, and bottom flaps which are interfolded or secured together to form a base structure. A second blank forms a front section, a seat cover and a bottom flap. When the two blanks are properly folded and secured to each other, a wing chair with a storage space below the seat is formed. The space also houses a removable support for the seat.

### 3,463,547 FLEXIBLE CHAIR SEAT

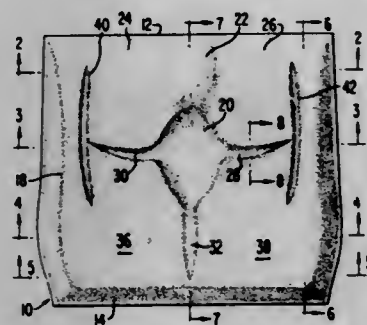
John M. Brennan, 2535 E. Van Buren, Phoenix, Ariz. 85034, and Harold R. Sparks, 3751 E. Meadowbrook Ave., Phoenix, Ariz. 85018  
Filed Oct. 20, 1967, Ser. No. 676,857  
Int. Cl. A47c 7/02 10 Claims

A unitary, flexible, plastic member for use with seats of chairs or the like and which is provided with a modified anatomical series of contours and portions with varying degrees of flexibility is described in the herein-after specification. The member may be used as a saddle or readily adapted to use as a pad that may be placed on a relatively soft cushioned seat such as an automobile



seat. In lieu of being used as a pad or the like it may be incorporated as the topmost portion of the seat of a cushioned chair or the like. The member is so constructed that it admits of varying degrees of flexibility so that

to the resonant driver and is manipulated into position and driven downward into a competent earth formation adjacent an open face thereof to break or separate chunks of the earth material from the earth formation. Earth en-



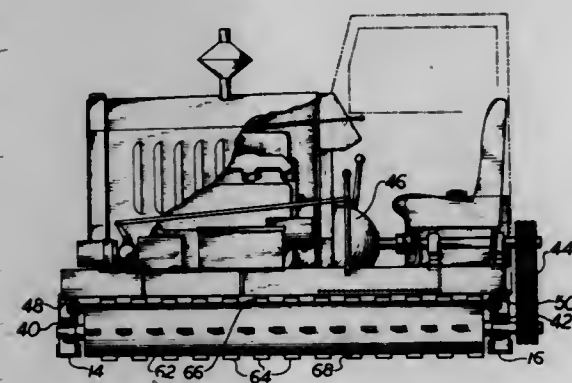
it tends to conform to the natural shape of a user. It is provided with channels and ridges and other portions of varying degrees of thickness such that the weight of the user is evenly distributed across the entire member.

**3,463,548**  
**PROCESS FOR CONDITIONING A HARD SNOW OR ICE-LIKE SNOW COVERED SKI SLOPE AND APPARATUS THEREFOR**

James W. Kelly, 509 Pecks Road,  
Pittsfield, Mass. 01201  
Filed Apr. 3, 1967, Ser. No. 627,783  
Int. Cl. E01c 19/26

U.S. Cl. 299—10

16 Claims



Apparatus and process for conditioning a hard snow or ice-like surface employed in combination a frame carrying a rapidly rotatable pulverizing member. This member has fracturing means projecting outwardly from an elongated body. Means for bringing and holding said member into engagement with the surface so that a portion of the periphery of said body is below the level of the surface to be conditioned. Means for moving said apparatus over said surface. Power means for rotating the member at high speed with respect to the translational motion of the apparatus.

**3,463,549**  
**SONIC EARTH CUTTING MACHINE**  
Willard B. Goodman, Sherman Oaks, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

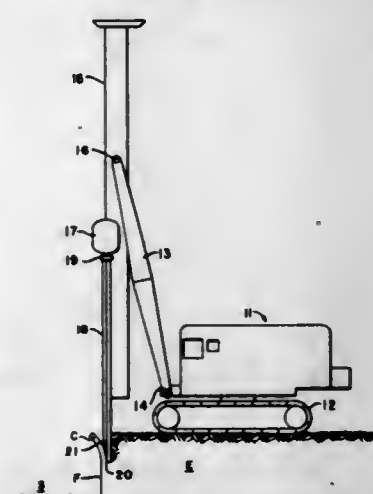
Filed Aug. 11, 1967, Ser. No. 660,008  
Int. Cl. E21c 37/20, 47/00

U.S. Cl. 299—37

6 Claims

A sonic resonant device is carried by a handling mechanism such as a hoisting crane mounted on a carrier vehicle. An elongated elastic cutting bar is rigidly coupled

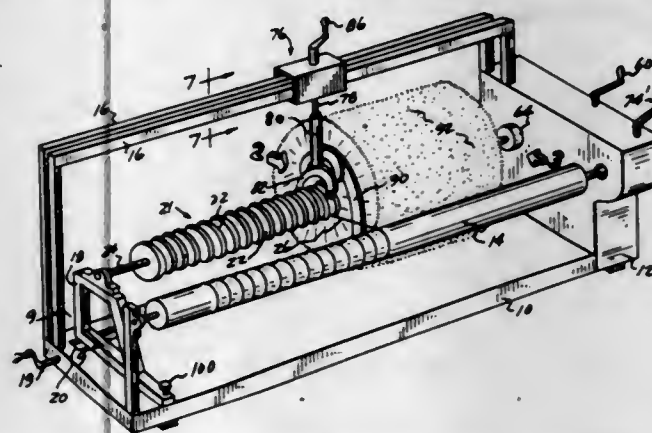
gaging cutting means is carried on the lower end of the cutting bar and includes earth engaging guide means which is cooperative with the earth formation to prevent lateral displacement of the cutting means.



**3,463,550**  
**BROOM CORE WINDING MACHINE**  
Leo L. Lechene, R. Rte. 1, Box 364, Patton, Pa. 15668  
Filed Mar. 15, 1967, Ser. No. 623,264  
Int. Cl. A46d 3/05

U.S. Cl. 300—14

5 Claims



A machine for winding bristles onto cylindrical commercial brooms is capable of accommodating broom cores of a wide range of lengths and diameters, and is provided with means for maintaining previously secured bristles out of the path of bristles being wound onto the core.

**3,463,551**  
**LIQUID WHEEL BALANCING SYSTEM**  
Robert A. Clay, Phoenix, Ariz., assignor to Sunland Refining Corporation, Fresno, Calif.  
Continuation-in-part of application Ser. No. 593,399, Nov. 10, 1966. This application June 19, 1967, Ser. No. 647,115

Int. Cl. B60b 1/00, 27/00; B60c 1/00

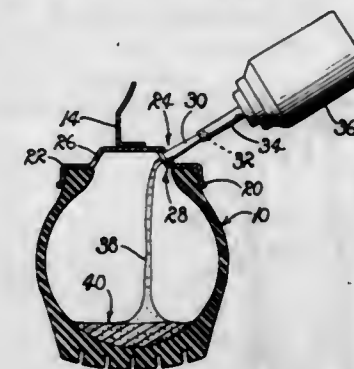
U.S. Cl. 301—5

14 Claims

A balancing method and composite material for vehicle wheels having tires thereon which utilize a non-hardening liquid conveyor containing a flowable, particulate non-liquid weighting material adapted for deposit in such a tire so that upon wheel rotation the composite material is conveyed to the light side of the wheel and tire, centrifuged from the liquid conveyor, and at least temporarily suspended against the interior of the tire at the light side thereof to balance the tire and wheel with the liquid conveyor thereafter constituting a feathering or vernier balancing material responsive to minor imbalances

while the weighting material remains in place. If the wheel and tire subsequently become unbalanced, the

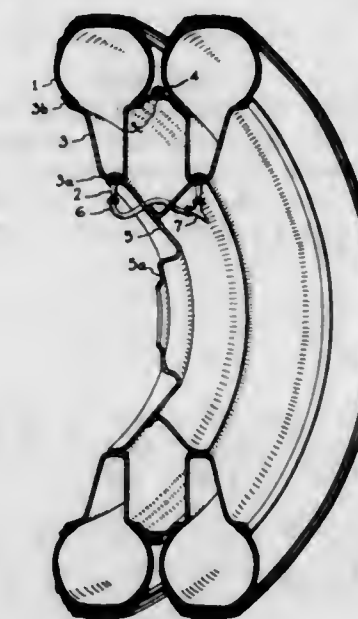
compressed air to discharge currents of air which pass through the top wall and fluidize the material in the lower zone of the receptacle. An evacuating pipe extends centrally through and upwardly beyond the receptacle



weighting material with the aid of the liquid conveyor repositions itself to re-establish a balanced condition.

**3,463,552**  
**AUTOMOTIVE WHEELS**  
Paul John Colletti, Long Beach, N.Y.  
(293 Foxhurst Road, Oceanside, N.Y. 11572)  
Filed Nov. 7, 1966, Ser. No. 592,676  
Int. Cl. B60b 11/00, 7/04; B60c 17/02  
U.S. Cl. 301—36

2 Claims



Herein is described a dual wheel and rim assembly including a pair of independently mounted tires each being provided with tire inflation means, said assembly including an integral one-piece dual rim having respective drop center portions and tire bead retaining flanges, said bead retaining flanges of the adjacent rims being interconnected by an integral axially extending bridge portion provided with a resilient annular auxiliary tire.

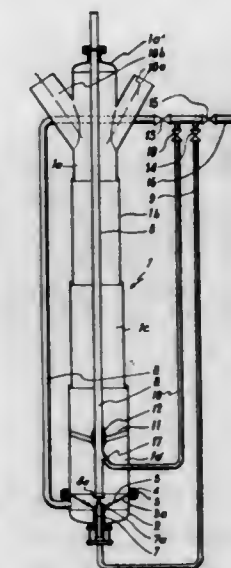
**3,463,553**  
**PNEUMATIC CONVEYOR**  
Michel Boucraut, Metz, Imré Toth, Longevilla-les-Metz, and Jacques Blum, Metz, France, assignors to Institut de Recherches de la Siderurgie Francaise, Saint-Germain-en-Laye, Yvelines, France  
Filed Nov. 14, 1967, Ser. No. 682,855  
Claims priority, application France, Nov. 18, 1966, 84,141

Int. Cl. B65g 53/16, 53/42

U.S. Cl. 302—17

5 Claims

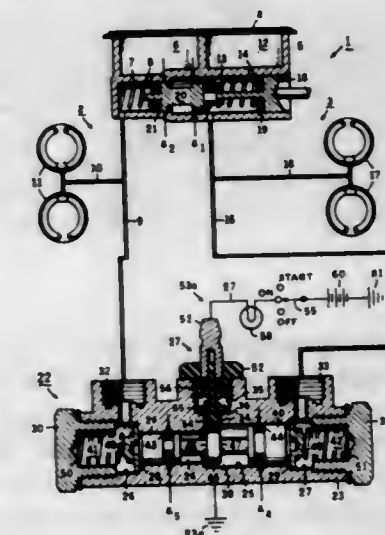
A pneumatic conveyor for transfer of pulverulent material from a lower level to a higher level comprises an upright receptacle whose internal diameter diminishes, gradually and/or stepwise, from the lower end toward the upper end and which receives pulverulent material through feed pipes connected with its upper end. A hollow bottom has an apertured top wall affixed to the lower end of the receptacle and is connected with a source of



and its intake end is located directly above an ejector nozzle which discharges compressed air and extends into the lowermost zone of the receptacle. The stream of ascending material is accelerated by compressed air which is admitted into the evacuating pipe above the intake end.

**3,463,554**  
**WARNING DEVICE**  
Richard C. Bueler, Glendale, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware  
Filed Aug. 15, 1968, Ser. No. 752,879  
Int. Cl. B60t 17/22  
U.S. Cl. 303—6

4 Claims



A split braking system having a split master cylinder for establishing proportional fluid pressures to energize a pair of brake sets and a warning device for comparing the magnitudes of the established proportional fluid pressures and indicating a fluid pressure failure in said system.

**3,463,555**  
**VEHICLE WHEEL BRAKING SYSTEM PROVIDING WHEEL SLIP CONTROL**

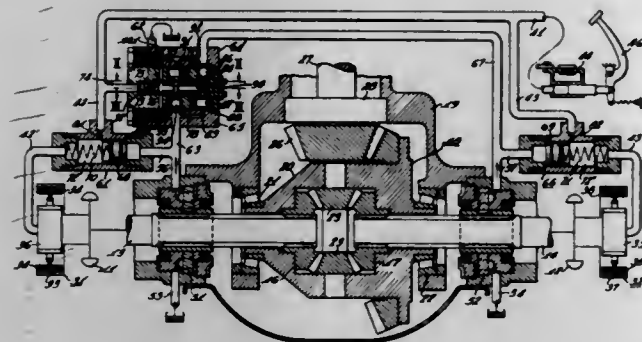
Neil J. Ryskamp, Markham, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.  
Continuation of application Ser. No. 683,172, Nov. 15, 1967. This application Nov. 13, 1968, Ser. No. 775,562  
Int. Cl. B60t 8/02, 13/00, 11/10  
U.S. Cl. 303—21

10 Claims

A braking system is provided for a pair of drive wheels wherein the motion of the vehicle provides power for



braking the wheels under the selective manual control of the operator. The power braking effort is proportional to the speed of rotation of the wheels thereby controlling skidding of the vehicle during power braking. Disproportionate division of torque to the drive wheels under driving conditions is prevented automatically by application of braking effort to the drive wheel tending to spin. This last function is accomplished without operation of the manual brake control by the operator.



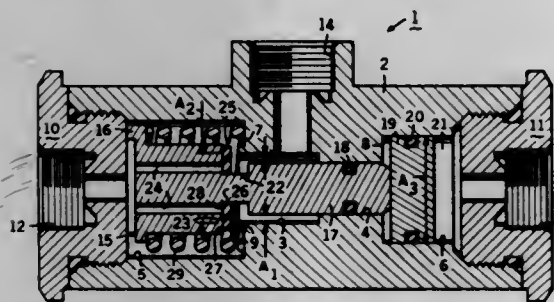
tionate division of torque to the drive wheels under driving conditions is prevented automatically by application of braking effort to the drive wheel tending to spin. This last function is accomplished without operation of the manual brake control by the operator.

### 3,463,556 CONTROL VALVE

Raymond J. Kersting, Dellwood, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware  
Filed Apr. 25, 1968, Ser. No. 724,031  
Int. Cl. B60t 13/46

U.S. Cl. 303—22

7 Claims



A load sensitive proportioning valve for use on a vehicle having air suspension means and a brake system including a master cylinder and a brake motor, said proportioning valve effecting a proportional application to the brake motor of fluid pressure supplied thereto from the master cylinder and also being responsive to the fluid pressure in the air suspension system to vary the value at which the proportional application of the supplied fluid pressure occurs.

### 3,463,557

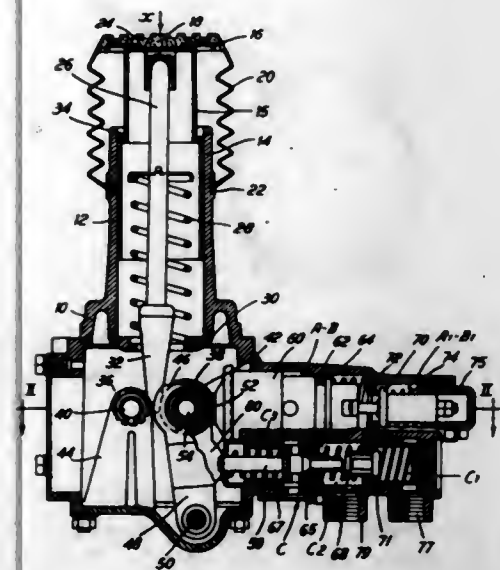
#### PLUNGER ACTUATED DISTRIBUTOR FOR PNEUMATIC BRAKING SYSTEMS IN VEHICLES

Giuseppe Alfieri, Milan, Italy, assignor to Fabbrica Italiana Magneti Marelli S.p.A., Milan, Italy, a corporation of Italy

Filed Apr. 17, 1967, Ser. No. 631,472  
Claims priority, application Italy, May 17, 1966, 11,256/66

Int. Cl. B60t 15/06; F16k 31/44; B65t 13/00  
U.S. Cl. 303—52 3 Claims  
A distributor for pneumatic braking systems wherein one or more sections are controlled by shut off devices, these devices being actuated by a braking pedal through

mechanism including a pair of guide members which are spread apart as the braking pedal is operated with at



least one of these members being movable to actuate the shut off devices.

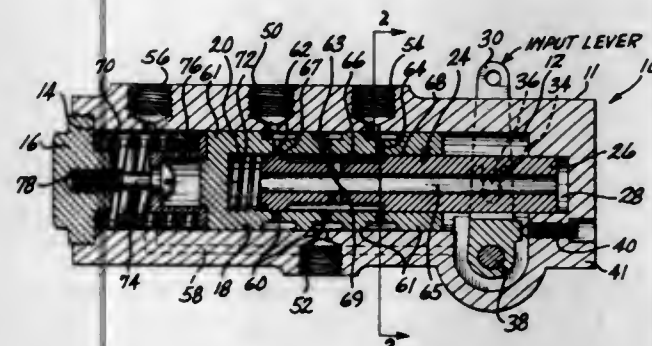
### 3,463,558

#### PRESSURE REGULATING VALVE

Donald E. Nichols, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware  
Filed Nov. 28, 1967, Ser. No. 686,028  
Int. Cl. B60t 15/12, 15/06

U.S. Cl. 303—54

9 Claims



A pressure regulating valve for controlling the flow of fluid from a source of fluid under pressure to a fluid pressure operable system, such as the wheel brakes of an airplane. The valve includes a manually operable input lever and is designed so that the displacement of the input lever from its "off" position is directly proportional to the fluid pressure in the system connected to the valve, and the lever is nonresponsive to fluid pressure variations in the system. In other words, no forces are fed back to the input lever from the system being operated.

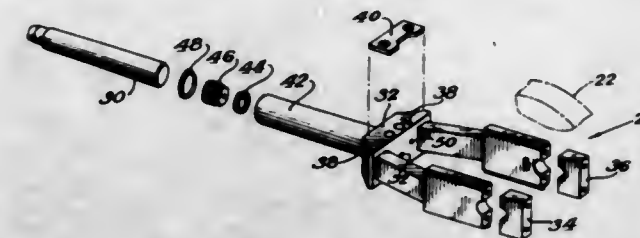
The valve includes a housing having a generally cylindrical chamber therein, a generally cylindrical valve sleeve slidably disposed in the housing chamber, and a generally cylindrical slide valve slidably disposed in a cavity in the valve sleeve. Fluid inlet, outlet and return ports extend through the housing and communicate with the chamber, and the valve sleeve and slide valve are provided with ports, bores and grooves arranged to selectively block or permit fluid flow between the housing inlet and outlet ports or outlet and return ports. An auxiliary port also extends through the valve housing and communicates with the chamber for operating the valve hydraulically or pneumatically.

### 3,463,559 HYDRAULIC TRACK ADJUSTER FOR TRACTOR

Kenneth W. Gehrke, Deerfield, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware  
Filed Feb. 20, 1967, Ser. No. 617,343  
Int. Cl. B62d 55/20

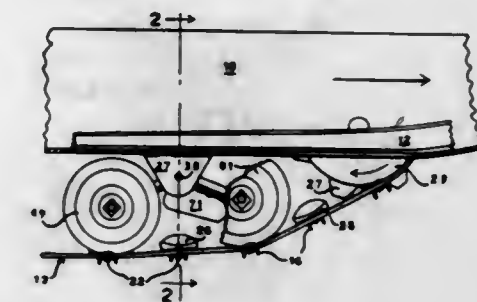
U.S. Cl. 305—10

7 Claims



Hydraulic track adjuster mechanism for crawler vehicles, effective in preloading the conventional endless track chains thereof to a desired value in the track working range, and effective automatically to hydraulically relieve the load safely back into that working range whenever track tension rises excessively. A single function inlet valve and a dual function valve are provided which communicate with the fluid in the hydraulic system, the dual function valve in an unadjusted position functioning to relieve excessive pressure automatically, and functioning in a position into which it can be adjusted either to release normal track tension or to vent air when refilling the system through the inlet valve.

an undersnow hard object, the bogie wheels may be thrown upwardly so high that the belt hits the shaft, bending it and/or damaging the belt.



The present improvement provides stops that engage the belt limiting its upward movement, the forces being translated to the shaft at points near its supported ends.

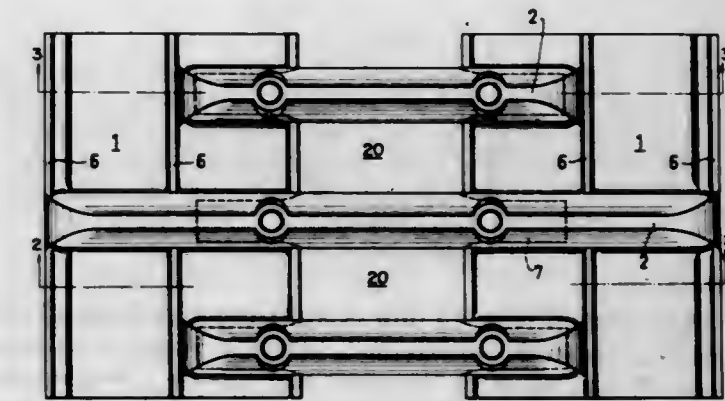
### 3,463,562 VEHICLE TRACK

Assar Natanael Svensson, Ersmark, Sweden, assignor to Skelleftea Gummifabriks AB, Ersmark, Sweden, a Swedish joint-stock company  
Filed Aug. 4, 1967, Ser. No. 658,561  
Claims priority, application Sweden, Aug. 22, 1966, 11,299/66

Int. Cl. B62d 55/26

U.S. Cl. 305—38

3 Claims



An endless track for a vehicle having two longitudinally extending parallel, spaced bands which are joined by longitudinally spaced transverse bars, the bands and the bars being, at least in part, integrally formed of an elastomeric material. Each bar comprises in part a U-shaped metal beam. Alternate ones of the bars extend the full width of the track and interspersed with these are shorter bars whose length corresponds substantially to the length of the associated U-shaped beam.

### 3,463,563

#### SWIVEL SUPPORT FOR GAS BEARINGS

Helmuth Pfaff, Scottsboro, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration  
Filed Nov. 20, 1967, Ser. No. 684,178  
Int. Cl. F16c 7/00, 9/00, 11/00

U.S. Cl. 308—2

9 Claims

A spherical supporting cup for the ball of a gas bearing with the cup being capable of being swiveled to change its relative position to the ball while the bearing is under high load. This adjustability has been found to enable a substantial decrease in gas bearing "disturbance torques" caused by a lack of optimum fit between the ball and the cup due to manufacturing tolerances. A shaft is rigidly

### 3,463,560

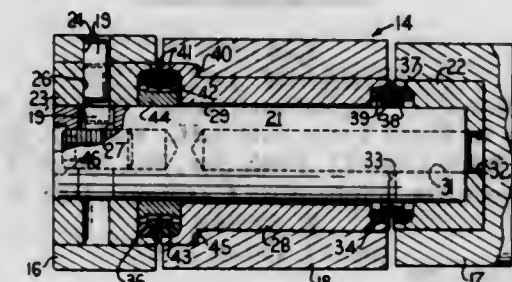
#### SELF-CONTAINED, SEALED AND LUBRICATED HINGE JOINT

Harold L. Reinsma and Floyd S. Dadds, Peoria, and Logan J. Johnson, East Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Oct. 23, 1967, Ser. No. 677,349  
Int. Cl. B62d 55/08, 55/20

U.S. Cl. 305—11

8 Claims



A hinge construction for coupling two members which pivot relative to each other is formed as a preassembled, prelubricated, sealed tubular cartridge which transpires the pivotable members and which may be installed and removed as a unit. The cartridge has a hinge pin and coaxial sleeves which define precision bearing surfaces with seals being provided between sleeves, together with means for maintaining optimum preloads on the seals in the presence of variable forces at the joint.

### 3,463,561

#### SNOWMOBILE BOGIE WHEEL

Robert M. Lamb, 915 Oswego St., Liverpool, N.Y. 13088

Filed Feb. 27, 1968, Ser. No. 708,589  
Int. Cl. B62d 55/14

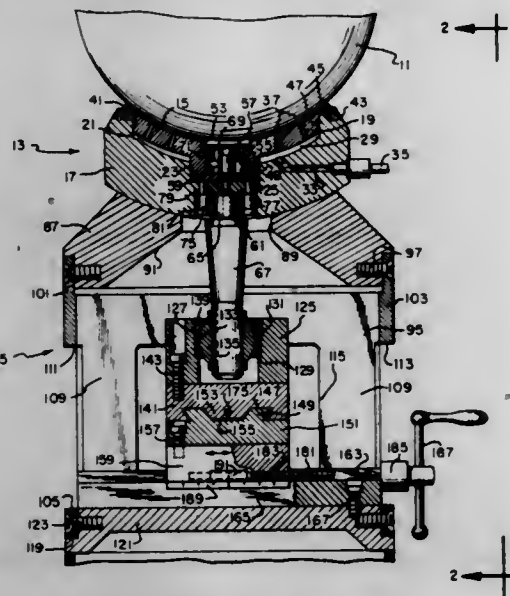
U.S. Cl. 305—27

7 Claims

Snowmobiles having belt-type endless tracks are conventionally provided with bogie wheels pivotally mounted on a main shaft fixed to the vehicle frame. The bogie wheels are spring pressed downwardly to engage the belt at points forwardly of the shaft. When the belt encounters



connected to the supporting cup in the center thereof and projects below the cup with the lower end of the shaft



being provided with means for swivelling the shaft and thus the gas bearing supporting cup.

3,463,564

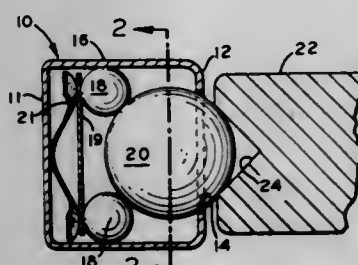
**BEARING ASSEMBLY**

Richard F. Moore, Norwalk, Conn., assignor to Norma-Hoffmann Bearings Company, a division of Universal American Corporation, Stamford, Conn.

Filed Nov. 17, 1967, Ser. No. 683,904  
Int. Cl. F16c 17/06, 17/08, 19/10

U.S. Cl. 308-230

5 Claims



Antifriction bearing unit comprising a cylindrical shell, open at one end and having a circular array of balls confined by the walls of the shell and having a single center ball engaging the circular array holding them against said wall, and projecting through the open end to be engaged by the end of a shaft having a V-shaped recess, the center ball being urged into driving relation with the shaft by a spring between the closed end and a plate supporting the circular array of balls.

3,463,565

**CONSTRUCTION FOR RADIOS AND THE LIKE**

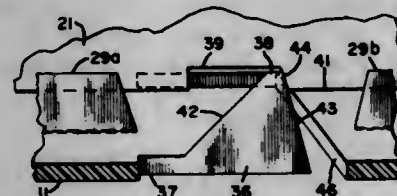
Ralph W. Richter, Whitesboro, and William O. Mongesku, Utica, N.Y., assignors to General Electric Company, a corporation of New York

Filed Jan. 4, 1965, Ser. No. 423,149

Int. Cl. H05k 5/02; A47b 81/06; H04b 1/08

U.S. Cl. 312-7

9 Claims



A radio construction wherein the chassis, loudspeaker and clock are secured within the radio cabinet by integral guide members and flexible latching members to completely eliminate the necessity for conventional fastening devices.

**3,463,566  
AUTOMATIC ARTICLE-HANDLING SYSTEM**

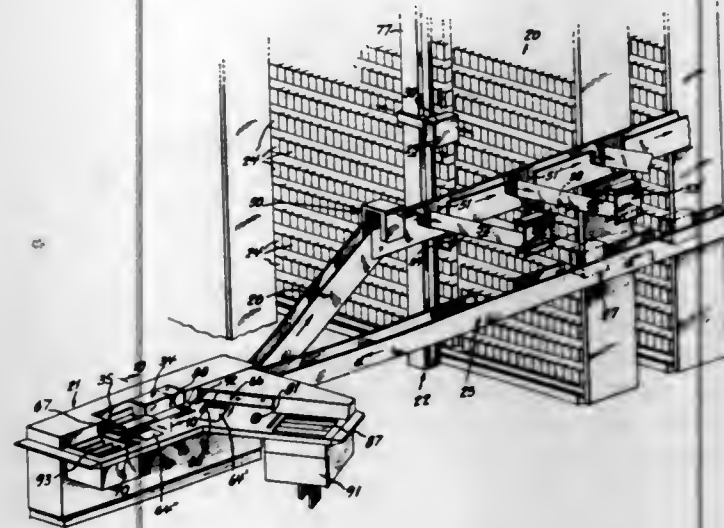
Joseph A. Powers, Williamsville, N.Y., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 16, 1967, Ser. No. 675,453

Int. Cl. A47b 81/00; B65g 1/06

U.S. Cl. 312-223

16 Claims



An article-handling system for selectively transporting article-carrying containers between a remote storage area and one or more operator work stations. The storage area is adapted to store a large quantity of containers in a plurality of parallel tiers in the nature of library book stacks or the like. The transporting apparatus includes conveyance means and associated regulation and control mechanisms to assure proper system control in response to various commands, such as a request initiated by a particular operator for a container stored at a coded address. At the work area each operator station is provided with adequate controls to enable selection and retrieval as well as filing of any of the coded containers, regardless of the relative disposition of the containers with respect to the system.

3,463,567

**PANORAMIC TELESCOPE**

Hellmut Böhmer, Hasselborn über Wetzlar, Germany, assignor to Ernst Leitz G.m.b.H., Wetzlar, Germany

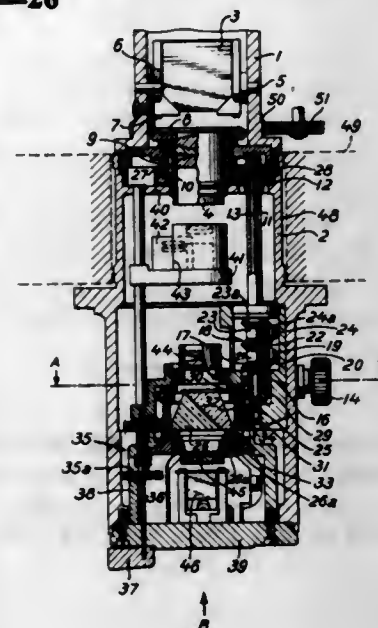
Filed Dec. 12, 1966, Ser. No. 601,033

Claims priority, application Germany, Dec. 23, 1965, L 52,465

Int. Cl. G02b 23/02

U.S. Cl. 350-26

4 Claims



The present invention relates generally to a panoramic telescope, and particularly to a panoramic telescope hav-

ing a telescope head which is adjustable in elevation, and a convertible day and night aiming optic for use in an armored vehicle.

3,463,568

**NON-SLIP EYEGLASS FRAMES**

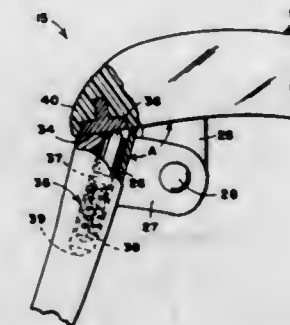
Irving Hasday, New York, N.Y., assignor, by mesne assignments, to Modern Factors Corp., New York, N.Y., a corporation of New York

Filed Aug. 21, 1967, Ser. No. 662,041

Int. Cl. G02b 7/02

U.S. Cl. 350-113

2 Claims



The frames are of the type having hinged temples which extend rearwardly when in use, one behind each ear of the wearer. When the frame is being worn, its temples are biased to move towards each other whereby they clamp the head, and thus automatically hold the frame from slipping down on the nose. Such biasing is afforded by spring plunger devices whose casings are inserted, one into the front edge end of each temple, so the spring-biased pin of each device shall bear against the rear face of the front frame member. This general scheme is also shown in frames of modified construction. Said spring plungers are readily available in commerce and are easy and cheap to incorporate in the manner and for the purpose taught herein, namely, that a hinge part at each temple, when mounted, will clamp one of said casings in position in a channel in the temple.

3,463,569

**REAR PROJECTION SCREEN**

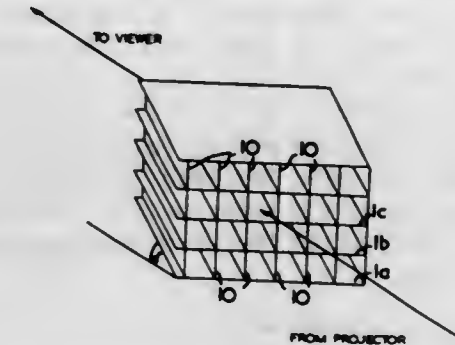
Yaroslau R. Bratkowski, Vancouver, British Columbia, Canada, assignor to A. Freen Limited, Vancouver, British Columbia, Canada, a corporation of British Columbia

Filed Oct. 22, 1965, Ser. No. 500,991

Int. Cl. G03b 21/60, 21/56

U.S. Cl. 350-129

16 Claims



A rear projection screen is provided comprising a plurality of similarly shaped members providing a plurality of pairs of adjacent first and second operative surfaces. These surfaces are spaced from each other to define passageways for light therebetween, and the members and surfaces are constructed and arranged to provide a front and rear face for said screen whereby the screen is capable of simultaneous viewing from both front and rear when a single projector is utilized. The operative surfaces have selected reflectivities and are arranged in selected angular disposition.

3,463,570

**WIDE-ANGLE STEREOSCOPIC VIEWER**

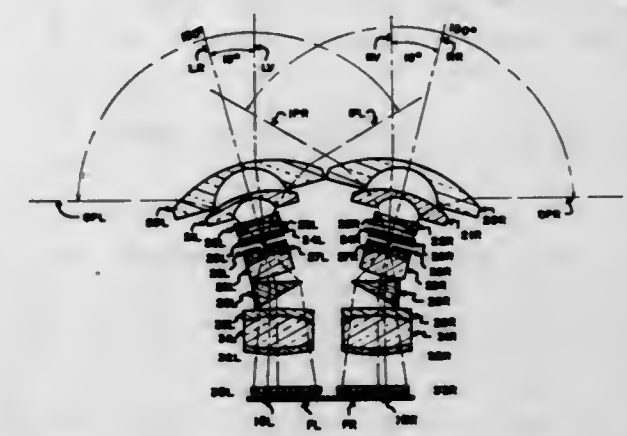
Harvey L. Ratliff, Jr., Amarillo, Tex., assignor, by direct and mesne assignments, of ninety-five percent to Jetru Inc. and five percent to Maymie T. May Trusts, Amarillo, Tex.

Filed Feb. 10, 1964, Ser. No. 343,841

Int. Cl. G02b 27/22

U.S. Cl. 350-134

5 Claims



An substantially distortion free apparatus for viewing wide-angle stereoscopic pictures utilizing a lens system with wide-angle oculars and large wedges whereby the pictures are placed at a flat object plane and the scene is recreated about right and left axes which are respectively rotated some 15° to the right and left of the respective axes of the right and left eye view to thus increase the angle of horizontal view some 30° more than is possible for any specifically sized ocular diameter placed any specific distance from the eyes of an observer.

3,463,571

**TOTAL INTERNAL REFLECTION DEFLECTOR**

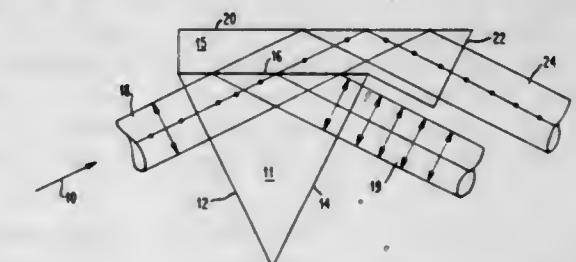
Gilbert O. Boehm, Kingston, Harry S. Hoffman, Jr., Saugerties, and James H. Williams, Woodstock, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 1, 1965, Ser. No. 491,997

Int. Cl. G02f 1/24

U.S. Cl. 350-157

5 Claims



This invention relates to an optical apparatus for separating a single beam into two separate beams of light, the single beam of light containing two different polarities each being orthogonal to each other. A prism of birefringent material and an isotropic block having a mirror thereon are employed to separate the two co-mingled beams.

3,463,572

**OPTICAL PHASE MODULATION APPARATUS**

Kendall Preston, Jr., New Haven, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Continuation-in-part of application Ser. No. 418,719, Dec. 16, 1964. This application Oct. 21, 1966, Ser. No. 588,384

Int. Cl. G02f 1/34

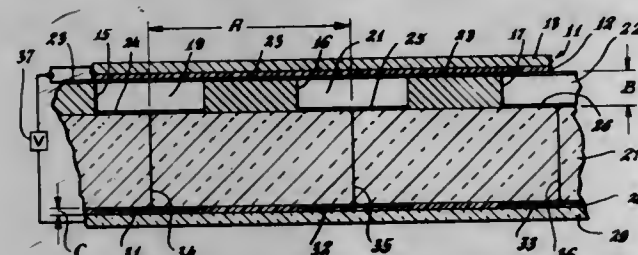
U.S. Cl. 350-161

11 Claims

Apparatus for use in phase modulating a beam of light. A reflective and conductive film is stretched across a constant impedance layer of material having downwardly



extending cavities. The layer is formed on nonconductive support. A variable impedance layer of material is located below the constant impedance layer and is in communication with the cavities. Potential differences are established between the film and the top of the constant impedance layer and between the top of the constant



impedance layer and the variable impedance layer. Exciting the variable impedance layer causes changes in the potential difference between the two layers which in turn causes the portions of the film extending over the cavities to deflect downward. In use, a beam of light striking the film is reflected and at the same time phase modulated.

### 3,463,573 CONTINUOUSLY VARIABLE LASER ACOUSTIC DELAY LINE

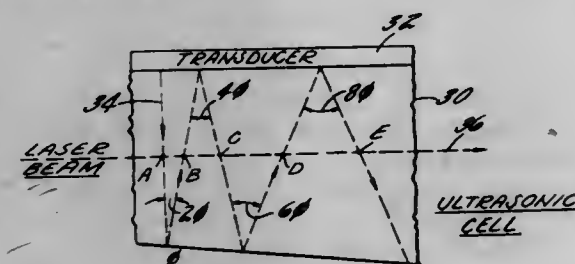
Michael J. Brienza, Vernon, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed June 1, 1967, Ser. No. 642,829

Int. Cl. G02f 1/34

U.S. Cl. 350—161

8 Claims



An optical beam such as from a laser is propagated through a transparent ultrasonic cell in which has been generated an ultrasonic-acoustic wave. The ultrasonic cell is provided with non-parallel end walls, and the acoustic wave echoes between the end walls, intersecting the optical beam at a different angle for each pass of the acoustic wave through the beam. By selectively rotating the ultrasonic cell, the intersection between the optical beam and the acoustic wave may be made to occur at the Bragg angle. When this occurs a portion of the optical beam is both diffracted from the cell and frequency shifted by an amount equal to the acoustic frequency. The time delay between initiation of the acoustic wave and its intersection with the optical beam may be continuously varied by translation of the ultrasonic cell or scanning of the optical beam to produce a variable time delay.

### 3,463,574 MULTILAYER ANTIREFLECTION COATING FOR LOW INDEX MATERIALS

Roy C. Bastien, Redding, and Richard J. Scheuerman, Danbury, Conn., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed June 26, 1967, Ser. No. 648,658

Int. Cl. G02b 1/10, 5/28

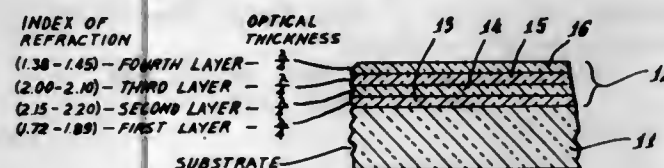
U.S. Cl. 350—164

7 Claims

A coating for reducing unwanted reflection off a surface of a transparent body having a low index of refraction. The coating is made up of four homogeneous layers of dielectric materials. Each layer has an optical thick-

ness of one-quarter of the design wavelength. The index of refraction of the transparent body and the four layers are numerically related as follows:

$$N_4 < N_3 < N_1 < N_2 < N_2$$



where  $N_3$  is the index of refraction of the transparent body and  $N_1$  through  $N_4$  are the indices of refraction of the layers in the order in which they are deposited on the transparent body.

### 3,463,575 LIGHT BEAM SAMPLING APPARATUS

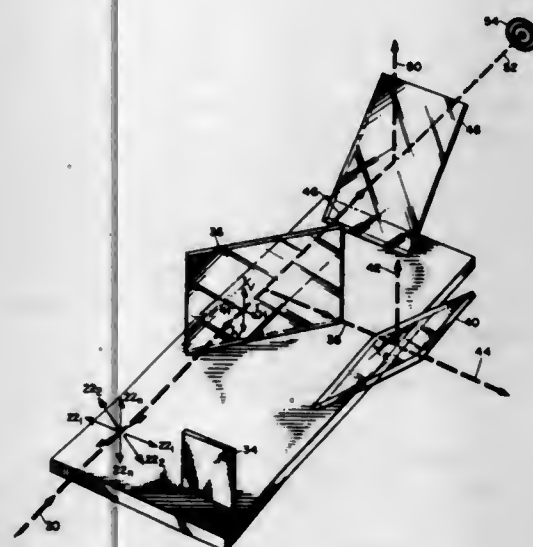
Percival T. Gates, Jr., Weston, Mass., assignor to EG & G, Inc., Bedford, Mass., a corporation of Massachusetts

Filed Dec. 9, 1966, Ser. No. 600,518

Int. Cl. G02b 27/14

U.S. Cl. 350—172

1 Claim



Three beam splitters are so arranged that incoming light polarized in the plane of incidence of the first beam splitter will be reflected therefrom as light polarized perpendicular to the plane of incidence of the second beam splitter; and the incoming light will be transmitted through the first beam splitter as light polarized perpendicular to the plane of incidence of the third beam splitter. The light reflected from the second beam splitter is the sample beam and will have vertically and horizontally polarized components of the same relative intensities as the light transmitted through the third beam splitter and as the incoming light.

### 3,463,576 ANTI-GLARE REAR VIEW MIRROR FOR VEHICLES

Robert Stanley Church, Langley, Itchenor, England, assignor to Wingard Limited, Chichester, England, a British company

Filed July 12, 1965, Ser. No. 471,081

Claims priority, application Great Britain, July 10, 1964, 28,477/64

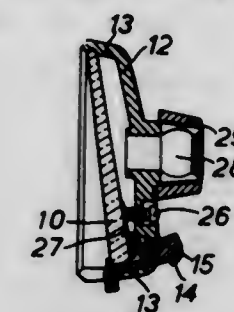
Int. Cl. G02b 17/00

U.S. Cl. 350—281

1 Claim

An anti-glare rear-view mirror of the type having a mirror element with two surfaces of different reflecting

power mounted in a case for movement about an upper edge of the mirror, improved trigger means for effecting movement of the mirror, the trigger means slidably



mirror having a length nearly equal to the width of the roof of the vehicle and approximately centered on the center line of the vehicle, and each of said lower mirrors being sized, shaped and positioned to reflect only the image of the preceding mirror.

### 3,463,579 DEVICE FOR FINE ADJUSTMENT OF OPTICAL INSTRUMENTS

Hans Papritz, Liebefeld, Bern, Switzerland, assignor to Haag-Streit A.G., Liebefeld, Bern, Switzerland

Filed Dec. 7, 1966, Ser. No. 599,954

Claims priority, application Germany, Dec. 20, 1965, H 58,027

Int. Cl. A61b 3/02

U.S. Cl. 351—38

8 Claims

engaging a flange extending forwardly from the lower edge of the case, the rear edges of the flange serving as stop means for the mirror.

### 3,463,577 SUN REFLECTING BOARD

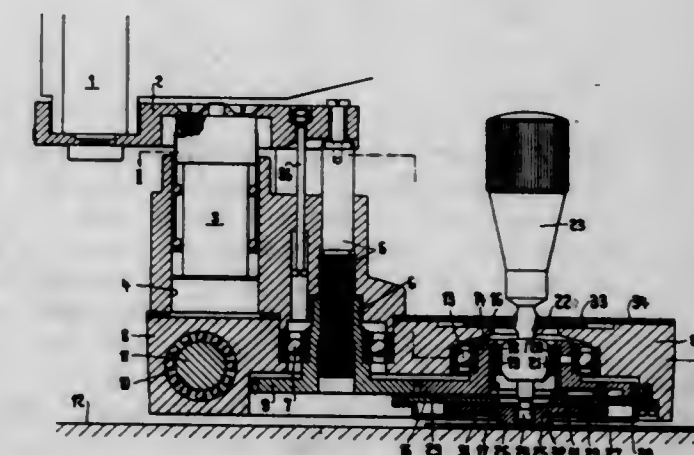
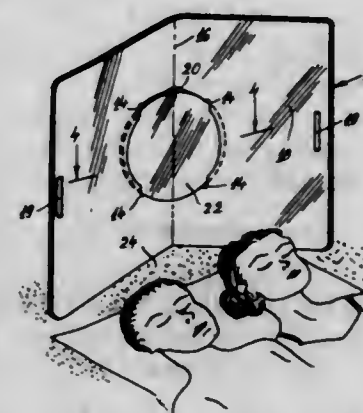
Samuel Friedberg, Chelsea Towers, Apt. 708, Ventnor Ave., Atlantic City, N.J. 08403

Filed Apr. 3, 1967, Ser. No. 627,898

Int. Cl. G02b 5/08

U.S. Cl. 350—292

1 Claim



A device for fine adjustment in vertical and horizontal direction of an optical, particularly an ophthalmological instrument, having an actuating lever swingable for fine horizontal adjustment and rotatable round its longitudinal axis for fine vertical adjustment.

A sun-reflecting board having a rectangular shaped foldable body with a reflecting surface on one side thereof. The body is formed with a central circular portion adapted to be removed to provide an opening for placing the board over the head for support on the shoulders of the user. The body is formed with means for holding the circular portion in opening-closing position after removal and restoration.

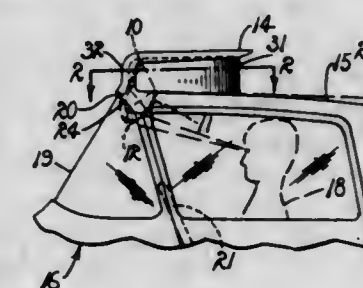
### 3,463,578 PANORAMIC REAR AND SIDE VIEW MIRROR SYSTEM

Karl E. Smith, Box 167, Auberry, Calif. 93602  
Continuation-in-part of application Ser. No. 369,355, May 15, 1964. This application Apr. 12, 1965, Ser. No. 447,140

Int. Cl. G02b 5/08

U.S. Cl. 350—302

3 Claims



A panoramic rear and side view mirror system for a vehicle comprising three planar mirrors arranged above and forwardly of the driver of the vehicle, the uppermost

### 3,463,580 MOTION PICTURE CAMERA HAVING MEANS FOR CHANGING FILM CARTRIDGE AUTOMATICALLY

Otto Freudenschusz, Vienna, Austria, assignor to Karl Vockenhuber and Raimund Hauser, both of Vienna, Austria

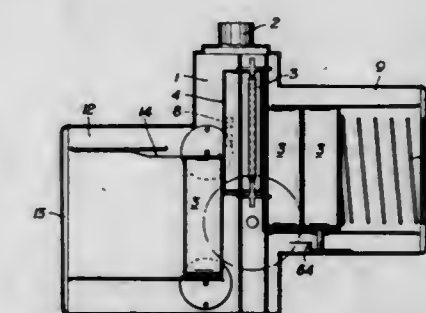
Filed Nov. 17, 1966, Ser. No. 595,134

Claims priority, application Austria, Nov. 19, 1965, A 10,454/65

Int. Cl. G03b 23/02

U.S. Cl. 352—73

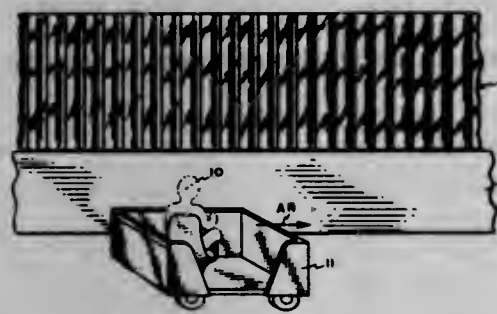
20 Claims



A motion picture camera has a compartment for supporting spare film magazines. One film magazine is held in operable position in the camera such that the film is driven past the optical axis for exposure. When the end of the film in the magazine is reached, the camera automatically ejects the cartridge into a second compartment for magazines containing exposed film and inserts a spare cartridge into operative position.

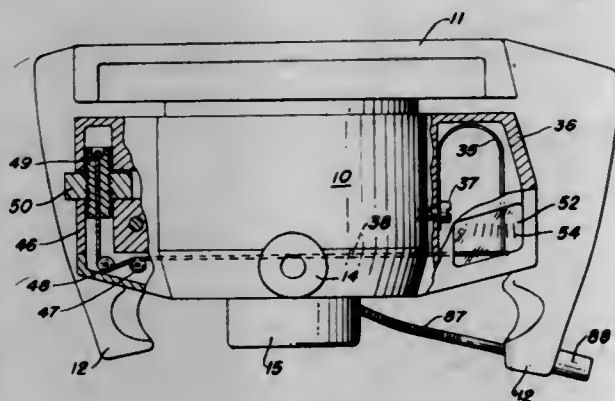


**3,463,581**  
**SYSTEM FOR THREE-DIMENSIONAL PANORAMIC**  
**STATIC-IMAGE MOTION PICTURES**  
 Wallace A. Clay, Ogden, Utah, assignor to Intermountain  
 Research and Engineering Company, Inc., Salt Lake  
 City, Utah, a corporation of Utah  
 Filed Jan. 17, 1966, Ser. No. 521,065  
 Int. Cl. G03b 25/00, 35/18  
 U.S. Cl. 352-100 7 Claims



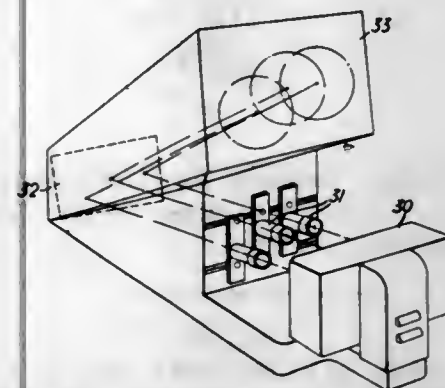
The present invention comprises a method and apparatus for producing static-image, stereoscopic displays in which visually apparent movement of subject matter therein simulates and corresponds with movement in the original panorama photographed. This is accomplished through structural and method-step correlation between distance (preferably equivalent to interocular spacing) and time spacing of successive image recordings in the photographing of the panorama and the speed of relative movement between the viewing screen incorporating stepped reproductions of said recordings and the viewer of said viewing screen.

**3,463,582**  
**SHUTTER MECHANISM FOR HIGH SPEED**  
**CINECAMERA**  
 Willard E. Buck, Los Gatos, Calif., assignor to Technical  
 Operations, Incorporated, Burlington, Mass., a corpo-  
 ration of Delaware  
 Filed Dec. 23, 1966, Ser. No. 604,216  
 Int. Cl. G03b 9/08, 41/00  
 U.S. Cl. 352-205 7 Claims



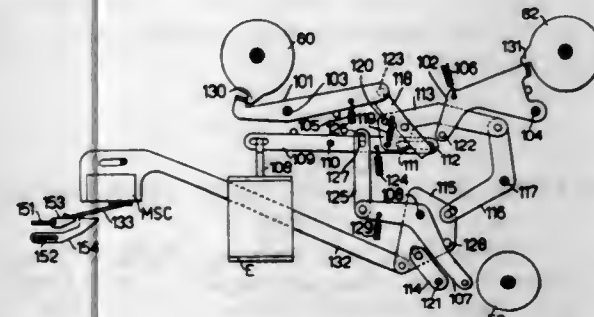
A shutter mechanism for a high speed camera has a stator having eight apertures which are aligned with eight lenses. A rotor is mounted such that upon rotation a single aperture in the rotor registers consecutively with the apertures in the stator. Two spaced pins project axially from the rotor. A cord passes between the two pins and is fastened to a spring at one end and anchored to the housing at the other end. Upon rotation of the housing with respect to the shutter, the cord engages the pins and is deformed so that the spring is elongated. When the shutter is released the tension in the cord causes it to rotate.

**3,463,583**  
**APPARATUS FOR PROJECTING MULTIPLE**  
**SUPERPOSED IMAGES**  
 William George Collis, Teddington, England, assignor to  
 Watson Manasty and Company Limited, Harpenden,  
 England, a corporate body of Great Britain  
 Filed Apr. 25, 1966, Ser. No. 545,154  
 Int. Cl. G03b 21/26, 21/28  
 U.S. Cl. 353-37 4 Claims



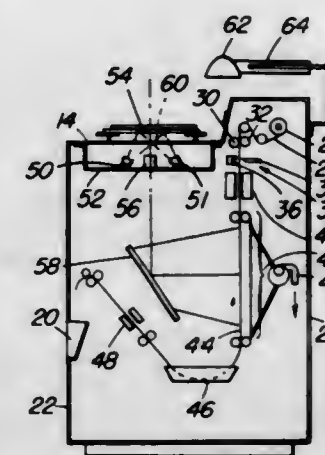
An optical image projector for examination and comparison of industrial products comprises a substantially horizontal support mounting a plurality of adjustable light units. Each light unit comprises a lamp from which a substantially horizontal beam reflected upwards by a first reflector is again reflected by a second reflector in a substantially horizontal direction opposite to the beam from the lamp to the first reflector. The second reflectors are adjustable on upstanding supports. A shutter for cutting off light may be operable by electromagnetic means.

**3,463,584**  
**PHOTOCOPYING MACHINE**  
 Carlo Trombetta, Caluso, Italy, assignor to Ing. C.  
 Olivetti & C., S.p.A., Ivrea, Italy, a corporation  
 of Italy  
 Original application Dec. 3, 1964, Ser. No. 415,681.  
 Divided and this application June 6, 1967, Ser.  
 No. 664,576  
 Claims priority, application Italy, Dec. 6, 1963,  
 25,558/63  
 Int. Cl. G03g 13/00, 15/00  
 U.S. Cl. 355-3 1 Claim



The electrophotographic copying machine has means for feeding a document along an illuminated exposure path, and an upper slightly depressible table for receiving the document for insertion along an aligning margin guide into the illuminated path. Means, responsive to the insertion of the document, feeds a copy sheet along the exposure path. The device further has means for electrostatic charging the copy sheet, means for illuminating the document, means for developing the image, means for fixing the image, and an electrical switch responsive to depression of the table for energizing the various means. A feeler mounted in the above mentioned path and responsive to the passage of the trailing edge of the document deenergizes the above mentioned means.

**3,463,585**  
**COMBINATION PRINTER-VIEWER**  
 Mark Levine, Plainview, N.Y., assignor to Readex  
 Microprint Corporation, New York, N.Y., a corpo-  
 ration of New York  
 Filed June 22, 1967, Ser. No. 648,071  
 Int. Cl. G03b 13/28, 27/70  
 U.S. Cl. 355-45 12 Claims



A combination printer-viewer having a printing station, a viewing station, a primary fixed focus optical system for enlarging an opaque or transparent microform image and projecting it to the printing station and an auxiliary, fixed focus optical system operating in combination with the primary optical system for projecting a smaller image to the viewing station. A scanning apparatus provides for planar relocation of the microform with respect to the optical system.

**3,463,586**  
**PHOTOGRAPHIC COPYBOARD**  
 Chesley F. Carlson and Allyn Schroeder, Minneapolis,  
 Minn., assignors to Chesley F. Carlson Company, Min-  
 neapolis, Minn., a corporation of Minnesota  
 Filed June 30, 1966, Ser. No. 561,879  
 Int. Cl. G03b 27/62, 27/64, 27/20  
 U.S. Cl. 355-76 2 Claims

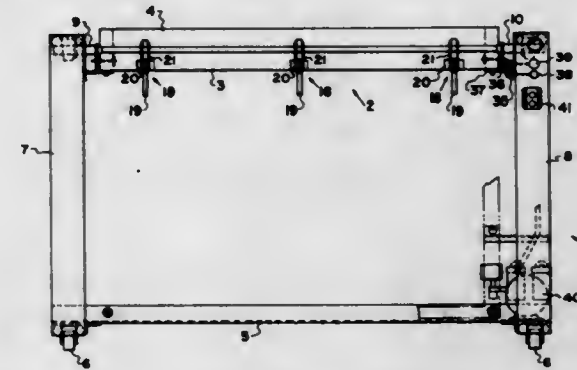


A photographic copyboard having a base with a hinged cover. A resilient yieldable and light penetrable pressure pad is removably positioned on the base for uniformly pressing an apertured sheet against the cover when the latter is closed. The pad consists of resilient and light penetrable cushion sandwiched between two light penetrable rigid plates. Retractable pins project from one of the plates to locate the apertured work sheet, the locating pins being retractable against the resilient cushion by closing of the cover.

**3,463,587**  
**VACUUM FRAME FOR SILK SCREEN STENCILS**  
 Claude H. Oltra, Chicago, and John DeLuca, Mount  
 Prospect, Ill., assignors to Advance Process Supply  
 Company, Chicago, Ill.  
 Filed June 19, 1967, Ser. No. 646,835  
 Int. Cl. G03b 27/20  
 U.S. Cl. 355-93 3 Claims

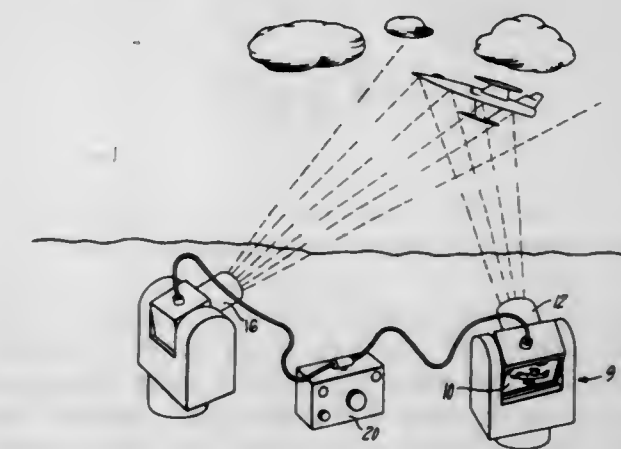
An improved vacuum frame for preparation of silk screen stencils is provided in which a flexible rubber clamping sheet is carried in a frame which is hinged for movement relative to a transparent base against which a stencil is supported for photographic exposure. The

hinged frame is provided with a novel spring-loaded mechanism for holding the frame in an opened position during loading. The apparatus is provided with adjustable hinges and with adjustable clamps for varying the degree of compression of a peripheral air and light seal. The apparatus is a self-contained unit and is pivotally mounted



for rotation of the transparent support surface into a position for exposure of the contained stencil to light. Application of vacuum to the flexible sheet in the cover member causes the sheet to press one or more stencils tightly and uniformly against the transparent exposing surface.

**3,463,588**  
**RADAR SYSTEM**  
 Russell G. Meyerand, Jr., and Alan F. Haight, Glaston-  
 bury, Conn., assignors to United Aircraft Corporation,  
 East Hartford, Conn., a corporation of Delaware  
 Filed Dec. 30, 1966, Ser. No. 606,274  
 Int. Cl. G01c 3/08  
 U.S. Cl. 356-5 5 Claims



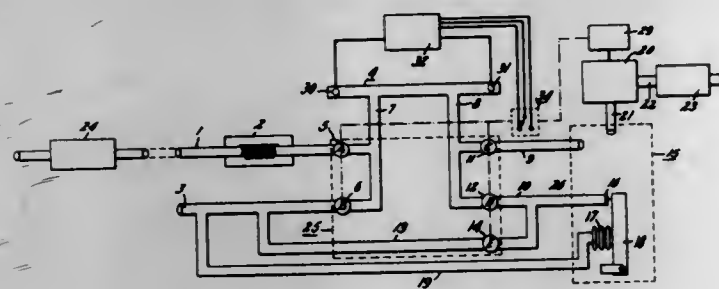
Positive images resulting from backscattering of transmitted energy and ambient energy are interleaved with negative images resulting only from ambient energy so as to cancel ambient images from the display of an optical radar, in response to interleaved alternative controlling signals. Range and band of range control are provided by controlling the timing relationships of the controlling signals.

**3,463,589**  
**PORTABLE CONDENSATION NUCLEI DETECTOR**  
 George F. Skala, Scotia, N.Y., assignor to General  
 Electric Company, a corporation of New York  
 Filed Jan. 27, 1966, Ser. No. 523,338  
 Int. Cl. G02b 21/00  
 U.S. Cl. 356-37 7 Claims

This invention relates to a continuously operating condensation nuclei detector which is portable to the extent that it may be carried by a human being. The expansion chamber of this invention utilizes the principle of atten-



uation of a light beam to a photocell, eliminating the need for special dark field optical systems, and thereby providing the advantages of very simple optics and simple

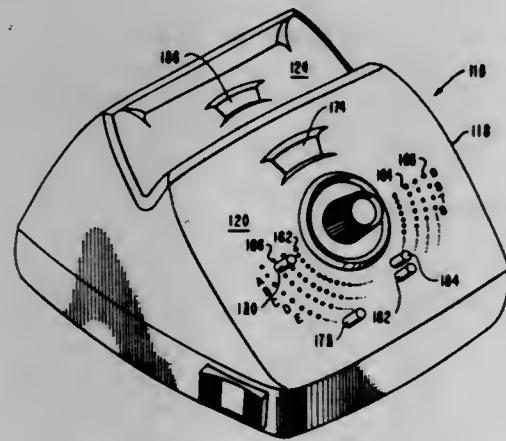


photocell pickup while at the same time enabling the use of a smaller power supply than was the case in prior expansion chambers.

**3,463,590**  
**CREDIT CARD IDENTIFICATION DEVICE**  
Bernice L. Bressler and Martin Bressler, both of  
3809 Vecino Drive, Covina, Calif. 91722  
Filed Feb. 11, 1966, Ser. No. 527,653  
Int. Cl. G06k 9/08

U.S. Cl. 356—71

3 Claims



This invention is characterized by a machine which perforates a credit card in a random pattern, but a pattern which is uniquely characteristic of a code word chosen by the applicant for the credit card. At the point of purchase there is a generally duplicate machine, which instead of perforating a card generates points of light. The purchaser feeds into the machine his code word, and the machine recreates on a screen, in points of light the patterns of perforations on the credit card. In this way, by comparing the pattern of perforations on the credit card with the pattern of points of light on the screen the purchaser can be identified as the legitimate owner of the credit card. Unauthorized persons who find or steal the credit card would not know the code word and so would be unable to operate the machine at the point of purchase to match the perforation pattern on the credit card.

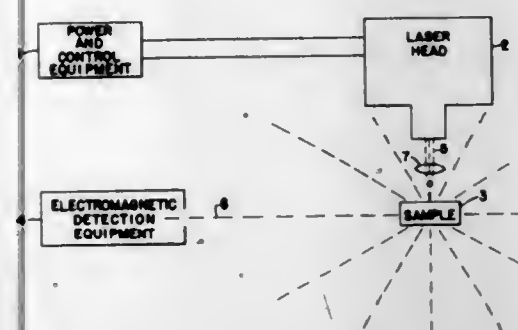
**3,463,591**  
**LASER SPECTROSCOPY**  
Peter A. Franken, Ann Arbor, Lee A. Cross, Northville,  
and Lloyd G. Cross, Ann Arbor, Mich., assignors to  
Lear Siegler, Inc.  
Filed Oct. 10, 1962, Ser. No. 229,610  
Int. Cl. G01j 3/30

U.S. Cl. 356—85

1 Claim

1. Apparatus for detecting the optical spectra characteristics of a sample of matter, including:  
a power source;  
a laser connected to said power source for emitting intense coherent electromagnetic energy;

a transparent lens positioned outwardly of said laser for focusing the coherent energy therefrom upon a small area of said sample, thereby increasing the intensity of the energy impinging on said sample sufficiently to vaporize, ionize and render incandescent a portion of said sample, including any refractory inclusions therein, in a sufficiently short time to prevent flow of any melted material; and

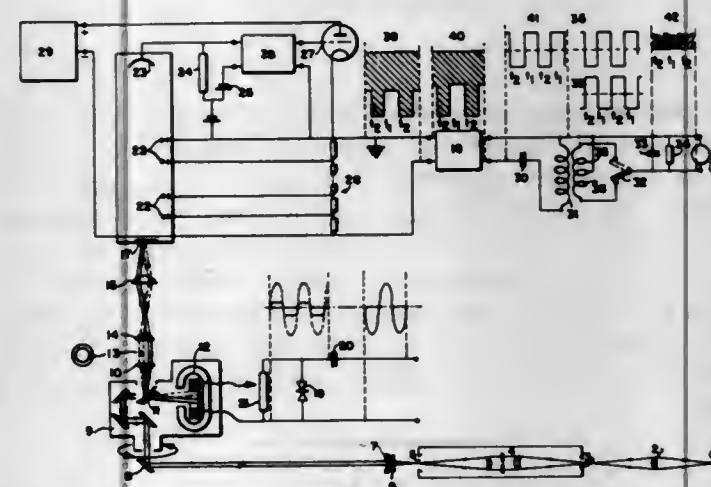


a spectroscope disposed with respect to said sample to detect the optical spectra characteristic of each of the constituent elements of said sample whilst the same are incandescent.

**3,463,592**  
**SHIFTING BEAM MICROSPPECTROPHOTOMETER WITH MEANS FOR SELECTIVELY VARYING PATHS OF REFERENCE AND SAMPLE BEAMS THROUGH A COMMON OPTICAL SYSTEM**  
Karl Aron Lennart Akerman, Ullangergatan 5,  
Vallingby, Sweden  
Filed May 4, 1964, Ser. No. 364,706  
Int. Cl. G01j 3/42

U.S. Cl. 356—95

18 Claims



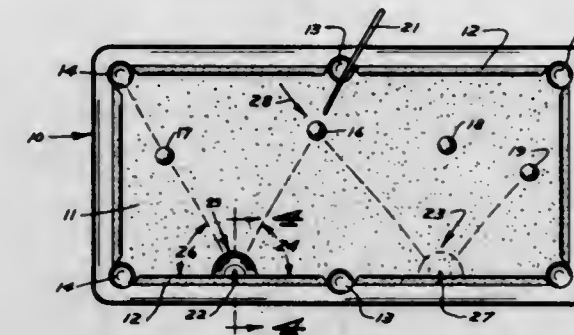
A shifting beam spectrophotometer using the same optical elements for directing a beam of light from a single source so that it alternately passes through the sample and reference. An oscillating mirror rapidly and alternately directs the beam through the reference and sample, the deviation between the two paths being quite small so that a visual impression of two continuously illuminated areas is obtained in the object plane of the microscope. Means are provided for varying the magnitude of oscillation and the plane of oscillation so that the positions of the illuminated areas may be varied. The sample

and reference beams are imaged at the same spot on the cathode of a photomultiplier. The photo anode current is held constant so that the dynode voltage varies as a function of the luminous intensity variations on the cathode. The dynode voltage is applied to a logarithmic converter and, after the DC is removed, the voltage variations are rectified and applied to an indicator.

**3,463,593**  
**CUE BALL ANGLE COMPUTER INCLUDING A CURVED MIRROR FOR INDICATING AN IMPACT POINT**

Michael H. Horan, 2155 Bayard Ave.,  
St. Paul, Minn. 55116  
Filed Apr. 6, 1966, Ser. No. 540,734  
Int. Cl. G01c 1/06; G02b 27/32; G01b 11/26  
U.S. Cl. 356—142

7 Claims



A cue ball angle computer for locating an impact point on a pool table cushion rail for a cue ball. The computer has a one-half hemispherical shaped mirror which reflects a diverging image of the entire top of a pool table. Indicia lines divide the reflecting surface of the mirror on opposite sides of a vertical plane bisecting the mirror. When the cue ball and selected ball angle of incidence and the angle of reflection are equal, a pointer on the computer will indicate a point on the cushion rail which the cue ball must hit in order to hit the selected ball.

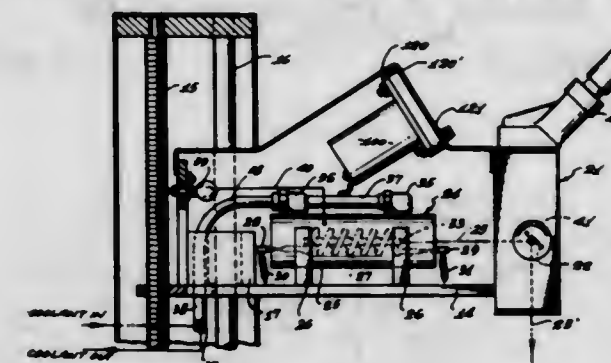
**3,463,594**  
**LASER TOOL APPARATUS**  
Jon H. Myer, Newport Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Nov. 1, 1965, Ser. No. 505,898

Int. Cl. G01b 11/26

U.S. Cl. 356—172

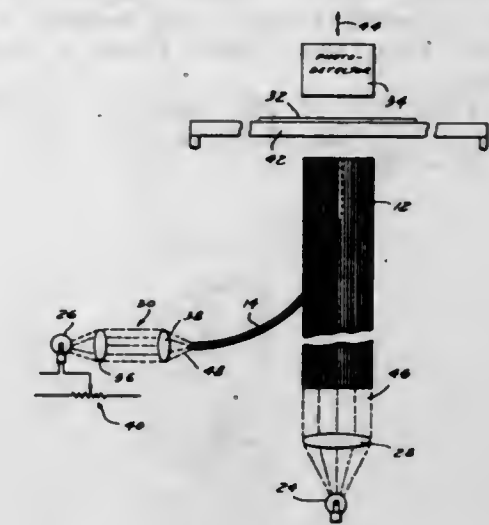
10 Claims



This is a laser tool apparatus which comprises a movable shield and a plurality of cams and electric switches coupled to the shield and arranged to be operated in sequence as the shield is moved to specific predetermined locations relative to the laser beam and the operator's line of sight. To operate the device, the shield is rotated to a first position in the path of the laser beam to thereby shield the operator from dangerous light energy while allowing him to align the device. Thereafter, the operator must rotate the shield into a second position, blocking the operator's line of sight and shielding him from the laser beam before the laser energy can be activated.

**3,463,595**  
**FIBER OPTICS APERTURE**  
Albert J. Blanc and Harvey Levine, Newburgh, N.Y., assignors to MacBeth Corporation, Newburgh, N.Y., a corporation of New York  
Filed Nov. 8, 1965, Ser. No. 506,796  
Int. Cl. G01n 21/06, 21/22; G02b 5/14  
U.S. Cl. 356—201

1 Claim

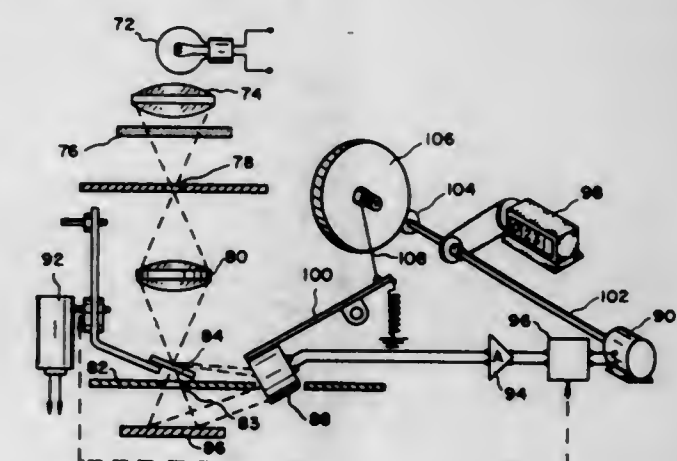


Photometric measuring apparatus is disclosed consisting of a photodetector and a sample platform. Fiber optic light transmitting elements consisting of a relatively large bundle of fiber optic rods are utilized for illuminating the total area of a sample placed on the platform from a distinct light source. The large bundle surrounds a relatively small bundle of fiber optic rods illuminated from a second light source. The small bundle of rods defines the evaluation area of the sample and thus becomes a "fiber optics aperture." Differential illuminating light intensity between the total area and evaluation area provides easy manipulation of the sample over the platform in order to select desired portions thereof to be placed over the evaluation area. During transmittance measurements over the evaluation area, the light source supplying the large bundle is then extinguished.

**3,463,596**  
**NULL TYPE COMPARISON REFLECTOMETER WHEREIN NULLING IS ACCOMPLISHED BY MOVING THE LIGHT DETECTOR**  
Paul J. Selgin, P.O. Box 244, Bethel, Conn. 06801  
Filed Mar. 9, 1966, Ser. No. 533,034  
Int. Cl. G01n 21/48

U.S. Cl. 356—211

11 Claims



A device for measuring light reflectance or light transmittance in order to obtain color data on both opaque and transparent surfaces. The device utilizes a single photocell or photosensitive element which is activated by the entire



light beam reflected from the standard and the test surface in alternate sequence. The device locates the standard and test surfaces approximately equidistant to the photosensitive surface and in close proximity thereto, thereby improving the accuracy of the device.

3,463,597

## INK WRITING IMPLEMENT

Noboru Wakai, Tokyo, Japan, assignor to Dai Nihon Bungu Kabushiki Kaisha (also trading as the Japan Stationery Co., Ltd.), Tokyo, Japan, a corporate body of Japan

Filed Apr. 18, 1967, Ser. No. 631,637

Int. Cl. B43k 5/18

U.S. Cl. 401—206

10 Claims



The writing implement of the present invention consists of a capillary fiber pen core, a fluid ink reservoir container, and a closure member including a spring mechanism. The pen core is connected by a fluid path with the fluid ink reservoir when the implement is inverted and the end point of the core is pressed on a surface to write. Fluid ink will be supplied to the core by retrogression of its fiber core against the spring opening a fluid passageway to the reservoir.

3,463,598

## DRAFTING PEN WITH VENT VALVE

Edward Bok, Falls Church, Va., assignor to Dike, Inc., Washington, D.C., a corporation of the District of Columbia

Filed Sept. 11, 1968, Ser. No. 759,001

Int. Cl. B43k 5/18

U.S. Cl. 401—259

10 Claims



A stylographic drafting pen of the type having a cylindrical hard metal tip communicating with a vented ink

reservoir, particularly a pressurized valve for the reservoir vent, so as to regulate the amount of air admitted to the reservoir and thus regulate ink flow.

3,463,599

## COMBUSTION PROCESS FOR COAL FIRED BOILERS

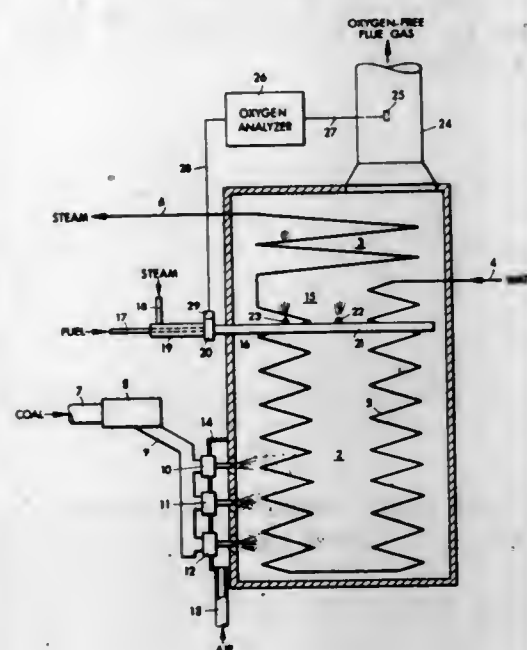
Albert B. Welty, Jr., Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Mar. 1, 1967, Ser. No. 619,825

Int. Cl. F23d 17/00; F23c 1/04, 9/00

U.S. Cl. 431—2

4 Claims



Coal is burned under conditions in which a flue gas is produced containing substantially no oxygen or sulfur trioxide by burning the coal in the presence of excess air and then adding a sufficient amount of a liquid or gaseous hydrocarbon to the resulting flue gas to burn the excess oxygen.

3,463,600

## CONTROL APPARATUS WITH REDUNDANT FEATURES

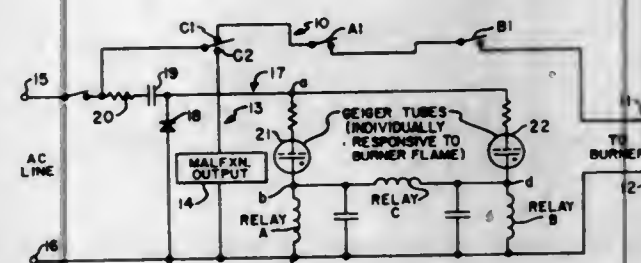
Roger E. Axmark, Fridley, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Mar. 15, 1967, Ser. No. 623,436

Int. Cl. F23n 5/24

U.S. Cl. 431—16

9 Claims



A burner control apparatus having two flame sensors in a bridge circuit. Each sensor is individually responsive to flame. The sensors jointly control, through adjacent legs of the bridge, the operation of a burner system. An electrical relay connected across the bridge is sensitive to electrical unbalance therein due to any discrepancy between the outputs of the two sensors and also controls the operation of the burner system.

3,463,601

## TORCH ASSEMBLY

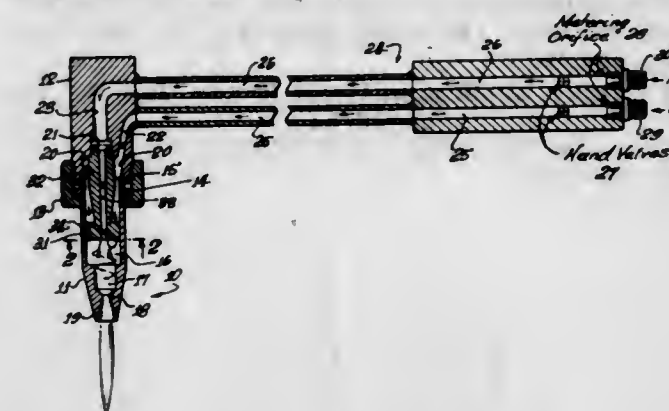
Herman T. Childree, Cason, Tex., assignor to General Dynamics Corporation, a corporation of Delaware

Filed Oct. 20, 1967, Ser. No. 676,952

Int. Cl. F23r 1/04; B23k 7/00; B05b 7/10

U.S. Cl. 431—158

6 Claims



This disclosure describes an apparatus that will burn volatile gaseous mixtures and exhaust them at sonic or supersonic speeds in such a manner that will result in a versatile unit suitable for numerous uses, and specifically applicable for cutting torches utilized for stainless steels and other metals and produces a cut relatively free of slag. The vortex action of the fluid within the unit creates an environmental condition that establishes a boundary layer and results in a relatively cool operation.

3,463,602

## GAS BURNER

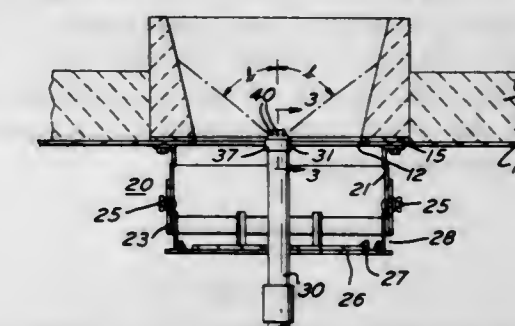
Gordon M. Bitterlich, Tredyffrin Township, Chester County, and Paul J. Binker, Philadelphia, Pa., assignors to National Alroil Burner Company, Incorporated, Philadelphia, Pa., a corporation of Delaware

Filed July 28, 1967, Ser. No. 656,858

Int. Cl. F23m 9/06, 9/08

U.S. Cl. 431—188

8 Claims



A gas burner construction in which a raw gas supply tube extends through an air register or air duct mounted on a furnace wall, the tube having a burner head discharging gas through openings into a refractory muffle block, the openings being at an angle with respect to a transverse radius and at an angle with respect to the longitudinal axis of the muffle block opening to effect a swirl and burn the gas with a short stiff flame prior to leaving the muffle block.

## CHEMICAL

3,463,603

## METHOD OF SEPARATING ACIDIC GASES FROM GASEOUS MIXTURE

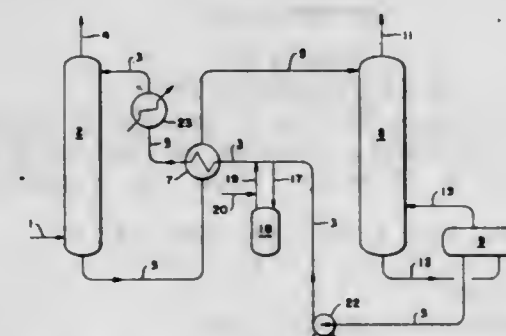
Ernest R. Freitas, San Leandro, and Clarence L. Dunn and Keith E. Zarker, Orinda, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Mar. 17, 1967, Ser. No. 623,976

Int. Cl. B01d 47/02

U.S. Cl. 23—2

12 Claims



A process for separating acidic gases from a gaseous mixture by absorbing the acidic gases in a liquid absorbent comprising 20-40% by weight water, 35-65% by weight monoisopropanolamine and 5-45% by weight of a cyclotetramethylene sulfone, such as sulfolane, and recovering an essentially acid-free gas.

3,463,604

## RECOVERY OF MOLYBDENUM FROM ORGANIC SOLUTIONS USING AMMONIUM PHOSPHATE

Richard G. Tave, Philadelphia, Pa., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed June 22, 1967, Ser. No. 647,908

Int. Cl. C22b 49/00

U.S. Cl. 23—22

2 Claims

Method for the recovery of molybdenum from organic solutions of compounds thereof by precipitation with

ammonium phosphate and recovery of the ammonium phosphomolybdate.

3,463,605

## PROCESS AND APPARATUS FOR PRODUCTION OF ALKALI METAL MONOFLUOROPHOSPHATE

Wayne E. White and James M. Munn, Sand Springs, and Joe E. Gilliland and Benny B. Wright, Tulsa, Okla., assignors to Ozark-Mahoning Company, Tulsa, Okla., a corporation of Delaware

Filed June 13, 1966, Ser. No. 557,239

Int. Cl. C01b 25/30; C01d 11/00; B01j 1/20

U.S. Cl. 23—50

2 Claims

A process and apparatus for the continuous production of sodium monofluorophosphate by reacting sodium fluoride and sodium metaphosphate is disclosed. The finely divided reactant mixture is passed through a graphite lined reactor wherein the temperature is sufficiently high to melt the mixture; the flow of the mixture is controlled such that a blanket thereof is maintained above the molten mass to protect it from atmospheric moisture and confine the generated reaction vapors. Molten product is continuously withdrawn and quickly cooled by flowing large volumes of air thereover.

3,463,606

## SEPARATION OF LITHIUM ISOTOPES

Wilhelm Matthijs Smit, Amsterdam, and Gerardus Johannes Arkenbout, Utrecht, Netherlands, assignors to Nederlandse Centrale Organisatie voor Toegepast-natuurwetenschappelijk Onderzoek (Central Organization T.N.O.), The Hague, Netherlands, a corporation of the Netherlands

Filed June 3, 1965, Ser. No. 467,806

Int. Cl. C01d 11/02; B01d 59/30

U.S. Cl. 23—89

6 Claims

A process for enriching lithium isotopes with an exchange column having a return circuit at the upper end and a return circuit at the lower end in which lithium amalgam is contacted with a lithium salt dissolved in an organic amine solvent.



3,463,607

## METHOD OF SYNTHESIZING ASBESTOS

Robert C. Johnson, Clinton, Tenn., and Haskiel R. Shell, Hyattsville, Md., assignors to the United States of America as represented by the Secretary of the Interior

No Drawing. Filed Nov. 4, 1966, Ser. No. 592,683

Int. Cl. C01b 33/22

U.S. Cl. 23—110 10 Claims  
Asbestos fibers oriented in a predetermined manner including parallel orientation are synthesized by employing solids as the asic reactants and maintaining a dispersion of large individual masses of the magnesium-containing reactant in the other basic reactant or reactants during the asbestos-forming reaction.

3,463,608

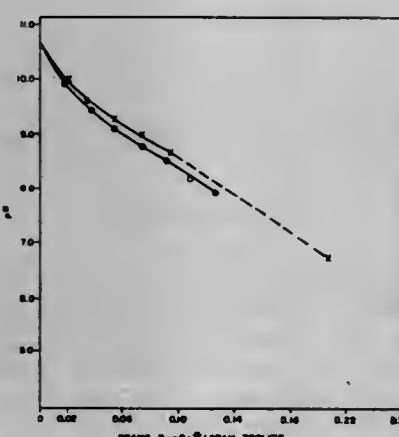
## PROCESS FOR THE PURIFICATION OF MOLECULAR SIEVES

Curtis H. Elliott, Jr., Baltimore, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed Aug. 18, 1967, Ser. No. 661,717

Int. Cl. C01b 33/22

U.S. Cl. 23—112 7 Claims



1. 1% LANTHANUM SALTS  
2. 1% GERMANIUM SALTS  
3. 1% ZINC SALTS  
4. 1% COPPER SALTS  
5. 1% NICKEL SALTS  
6. 1% COBALT SALTS  
7. 1% MANGANESE SALTS  
8. 1% IRON SALTS  
9. 1% ALUMINUM SALTS  
10. 1% SODIUM SALTS  
11. 1% POTASSIUM SALTS  
12. 1% AMMONIUM SALTS  
13. 1% CALCIUM SALTS  
14. 1% MAGNESIUM SALTS  
15. 1% BARIUM SALTS  
16. 1% STRONTIUM SALTS  
17. 1% LEAD SALTS  
18. 1% SILVER SALTS  
19. 1% GOLD SALTS  
20. 1% PLATINUM SALTS  
21. 1% PALLADIUM SALTS  
22. 1% RHODIUM SALTS  
23. 1% IRIDIUM SALTS  
24. 1% OSMIUM SALTS  
25. 1% RUTHENIUM SALTS  
26. 1% NIOBIUM SALTS  
27. 1% TANTALUM SALTS  
28. 1% ZIRCONIUM SALTS  
29. 1% HAFNIUM SALTS  
30. 1% TITANIUM SALTS  
31. 1% VANADIUM SALTS  
32. 1% CHROMIUM SALTS  
33. 1% MANGANESE SALTS  
34. 1% IRON SALTS  
35. 1% COBALT SALTS  
36. 1% NICKEL SALTS  
37. 1% COPPER SALTS  
38. 1% ZINC SALTS  
39. 1% CADMIUM SALTS  
40. 1% MERCURY SALTS  
41. 1% BARIUM SALTS  
42. 1% STRONTIUM SALTS  
43. 1% CALCIUM SALTS  
44. 1% MAGNESIUM SALTS  
45. 1% ALUMINUM SALTS  
46. 1% SILICON SALTS  
47. 1% BORON SALTS  
48. 1% FLUORINE SALTS  
49. 1% CHLORINE SALTS  
50. 1% BROMINE SALTS  
51. 1% IODINE SALTS  
52. 1% SULFUR SALTS  
53. 1% SELENIUM SALTS  
54. 1% TELLURUM SALTS  
55. 1% POLYMER SALTS  
56. 1% CARBON SALTS  
57. 1% SILICON SALTS  
58. 1% BORON SALTS  
59. 1% FLUORINE SALTS  
60. 1% CHLORINE SALTS  
61. 1% BROMINE SALTS  
62. 1% IODINE SALTS  
63. 1% SULFUR SALTS  
64. 1% SELENIUM SALTS  
65. 1% TELLURUM SALTS  
66. 1% POLYMER SALTS  
67. 1% CARBON SALTS  
68. 1% SILICON SALTS  
69. 1% BORON SALTS  
70. 1% FLUORINE SALTS  
71. 1% CHLORINE SALTS  
72. 1% BROMINE SALTS  
73. 1% IODINE SALTS  
74. 1% SULFUR SALTS  
75. 1% SELENIUM SALTS  
76. 1% TELLURUM SALTS  
77. 1% POLYMER SALTS  
78. 1% CARBON SALTS  
79. 1% SILICON SALTS  
80. 1% BORON SALTS  
81. 1% FLUORINE SALTS  
82. 1% CHLORINE SALTS  
83. 1% BROMINE SALTS  
84. 1% IODINE SALTS  
85. 1% SULFUR SALTS  
86. 1% SELENIUM SALTS  
87. 1% TELLURUM SALTS  
88. 1% POLYMER SALTS  
89. 1% CARBON SALTS  
90. 1% SILICON SALTS  
91. 1% BORON SALTS  
92. 1% FLUORINE SALTS  
93. 1% CHLORINE SALTS  
94. 1% BROMINE SALTS  
95. 1% IODINE SALTS  
96. 1% SULFUR SALTS  
97. 1% SELENIUM SALTS  
98. 1% TELLURUM SALTS  
99. 1% POLYMER SALTS  
100. 1% CARBON SALTS

A process for removing excess cation exchange compounds which are deposited upon molecular sieves during the cation exchange treatment of such sieves. The process is characterized by a post calcination washing treatment with a pH controlled wash solution such that pH is maintained within the range of from 3.5 to 5.5.

3,463,609

## PHOSPHORIC ACID PRODUCTION

Raymond W. Garris, 10445 Classique Ave., Baton Rouge, La. 70815

Filed May 4, 1967, Ser. No. 636,074

Int. Cl. C01b 25/22

U.S. Cl. 23—165 7 Claims  
Phosphate rock is reacted with slight excess HCl and recycle acid and clarified. The effluent is passed through a cation exchanger. The weak acid is concentrated preferably by dialysis and evaporation. The acid condensate from the evaporator may be used to regenerate the cation exchanger. By-product recovery, stage operation and recycling may be employed.

## PROCESS FOR THE PRODUCTION OF PARTICULATE TITANIUM DIOXIDE

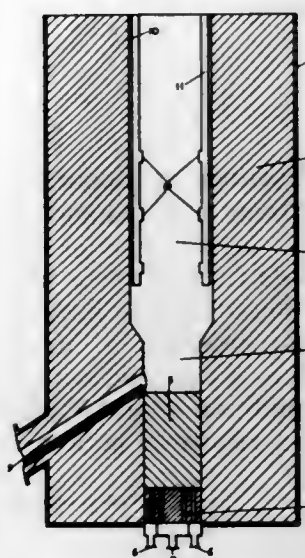
James Dennis Groves, Redcar, and Kenneth Arkless, Eaglescliffe, England, assignors to British Titan Products Company Limited, Billingham, Durham, England, a corporation of the United Kingdom

Continuation-in-part of application Ser. No. 254,007, Jan. 25, 1963. This application May 11, 1966, Ser. No. 549,297

Claims priority, application Great Britain, Jan. 30, 1962, 3,528/62

Int. Cl. C01g 23/06; C09c 1/36

U.S. Cl. 23—202 16 Claims



Titanium dioxide in finely divided form is produced by effecting the reaction of a titanium tetrahalide in an oxygenating gas in the presence of a hot gaseous suspension containing dispersed metal oxide particles by effecting such reaction in a plurality of stages until the initial particles are coated to the desired degree and improved process and product result over that process in which all of the coating is effected in a single stage.

3,463,611

## SULFUR RECOVERY

Nicholas J. Haritatos, El Cerrito, and Phillip D. Harvey, Walnut Creek, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Filed May 1, 1967, Ser. No. 635,241

Int. Cl. C01b 17/04

U.S. Cl. 23—225 11 Claims

A process for producing sulfur by:

- (1) withdrawing purge gas from a hydroconversion zone recycle gas stream containing hydrocarbons, hydrogen and hydrogen sulfide;
- (2) passing the purge gas to a partial oxidation zone wherein the hydrocarbons in the purge gas and other feed stream to the partial oxidation zone are partially oxidized to form hydrogen, carbon monoxide and carbon dioxide;
- (3) passing the effluent from the partial oxidation zone to a hydrogen sulfide and carbon dioxide removal step to separate the hydrogen sulfide and carbon dioxide from hydrogen and carbon monoxide; and
- (4) passing the separated hydrogen sulfide and carbon dioxide to a Claus process for manufacture of sulfur.

## Definitions

The following terms are used in this specification with the meanings given below:

Purge gas: a portion of a larger recycle gas stream.  
Hydroconversion: a conversion of hydrocarbons using hydrogen.

3,463,612

## ADAPTION OF GAS TURBINE AND FREE PISTON ENGINES TO THE MANUFACTURE OF CARBON BLACK

Travis S. Whitsel, Jr., Houston, Tex., assignor to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky

Filed July 7, 1965, Ser. No. 470,102

Int. Cl. C09c 1/50, 1/58

U.S. Cl. 23—209.4 14 Claims

A process and apparatus for the production of carbon black pellets by the pyrolysis of a hydrocarbon feedstock and wet pelleting of the carbon black which includes burning a hydrocarbon gas or oil with compressed air to produce hot flue gases, utilizing the hot flue gases to operate a gas turbine and thereby partially reduce the temperature of the hot flue gases, utilizing the turbine energy to compress air for the combustion chamber and to generate electricity which in turn operates a blower for compressing air for the carbon black furnace, utilizing a part of the hot flue gases from the turbine to heat the process air to the carbon black furnace, a hydrocarbon gas or oil to the carbon black furnace, an auxiliary hydrocarbon fuel to the furnace, and to dry wet pellets of carbon black recovered from the furnace effluent.

3,463,613

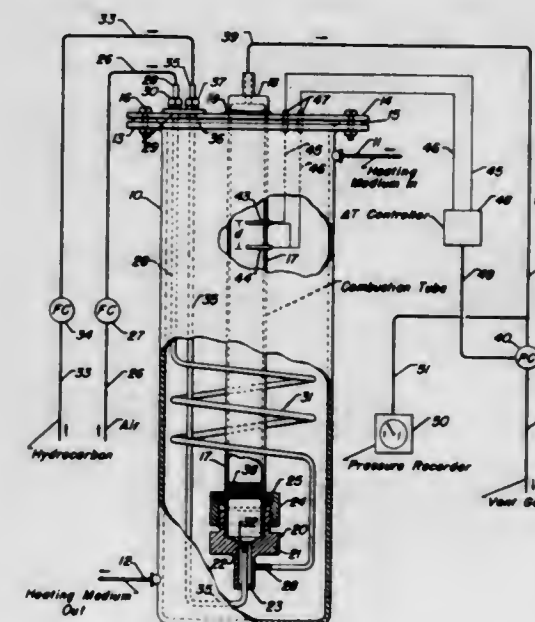
## HYDROCARBON ANALYZER COMPRISING STABILIZED COOL FLAME GENERATOR WITH SERVO-POSITIONED FLAME FRONT

Ellsworth R. Fenske, Palatine, and James H. McLaughlin, La Grange Park, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed July 13, 1965, Ser. No. 471,670

Int. Cl. G01n 33/22

U.S. Cl. 23—230 18 Claims



The composition of a hydrocarbon containing sample mixture—such as a gasoline fraction—is determined by burning said mixture in a combustion tube under conditions to generate therein a stabilized cool flame. The position of the flame front is automatically detected and used to develop a control signal which, in turn, is used to vary a combustion parameter, such as pressure, temperature or air flow, in a manner to immobilize the flame front regardless of changes in composition of the sample mixture. The change in such combustion parameter required to immobilize the flame following a change of sample composition is correlatable with such composition change. A suitable readout device may be calibrated in

terms of the desired identifying characteristic of the hydrocarbon-containing sample, as, for example, octane number.

3,463,614

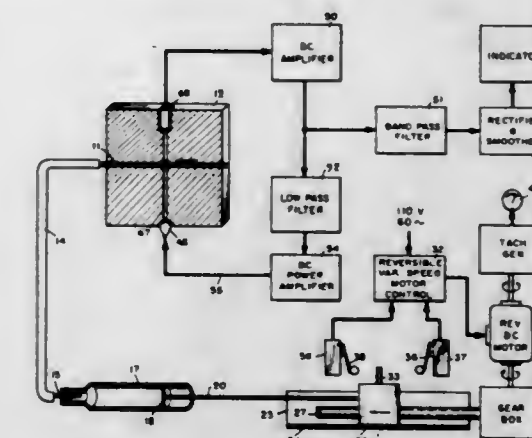
## METHOD AND APPARATUS FOR USE IN PROMOTING AGGLOMERATION

Myron W. Leslie, Westbury, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Nov. 29, 1966, Ser. No. 597,614

Int. Cl. G01n 31/00

U.S. Cl. 23—230 13 Claims



Method and apparatus for inducing and detecting agglomeration in certain fluid substances, particularly enhancing and intensifying the agglomeration action and requiring but a very small quantity of the fluid substance.

3,463,615

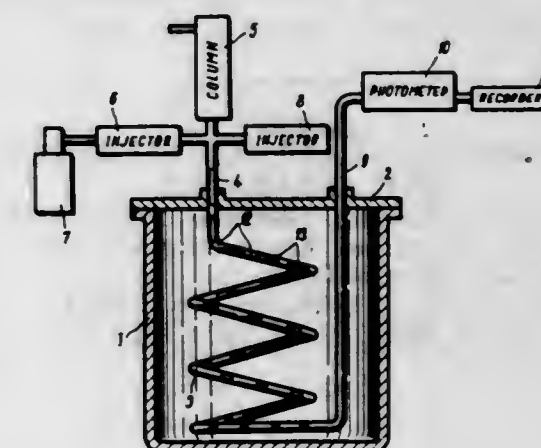
## METHOD FOR TREATING ELUATE FROM A CHROMATOGRAPHIC COLUMN

Čestmír Sochor, Prague, Czechoslovakia, assignor to Československá akademie věd, Prague, Czechoslovakia

Continuation-in-part of application Ser. No. 674,404, Oct. 11, 1967. This application June 4, 1968, Ser. No. 734,458

Claims priority, application Czechoslovakia, Oct. 13, 1966, 6,517/66

Int. Cl. G01n 31/08; B01d 19/00; G01j 1/00  
U.S. Cl. 23—230 3 Claims



Gas bubbles placed in the eluate from a chromatographic column to prevent back-mixing of the several sections of the eluate while the same is being transferred through capillary tubing from the column to an evaluating station, such as a photometer, are removed from the eluate by passage through a wall portion of the capillary tubing. Capillary tubing of polytetrafluoroethylene or fluorinated



ethylene propylene polymer passes hydrogen or helium under internal pressures as low as 30 cm. while being impervious to all liquid eluates normally encountered.

3,463,616

# APPARATUS FOR THE INDUSTRIAL PRODUCTION OF SPINNABLE ACRYLONITRILE-BASED POLYMERS

Demetrio Corradi, Varedo, and Alberto Pasin, Maderno, Italy, assignors to Snia Viscosa Società Nazionale Industri Applicazioni Viscosa S.p.A., Milan, Italy, a company of Italy

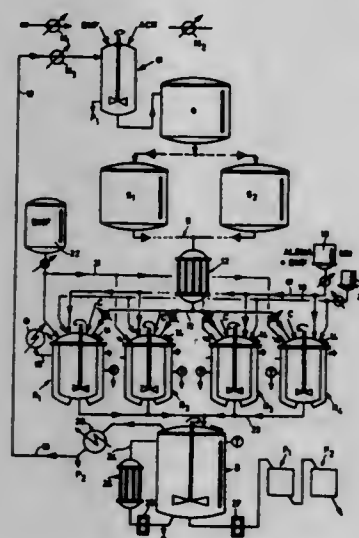
Filed Mar. 18, 1966, Ser. No. 535,473

Claims priority, application Italy, Feb. 7, 1966, 14,227/66

Int. Cl. B01d 3/42, 3/00

U.S. Cl. 23—263

5 Claims



For production of a spinnable solution of a copolymer containing polyacrylonitrile, a mixer is provided for mixing a metered volume of a solvent, such as dimethylformamide, with a metered volume of acrylonitrile. From the mixer the solution flows to tanks from which it is selectively delivered through a heat exchanger to a plurality of reactors. The individual reactors are connected to tanks from which metered volumes of methyl methacrylate and of sodium allylsulphonate and dimethylformamide can be fed into the reactors. The outlets of all the reactors are connected to a single distiller. From the distiller the spinnable solution is fed to the spinneret. The unreacted acrylonitrile and excess solvent are returned through a condenser and a metering device to the mixer.

3,463,617

# SUPPORTING PLATE FOR FLUIDIZED BED APPARATUS

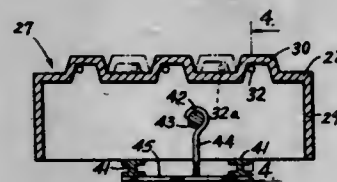
Shinro Takeuchi, Tamano, Okayama, Japan, assignor to Mitsui Shipbuilding and Engineering Co. Ltd., Tokyo, Japan, a corporation of Japan

Filed Apr. 6, 1966, Ser. No. 540,655

Int. Cl. B01j 1/14, 7/00; C10j 1/00

U.S. Cl. 23—284

7 Claims



Apparatus for roasting finely divided particulate material has a horizontal plate supporting a bed of the ma-

terial above a plenum containing hot gases which pass upwardly through the plate to fluidize and heat the material. The plate comprises a plurality of hollow blocks having ports in fluid communication with the plenum, the blocks being arranged in a predetermined pattern so that a swirling motion is imparted to the hot gases as they issue from the ports to uniformly heat the bed.

3,463,618

# SODIUM CARBONATE PERHYDRATE, ITS TREATMENT AND METHOD OF PREPARATION

John F. G. Harris, Luton, and Anthony M. Hildon, Leighton Buzzard, England, assignors to Laporte Chemicals Limited

No Drawing. Filed Dec. 9, 1966, Ser. No. 600,649

Claims priority, application Great Britain, Dec. 10, 1965, 52,596/65

Int. Cl. C01d 7/38; C01b 31/24

U.S. Cl. 23—315

20 Claims

Sodium carbonate perhydrate is obtained in a free-flowing form, of bulk density 0.2–0.75 gm./cc., by forming a paste with 10–40% by weight of water, passing the paste through a sieve of an opening 0.5–2.5 mm., drying and then passing the agglomerates through a sieve of an opening 0.5–2.5 mm. A solvent in which water and the perhydrate are not soluble, may be used and the material is maintained suspended in turbulence and then it is separated in granular form.

3,463,619

# SOLVENT EXTRACTION PROCESS FOR PURIFYING AMERICIUM AND CURIUM

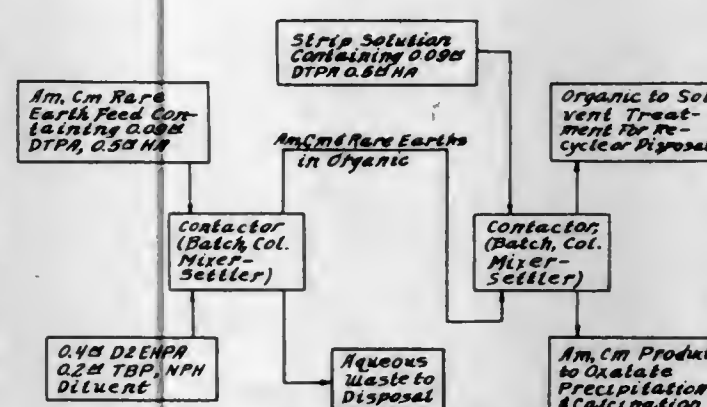
Gerald L. Ritter and Lane A. Bray, Richland, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed July 12, 1968, Ser. No. 744,353

Int. Cl. C01g 56/00

U.S. Cl. 23—341

8 Claims



Legend:  
DTPH = Diethylenetriaminepentaacetic Acid  
HA = Hydroxyacetic Acid  
DZENPH = Di(2-ethylhexyl) phosphoric Acid  
NPH = Normal Paraffin Hydrocarbon

A solvent extraction process for purifying americium and/or curium which is contained in an aqueous feed solution containing rare earths and other values by extracting the lanthanide rare earths, yttrium, uranium, americium and curium values present with di(2-ethylhexyl) phosphoric acid and tributyl phosphate in a normal paraffin hydrocarbon from the feed solution to which has been added hydroxyacetic acid and diethylenetriaminepentaacetic acid. The americium and/or curium values are then separated from the lanthanide rare earths, yttrium, and uranium present and from the other elements, e.g. plutonium, which are extracted to a small extent by contacting the organic phase with an aqueous solution of hydroxyacetic acid and diethylenetriaminepentaacetic acid. The values are then recovered from the aqueous phase by precipitation with oxalic acid.

3,463,620

# CYLINDRICAL OR ROD-LIKE COMPOSITE ARTICLE

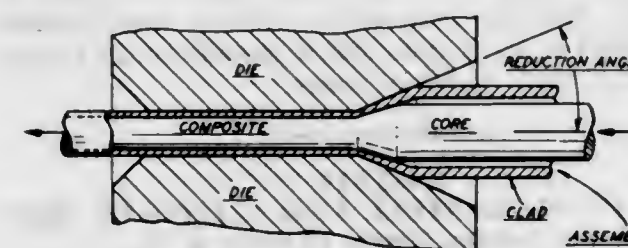
Joseph Winter, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Continuation-in-part of application Ser. No. 565,664, May 23, 1966, which is a division of application Ser. No. 229,262, Oct. 2, 1962. This application Feb. 28, 1968, Ser. No. 708,935

Int. Cl. B21c 37/00; B23p 3/20

U.S. Cl. 29—183.5

8 Claims



The instant disclosure teaches a process for obtaining a high strength cylindrical or rod-like composite material which may be either a clad solid rod or a clad hollow tube and the improved cylindrical or rod-like composite article obtained thereby. In particular, the process comprises forming an assembly by placing one component inside another component and reducing the assembly diameter from 10 to 70% by rotary swaging.

3,463,621

# ALLOYS OF SINTERED CARBIDES

Richard Kieffer, Vienna, Austria, assignor to Societe des Poudres Metalliques et des Allages Speciaux Ugine-Carbone, Paris, France, a corporation of France

No Drawing. Filed June 19, 1968, Ser. No. 738,137

Claims priority, application Austria, June 20, 1967, A 5,750/67

Int. Cl. B22f 3/10

U.S. Cl. 29—182.7

11 Claims

An improved sintered hard metal alloy comprising 4 to 15 percent of at least one metal selected from the group consisting of iron, nickel and cobalt, 0.5 to 75 percent titanium carbide, 3 to 40 percent columbium carbide-hafnium carbide and the balance tungsten carbide. A small amount (0.1 to 0.5 percent) of vanadium carbide may be included.

## ERRATUM

For Class 29—197 see:  
Patent No. 3,462,820

3,463,622

## FUEL OILS

Hugh Frederick Stevens, The Lodge, South Wonston, Winchester, Hampshire, England, and Tom Craven, Hillcross, Droxford Road, Swanmore, Hampshire, England

No Drawing. Filed Dec. 30, 1965, Ser. No. 517,831

Int. Cl. C10I 1/12, 1/32

U.S. Cl. 44—51

7 Claims

High sulphur content fuel oils can be improved by incorporating a lead oxide or alkali plumbite dispersed in tall oil and triethanolamine.

3,463,623

# PROCESS FOR GASIFYING CAKING COALS

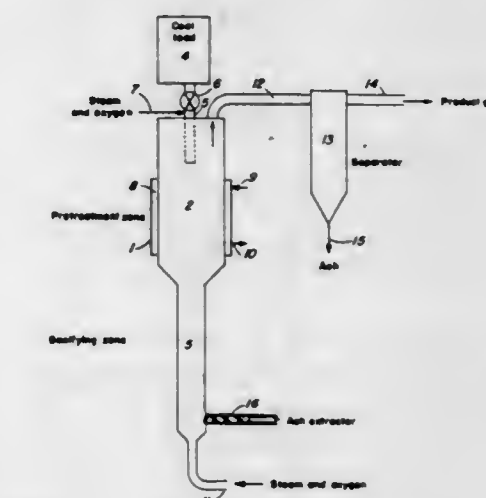
Albert J. Forney, Coraopolis, and Stanley J. Gasior and Joseph H. Field, Pittsburgh, Pa., assignors to the United States of America as represented by the Secretary of the Interior

Filed Sept. 7, 1967, Ser. No. 666,565

Int. Cl. C10j 3/06

U.S. Cl. 48—202

7 Claims



A methane-rich synthesis gas is produced from finely divided particulate caking coals by subjecting the coal to a pretreatment in the presence of oxygen and steam in a free-fall zone surmounting and in open communication with a fluidized bed in which gasification occurs.

3,463,624

# METHOD OF MANUFACTURING GLASS PAPERWEIGHTS

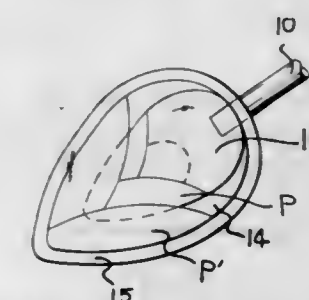
Dominick Labino, Kellogg Road, Box 154, Grand Rapids, Ohio 43522

Filed June 27, 1967, Ser. No. 649,197

Int. Cl. C03b 19/00; C03c 17/02

U.S. Cl. 65—71

2 Claims



A method of manufacturing a glass paperweight, or the like, in which, after a gob of clear colorless glass has been gathered from the furnace and formed into an elongate cone, the pointed end portion is dipped into a bath of molten colored glass of higher temperature than the gob at an inclined angle recurrently after turning the cone to collect a thin coating of generally oblate form so that a plurality of coatings are formed about the cone representing petals of a flower, such for example, as a tulip. Then the cone is immersed into the molten clear glass so that the colored petals are arranged between two portions of layers of clear glass. The operation is repeated so as to form another row of colored petals and then redipped into the clear glass for a complete coating of clear glass.

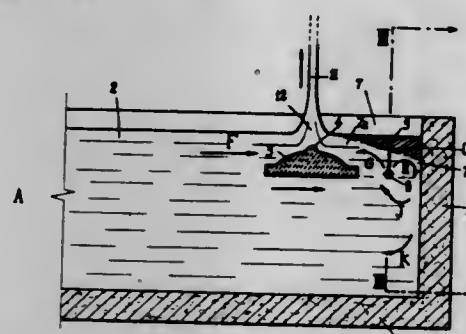


**3,463,625**  
**PROCESS AND APPARATUS FOR THE PRODUCTION OF FLAT GLASS**  
 Jan-Theodor Olink, Asnieres, France, assignor to Boussois-Souchon-Neuvesel, Paris, France, a company of France  
 Filed July 10, 1967, Ser. No. 652,232  
 Claims priority, application France, July 15, 1966, 69,514

U.S. Cl. 65—90

Int. Cl. C03b 15/04

6 Claims

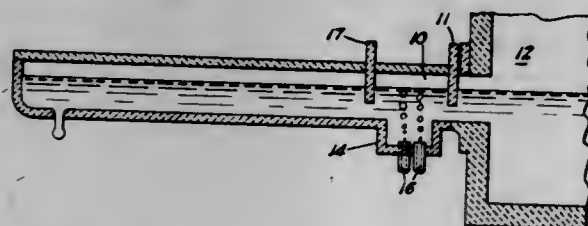


Process and installation for the production of flat glass by vertical drawing of a sheet of glass starting from a bath of molten glass contained in a drawing kiln. The process comprises a supplementary heating of the bath of glass situated in the part of the drawing kiln termed the end part, characterized in that the said heating extends substantially full width of the kiln and is localized in such a way as to produce, within the end part and in the upper portion of this latter, a substantially vertical thin zone of hotter glass with lower viscosity, constituting a curtain separating a further glass current from a return current.

**3,463,626**  
**METHOD FOR COLORING GLASS WITH WATER SOLUBLE COMPOUNDS**  
 John R. Le Blanc, Brockway, Pa., assignor to Brockway Glass Company, Inc., Brockway, Pa.  
 Filed June 16, 1966, Ser. No. 557,947  
 Int. Cl. C03b 5/04, 5/16

U.S. Cl. 65—134

1 Claim

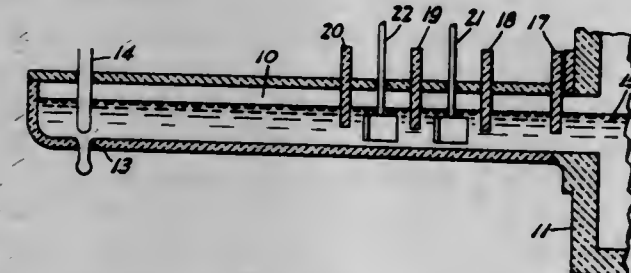


The invention is to a method for coloring molten glass by the addition of water soluble compounds of chromium, copper, cobalt and iron to the flowing molten glass in the forehearth.

**3,463,627**  
**METHOD FOR PRODUCING COLORED GLASS**  
 John R. LeBlanc, Brockway, Pa., assignor to Brockway Glass Company, Inc., Brockway, Pa.  
 Filed June 16, 1966, Ser. No. 558,023  
 Int. Cl. C03b 5/16; C03c 1/10

U.S. Cl. 65—134

1 Claim



A process for coloring glass whereby there is a glass melting furnace having a forehearth at the discharge

end of the melting tank for receiving molten clear glass with chromic oxide refractory elements interposed in the forehearth to be impinged against by the clear molten glass, whereby the glass takes up chromic oxide by erosion from the interposed elements in a quantity sufficient to impart a green color to the glass.

**3,463,628**  
**METHOD OF KILLING ELODEA**  
 Robert W. Hyde, Crystal River, Fla. 32629  
 No Drawing, Filed Aug. 30, 1966, Ser. No. 575,954  
 Int. Cl. A01n 17/00; 11/00

U.S. Cl. 71—66

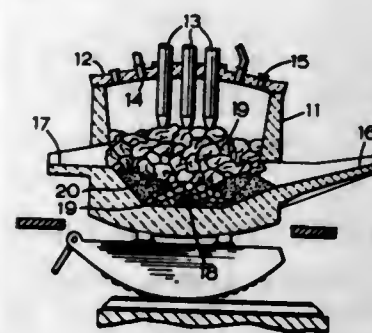
1 Claim

A method of killing Elodea by dumping commercial sulfuric acid, which is at least 90% pure, and therefor considerably heavier than water, directly into Elodea-clogged bodies of water such that it spreads out as a layer on the beds of such bodies of water.

**3,463,629**  
**MANUFACTURING STEEL AND ALLOYS OF IRON**  
 Gerald Gordon Hatch, 37 Bloor St. W., Toronto, Ontario, Canada  
 Filed Aug. 15, 1966, Ser. No. 572,468  
 Claims priority, application Great Britain, Sept. 3, 1965, 37,705/65

U.S. Cl. 75—11

17 Claims



A process for the manufacture of steel and other alloys of iron from sponge iron in an electric arc furnace in which a layer of molten metal is formed in the furnace, the furnace sidewalls are charged with sponge iron to above the slag line and sponge iron is continuously charged in and around the electrodes to maintain excess solid charge in the furnace around the electrodes while continuously melting the sponge iron charged. Sponge iron is fed to and maintained banked against the sidewalls of the furnace during melting, gangue slag is removed from the furnace during melting and molten iron is formed in and tapped from the furnace.

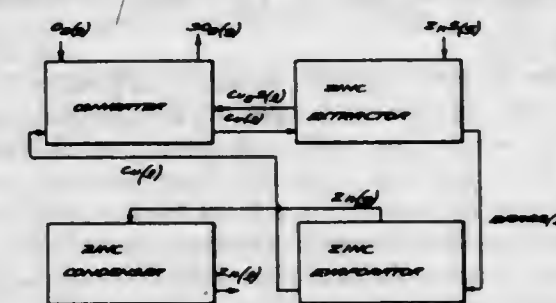
**3,463,630**  
**PROCESS FOR PRODUCING ZINC AND RELATED MATERIALS**  
 Lamar S. Todd, 3504 Woodland Road, Bartlesville, Okla. 74003  
 Filed Mar. 3, 1966, Ser. No. 531,503  
 Int. Cl. C22b 19/04

U.S. Cl. 75—23

14 Claims

This invention relates to a new process for the treatment of complex sulfide substances to make high value metallic end-products. The process accomplishes this by reducing the mineral sulfide with molten copper in the metal extractor to make molten cuprous sulfide matte and a molten copper alloy of the metal being reduced. The matte goes to a converter where it is reacted with gaseous oxygen to make molten copper and gaseous sulfur dioxide. The molten copper is returned to the metal extractor. The copper alloy made by the sulfide reduction

in the extractor goes to an evaporator where the volatile metal is evaporated from the molten copper alloy and the resulting molten copper goes to the converter. Any metal can be produced by this process if the metal sulfide can be reduced by copper and the metal has a lower boiling point than copper. Two or more metal sulfides can be



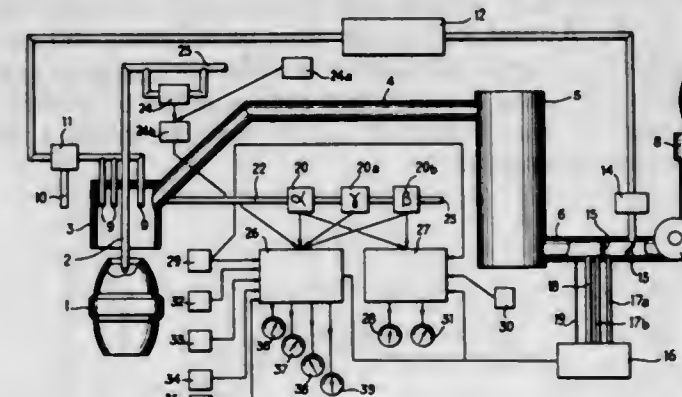
simultaneously reduced in the metal extractor to make a copper alloy containing copper and two or more metals. One or more of the metals can be volatilized from the complex copper alloy in a metal evaporator. The volatile metals can be separated by fractionation and condensation.

**3,463,631**  
**METHOD AND ARRANGEMENT FOR DETERMINING THE OXIDATION REACTIONS DURING REFINING OF METALS**

Pierre Vayssiere and Jacques Dumont-Fillon, Moselle, France, assignors to Institut de Recherches de la Siderurgie Francaise, St. Germain-en-Laye, France  
 Filed Nov. 30, 1964, Ser. No. 414,809  
 Claims priority, application France, Dec. 3, 1963, 955,779

U.S. Cl. 75—60

19 Claims



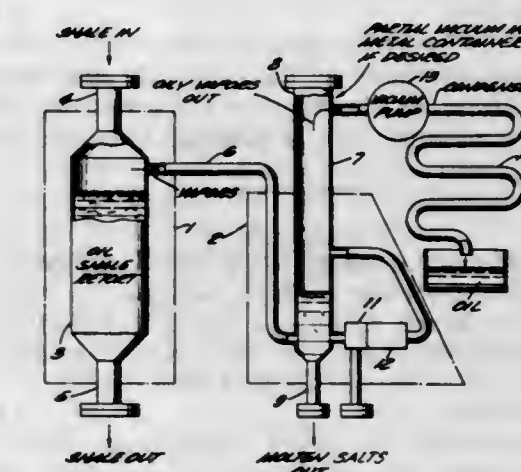
Pig iron is refined with continuous determining of the composition of the molten pig iron bath during oxygen blast refining in a converter in order to permit accurate adjustment of the rate of oxidation and for determination of the appropriate time for terminating the refining process, by introducing into an oxygen converter a charge of predetermined amount and composition including carbon, iron, silicon, manganese, phosphorus and oxygen, introducing an oxygen blast into the charged converter and continuously measuring the total quantity of oxygen introduced by said blast into the converter per unit of time, continuously measuring the quantity of oxygen which leaves the converter during such unit of time as free oxygen and combined with carbon, continuously measuring the quantity of oxygen bound by each of the elements of the bath other than carbon and silicon, continuously determining by integration from all of these measurements and the determination of the amount of oxygen required for oxidizing the silicon con-

tent of said charge the total quantity of oxygen bound by the iron, the phosphorus and the manganese of the bath, and ending refining of the pig iron when the total quantities of oxygen bound by the iron, phosphorus and manganese of the bath reach predetermined desired values.

**3,463,632**  
**METAL RECOVERY METHOD**  
 Jack W. Petty, 1115 Arbor Dell Road, Los Angeles, Calif. 90041  
 Filed Feb. 24, 1967, Ser. No. 618,458  
 Int. Cl. C22b 11/02, 7/02; C10b 57/04

U.S. Cl. 75—83

4 Claims

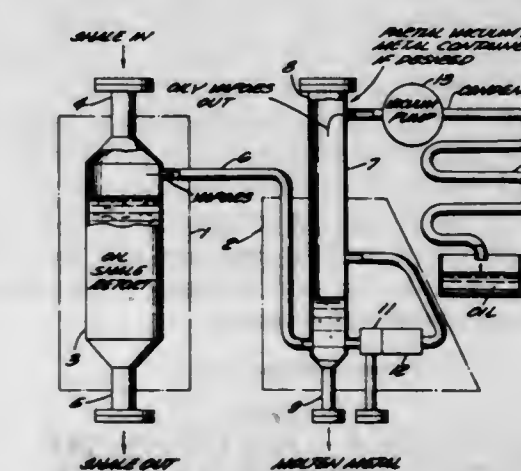


A method of obtaining precious metals by heating oil shales to drive off oily vapors containing precious metals and bubbling the vapors through a bath of a molten alkali metal chloride.

**3,463,633**  
**METAL RECOVERY METHOD**  
 Jack W. Petty, 1115 Arbor Dell Road, Los Angeles, Calif. 90041  
 Continuation-in-part of application Ser. No. 534,858, Mar. 16, 1966. This application Mar. 1, 1967, Ser. No. 619,664  
 Int. Cl. C22b 11/02, 11/10; C10b 57/04

U.S. Cl. 75—83

12 Claims



A metal recovery method in which oil shales are heated to drive off oily vapors, and the oily vapors are bubbled through a molten metal with which precious metals will combine.

**3,463,634**  
**CARBON REDUCTION PROCESS**  
 Harley A. Wilhelm and James K. McClusky, Ames, Iowa, assignors to the United States of America as represented by the United States Atomic Energy Commission  
 No Drawing, Filed Aug. 9, 1968, Ser. No. 751,339  
 Int. Cl. C22b 61/04, 55/00

U.S. Cl. 75—84

10 Claims

A process for reducing uranium or vanadium oxides to high-purity metal by heating under reduced pressure



a mixture of the metal oxide and carbon to form an electrically conductive intermediate. This intermediate is then heated by self-induction under reduced pressure in a ceramic crucible until reduced to the metal.

3,463,635

# RECOVERY OF MERCURY FROM NUCLEAR FUEL REPROCESSING WASTES

Donald W. Rhodes and Malcolm W. Wilding, Idaho Falls, Idaho, assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Nov. 1, 1967, Ser. No. 679,668  
Int. Cl. C22b 43/00, 7/00; G21f 9/04

U.S. Cl. 75—121

2 Claims

A process for recovering mercury metal, present in acidic aqueous solutions as the mercuric ion, by adding hydrazine hydrate to the solution and refluxing the solution until the mercuric ion is reduced to mercury metal.

3,463,636

# CONSTANT CONDUCTIVITY ALLOYS

John R. Ogren, La Palma, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

No Drawing. Filed Jan. 3, 1967, Ser. No. 606,574  
Int. Cl. C22c 5/00

U.S. Cl. 75—165

2 Claims

Constant conductivity alloys containing 70–90 weight percent of a metal selected from the group consisting of platinum, rhodium, iridium, palladium, gold, and silver; 7–23 weight percent tungsten, and 2–8 weight percent rhenium. These alloys possess a greater degree of constant electrical conductivity over a wider temperature range than prior art alloys.

3,463,637

# WATER DISINTEGRABLE LEAD SHOT

George S. Foerster, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 26, 1966, Ser. No. 575,232  
Int. Cl. C22c 11/02

U.S. Cl. 75—167

6 Claims

A lead-base alloy contains, by weight, from 2 to 6 percent magnesium, from 0.2 to 3 percent rare earth metal and up to 6 percent mercury. Preferably the alloy contains 2.5 to 3.5 percent magnesium, from 0.5 to 2 percent rare earth metal, and more preferably, mercury is also present in the range of 0.5 to 1.5 percent. Substantially spherical lead shot consists of lead-base alloy containing from 2 to 6 percent magnesium, and at least one of from 0.2 to 6 percent mercury and from 0.2 to 3 percent rare earth metal, and is characterized by ready disintegration on immersion in water.

3,463,638

# HEAT-FIXABLE LIGHT-SENSITIVE COMPOSITIONS AND ELEMENTS

Eugene P. Damm, Jr., Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

No Drawing. Filed Aug. 20, 1965, Ser. No. 481,388  
Int. Cl. G03c 1/58

U.S. Cl. 96—49

7 Claims

A light sensitive, heat-fixable negative diazotype composition, element and method of using, the composition consisting of a Rapidogen dye and a hydrolyzable alkaline metal salt as an image fixing agent. The dye forming under the exposure to ultraviolet light and upon subsequent application of heat light insensitive alkaline hydrolysis products forming between the hydrolyzed alkaline metal salt and diazonium decomposition products of the dye.

3,463,639

# BENZENE DIAZONIUM SALTS USEFUL IN DIAZOTYPE MATERIALS HAVING ORTHO CARBOXY-AMIDO SUBSTITUTION

Evan S. Baltazzi, Brookfield, Ill., assignor to Addressograph-Multigraph Corporation, Mount Prospect, Ill., a corporation of Delaware

No Drawing. Filed Dec. 15, 1965, Ser. No. 514,130  
Int. Cl. G03c 1/54; C07c 113/04

U.S. Cl. 96—91

9 Claims

A benzene diazonium salt having a carboxamido substituent in the 2-position, a heterocyclic tertiary amino residue to the 4-position, and a substituent other than hydrogen in the 5-position. A typical diazonium salt of this invention is one derived from a 2-(N,N-di-n-butylcarboxamido)-4-morpholino-5-methoxybenzenediazonium compound. These diazonium salts find utility in both one and two component diazotype materials.

3,463,640

# SUPERSENSITIZED SILVER HALIDE EMULSIONS WITH THREE CYANINE DYES

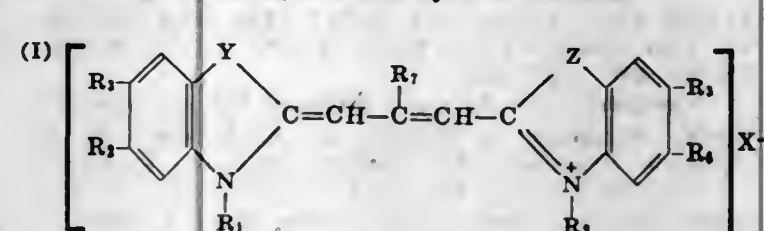
Geoffrey Ernest Ficken, Douglas James Fry, and Elvin Frederick William Thurston, Ilford, England, assignors to Ilford Limited, Ilford, Essex, England, a British company

No Drawing. Filed Dec. 10, 1965, Ser. No. 513,084  
Claims priority, application Great Britain, Dec. 17, 1964, 51,358/64; Aug. 19, 1965, 35,643/65  
Int. Cl. G03c 1/28

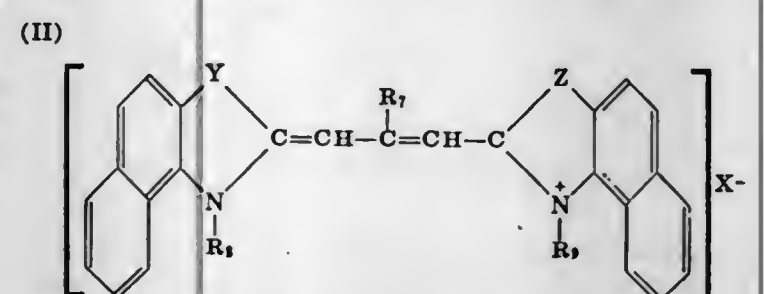
U.S. Cl. 96—104

8 Claims

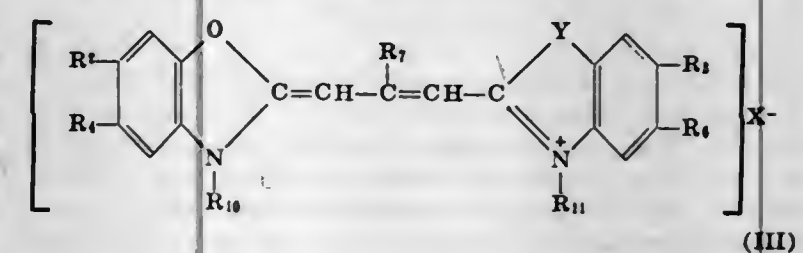
A photographic silver halide emulsion which contains in sensitising amounts, either 2 dyes of formula:



wherein R<sub>1</sub> and R<sub>2</sub> are the same or different and are alkyl groups or one is alkyl and the other is A-Q where A is alkylene and Q is amide, carboxylic acid or sulphonic acid, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> are the same or different and each represents hydrogen, halogen or a hydrocarbon group, R<sub>7</sub> is a lower alkyl and Z and Y are each sulphur or selenium atoms and X<sup>-</sup> is an anion; or one dye of Formula I and one dye of Formula II:



wherein R<sub>8</sub> and R<sub>9</sub> are alkyl groups and R<sub>7</sub>, X<sup>-</sup>, Y<sup>-</sup>, and Z have the meanings assigned above; there being present with either combination a dye of the following formula:



wherein R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, X<sup>-</sup> and Y have the meanings assigned above, R<sub>10</sub> is an alkyl group and R<sub>11</sub> is alkyl or a group A-Q as above.

3,463,641

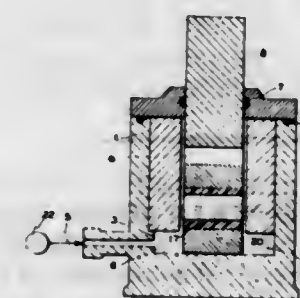
# PROCESS FOR PRODUCING COMPRESSED DRY FOOD AND PRODUCT

Leah C. Berardi, Wilda H. Martinez, and Gordon J. Boudreaux, New Orleans, and Biagio Piccolo and Vernon L. Frampton, Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture

Filed Oct. 13, 1965, Ser. No. 495,735  
Int. Cl. A23p 1/00; B65b 31/00, 55/00

U.S. Cl. 99—1

4 Claims



A disk of dried food material is produced having smooth reproducible surfaces for measuring its color objectively. The dry food is prepared in the form of a sandwich comprising outer layers of plastic and an inner layer of dried food product. The system is evacuated at less than 50 mm. Hg for 1 to 5 minutes, then compressed at about 300 to 3000 p.s.i.g. for 5 to 30 seconds.

3,463,642

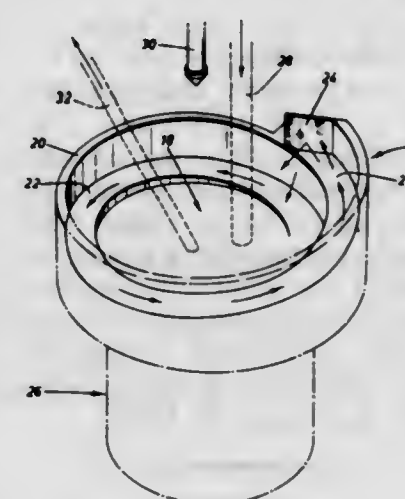
# METHOD AND TEA POWDER FOR AGGLOMERATION

Theodore Sigman, New Hartford, N.Y., assignor to Salada Foods Ltd., Don Mills, Canada

Filed June 23, 1965, Ser. No. 466,150  
Int. Cl. A23f 3/02

U.S. Cl. 99—77

1 Claim



Dry fine tea powder is fed to a zone where it is moistened and then subjected to vibratory circulatory movement with the result that a portion agglomerates collecting at the centre of the zone from which it is removed for subsequent drying; the remainder of the powder which does not agglomerate moves outwards of the centre of the zone and is thereby separated from the agglomerated material.

3,463,643

# LOW-TEMPERATURE IRRADIATION TREATMENT OF DEHYDRATED POTATOES

Donald S. Gardner, Scarborough, Ontario, Canada, and Clarence K. Wadsworth, Wellesley, Mass.; said Wadsworth assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Jan. 5, 1966, Ser. No. 518,795  
Int. Cl. A231 3/26, 1/12; A23b 7/03

U.S. Cl. 99—104

4 Claims

Dehydrated potatoes, having a moisture content of between 1–20% by weight of water, are subjected to ionizing radiation in the range of 1–10 mega rads in a temperature environment of at least below –100° C.

3,463,644

# CARBOXYMERCAPTAL HYDROCARBON TIN SALTS WITH ANTIFOULING MARINE PAINT OR COATING BIOCIDAL ACTIVITY

Ingennin Hechenbleikner and Paul F. Thompson, Cincinnati, Ohio, assignors to Carlisle Chemical Works, Inc., Reading, Ohio, a corporation of Ohio

No Drawing. Filed May 10, 1966, Ser. No. 548,878  
Int. Cl. A61k 27/00

U.S. Cl. 106—15

4 Claims

Bacteria, fungi, nematodes and barnacles are killed by applying a hydrocarbon tin salt of a carboxymercaptal.

3,463,645

# PRINTING INK FOR WAXED PELLETS AND PROCESS FOR APPLYING THE SAME

John R. Kane, Ambler, Pa., assignor to Rex Laboratories, Inc., North Wales, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 2, 1966, Ser. No. 591,406  
Int. Cl. C09d 11/08

U.S. Cl. 106—30

3 Claims

An edible ink for pharmaceutical tablets and the like, which is especially adapted to imprinting wax-coated pellets, the ink consisting essentially of a mixture of an edible shellac, an edible surfactant, alcohol, ammonia, an edible coloring agent, and water.

3,463,646

# SEMI-CRYSTALLINE GROUND COATS HAVING CONTROLLED P<sub>2</sub>O<sub>5</sub>/B<sub>2</sub>O<sub>3</sub> RATIO

John R. Little, Fairport, and Elbert A. Sanford, Rochester, N.Y., assignors, by mesne assignments, to Sybron Corporation, a corporation of New York

No Drawing. Filed Nov. 20, 1964, Ser. No. 412,850  
Int. Cl. C03c 5/00, 7/04

U.S. Cl. 106—48

4 Claims

Disclosed is a glass composition containing 5–20% of P<sub>2</sub>O<sub>5</sub> and B<sub>2</sub>O<sub>3</sub>, the ratio of P<sub>2</sub>O<sub>5</sub>/B<sub>2</sub>O<sub>3</sub> being within the range of 1:3 and 2:1, 4–20% of alkaline earth oxide; 9–23% of alkali oxide; 0–20% of TiO<sub>2</sub>; and 45–65% of SiO<sub>2</sub>. The glass composition has relatively high oxide solubility coupled with the ability to crystallize and has use as a ground coat enamel for mild steel or other substrates that tend to form substantial amounts of oxide scale when heated.

3,463,647

# CRYSTALLIZABLE ENAMELS FOR GLASS-CERAMICS

Raymond Koslerek, Bridgeville, and John I. Loughman, Washington, Pa., assignors to B. F. Drakenfeld & Company, Washington, Pa., a corporation of New York

No Drawing. Filed Feb. 2, 1966, Ser. No. 524,480  
Int. Cl. C03c 3/04; C04b 35/14

U.S. Cl. 106—48

7 Claims

Enamels for glass-ceramic articles are provided by compositions consisting essentially of, by weight, on the oxide basis, 40 to 67 percent of SiO<sub>2</sub>, 0.1 to 10 percent of B<sub>2</sub>O<sub>3</sub>, 17 to 31 percent of Al<sub>2</sub>O<sub>3</sub>, 3 to 13 percent of Li<sub>2</sub>O, 0.1 to 9 percent of TiO<sub>2</sub>, and 0.1 to 11 percent



of  $\text{Bi}_2\text{O}_3$  in proportions adapted to be converted to betacryptite as at least the major phase by a thermally induced nucleation and crystallization.

### 3,463,648 LADLE BRICK

Clyde L. Thompson, Pittsburgh, Pa., assignor to Dresser Industries, Inc., a corporation of Delaware  
Filed Nov. 7, 1966, Ser. No. 592,522  
Int. Cl. C04b 35/68, 35/10

U.S. Cl. 106—65 5 Claims  
The present invention relates to a ladle brick of the high alumina class, i.e., including more than 50%  $\text{Al}_2\text{O}_3$ , of carefully controlled bond-clay chemistry.

### 3,463,649 LADLE BRICK

Robert F. Moore, East Liverpool, Ohio, assignor to Globe Refractories, Inc., Newell, W. Va., a corporation of West Virginia

No Drawing. Continuation-in-part of application Ser. No. 584,080, Oct. 4, 1966. This application May 7, 1968, Ser. No. 727,368

Int. Cl. C04b 35/66  
U.S. Cl. 106—67 1 Claim  
The invention provides bloating class ladle brick made from batches of fire clay normally possessing insufficient bloating capacity for making ladle brick with which there is incorporated from about 0.25 to 4 percent of pyrite. The batches are tempered with water, formed into shapes which are dried and then heated at a temperature to produce a ceramic bond and maximum linear shrinkage but below that to cause bloating. Ladle linings for receiving molten steel are constructed from the brick and upon contact with the steel undergo bloating with closure of the joints between the bricks.

### 3,463,650 VITREOUS SILICA REFRACTORIES

Donald O. McCreight, Bethel Park, Eldon D. Miller, Bridgeville, and Stanley R. Pavlica, Irwin, Pa., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

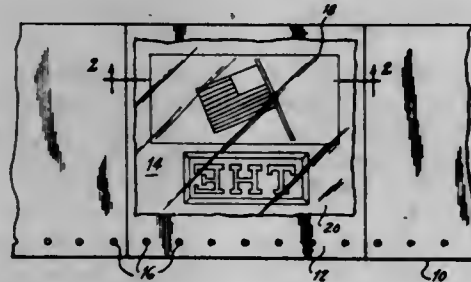
Continuation-in-part of application Ser. No. 431,977, Feb. 11, 1965. This application Feb. 13, 1967, Ser. No. 615,693

Int. Cl. C04b 35/14  
U.S. Cl. 106—69 6 Claims  
This invention is directed to a brick fabricated of a mixture of two different types of silica. One is volatilized silica and the other is a unique vitreous silica.

### 3,463,651 MULTICOLOR SURFACE DECORATION AND PROCESS FOR PRODUCING SAME

Rubin Warsager, 502 Summer Ave., Newark, N.J. 07104  
Filed Sept. 19, 1967, Ser. No. 668,933  
Int. Cl. B41m 3/12

U.S. Cl. 117—3.3 9 Claims



The multicolor surface decoration described employs a transparent base on web such as Mylar or cellophane

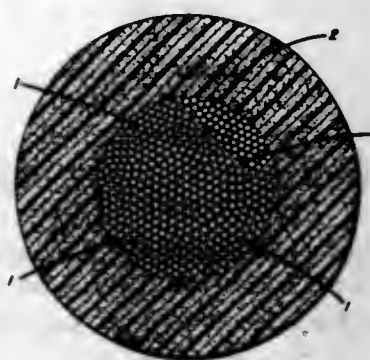
to which is applied a metallized bright foil such as gold or silver together with a multicolor image. A heat sensitive release material is first applied to one surface of the Mylar or cellophane web and then a first color is printed over the heat sensitive release material. Subsequent colors are then applied over the first color in order to form a multicolor image. When the multicolor image has been applied over the heat sensitive release material the entire surface is passed through a vacuum chamber in order to apply a metal surface by means of vacuum metallizing. When it is desired to decorate the surface of an article the portion of the Mylar or cellophane leaf containing the vacuum metallizing is brought into contact with the surface of the article to be decorated. The opposite surface of the Mylar or cellophane leaf then has both heat and pressure applied thereto which transfers everything beyond the heat sensitive material to the surface to be decorated.

### 3,463,652 ARTICLE AND METHOD OF COATING CONTINUOUS FILAMENT

Joseph Collichio Whitesel, Waynesboro, Va., and Stanley Norman Weissman, Cedar Grove, N.J., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Continuation-in-part of abandoned application Ser. No. 495,049, Oct. 12, 1965. This application Aug. 5, 1968, Ser. No. 757,185

Int. Cl. C08d 13/24; B44d 1/22  
U.S. Cl. 117—7 13 Claims



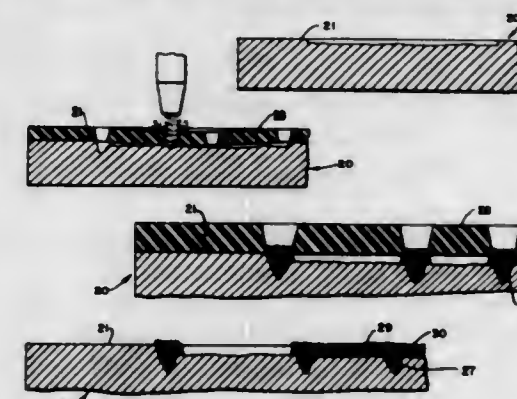
The disclosed invention is for a continuous strand or filament having the ability to hold knots which includes an oriented poly (alpha-olefin) fiber having a specified tenacity and formed of a plurality of filaments having a denier from about 25 to about 1,200; and a foamed thermoplastic coating disposed about the oriented poly (alpha-olefin) fiber. The thermoplastic coating has an outer diameter of from about 25 to about 1,000 mils and is formed of a foamed thermoplastic having a specific gravity of from about 0.1 to about 0.7 and having a melting point below the melting point of the oriented poly (alpha-olefin) fiber. The filament is formed by extruding a foam coating on pretensioned fibers, cooling the coating and releasing the tension on the fibers.

### 3,463,653 PROCESS FOR PERMANENTLY ORNAMENTS STONE

Joseph D. Letter, % Granite Marble Coquina Tomoka Estates, U.S. 1, Ormond Beach, Fla. 32074  
Continuation-in-part of application Ser. No. 397,826, Sept. 21, 1964. This application Feb. 18, 1965, Ser. No. 437,622

Int. Cl. B44d 1/52; C23d 5/08; B41m 1/12  
U.S. Cl. 117—8.5 1 Claim  
A method for producing a decorative insert in a stone base is disclosed. A stencil is applied to the stone base and portions of the stencil corresponding to the design

are removed. The stone base is abraded to produce impressions corresponding to the design. Portions of the stencil are replaced leaving exposed the outline portions of the design which are further abraded. The outline portions are filled with a composition comprising crushed



stone and a synthetic resin which is allowed to set. The stencil is removed and the remaining portions of the design are filled with a mixture of crushed stone and synthetic resin. After the mixture has set the surface of the stone is finished.

### 3,463,654 COPYING PROCESSES

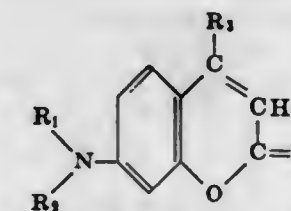
Abraham Games, London, England, assignor to Imagic Limited, London, England, a British company

No Drawing. Filed Dec. 24, 1963, Ser. No. 333,182  
Claims priority, application Great Britain, Dec. 31, 1962, 49,105/62

Int. Cl. B41c 1/06; B41m 3/00  
U.S. Cl. 117—21 13 Claims  
A copying process for producing a right reading image from an original image by heating a vaporizing agent so that it penetrates an opaque copy sheet so that the right reading image is formed on the upper surface of the copy sheet. The image may either be latent or visible.

3,463,655  
PRESSURE-SENSITIVE COPYING PAPER  
Hitoshi Imamiya, Shizuo Katayama, and Hiroharu Matsukawa, Fujimiyashi, and Teruo Kobayashi and Sadao Ishige, Ashigara-Kamigun, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Ashigara-Kamigun, Kanagawa, Japan  
Filed Apr. 5, 1967, Ser. No. 628,754  
Claims priority, application Japan, Apr. 9, 1966, 41/22,196

Int. Cl. B41m 5/16, 5/14  
U.S. Cl. 117—36.2 4 Claims  
A pressure-sensitive copying paper containing as a color former a coumarin compound of the following general formula:



Suitable coumarin compounds of the above type are 4-methyl-N,N-dimethyl-aminocoumarin, 4-methyl-N,N-diethyl-aminocoumarin, 4-propyl-7-N-ethyl-N-benzyl-aminocoumarin, 4-phenyl-7-N,N-dibutyl-aminocoumarin, 4-(4'-methoxyphenyl)-7-N,N-dimethyl-aminocoumarin and 4-(3'-methylphenyl)-7-N,N-diethyl-aminocoumarin. The coumarin may be used with or without leuco color forming compounds conventionally used in reaction-type pressure-sensitive, copying papers. The copy obtained with the new copying paper can be efficiently reproduced by diazo and electrophotographic printing or copying systems.

### 3,463,656 FOLDING CARTON BLANK

Joseph W. Feeney, Pikesville, Md., Paul L. Pojawis, Pennsauken, and James E. Allenbaugh, Jr., Fords, N.J., and John W. McNair, Jr., New York, N.Y., assignors to International Paper Company, New York, N.Y., a corporation of New York

No Drawing. Continuation of application Ser. No. 554,232, Mar. 14, 1966, which is a division of application Ser. No. 457,221, May 19, 1965, and a continuation-in-part of applications Ser. No. 261,053, Feb. 26, 1963, and Ser. No. 446,372, Apr. 7, 1965. This application Apr. 29, 1968, Ser. No. 725,220

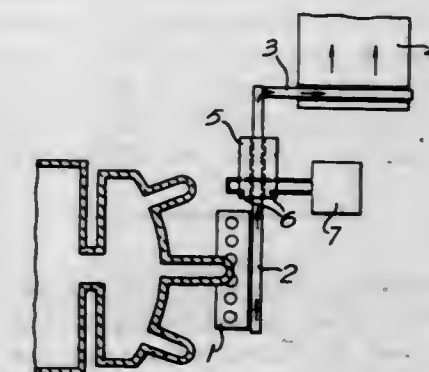
The portion of the term of the patent subsequent to Sept. 12, 1984, has been disclaimed  
Int. Cl. D21h 1/22; B05c 3/20

U.S. Cl. 117—44 1 Claim  
Folding cartons having a superior grease, moisture, water, and gas transmission barrier property, as well as printability, product flavor retentivity, sifting loss resistance, external odor product contamination resistance, and insect and fungal product attack resistance, by virtue of the disposition of an edge sealing material on the carton free edges with the aid of a vacuum.

3,463,657  
METHOD OF IMPROVING PAPERMAKER'S FELT  
Wilhelm Schuster, Frankfurt am Main, Germany, assignor to Forschungsgemeinschaft der Deutschen Filztuchindustrie, Frankfurt am Main, Germany  
No Drawing. Filed Oct. 27, 1965, Ser. No. 505,401  
Claims priority, application Germany, Feb. 17, 1965, F 45,272

Int. Cl. C08c 17/16; B44d 1/44, 1/20  
U.S. Cl. 117—65.2 3 Claims  
A method of improving papermaker's felt comprising coating the underside of the felt with a uniform thickness of water insoluble adhesive, compressing the felt, permitting the felt to spring back into its original condition, and subjecting the underside of the felt to compressed air whereby a felt is produced that has excellent water absorbing properties and has a firmly anchored surface layer.

3,463,658  
PROCESS FOR PRODUCING A GLASS WITH A DIFFUSED LAYER AND A COATING  
Sidney Maurice Budd, Edware, England, assignor to United Glass Limited, Staines, Middlesex, England, a corporation of the United Kingdom  
Filed Mar. 24, 1967, Ser. No. 625,729  
Claims priority, application Great Britain, Mar. 31, 1966, 14,354/66, 14,355/66  
Int. Cl. C03c 17/00; B44d 1/12  
U.S. Cl. 117—69 8 Claims



A glass container having a surface coating of tin oxide or titanium oxide and a diffused layer beneath the surface containing tin oxide or titanium oxide is prepared. The containers are prepared by treating the containers



while still hot from the forming operation with a liquid solution of an organic compound of tin or titanium, which upon application of heat decomposes into a compound of high decomposition temperature which diffuses into the glass and a volatile compound which reacts with the surface of the glass and forms a coating thereon.

3,463,659

## VACUUM METALLIZED PAPER

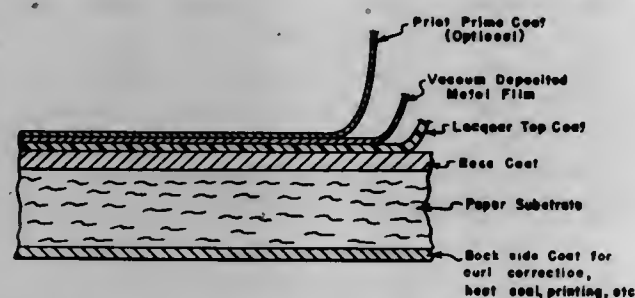
Robert Dragoon and Karl V. Kraske, Rumford, Maine, assignors to Oxford Paper Company, Rumford, Maine, a corporation of Maine

Filed Oct. 22, 1965, Ser. No. 500,908

Int. Cl. B44d 1/12; C23c 13/02

U.S. Cl. 117-71

8 Claims



A metallized paper is prepared by applying to a backing paper sheet a base coat containing about 52 to 88 percent by weight of an inorganic pigment such as clay, calcium carbonate or titanium dioxide, about 2 to 20 percent by weight of a thermoplastic pigment having a glass transition temperature above 150° F. such as a polyvinyl-acetate polymer or a polystyrene emulsion polymer, about 5 to 25 percent by weight of a water or alkali soluble natural polymer adhesive such as starch, casein or protein, supercalendering the coated sheet, applying a lacquer top coat, and vacuum applying a metal such as aluminum, silver, tin, zinc and gold. Additionally a print prime top coat may be applied which may be a lacquer, soft glass, magnesium fluoride and calcium fluoride.

3,463,660

## PROCESS FOR OBTAINING AN ANTI-STICK SURFACE WITH AN ORGANOSILICON AND AN ORGANOPOLYSILOXANE AND A COOKING UTENSIL SO TREATED

Roy Bentley, Largs, and John Craig, Paisley, Scotland, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed May 4, 1966, Ser. No. 547,411

Claims priority, application Great Britain, May 11, 1965, 19,830/65

Int. Cl. B44d 5/08, 1/36

U.S. Cl. 117-72

26 Claims

Surfaces of wood, glass, metal and enamel are rendered anti-stick by treating the surfaces in the presence of an acid with a liquid organosilicon having at least one  $\text{Si-H}$  linkage and at least three  $\text{Si-OR}$  linkages, where R is a monovalent hydrocarbon radical or a hydrocarbonoxy radical, and allowing the surface to dry and thereafter applying thereto a linear organopolysiloxane containing at least one silicon-bonded hydroxyl group.

3,463,661

## PROCESS FOR PREPARING PAPER WITH SILICONE RELEASE COATING

Robert A. Benson, Gorham, Maine, assignor, by mesne assignments, to Scott Paper Company, Delaware County, Pa., a corporation of Pennsylvania

Filed Jan. 14, 1966, Ser. No. 520,607

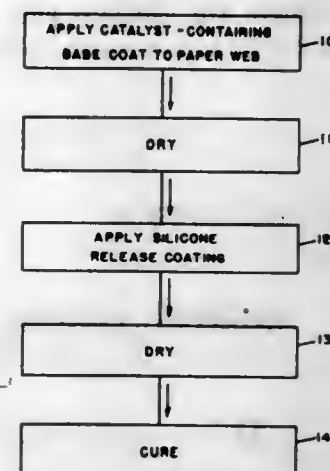
Int. Cl. B44d 1/14

U.S. Cl. 117-76

6 Claims

A process for preparing a silicone release coating comprising applying to a flexible fibrous substrate a base

coating containing a silicone polymerization catalyst, drying said base coating, applying to said base coating



a top coating containing a polymerizable silicone resin and curing said top coating.

3,463,662

## POLYURETHANE-POLYSILOXANE GRAFT COPOLYMERS

William Hodes, Edison Township, Middlesex County, N.J., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 341,742, Jan. 31, 1964. This application Apr. 19, 1967, Ser. No. 631,905

Int. Cl. C09d 3/72, 3/82

U.S. Cl. 117-118

5 Claims

Stain and abrasive resistance articles consisting of a polyurethane substrate having grafted thereon a layer of a polysiloxane. The polyurethane substrate can be the reaction product of adipic acid-butanediol-tolylene diisocyanate. The polysiloxane can be formed by hydrolysis and condensation of a dimethyldichlorosilane and methyltrichlorosilane or dichlorodialkylsilane cross-linked by alkyltrichlorosilane.

3,463,663

## DEPOSITION OF THIN FILMS

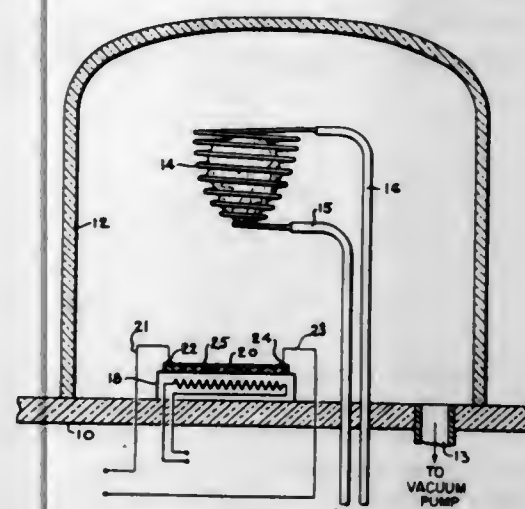
Kasturi L. Chopra, Lexington, Mass., assignor to Kennecott Copper Corporation, New York, N.Y., a corporation of New York

Filed May 7, 1965, Ser. No. 454,146

Int. Cl. C23c 13/02, 13/08

U.S. Cl. 117-227

9 Claims



In the formation of thin metal films by vacuum deposition, the maintenance of an electric field in the plane of the substrate surface induces coalition of the particles and crystal orientation whereby improved conductivity at reduced thicknesses is realized.

3,463,664

## GLASS ELEMENT FOR DOSIMETERS

Ryosuke Yokota, Yokohama-shi, Saburo Nakajima, Kawasaki-shi, and Toshio Fukui and Kiyoshi Fukuda, Yokohama-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Feb. 21, 1967, Ser. No. 617,570

Claims priority, application Japan, Feb. 28, 1966, 41/11,695, 41/11,698

Int. Cl. C03c 17/22, 23/00; C09k 1/04

U.S. Cl. 117-124

5 Claims

A glass element for dosimeters made of a glass consisting, as basic components, of 20 to 80% by weight of beryllium metaphosphate and 80 to 20% by weight of lithium metaphosphate, and silver metaphosphate in an amount of 1 to 10% by weight on the basic components. The glass element, when exposed to radiation and excited by ultra-violet radiation, emits fluorescence with an intensity corresponding to the dose of the applied radiation. The dose of radiation can be determined by measuring the intensity of the fluorescence.

3,463,665

## METHOD AND COMPOSITION FOR RENDERING MATERIAL FIRE RESISTANT

Patrick D. Quinn, St. Louis, Mo., assignor to American Zinc Company, St. Louis, Mo., a corporation of Maine

No Drawing. Filed Apr. 18, 1966, Ser. No. 543,084

Int. Cl. B44d 1/28; C09d 5/18

U.S. Cl. 117-138

7 Claims

Material to be rendered fire resistant is impregnated with a zinc complex fluoride salt and thereafter the salt is reacted with a base in such a way as to precipitate zinc oxide, zinc hydroxide, zinc fluoride, basic zinc complex fluoride and basic zinc fluoride in situ. Preferably the impregnation is with a treating solution which includes zinc silicofluoride and zinc sulfate, the mole ratio of zinc sulfate to zinc silicofluoride being no greater than 5:1.

3,463,666

## MONOCRYSTALLINE BETA SILICON CARBIDE ON SAPPHIRE

Edward L. Kern and Dennis W. Hamill, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Aug. 27, 1965, Ser. No. 483,340

Int. Cl. H01b 1/04; B44d 1/00

U.S. Cl. 117-201

1 Claim

A method of producing monocrystalline beta silicon carbide wherein gaseous substances such as alkyl chlorosilanes are decomposed on a monocrystalline sapphire substrate heated to temperatures between 1650° C. and 2000° C. Since the surface crystal lattice of the monocrystalline sapphire closely approximates that of monocrystalline beta silicon carbide, the silicon carbide is deposited in monocrystalline rather than polycrystalline form.

3,463,667

## DEPOSITION OF THIN FILMS

Kasturi L. Chopra, Lexington, Mass., assignor to Kennecott Copper Corporation, New York, N.Y., a corporation of New York

Filed Dec. 3, 1965, Ser. No. 511,490

Int. Cl. B44d 5/00; H01b 1/08

U.S. Cl. 117-213

12 Claims

In the formation of thin non-metallic films by vacuum deposition, the application of an electric field in the plane of the substrate surface induces coalition of the particles producing a thin film of increased crystallinity.

3,463,668

## INHIBITED STARCH PRODUCTS

Raymond B. Evans, Catonsville, Md., and Leo H. Kruger, Kendall Park, and Chester D. Szymanski, Martinsville, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 21, 1966, Ser. No. 580,884

Int. Cl. C131 1/08; C08b 19/04, 25/02

U.S. Cl. 127-32

8 Claims

Inhibited, granular starch products possessing labile cross-linkages are prepared by reacting a granular starch base with a combination of: (1) either glycine or a glycine progenitor; and (2) a chlorine containing oxidizing agent at controlled pH and temperature levels.

3,463,669

## MANGANESE DIOXIDE-ZINC ALKALINE SECONDARY CELL

Jean Firmin Jammet, Poitiers, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, France, a French company

Filed Dec. 22, 1966, Ser. No. 611,201

Claims priority, application France, Dec. 28, 1965, 44,025

Int. Cl. H01m 43/02

U.S. Cl. 136-6

21 Claims

This disclosure relates to structure of an alkaline secondary cell utilizing the positive manganese dioxide-carbon electrode negative zinc electrode system with modified internal zinc electrode construction and novel separator arrangements between the negative and positive compartments of the cell as a result of which the cell is capable of large output capacity as compared with a primary cell utilizing the same system and which secondary cell is rechargeable many times in manner similar to storage cells. The disclosure also includes an assembly process for the manufacture of such rechargeable alkaline secondary cells.

3,463,670

## HIGH ENERGY DENSITY THERMAL CELL

Bhaskara M. L. Rao, Billerica, and Robert W. Holmes, North Reading, Mass., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed May 26, 1967, Ser. No. 641,585

Int. Cl. H01m 21/14

U.S. Cl. 136-83

13 Claims

A solid electrolyte thermal cell comprising an alkali metal anode, a sulfur cathode, and a solid separator of an alkali metal halide, constituting the electrolyte, interposed between said anode and cathode and in contact therewith. The cell may serve as a low current voltage source at room temperature or as a source delivering relatively high currents at high temperatures below the melting point of the separator.

3,463,671

## SEA WATER ACTIVATED PRIMARY BATTERIES AND METHOD OF OPERATING SAME

Jean Henri Doll, Aulnay-sous-Bois, and Henri Desre Druesne, La Courneuve, France, assignors to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, France, a company of France

Filed Feb. 10, 1967, Ser. No. 615,220

Claims priority, application France, Feb. 17, 1966, 50,069, Patent 1,476,706

Int. Cl. H01m 17/02, 31/04

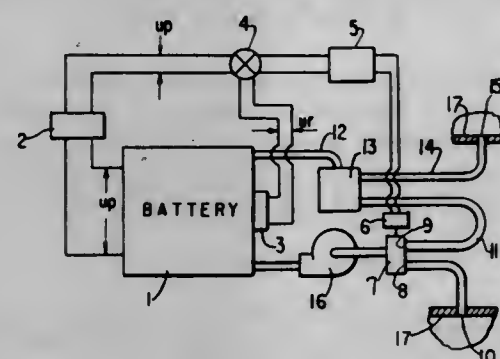
U.S. Cl. 136-160

17 Claims

Primary batteries of the magnesium-silver chloride type activated by electrolyte having substantially the salinity of sea water, utilizing controlled mixtures of fresh and used electrolytes monitored by the voltage at the terminals of the battery, including electrically controlled valve means at the inlet port for fresh electrolyte and a mixing valve for regulating the ratio of fresh electrolyte



and used electrolyte pumped through the battery for the purposes of maintaining uniformity of operative characteristics of the battery after activation as well as method for operating said batteries including use of an amplifier



whose output effects operation of the valve means and whose input is the difference between a reference voltage supplied by a standard voltage reference source and the voltage at the battery terminals and engines such as torpedoes or the like operated by such batteries.

3,463,672

## BATTERY CONSTRUCTION

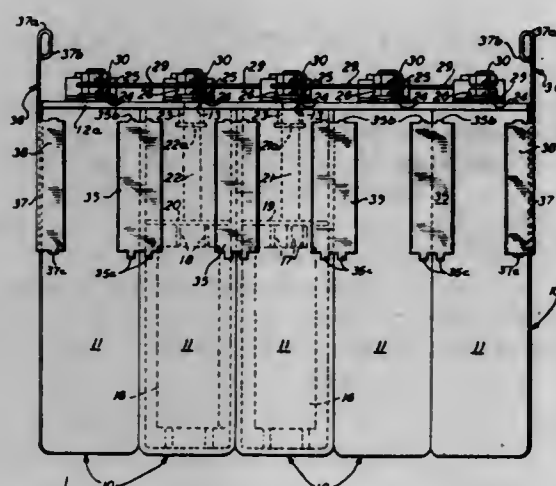
Jacob E. Schmidt, Little Falls Township, Passaic County, N.J., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Aug. 10, 1967, Ser. No. 659,645

Int. Cl. H01m 1/02

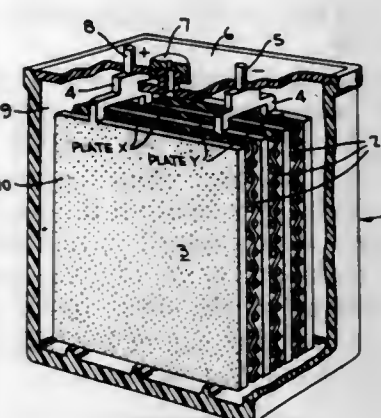
U.S. Cl. 136-166

2 Claims



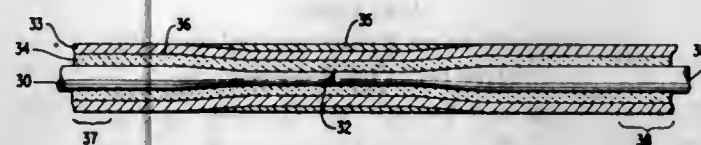
This invention relates to a battery construction which permits any selected number of individual battery cells to be readily connected into a unitary structure. The case of each cell is provided with vertically extending undercut edges adjacent to its corner edges at its back and front sides so that when a group of cells are set side-by-side in a row they can be mechanically interconnected by slide clasps having hooked flanges which can be pressed onto the pairs of undercut edges of adjoining cells. The undercut edges are formed by providing ribs along the corner edges of the cells, and each clasp is adapted to embrace a pair of adjacent ribs of adjoining cells and to hook slidably onto the side walls thereof. Handles in the form of plate structures having hook-shaped side flanges are provided on the end walls of the row of cells by pressing the flanges slidably onto the ribs at the corners of the end cells.

3,463,673  
ELECTROCHEMICAL COULOMETER AND METHOD OF FORMING SAME  
Eugene R. Stroup, Arlington, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration  
Filed Sept. 12, 1967, Ser. No. 667,636  
Int. Cl. H01m 35/18, 43/04; G01r 29/00  
U.S. Cl. 136-182 6 Claims



This invention relates to a coulometer cell of the secondary alkaline type formed by flooding the cell with electrolyte and passing a forming current in two directions through the cell with the attainment of oxygenol voltage and hydrogenol voltage in each direction.

3,463,674  
THERMOCOUPLE HAVING COMPOSITE SHEATH  
Frank S. Black, Wenham, and Thomas P. Haselton, Lynn, Mass., assignors to General Electric Company, a corporation of New York  
Filed Dec. 11, 1967, Ser. No. 689,491  
Int. Cl. H01v 1/04  
U.S. Cl. 136-233 4 Claims



A sheathed electrical conductor assembly for high temperature, vibrational, oxidizing environments. Compacted insulation and a first sheath of substantially constant radial thicknesses surround the conductor. Mechanically reducing a second sheath onto the first to produce a continuously surfaced, cylindrical assembly causes the conductor to have a reduced portion axially coextensive with an increased thickness, composite wall formed by the first and second sheaths.

3,463,675  
MALLEABLE IRONS INCLUDING TELLURIUM AND BISMUTH  
Oral K. Hunsaker and Bruce R. Shue, Dayton, and Ralph C. Davis, Ironton, Ohio, assignors to The Dayton Malleable Iron Company, Dayton, Ohio, a corporation of Ohio  
No Drawing. Filed Dec. 30, 1966, Ser. No. 605,955  
Int. Cl. C21d 7/14; B22d 25/00  
U.S. Cl. 148-3 9 Claims

A method for making standard and pearlitic and malleable iron, and the resulting product, in which tellurium and bismuth are simultaneously added as a pellet to provide between 0.001% and 0.003% and 0.001% and 0.009% residuals of tellurium and bismuth, respectively.

3,463,676  
COMPOSITION OF STOP-WELD MATERIAL FOR ROLL-BOND  
John E. Higgins, Cottage Hills, Ill., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia  
No Drawing. Filed Sept. 13, 1967, Ser. No. 667,351  
Int. Cl. C23c 1/12 6 Claims

U.S. Cl. 148-22  
A composition of stop-weld has been developed which is particularly effective for production of copper, Roll-Bond® (Roll-Bond is a registered trademark of Olin Mathieson Chemical Corp.). The composition contains about 16 to 41% of the sum of TiO<sub>2</sub> and BN, the BN being at least 40% of said sum, from 0.5% to 5.0% by weight bentonite, from 0.10% to 4% magnesium montmorillonite, balance water. 0.1% to 10% by weight SiO<sub>2</sub> can also be added.

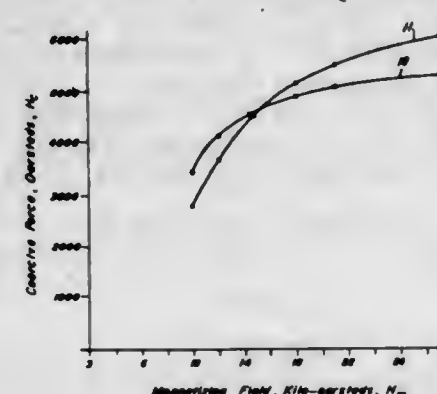
3,463,677  
WELDABLE HIGH STRENGTH STEEL  
Hajime Nakamura, Tokyo-to, and Kamekichi Wada, Kitakyushu, Japan, assignors to Ishikawajima-Harima Jukogyo Kabushiki Kaisha and Yawata Iron & Steel Company Limited, both of Chiyoda-ku, Tokyo-to, Japan  
No Drawing. Continuation-in-part of application Ser. No. 674,015, Oct. 9, 1967, which is a continuation of application Ser. No. 326,387, Nov. 27, 1963. This application Aug. 14, 1968, Ser. No. 752,500  
Int. Cl. C22c 39/54, 39/50, 39/44 2 Claims

U.S. Cl. 148-36  
A weldable high strength structural steel which consists of less than 0.25% carbon, from 0.10 to 0.75% silicon, from 0.5 to 1.5% manganese, from 0.3 to 1.5% chromium, from 0.1 to 0.6% molybdenum, from 0.02 to 0.2% vanadium, from 0.03 to 0.18% metallic nitride precipitate, and from 0.0005 to 0.005% boron, the metallic nitride being any one or any combination of aluminum nitride, beryllium nitride, columbium nitride, titanium nitride and zirconium nitride, the rest substantially all iron with incidental impurities, the steel being in martensitic condition.

3,463,678  
METHOD FOR IMPROVING MAGNETIC PROPERTIES OF COBALT-YTTRIUM OR COBALT-RARE EARTH METAL COMPOUNDS  
Joseph J. Becker, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York  
Filed Aug. 15, 1966, Ser. No. 572,525  
Int. Cl. H01f 1/04; B02c 1/00 2 Claims

U.S. Cl. 148-105

2 Claims



1. In the process for producing particulate magnetic material having improved magnetic properties, the steps comprising providing a quantity of an alloy having a composition according to the formula Co<sub>2</sub>R where R is selected from the group consisting of yttrium, thorium, the rare earth metals, and combinations of these metals

with each other, cooling the alloy to a temperature no higher than about -125° C. and comminuting the alloy to the desired particle size while at the lowered temperature.

3,463,679  
PROCESS FOR PRODUCING DISPERSION STRENGTHENED NICKEL WITH ALUMINUM  
John W. Weeton, Rocky River, Max Quatintet, Bay Village, and Norman W. Orth, Cleveland, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration  
Filed July 24, 1967, Ser. No. 655,675  
Int. Cl. C21d 1/00, 1/26, 9/00 6 Claims

U.S. Cl. 148-126  
Dispersion strengthened materials containing ultra-fine dispersoids from mechanically produced blends of matrix and dispersoid powders. Microstructural stability is achieved by carefully controlling the cleaning and densification of partially consolidated thin shapes.

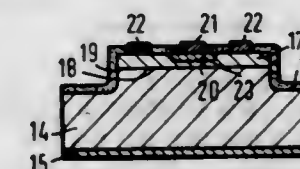
3,463,680  
SOLUTION GROWTH OF EPITAXIAL LAYERS OF SEMICONDUCTOR MATERIAL  
Ivars Melngailis, Wellesley, and Arthur R. Calawa, Chelmsford, Mass., assignors to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts  
Filed Nov. 25, 1966, Ser. No. 603,699  
Int. Cl. H01l 7/46 16 Claims

U.S. Cl. 148-172  
1. A method for growing a layer of semiconductor material on a semiconductor substrate material, comprising the steps of:  
coating said substrate material with a semiconductor or metallic melt containing said semiconductor material in solution therein, while said substrate material and said melt are immersed in a liquid which boils at a temperature greater than the temperature of said melt, and cooling to form an epitaxial layer of said semiconductor material on said substrate material.

3,463,681  
COATED MESA TRANSISTOR STRUCTURES FOR IMPROVED VOLTAGE CHARACTERISTICS  
Gunter Winstel, Joachim Dathe, and Karl Heinz Zschauer, Munich, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany  
Filed July 14, 1965, Ser. No. 471,831  
Claims priority, application Germany, July 21, 1964, S 92,168  
Int. Cl. H01l 7/44 5 Claims

U.S. Cl. 148-187

5 Claims



Described is a method of producing a semiconductor device with a mesa, and a pn junction extending perpendicularly to the mesa flanks and parallel to the planar mesa top. A mesa projection is first produced on the surface of a disc-shaped semiconductor crystal of one conductance type. An insulating protective layer comprised of an inorganic oxide is produced, at least at the flanks of the mesa, upon the surface of the semiconductor crystal. Only then is the final position of the pn junction adjusted in the mesa. The pn junction is produced in the peak of the mesa, through indiffusion of doping material which results in the opposite conductance type.



### 3,463,682 HIGH TEMPERATURE COMPOSITE PROPELLANT SYSTEM

Joseph T. Hamrick, 6364 Jae Valley Road SE.,  
Roanoke County, Va. 24014  
No Drawing. Filed Feb. 13, 1967, Ser. No. 615,345  
Int. Cl. C06b 1/00, 11/00

U.S. Cl. 149—19 1 Claim  
The invention consists of a composite solid propellant which will withstand 600° F. for at least two hours, 500° F. for more than 48 hours, and 450° F. for over 400 hours without significant change in performance.

### 3,463,683 EXPLOSIVE WITH BINDER OF A VINYL CHLORIDE COPOLYMER AND STARCH AND METHOD OF MAKING SAME

David Pelton Moore, Marlow, N.H., assignor to The Universal Ordnance and Power Company, a corporation of the District of Columbia  
No Drawing. Original application Nov. 21, 1967, Ser. No. 684,634, now Patent No. 3,409,708, dated Nov. 5, 1968. Divided and this application Apr. 19, 1968, Ser. No. 722,561

Int. Cl. C06b 21/02 2 Claims  
This is a solid propellant or an explosive composition in which the binder consists of a vinyl chloride copolymer and starch. The binder ingredients are intimately mixed and heated from 75 to 85° C. to swell the starch and produce a putty-like mass. After the putty-like mass is produced, an oxidant such as ammonium nitrate, chlorate, or perchlorate; potassium nitrate, chlorate, or perchlorate; and sodium nitrate, chlorate, or perchlorate can be added.

### 3,463,684 CRYSTALLINE EXPLOSIVE COMPOSED OF AN ALKYL SULFOXIDE SOLVATING A HYDRATE- FORMING SALT AND METHOD OF MAKING

Heinz Dehn, 314 Gardenview Drive,  
Burlington, Ontario, Canada

No Drawing. Filed Dec. 19, 1966, Ser. No. 602,536  
Int. Cl. C06b 21/02, 11/00, 1/00

U.S. Cl. 149—45 10 Claims  
Explosives and explosive compositions, suitable for use as rocket propellants and for other explosive purposes, containing an oxidizing inorganic salt solvated with an alkyl sulfoxide and method of making such explosives and explosive compositions, whereby the solvate may be formed by heating a mixture of the hydrated salt and the alkyl sulfoxide to drive off the displaced water of crystallization or by reacting the water-free or partially hydrated salt and the alkyl sulfoxide in a solvent which dissolves both compounds and can later be removed by distillation or extraction.

### 3,463,685 PROCESS FOR PRE-TREATING FACING SHEETS FOR GYPSUM BOARDS

William Elsevier, Chickasaw, Ala., and Douglas E. Read, Hawkesbury, Ontario, Canada, assignors to International Paper Company, New York, N.Y., a corporation of New York

Continuation of abandoned application Ser. No. 203,575, June 19, 1962. This application June 26, 1967, Ser. No. 649,060

Int. Cl. B32b 13/04; B28b 5/02 2 Claims

In the manufacture of gypsum-core plaster boards, Fourdrinier paper facing sheets are pre-treated with water to provide smooth facing surfaces which are free of dimpling and easy to paint. The pre-treatment consists of wetting out the facing sheets with 70° F. to 212° F. water in an amount and for a time sufficient to penetrate the facing sheet. While the facing sheet is still wet,

a gypsum slurry is deposited on the working surface of the facing sheet, a backing sheet is applied, and the composite board is dried.

### 3,463,686 CATHODOLUMINESCENT SCREENS AND FABRICATION THEREOF

Anthony V. Gallaro, Auburn, N.Y., and William R. McKeirnan, Crosby, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware  
Filed Sept. 8, 1965, Ser. No. 485,714  
Int. Cl. B32b 5/16, 17/06

U.S. Cl. 156—67 9 Claims



A cathodoluminescent screen fabricating process includes the steps of casting a pliable self-supporting film of phosphor particles homogeneously dispersed in an organic binder, wetting the film with an organic adhesive, contacting the film and the inner surface of the faceplate of a cathode ray tube, and heating to volatilize the organic materials and affix the phosphor particles to the faceplate.

### 3,463,687 METHOD OF PRODUCING LOW DENSITY RIGID SHEETS OF SYNTHETIC PLASTIC

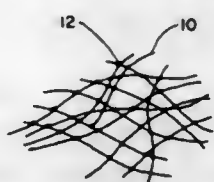
Allan G. Folsom, Reading, Mass., and Peter J. Perron, Ossining, N.Y., assignors to The General Tire & Rubber Company, a corporation of Ohio  
No Drawing. Filed Apr. 26, 1966, Ser. No. 545,303  
Int. Cl. B32b 5/20

U.S. Cl. 156—79 10 Claims  
Low density rigid sheets of synthetic plastic material free of surface blemishes or defects and capable of being molded by vacuum forming techniques into shaped articles are made by sandwiching a sheet of thermoplastic material containing a heat-activatable blowing agent between a pair of impervious sheets of thermoplastic material and expanding the inner sheet under controlled conditions.

### 3,463,688 FIBROUS ELEMENT

Robert C. Harrington, Jr., James L. Smith, and James H. Bond, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey  
Continuation of application Ser. No. 521,474, Nov. 22, 1965, now Patent No. 3,272,687, dated Sept. 13, 1966, which is a division of application Ser. No. 384,334, July 22, 1964. This application July 24, 1967, Ser. No. 655,667

Int. Cl. B29h 9/04; D04h 3/12 2 Claims

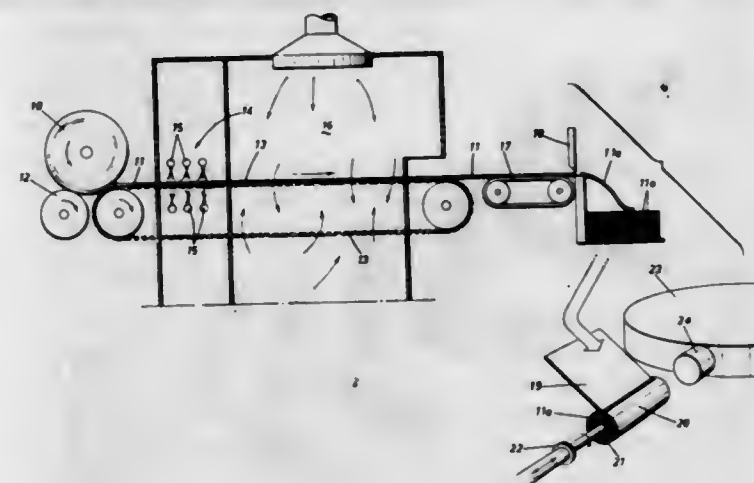


Bonded vapor permeable polypropylene fibrous products are manufactured by forming a polypropylene tow,

crimping the tow with the aid of steam, heatsetting the tow at elevated temperature and thereafter opening the tow, applying to the opened tow a polyethylene wax emulsion, forming the tow into a rod shaped element and heating the element to bond rigidly the filaments contained therein.

### 3,463,689 METHOD OF FORMING FILTERS FROM FIBROUS MATERIAL

Robert Palmal, Preston, Ontario, Canada, assignor to Sheller-Globe Corporation, a corporation of Ohio  
Continuation of application Ser. No. 357,491, Apr. 6, 1964. This application June 7, 1968, Ser. No. 735,242  
Int. Cl. B65h 81/00; B31c 13/00; B01d 39/16  
U.S. Cl. 156—190 3 Claims



A method of producing hollow cylindrical filters from a mat of non-woven fibrous material of selected density comprising the steps of impregnating the fibrous material with a thermosetting resin, drying said impregnated fibrous material at a temperature below the curing point of the resin, feeding the mat edgewise through a slot in the wall of a cylinder onto a rotating member located therein to form said mat into the requisite filter form without changing the density and then curing the resin in the formed filter.

### 3,463,690 METHOD OF LAMINATING POLYURETHANE FOAM AND FABRIC

Sherman Converse and Calvin M. McKeown, Aiken, S.C., assignors to Graniteville Company, Graniteville, S.C., a corporation of South Carolina  
Continuation of abandoned application Ser. No. 112,493, June 5, 1961. This application Feb. 3, 1967, Ser. No. 613,820

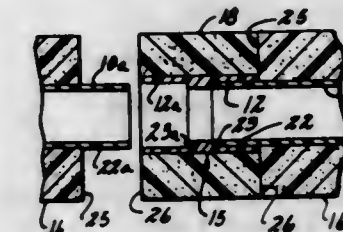
Int. Cl. B32b 7/12; C09j 5/06 2 Claims

This invention relates to foam-fabric laminates and more particularly to a laminate formed from a cellular web such as polyurethane foam and a textile fabric web, and to its method of manufacture.

### 3,463,691 METHOD FOR FORMING LIQUID HEAT EXCHANGE PIPING SYSTEM

George Martin, Louisville, Ky., assignor to American Standard Inc., a corporation of Delaware  
Original application Aug. 11, 1965, Ser. No. 478,848, now Patent No. 3,402,731, dated Sept. 24, 1968. Divided and this application Jan. 22, 1968, Ser. No. 718,267  
Int. Cl. B32b 31/20 7 Claims

Two sets of longitudinally spaced friction drive rollers each have four rectangularly arranged outside rollers and



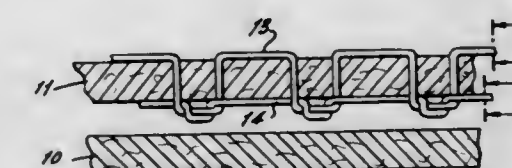
the interconnection between the two pipes being made by connectors in such a manner as to obviate the necessity of applying insulation, or removing insulation, in the apparatus or during the interconnection procedure.

By employing in-line connectors or T-type connectors, interconnection of the two pipes may be accomplished for conveying hot or cold liquids with a minimum of on-site labor and at a minimum cost.

### 3,463,692 THERMOPLASTIC SCHIFFLI EMBROIDERY AND METHOD OF LAMINATING SAME TO BASE

Frederick T. Brunner, Maywood, N.J., assignor to Brunner Bros. Co., North Bergen, N.J., a corporation of New Jersey  
Filed Mar. 22, 1965, Ser. No. 441,442  
Int. Cl. B32b 31/20, 31/26 6 Claims

U.S. Cl. 156—306 6 Claims



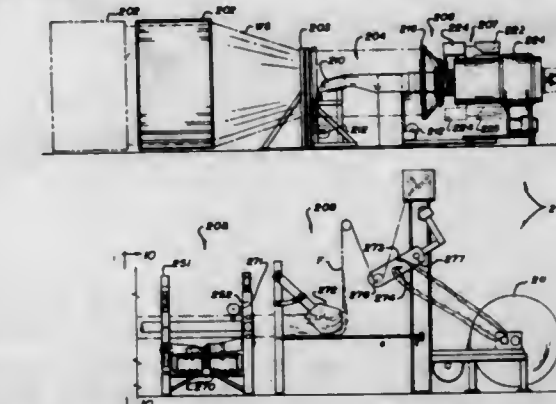
A Schiffli embroidery is provided in which the front thread is of conventional natural or synthetic yarn and the rear or bobbin thread is of thermoplastic material. Upon the application of heat the thermoplastic thread which is principally on the rear surface serves to bind the embroidery to a supporting cloth without sticking to the source of the applied heat.

### 3,463,693 APPARATUS FOR MAKING NON-WOVEN FABRIC

Hollis H. Bascom and John J. Greci, Livermore, and Richard G. Jenkins, Fremont, Calif., assignors to Orcon Corporation, Livermore, Calif., a corporation of California  
Original application May 6, 1964, Ser. No. 365,318, now Patent No. 3,391,039, dated July 2, 1968. Divided and this application Jan. 10, 1968, Ser. No. 712,313

Int. Cl. B65h 25/00, 81/00; D04h 3/02 5 Claims

U.S. Cl. 156—361 5 Claims





four rectangularly arranged inside rollers engaged with the tubular fabric therebetween. The second set of friction drive rollers is canted at an angle of 45° to the first set of rollers to provide an octagonal drive which approaches a uniform drive about the entire circumferential extent of the tubular fabric.

3,463,694

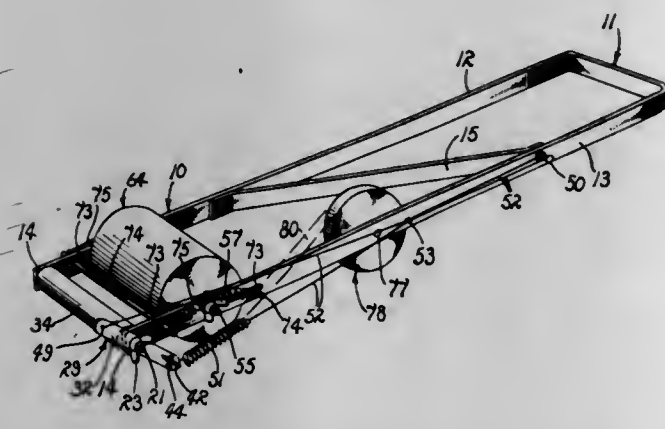
## MASKING TOOL

Harold A. De Roshia, 3882 Lyell Ave.,  
Fresno, Calif. 93702

Filed June 27, 1966, Ser. No. 560,407

Int. Cl. B32b 31/18; B44c 7/00; B31f 5/06  
U.S. Cl. 156—523

5 Claims



A tool for applying masking paper to areas which are to be shielded including a portable frame, rolls of masking paper and adhesive tape rotatably mounted on the frame with the tape substantially aligned with one edge of the paper, a roller at one end of the frame for applying the paper and tape to the surface of an area, and feeding means securing the paper and tape in marginally overlapping relation prior to application.

3,463,695

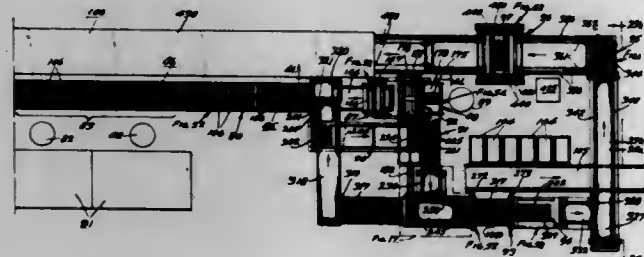
## APPARATUS FOR PRODUCING CERAMIC TILE ASSEMBLIES

Malcolm A. Schwelker, Worcester, and Wayne C. Watson, Ambler, Pa., assignors to American Olean Tile Company, Inc., Lansdale, Pa., a corporation of New York

Filed June 23, 1966, Ser. No. 559,999

Int. Cl. B65h 29/24, 9/08  
U.S. Cl. 156—556

25 Claims



Apparatus for producing ceramic tile assemblies including means for filling the pockets of a partitioned tray with tile elements, means for arranging the tile elements in the tray pockets in an aligned spaced orientations, and means for applying beads of a mastic adhesive to the back faces of the tile elements to connect the adjacent edges thereof.

3,463,696

## ARTIFICIAL-TREE CONSTRUCTION

Ammon Baus, Philadelphia, and Frederick C. Keller, Cornwells Heights, Pa., and William B. Reukauf, Hadonfield, N.J., assignors to Carey-McFall Company, Philadelphia, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 552,748, May 25, 1966. This application Jan. 23, 1967, Ser. No. 610,918

Int. Cl. A41g 1/00

U.S. Cl. 161—24

10 Claims

An artificial tree is provided having a tubular longitudinally slotted branch connected at one end to an upstanding trunk. A plurality of artificial twigs are frictionally held on the branch between a pair of lips which define the slot. A connector engages with a hole in the



trunk and the hollow branch to fasten the branch to the trunk and prevents widening of the slot.

3,463,697

## REUSABLE TRANSFER MEDIUM WITH PRINT CHARACTERISTICS COMPARABLE TO FILLED INK

Hugh T. Findlay and William H. Horne, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

No Drawing. Filed Feb. 23, 1966, Ser. No. 529,269

Int. Cl. B32b 27/06, 27/34, 9/04

U.S. Cl. 161—165

4 Claims

A reusable filled ink transfer medium has a solid resinous support layer, for example of nylon, an intermediate mixed layer of resin and a filled ink, which ink will exude under typing pressure, and an outer layer of essentially pure filled ink. The transfer medium is prepared by coating a thin layer of resin with the filled ink contained in a liquid which is a solvent for the resin and heating to expel the solvent.

3,463,698

## LAMINATED PLATE FOR ELECTRICAL APPARATUS AND METHOD FOR MAKING SAME

Kotaro Yanagihara, Tokyo, and Takenori Suzuki, Kawasaki-shi, Japan, assignors to Fuji Tsushinki Seizo Kabushiki Kaisha, Kawasaki, Japan, a corporation of Japan

No Drawing. Continuation-in-part of application Ser. No. 71,462, Nov. 25, 1960. This application June 14, 1965, Ser. No. 463,912

Int. Cl. B32b 27/36

U.S. Cl. 161—186

8 Claims

1. A rigid laminated plate for electrical apparatus comprising a plurality of layers of a polyethylene terephthalate

polyester fabric coated from solution with a polyisocyanate compound having at least two functional isocyanate groups in its molecule, and impregnated with a thermosetting resin chosen from the group consisting of phenol-formaldehyde resins, glycol-maleic acid condensation products, alkane diol-fumaric acid condensation products, and alkane diol-chlorinated phthalic and terephthalic acid condensation products, and thermoset to form the rigid laminated plate.

3,463,699

## PROCESS OF FORMING CELLULOSIC FIBER PRODUCTS CONTAINING A RESINOUS LIGNOCELLULOSE DERIVATIVE

Ronald L. Broadhead, Buffalo Grove, and William R. Dunlop, Maywood, Ill., assignors to The Richardson Company, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 429,627, Feb. 1, 1965. This application Feb. 26, 1968, Ser. No. 707,974

The portion of the term of the patent subsequent to Oct. 8, 1985, has been disclaimed

Int. Cl. D21h 3/02

U.S. Cl. 162—163

4 Claims

A cellulose fiber composition with improved wet strength and prepared from cellulose pulp and a resinous lignocellulose derivative from the action of steam on a mixture of lignocellulose and a phenolic agent and containing a minimum of about twenty percent curable resin. The derivative is water dispersible by the use of an alkaline agent.

3,463,700

## APPARATUS FOR IMPROVING DRAINAGE ON A FORMING WIRE

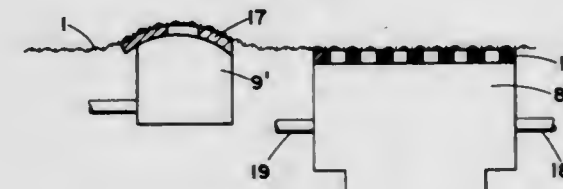
Donald B. Brewster and William H. Burgess, Jr., Covington, Va., assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

Filed July 13, 1966, Ser. No. 564,796

Int. Cl. D21f 5/08, 11/08, 1/20

U.S. Cl. 162—308

3 Claims



A fluid such as steam is injected into the underside of a fourdrinier wire to remix a mat of fibers thereon and the liquid suspension overlying the mat. The injection is performed by a series of nozzles with water removal devices therebetween to partially remove the liquid upstream of the liquid dry line.

3,463,701

## REMOTE CONTROLLED HEADBOX SLICE

Donald R. Curtis, Appleton, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Sept. 26, 1966, Ser. No. 582,141

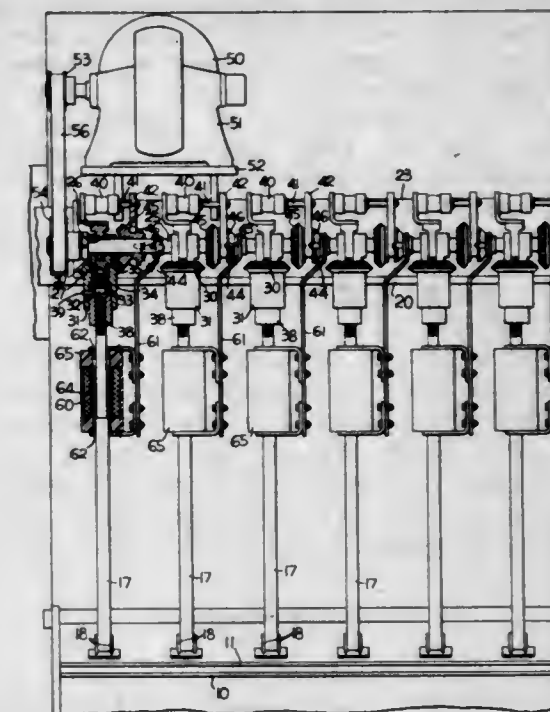
Int. Cl. D21f 1/06; B26d 7/26

U.S. Cl. 162—347

4 Claims

A remotely controlled headbox slice for a Fourdrinier headbox having a plurality of independently adjustable

and selectively operable micro-rods supporting the top lip of said slice and having position sensors adjacent the



micro-rods to indicate to the operator the relative position of said rods.

3,463,702

## NUCLEAR REACTOR FUEL ELEMENTS

Royston Walter Mastin D'Eve, Penworthan, Preston, and John Vincent Shennan, Fulwood, Preston, England, assignors to United Kingdom Atomic Energy Authority, London, England

No Drawing. Filed June 5, 1967, Ser. No. 643,338  
Claims priority, application Great Britain, June 22, 1966, 28,000/66

Int. Cl. G21c 3/16, 3/06

U.S. Cl. 176—68

22 Claims

A nuclear reactor fuel element comprising particles of ceramic fissile material, each having a coating of non-fissile ceramic material, the particles being contained in an outer ceramic container and the particles being bonded together in a region about each of their points of contact in the container by an individual bridge of bonding material of high thermal conductivity, the interspaces between the particles being free of bonding material.

3,463,703

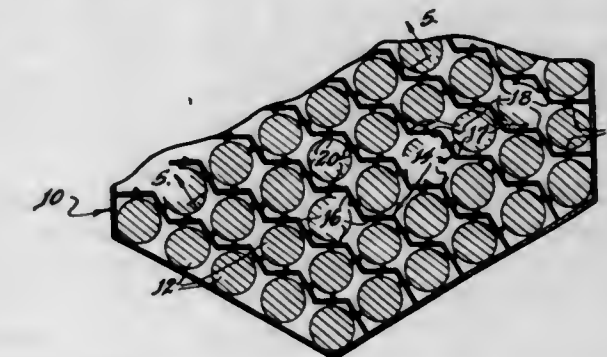
## FUEL PIN SPACERS

Gary J. Crandall, Northport, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission  
Filed July 24, 1968, Ser. No. 747,320

Int. Cl. G21c 3/34

U.S. Cl. 176—78

6 Claims



A nuclear reactor fuel pin spacer assembly consisting of parallel strips of joined V's transverse of and between the fuel pins, each V containing a fuel pin which is supported by protuberances extending from the sides of the V.



### 3,463,704 METHOD OF PRODUCING ALANINE BY ENZYMATIC ACTION

Shinji Okumura, Yokohama-shi, Kanagawa-ken, and Fumihito Yoshinaga, and Yasuhiko Yoshihara, Kawasaki-shi, Kanagawa-ken, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

No Drawing. Continuation of application Ser. No. 527,512, Feb. 15, 1966, which is a continuation of application Ser. No. 506,889, Nov. 8, 1965. This application Sept. 30, 1968, Ser. No. 766,374

Claims priority, application Japan, Nov. 9, 1964, 39/63,247; Nov. 13, 1964, 39/63,789

Int. Cl. C12d 13/06; C07c 99/00

U.S. Cl. 195—29 4 Claims  
L-alanine is formed by enzymatic decarboxylation of L-aspartic acid when an aqueous solution of the latter is mixed with a culture broth in which *Pseudomonas* species No. 618 (ATCC No. 19,121) was cultured, and the resulting mixture is kept at pH 4.5 to 5.5 under aerobic conditions at 25° to 45° C. The L-alanine is recovered by conventional methods.

### 3,463,705 ENZYMIC POLYPEPTIDE DEGRADATION

David Perlman, Princeton, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 1, 1966, Ser. No. 569,069

Int. Cl. C12d 13/06; C12k 1/00

U.S. Cl. 195—80 4 Claims  
Disclosed herein is a process for degrading heterodetic polypeptides by utilizing microorganisms of the genus *Actinoplanes*.

### 3,463,706 WATER DISTILLATION APPARATUS WITH DIS- TILLATE QUALITY SENSING CONTROL

Forrest Thompson Randall, Glasgow, Scotland, assignor to G. & J. Weir Limited, Glasgow, Scotland, a company of Scotland

Filed Sept. 18, 1967, Ser. No. 668,337

Claims priority, application Great Britain, Dec. 7, 1966, 54,704/66

Int. Cl. C02b 1/06; B01d 3/42, 3/00

U.S. Cl. 202—202 3 Claims  
Apparatus for producing fresh water from brine including an evaporator, a distiller, and a distillate quality sensing device, the distillate produced, when of satisfactory quality being removed from a distillate reservoir by a pump and passed to a fresh water tank, and when of unsatisfactory quality being recirculated, with the pump stopped, to the evaporator.

### 3,463,707 ELECTRODEPOSITION OF LEAD DIOXIDE

Fred D. Gibson, Jr., Las Vegas, and Bruce B. Halker and Robert L. Thayer, Henderson, Nev., assignors to Pacific Engineering and Production Co. of Nevada

Continuation-in-part of application Ser. No. 474,179, July 22, 1965. This application Jan. 13, 1966, Ser. No. 520,341

Int. Cl. C23b 5/50, 5/54, 9/00

U.S. Cl. 204—15 22 Claims  
Methods for and products of electrodeposition of lead dioxide on various substrates from electrolytes containing lead nitrate and nitric acid involving the use of free nitric acid in a concentration of about 5 to about 20 grams per liter and treating the electrolyte to reduce its iron content to below .02 gram per liter calculated as free iron. Processes for manufacture of lead dioxide involving plating onto a substrate first a thin layer and then a thick layer of lead dioxide and removing the thick layer while retaining the thin one in place.

### 3,463,708 ELECTROLYTIC BATH FOR MAGNETIC DEPOSITION

Russell W. Grant, Boston, Mass., assignor to Mohawk Data Sciences Corporation, East Herkimer, N.Y.

Filed June 20, 1966, Ser. No. 558,659

Int. Cl. C23b 5/32

U.S. Cl. 204—43 1 Claim  
An electrolytic bath for the deposition of magnetic coatings on metal substrates, particularly on aluminum discs or the like, to provide record carriers. The bath is formulated with the following composition: cobalt ion having a concentration of 25–35 grams per liter, nickel ion having a concentration of 25–35 grams per liter, sodium hypophosphite having a concentration of 0.5–2.0 grams per liter, ammonium chloride having a concentration of 25.0–55.0 grams per liter and pyrotartaric anhydride having a concentration of 5.7–11.4 grams per liter. With such a selected electrolytic bath there exists a particular range for the plating voltage which, by judicious selection can provide tremendous variation in the coercive force.

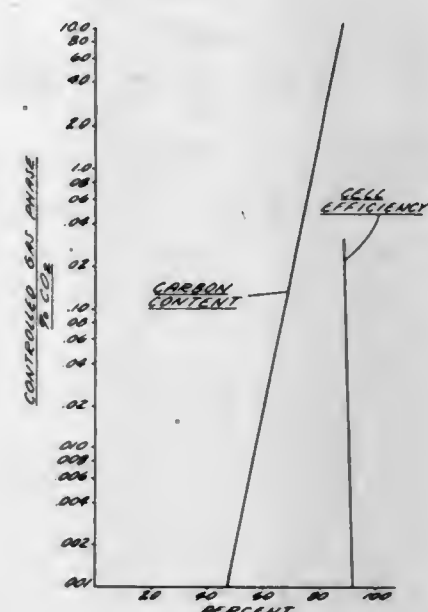
### 3,463,709 ELECTROLYSIS UTILIZING THIN FILM ELECTROLYTES

Sid Russell, Suffield, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed July 20, 1966, Ser. No. 566,677

Int. Cl. B01k 1/00

U.S. Cl. 204—60 9 Claims



An electrochemical process is described wherein the electrolyte is provided on an electrode in the form of a thin film which is exposed to a gas phase whose composition is controlled to minimize the effects of electrolyte depletion at the electrode resulting from the loss of ionic species through oxidation or reduction.

### 3,463,710 ELECTROLYTIC RECOVERY OF COPPER FROM COPPER CYANIDE LEACHING SOLUTIONS

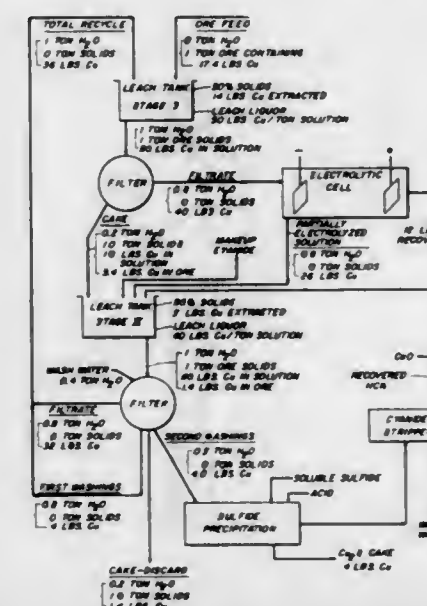
George William Lower, Bethel, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Mar. 30, 1965, Ser. No. 443,800

Int. Cl. C22d 1/16

U.S. Cl. 204—106 5 Claims  
Copper is recovered from copper ore including ore fractions by leaching with an aqueous alkaline solution containing at least about 3 moles of cyanide per mole of

copper, separating the solution from the solids, and electrolyzing the solution to recover only part of the copper directly from the solution, also regenerating cyanide. Cyanide recovery is higher if only part of the copper is electrolyzed. Less than about 50% of the copper in the solution at the time is electrolyzed. The regenerated cyanide



solution is reused for leaching. At least two leaching stages, with a water wash after the second, and recycling of part of the wash, improves efficiency. Excess wash water is acidified, to release cyanide, as HCN, for vapor phase stripping and recovery, and to precipitate copper sulfide, for copper recovery.

### 3,463,711 ELECTROLYTIC METHOD AND APPARATUS FOR RECOVERING SILVER FROM FIXING BATHS

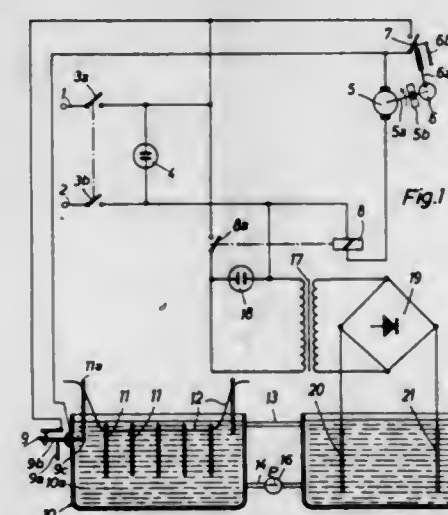
Erwin Geyken, Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany

Filed Apr. 7, 1965, Ser. No. 446,218

Claims priority, application Germany, Apr. 24, 1964, A 45,858

Int. Cl. C22d 1/12, 1/02

U.S. Cl. 204—109 8 Claims



A method and apparatus for reclaiming silver from used photographic mixing baths into which electrodes extend and in which a circuit supplying the electrodes with DC current is intermittently opened and closed by means controlled by films conveyed through the bath.

865 O.G.—46

### 3,463,712 ELECTROPHORETIC COATING BATH AND PROC- ESS WHEREIN SOLVENT AND BASE CONCENT- RATIONS ARE CONTROLLED

Carlton E. Coates, Savage, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

Filed Feb. 13, 1967, Ser. No. 615,555

Int. Cl. C23b 13/00; B01k 5/02

U.S. Cl. 204—181 7 Claims



Electrophoretic coating employing a two-phase bath comprising:

- (A) a discontinuous phase comprising (1) an uncured, curable, electrodepositable material (2) a solvent for said material, and
- (B) a continuous phase comprising a solution of the solvent in the bath liquid

wherein the solubility of the solvent in the bath liquid is less than the solubility of the bath liquid in the solvent.

### 3,463,713 ELECTRODIALYSIS PROCESS USING INORGANIC ION EXCHANGE MEMBRANES

Jacob I. Bregman, Glencoe, David E. Anthes, Chicago, and Robert S. Braman, South Holland, Ill., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Interior

No Drawing. Filed Dec. 13, 1966, Ser. No. 601,824

Int. Cl. B01d 13/02; B01k 1/00, 3/10

U.S. Cl. 204—180 4 Claims

Demineralization of solution by electrodialysis using a zirconium phosphate cation exchange membrane and a thorium oxide anion exchange membrane.

### 3,463,714 ELECTRODEPOSITION OF POLYMERS IN NON-AQUEOUS MEDIA

William D. Suomi, Gary, Ind., and Abraham Ravve, Chicago, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed June 30, 1967, Ser. No. 650,221

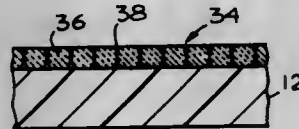
Int. Cl. C23b 13/00; B01k 5/02

U.S. Cl. 204—181 7 Claims

A process for electrodepositing polymeric coatings by applying an electrical potential across electrodes immersed in an electrocoating bath which is prepared by dissolving a carboxyl-containing polymer and a basic nitrogen-containing compound in a suitable solvent and adding a sufficient amount of a polar organic non-solvent having a solubility parameter greater than 12 and a hydrogen bond index greater than 7.5 to convert the polymer solution into a suspension, the article to be coated serving as one electrode of the electrical circuit used to deposit the polymer.

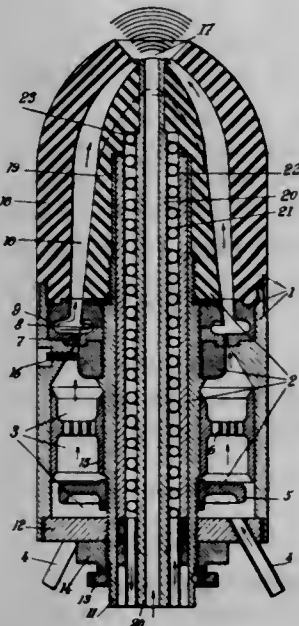


**3,463,715**  
**METHOD OF CATHODICALLY SPUTTERING A LAYER OF SILICON HAVING A REDUCED RESISTIVITY**  
 Murray Bloom, Los Angeles, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio  
 Filed July 7, 1966, Ser. No. 563,482  
 Int. Cl. C23c 15/00  
 U.S. Cl. 204—192



There is disclosed a method of sputter depositing semiconductor materials such as silicon on a substrate to produce a silicon layer having high conductivity in both the longitudinal direction parallel to the surface of the substrate and in a direction normal or perpendicular to the substrate surface. The method comprises the steps of sputter depositing the silicon in a reduced pressure atmosphere to form a silicon layer on the substrate and thereafter heating the deposited layer in an environment of pure hydrogen preferably at a temperature of about 1,000° C. for approximately 15 minutes.

**3,463,716**  
**SOUND AND ULTRA-SOUND GENERATORS**  
 Robert Levavasseur, Marseille, France, assignor to Centre National de la Recherche Scientifique, Paris, France, a French Government administration  
 Filed June 3, 1966, Ser. No. 555,169  
 Claims priority, application France, June 9, 1965, 20,092  
 Int. Cl. B01j 1/12  
 U.S. Cl. 204—193



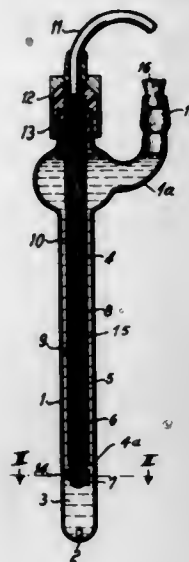
A device for producing powerful sonic and ultrasonic waves. Two coaxial bodies of revolution, adjustable to have a common axis, are provided, one body surrounding the other to define therebetween a path for the passage of a gas for producing said waves. The device has an inlet and an outlet, and a chamber in the path with means for reducing the turbulence of gas admitted through said inlet end. An annular slot is provided in said path, the upstream end of which opens into said chamber and the downstream end of which opens opposite the sharp edge of a whistle-producing chamber. An auxiliary cavity amplifies the waves produced. An outlet conduit is provided in said path and a heat insulated central conduit extends through the device and has an opening disposed near the said outlet for the wave-producing gas. The said outlet conduit converges in the direction of the axial zone where said central conduit opens.

**3,463,717**  
**REFERENCE AND GLASS ELECTRODES CAPABLE OF WITHSTANDING HIGH PRESSURES**  
 Francis C. Koopman and J. L. Kunkler, Albuquerque, N. Mex., assignors to the United States of America as represented by the Secretary of the Interior  
 Filed Jan. 7, 1966, Ser. No. 519,396  
 Int. Cl. B01k 3/04  
 U.S. Cl. 204—195



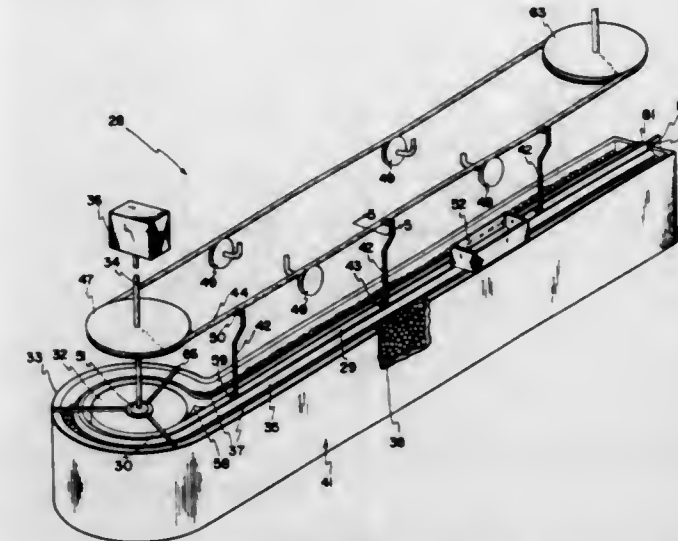
A reference electrode is provided with flexible, distensible electrolyte reservoir walls to maintain the pressure within the electrode electrolyte at a greater pressure than the surrounding working environment. A glass electrode is provided with flexible walls to equalize the pressure across the electrode's fragile glass membrane.

**3,463,718**  
**REFERENCE ELECTRODE**  
 Manfred Detemple, Mainz, Germany, assignor to Jenbacher Glaswerk Schott & Gen., Mainz, Germany, a corporation of Germany  
 Filed June 6, 1966, Ser. No. 555,536  
 Claims priority, application Germany, July 3, 1965, J 28,514  
 Int. Cl. B01k 3/02  
 U.S. Cl. 204—195



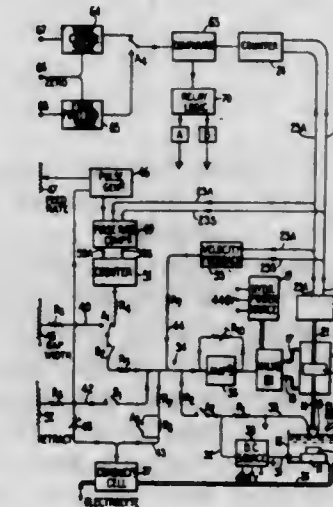
A reference electrode for use in electrochemical potential measurements in which a reference capsule is inserted into a tubular electrode shaft filled with an electrolyte solution, and that a tube is positioned between said reference capsule and said tubular electrode shaft. The tube is closed on all sides and contains in the same manner as the reference capsule in its lower part a mixture of sparingly soluble salt and solid electrolyte of high solubility.

**3,463,719**  
**CONTINUOUS ELECTROPLATING APPARATUS**  
 Wayne S. Brown and William S. Partridge, Salt Lake City, Utah, assignors to University of Utah  
 Filed Sept. 27, 1966, Ser. No. 582,393  
 Int. Cl. B23p 1/16; C23b 7/08, 5/68  
 U.S. Cl. 204—216



A continuously driven essentially vertically oriented cathode drum substantially submerged within electrolyte solution, the outer surface of which receives electrorefined metal continuously as the drum is rotated. An elongated electrolytic bath opens adjacent the drum so that the electro-refined metal is peeled from the drum and conveyed through the electrolytic bath while being continuously subjected to electrodeposition. The improved method comprises continuously electrodepositing metal along the entire circumference of the generally vertical power-rotated drum and continuously peeling the resulting metal veneer from the drum at a fixed location and conveying the veneer through the electrolytic bath and continuously electrodepositing metal upon the veneer throughout the length of the electrolytic bath.

**3,463,720**  
**ELECTRO-CHEMICAL MACHINING CONTROL SYSTEM**  
 Bernard H. Wilkinson, Glasgow, and Harry Ogden, Edinburgh, Scotland, assignors to Rolls-Royce Limited and Ferranti Limited, Derby, England, and Hollinwood, England  
 Filed Oct. 11, 1965, Ser. No. 494,829  
 Claims priority, application Great Britain, Oct. 16, 1964, 42,440  
 Int. Cl. B23p 1/14  
 U.S. Cl. 204—224



A control system for an electro-chemical machining apparatus in which the actuator of tool movement is controlled by a closed digital servo loop mode for initial approach and rough machining, and by a closed analog servo loop mode for approach to a finished workpiece size, there being a store for presetting the condition for a changeover between the two modes according to the distance of the tool from the workpiece, and a relay for automatically effecting the changeover when this distance has reached the preset value.

**3,463,721**  
**PURIFICATION DEVICE FOR ALKALI METAL ELECTROLYSIS CELLS**  
 Luther L. Harris, La Porte, Tex., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia  
 Filed Mar. 3, 1967, Ser. No. 620,482  
 Int. Cl. C22d 3/02  
 U.S. Cl. 204—245



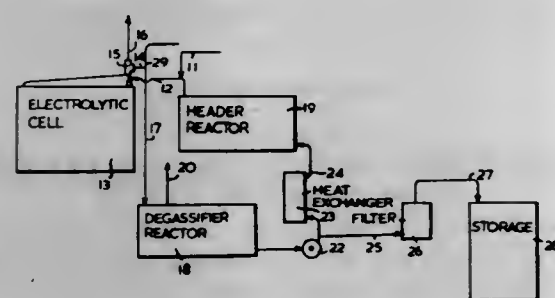
Apparatus for removing undesired metal deposits from product and product conduit walls of fused melt electrolysis cells. A rotatable central shaft supports vertically spaced horizontal arms having radial extensions. Vertical scraper bars are movably mounted on the ends of said radial extensions.

**3,463,722**  
**ELECTROLYSIS SYSTEM FOR CHLORATE MANUFACTURE**  
 Göthe Oscar Westerlund, Vancouver, Canada, assignor to Chemtech Engineering Ltd., Vancouver, British Columbia, Canada  
 Continuation-in-part of application Ser. No. 380,518, July 6, 1964. This application Apr. 18, 1966, Ser. No. 543,261  
 Claims priority, application Canada, July 3, 1964, 901,153  
 Int. Cl. B01k 3/00; C22d 1/02; C01b 11/26  
 U.S. Cl. 204—268

An improved electrolytic cell particularly adapted for the production of sodium chlorate. This cell includes a pair of bipolar electrodes, means for maintaining the cell full of electrolyte, means for removing gases and for effluent liquor and recirculation. There is also provided means for continuously introducing fresh electrolyte into the cell at a predetermined rate, with means within the container for the recirculation of electrolyte within the cell at a total rate which is greater than the predetermined rate, and in which the combined rates are sufficiently high to maintain any gaseous reaction products obtained during the electrolysis reaction within the electrolyte within the container. The outlet means for removing a mixture of gaseous reaction products and elec-

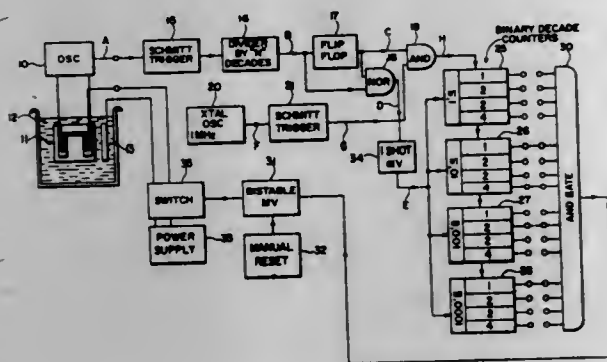


trolite liquor from the cell has connected thereto means outside the container, for receiving that particular mixture of gaseous reaction products and effluent liquor in order to separate the gaseous products from the liquor.



Means finally are provided for circulating a portion of that particular separated liquor back to the container.

**3,463,723**  
**METHOD OF CONTROLLING THE ADJUSTMENT OF FREQUENCY DETERMINING FILM RESISTORS IN AN OSCILLATOR**  
Harry J. Lajeunesse, Michael C. J. Cowland, and John L. Hanna, Ottawa, Ontario, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada  
Filed Feb. 7, 1968, Ser. No. 703,604  
Int. Cl. C23b 9/00; B01k 3/00  
U.S. Cl. 204—140

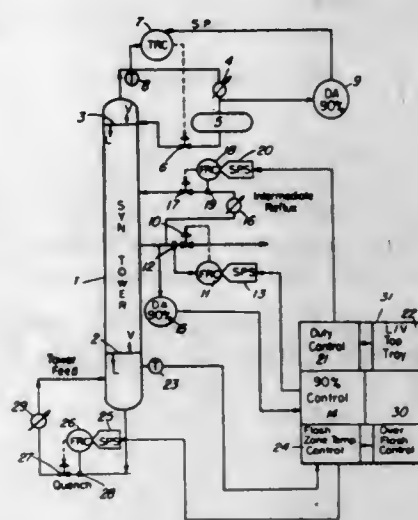


A method of controlling the anodization and hence the adjustment of frequency determining thin film resistors in an oscillator by monitoring the period rather than counting the frequency of the output signal therefrom. This comprises counting the number of cycles from a substantially higher frequency reference oscillator during one or more periods of the adjustable oscillator; and utilizing the count to terminate the anodization of the thin film resistor once the desired output signal frequency has been reached.

**3,463,724**  
**PROCESS FOR STABILIZING LUBRICATING OIL**  
Gordon E. Langlois, El Cerrito, and Robert J. White, Pinole, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware  
Continuation-in-part of application Ser. No. 636,345, May 5, 1967. This application Dec. 22, 1967, Ser. No. 692,888  
Int. Cl. C10g 37/00, 13/10, 17/02  
U.S. Cl. 208—98  
A process for producing lubricating oil stable in the presence of ultraviolet light which comprises hydrocracking a hydrocarbon feedstock containing a substantial portion of components boiling above 750° F., under catalytic hydrocracking conditions, including a tempera-

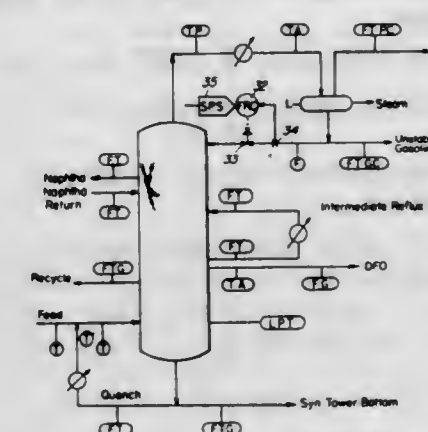
ture in the range 720° to 850° F., sufficient to convert at least 15 weight percent of these components to materials boiling below 750° F., separating from the hydro-

**3,463,725**  
**FRACTIONATING TOWER COMPUTER CONTROL**  
Benedict Macfarlane, White Plains, N.Y., and Charles A. Jones III, Haddonfield, N.J., assignors to Mobil Oil Corporation, a corporation of New York  
Filed July 25, 1967, Ser. No. 655,873  
Int. Cl. B01d 3/42; C10g 7/00  
U.S. Cl. 208—358



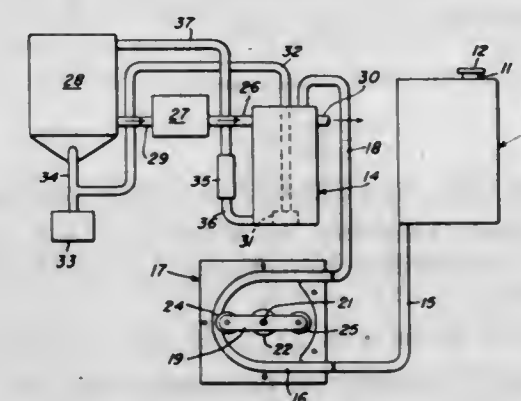
This invention is directed to the computer control of a fractionating tower for the separation of petroleum products. The tower is controlled by adjustment of the flow rates of the top, bottom and intermediate refluxes and the draw rate for the product stream. A two-part control scheme, having primary control loops in which the set point is adjusted by a secondary control loop, is provided for the intermediate and bottom reflux rates. An on-line computer is used in both the primary loop (such as to calculate the intermediate reflux flow rate to maintain a specified heat removal, and to control bottom reflux rate to maintain a specified tower bottom temperature) and secondary loop (such as to maintain a specific liquid/vapor ratio at the tower top by adjusting the intermediate reflux flow rate set point and to

maintain a specified tower bottom internal reflux by adjusting the set point for the bottom external reflux



rate). The product stream draw-off rate is also controlled by the on-line computer.

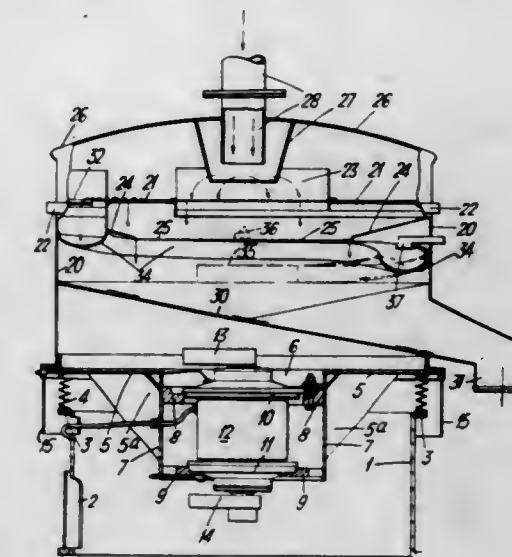
**3,463,726**  
**WASTEWATER TREATMENT METHOD**  
Johann F. Schulte, Valley Station, Ky., assignor to General Electric Company, a corporation of New York  
Filed Nov. 20, 1967, Ser. No. 684,394  
Int. Cl. C02c 5/02, 1/00  
U.S. Cl. 210—8



Wastewater is treated batchwise with a dilute polyelectrolyte solution as a flocculant prepared in successive batches by mixing concentrated polyelectrolyte with solids-free supernatant carrier water obtained in the treatment of prior wastewater batches. Thus, a single vessel serves both as a mixing tank and as a storage tank for dilute polyelectrolyte solution and the necessity for a separate source of water for dilution of polyelectrolyte is eliminated.

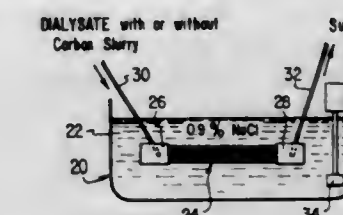
**3,463,727**  
**TREATMENT OF MATERIALS HAVING BOTH LIQUID AND SOLID CONTENTS**  
Denis Fahey, 8 Montfat Place, Newcastle, Staffordshire, England  
Filed July 18, 1967, Ser. No. 654,191  
Claims priority, application Great Britain, July 22, 1966, 33,001/66  
Int. Cl. B01d 35/20  
U.S. Cl. 210—19

The liquid and solid material is fed on to a filtering element having meshes through which the liquid passes, and the filtering element is subjected to a vibratory motion of such a nature that the solid materials retained on it



down which the material progresses assisted by the vibratory action.

**3,463,728**  
**DIALYSATE CAPACITY AUGMENTATION PROCESS**  
Theodor Kolobow, Rockville, Md., and Robert L. Dedrick, McLean, Va., assignors to the United States of America as represented by the Secretary of the Department of Health, Education, and Welfare  
Filed Apr. 28, 1967, Ser. No. 634,640  
Int. Cl. B01d 13/00  
U.S. Cl. 210—22



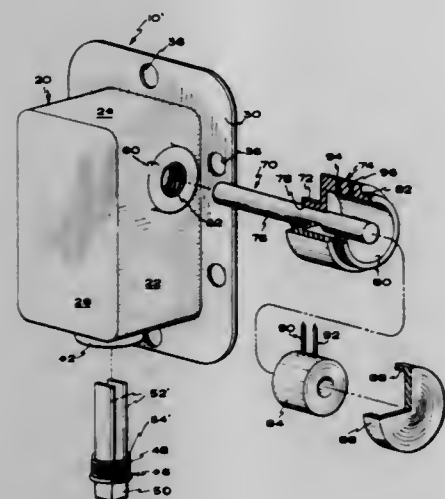
Augmenting dialysate capacity for waste materials by adding thereto adsorbents for the waste materials. Specifically, a slurry of activated carbon of fine particle size is propelled past an artificial membrane in a dialyzing apparatus permitting the use of ultra-low dialysate flow rates and small quantities of dialysate. The technique is especially useful for artificial kidney applications.

**3,463,729**  
**MAGNETIC FILTRATION OF TRANSMISSION FLUID**  
Carmon J. Bean, 413 N. 1st W., Salt Lake City, Utah 84103  
Filed Apr. 17, 1967, Ser. No. 631,288  
Int. Cl. B01d 35/06; B03c 1/30  
U.S. Cl. 210—42

A magnetic filtration system comprising an auxiliary housing, with one or more internally exposed magnets, adapted to be attached in sealed relation to the side of a



truck or like transmission casing for receiving and magnetically purging displaced transmission fluid of sus-



pended pieces of metal worn from the transmission gears through use.

3,463,730

#### PREVENTION OF AND REMOVAL OF SCALE FORMATION IN WATER SYSTEMS

Robert Ben Booth, Stamford, and Linda Clarendon Mead, Greenwich, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
No Drawing. Filed Aug. 5, 1965, Ser. No. 477,604

Int. Cl. C02b 1/20

U.S. Cl. 210—58 15 Claims

Formation of hard adherent scale deposits of insoluble salts particularly carbonates and sulfates of metals such as calcium or other alkaline earth metals, and/or iron which may include particles of silt or silica, are inhibited, controlled or prevented on, or removed from (a) the walls of evaporators, cooling towers, heat exchangers, boilers and devices where a thermal gradient exists or areas where catalytically active sites induce scale formation in aqueous systems by (b) from about 1/4 to 100 parts per million of a hydrolyzed polyacrylamide having (c) from about 10% to 50% unhydrolyzed amide groups and (d) a molecular weight of about 1,000 to 8,000. The polymer is useful alone, and in cooperation with other sequestrants and chelating agents.

3,463,731

#### STABILIZATION WITH PHENOLIC TYPE ANTIOXIDANT

George G. Ecke, Detroit, Mich., and Alfred J. Kolka, O'Hara Township, Allegheny County, Pa., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Nov. 12, 1963, Ser. No. 323,075, now Patent No. 3,290,392, dated Dec. 6, 1966. Divided and this application June 8, 1966, Ser. No. 571,664

Int. Cl. C10m 1/20, 3/14, 5/12

U.S. Cl. 252—52 5 Claims

Phenols unsubstituted in the para position and in which at least one ortho position is substituted with an alpha-substituted benzyl radical and the other ortho position is substituted with a hydrocarbon radical which may also be an alpha-substituted benzyl radical are antioxidants for organic material.

3,463,732

#### POLARIZABLE FERROELECTRIC CERAMIC COMPOSITIONS

Hisao Banno, Aichi Prefecture, and Tsutomu Tsunooka, Kariya, Japan, assignors to NGK Spark Plug Co., Ltd., Nagoya, Japan

No Drawing. Filed July 5, 1967, Ser. No. 651,112

Claims priority, application Japan, Aug. 26, 1966, 41/55,798

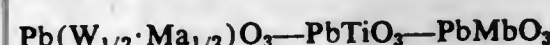
Int. Cl. C04b 35/00, 35/46; H01v 7/02

U.S. Cl. 252—62.9 26 Claims

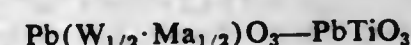
A novel and useful polarizable ferroelectric ceramic composition suitable for use in piezoelectric and electrostrictive ceramic articles and consisting essentially of a series of solid solutions expressed by the formula,



wherein Ma represents at least one element selected from the group consisting of Ni and Zn, or another series of solid solutions expressed by



wherein Mb represents at least one element selected from the group consisting of Zr and Sn, a series of solid solutions expressed by said formulas



or



wherein a part of Pb is replaced by at least one alkaline earth element selected from the group consisting of Ba, Ca and Sr, or said series of solid solutions further containing Mn at a rate corresponding to up to 5.0 weight percent of MnO<sub>2</sub> in the aggregate.

3,463,733

#### PROCESS FOR ETCHING PRINTED CIRCUITS

Karl Achenbach, Frankfurt am Main, Germany, assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 18, 1965, Ser. No. 480,775

Claims priority, application Germany, Aug. 22, 1964, D 45,262

Int. Cl. C23f 1/00, 1/04; H05k 3/06

U.S. Cl. 252—79.4 6 Claims

1. In a process for etching printed copper circuits, the step of effecting such etching with a mineral acid solution consisting essentially of water, 0.01 to 0.7 kilogram per liter of sulfuric acid or phosphoric acid, 1.5 to 10% H<sub>2</sub>O<sub>2</sub> and 1 to 15% of a stabilizer for the H<sub>2</sub>O<sub>2</sub> selected from the group consisting of urea, semicarbazide, biuret, barbituric acid and dipropyl barbituric acid.

3,463,734

#### BUILDERS FOR SYNTHETIC DETERGENTS

Richard P. Carter, Jr., Chesterfield, and Riyad R. Irani, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 16, 1966, Ser. No. 557,884

Int. Cl. C11d 1/10, 1/04

U.S. Cl. 252—99 10 Claims

Washing compositions comprising (1) surface active compounds, (2) water soluble salts of poly(itaconic acid) as builders and (3) supplemental builders are effective as detergents in an aqueous solution.

3,463,735

#### GLASS CLEANING COMPOSITION

Melvin E. Stonebraker, Cincinnati, and Samuel P. Wise, Kenwood, Syracuse Township, Cincinnati, Ohio, assignors to The Drackett Company, Cincinnati, Ohio, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 370,079, Mar. 25, 1964. This application Oct. 18, 1967, Ser. No. 676,084

Int. Cl. C11d 7/50

U.S. Cl. 252—137 12 Claims  
Improves the effectiveness of a glass cleaning composition of the type containing (a) a solvent system consisting of a mixture of a low boiling solvent (e.g., aliphatic alcohols) and a moderately higher boiling solvent (e.g., alkylene or polyalkylene glycols or their ethers), and (b) a surfactant by adding to said composition an alkali-metal polyphosphate; in a preferred form of the invention, ammonia is also added.

3,463,736

#### AQUEOUS SLURRIES OF TRIETHANOLAMINE SALTS OF LINEAR ALKYL BENZENE SULFONIC ACIDS

John C. Reid, Wynnewood, Robert B. Doan, Drexel Hill, and Robert C. Taylor, King of Prussia, Pa., assignors to Atlantic Richfield Company, New York, N.Y., a corporation of Pennsylvania

No Drawing. Filed Mar. 4, 1966, Ser. No. 531,737

Int. Cl. C11d 1/40, 1/14

U.S. Cl. 252—152 8 Claims

This invention relates to aqueous detergent slurries comprising the triethanolamine salt of an alkylbenzene sulfonic acid having a linear alkyl radical ranging from 8–16 carbon atoms, said slurry having a pH ranging from 2.0–6.0 when measured at a total solids concentration of 10 weight percent in the slurry. These controlled pH slurries have improved color and color stability without adverse corrosion characteristics.

3,463,737

#### HIGHLY ALKALINE STORABLE AND NON-FOAMING BOTTLE CLEANSING AGENTS

Herbert Kasperl, Ratingen, Gunther Tischbirek, Düsseldorf, and Karl-Helz Worms, Düsseldorf-Holthausen, Germany, assignors to Henkel & Cie. GmbH, Düsseldorf-Holthausen, Germany

No Drawing. Continuation of abandoned application Ser. No. 495,349, Oct. 12, 1965. This application Sept. 19, 1968, Ser. No. 775,567

Claims priority, application Germany, Oct. 24, 1964, H 54,128

Int. Cl. C11d 7/32

U.S. Cl. 252—153 5 Claims

Storable, solid bottle cleansing agents consisting essentially of 50–95 weight percent finely grained caustic alkali which has a grain size of less than 3 mm., and of a reaction product of propylene oxide with an alpha-ic amine which has at least 3 reactive hydrogens in its molecule. The reaction product must have a cloud point ranging from 10 to 60° C., preferably from 15 to 40° C. These cleansing agents are substantially non-foaming when used and do not deteriorate on storage.

3,463,738

#### CONVERSION AND CONTAINMENT OF RADIOACTIVE ORGANIC LIQUIDS INTO SOLID FORM

Curtis L. Fitzgerald, Kingston, Herschel W. Godbee, Oak Ridge, and Kenneth H. McCorkle, Jr., Powell, Tenn., assignors to the United States Atomic Energy Commission by the United States Atomic Energy Commission

No Drawing. Filed May 1, 1968, Ser. No. 725,890

Int. Cl. G21f 9/20

U.S. Cl. 252—301.1 4 Claims

Radioactive organic liquids are effectively converted into solid form by homogeneously mixing liquefied poly-

ethylene with the radioactive liquids and cooling the resulting mixture to form a solid essentially non-porous, rigid polyethylene body which effectively contains the radioactivity.

3,463,739

#### METHOD FOR RECOVERING POLONIUM-210 FROM BISMUTH

Wallace W. Schulz and Gary F. Schiefelbein, Richland, and Lester E. Bruns, Kennewick, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed June 4, 1968, Ser. No. 734,198

Int. Cl. C01g 57/00; C07f 11/00

U.S. Cl. 252—301.1 4 Claims

A method for recovering polonium-210 from bismuth using both pyrochemical and liquid-liquid solvent extraction steps. Molten bismuth containing the polonium is contacted at 400–500° C. in an inert atmosphere with sodium hydroxide. The polonium is then recovered from the sodium hydroxide melt by liquid-liquid solvent extraction.

3,463,740

#### FORMALDEHYDE IN THE REMOVAL OF NITRATE IONS FROM REGENERATED ALKYLATION CATALYSTS

Arthur D. Ketley, Bethesda, and Thomas R. Steadman, Kensington, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Mar. 24, 1967, Ser. No. 625,634

Int. Cl. B01s 11/04; C07c 67/04

U.S. Cl. 252—416 4 Claims

Catalyst systems containing Group VIII noble metals used in the production of vinyl acetate by the reaction of ethylene, acetic acid and oxygen are regenerated by oxidation with nitric acid and molecular oxygen or air, and subsequently reacted with hydrochloric acid and then formaldehyde to remove substantially all nitrate ion remaining in the catalyst mixture.

3,463,741

#### COBALT CONTAINING CATALYSTS OXYGEN REGENERATED TO FORM COBALTOXIDE

Edmund R. Russell, Longview, Tex., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 12, 1964, Ser. No. 344,227

Int. Cl. B01j 11/68, 11/06

U.S. Cl. 252—416 5 Claims

Cobalt containing hydroformylation catalysts are regenerated to a high state of activity by a process which comprises contacting the spent catalyst with molecular oxygen at a temperature in the range of about 400° to about 620° C. The regenerated catalysts are employed in the ozon process for the manufacture of aldehydes, alcohols, and other useful oxygenated materials.

3,463,742

#### PARTIALLY HYDRATED TITANIUM DIOXIDE CATALYST FOR POLYESTER PREPARATION

Alan Bell and Thomas Howard Strickland, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 441,857, Mar. 22, 1965. This application Sept. 5, 1967, Ser. No. 665,282

Int. Cl. B01j 11/06; C07c 69/76

U.S. Cl. 252—430 5 Claims

Substantially colorless, highly polymeric condensation polyesters are prepared from a lower dialkyl ester of a bifunctional dicarboxylic acid and a bifunctional glycol by



using a catalyst composition comprising a substantially amorphous, partially hydrated titanium dioxide dispersed in a liquid carrier compound.

3,463,743

# POLYMERIC TITANIUM COMPOUNDS AND Ti-AL COMPLEXES

Richard R. Durst and Wendell O. Phillips, Stow, Ohio, assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Original application Sept. 9, 1963, Ser. No. 307,353, now Patent No. 3,312,637, dated Apr. 4, 1967. Divided and this application Jan. 16, 1967, Ser. No. 609,292

Int. Cl. B01j 11/84; C07f 7/28; C08g 35/00  
U.S. Cl. 252—431 8 Claims

A benzene-soluble reaction product is obtained by reacting at a temperature of from about 30° to 110° C. under subatmospheric pressure approximately equimolar amounts of a compound of the formula  $Ti(OR)_4$  in which each R is an alkyl radical of no more than about 10 carbon atoms with a compound of the formula  $TiX_4$  in which each X is a halogen atom, said reaction product containing at least one  $TiOTi$  linkage. This reaction product can further be reacted with  $AlR_3$  to form a complex reaction product where R is an alkyl radical of up to 10 carbon atoms and where the mol ratio of Al to Ti is from 0.3:1 to 10:1. These products are useful in polymerizing epoxides like propylene oxide to make polyalkylene ethers of high molecular weight.

3,463,744

# CONTROL OF ACID ACTIVITY OF A HYDROCARBON CONVERSION CATALYST COMPRISING A HALOGEN COMPONENT COMBINED WITH A SUPPORT CONTAINING ALUMINA AND CRYSTALLINE ALUMINOSILICATE PARTICLES

Roy T. Mitsche, Island Lake, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 517,845, Dec. 30, 1965. This application June 3, 1968, Ser. No. 733,799

Int. Cl. B01j 11/40, 11/78  
U.S. Cl. 252—442 9 Claims

A hydrocarbon conversion catalyst comprising a halogen component combined with a support containing alumina and finely divided crystalline aluminosilicate particles is prepared and the acid activity of the resulting catalyst is simultaneously controlled, by the steps of: (a) commingling finely divided crystalline aluminosilicate particles with an aluminum hydroxyl halide sol to form a mixture thereof, (b) gelling the resultant mixture to form a hydrogel, and (c) calcining the resultant hydrogel for a period of about 1 to about 5 hours at a constant calcination temperature selected from the range of about 500° C. to about 800° C. in inverse relation to the amount of acid activity required. Principal utility of the resultant catalyst is in the area of acid-catalyzed hydrocarbon conversion reactions such as cracking, alkylation, polymerization, etc., where the acid strength of the catalyst must be carefully controlled in order to limit side reactions and avoid excessive catalyst deactivation. In addition, the catalyst can be combined with a Group VI or Group VIII metallic component and utilized to accelerate a wide variety of reactions of the type which have heretofore utilized dual-function catalysts such as hydrocracking, reforming, isomerization, etc., wherein the acid function of the catalyst must be carefully balanced against the hydrogenation-dehydrogenation function.

# POLYURETHANE SPONGE AND PROCESS THEREFOR

Charles H. Hofrichter, Madison, and Thomas I. Haggerty, West Haven, Conn., and Gerald W. Zimmer, Rush, N.Y., assignors to Olin Mathieson Chemical Corporation

No Drawing. Filed Dec. 29, 1966, Ser. No. 605,536  
Int. Cl. C08g 22/16, 22/04

U.S. Cl. 260—2.5 2 Claims  
Compositions comprising a mixture of a polyether polyol and a surfactant compound comprising the reaction product of glycidol or ethylene oxide and an alkyl phenol are disclosed; these compositions are employed in the preparation of hydrophilic polyurethane foams.

3,463,746

# PARTICLE BOARD

James David Murdock, St. Hilaire, Quebec, and John Arthur Sharp, Beloeil, Quebec, Canada, assignors to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Filed Nov. 21, 1966, Ser. No. 601,274  
Claims priority, application Canada, Nov. 27, 1965, 946,438

Int. Cl. C08g 51/18; B32b 21/02  
U.S. Cl. 260—9 6 Claims

A particle board formed of wood particles bonded by a thermosetting adhesive composition containing a dihydropyran compound, an acidic catalyst and, optionally, a compound containing hydroxyl groups such as an aliphatic hydrocarbon insoluble product derived from pine wood (Vinsol) or an ethylenically unsaturated polyester or mixtures thereof. The adhesive is cured by heating the adhesive coated wood particles at a temperature of 180° F. to 400° F. under pressure of 200 to 400 pounds per square inch. The particle board is water resistant.

3,463,747

# DICYANDIAMIDE MODIFIED RESIN BINDERS

Lawrence E. Noll, Waterloo, Belgium, and James F. Farish, Hanahan, S.C., assignors to Westvaco Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 454,677, May 10, 1965. This application Nov. 8, 1967, Ser. No. 681,592

Int. Cl. C08g 37/32, 51/10  
U.S. Cl. 260—17.5 4 Claims

Aqueous binders of low solids content used primarily in the manufacture of mineral fiber mats having increased heat stability, dry tensile strength, wet tensile strength and efficiency as well as highly desirable curing characteristics, by virtue of the combination of a thermosetting resin consisting of dicyandiamide-formaldehyde and phenol-formaldehyde, alkali lignin, and urea.

3,463,748

# METHOD OF CURING POLYURETHANES WITH DIAMINE-KETONE MIXTURES TREATED WITH ANHYDROUS DRYING COMPOUNDS

Anthony S. Schelbelloffer, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 30, 1967, Ser. No. 612,347  
Int. Cl. C08g 22/02, 22/04

U.S. Cl. 260—18 11 Claims

A method of curing an isocyanate-terminated polyurethane by reacting the isocyanate-terminated polyurethane with a composition of matter prepared by treating a mixture comprising a diamine, where the amino groups of the diamine are connected to nonbenzenoid carbon atoms, and a liquid ketone with a nonreactive drying agent.

# CURABLE COMPOSITION CONTAINING EPOXY AND VINYL MODIFIED POLYESTER

David D. Taft, 7233 Monardo Lane, Minneapolis, Minn. 55435

No Drawing. Continuation-in-part of application Ser. No. 527,093, Feb. 14, 1966. This application Aug. 17, 1967, Ser. No. 661,189

Int. Cl. C08f 21/00; C08g 45/14  
U.S. Cl. 260—22 17 Claims

Hard, flexible, mar-resistant films are obtained by mixing together a curable epoxy component and a vinyl-modified polyester. Preferably these two components are employed in a two-package system in which, when they are mixed together, they react to form the film-forming material.

3,463,750

# WATER-THINNABLE, AIR-DRYING FILM-FORMING POLYESTER RESIN COMPOSITIONS

Arthur G. Ghosh, Perstorp, Sweden, assignor to Perstorp AB, Perstorp, Sweden

No Drawing. Filed May 2, 1966, Ser. No. 546,536  
Claims priority, application Sweden, May 10, 1965, 6,043/65

Int. Cl. C08g 39/00  
U.S. Cl. 260—22 12 Claims

Film-forming polyester resin compositions are prepared by reacting a mixture of

- (A) a polyhydric aromatic acid having at least three reactive carboxy groups or the anhydride thereof,
- (B) an allyl ether of a polyhydric alcohol having at least three hydroxyls, one of which is not etherified,
- (C) an aliphatic or aromatic dibasic acid, and
- (D) an alcohol having at least two free hydroxyl groups.

The ratio of acidic to hydroxyl radicals in the starting mixture shall be 1:1-1:15, and the reaction is carried out to an acid number below 70, preferably 50-52, followed by neutralization with ammonia.

The product is air-dried, may be thinned with water or hydrocarbon solvents, and forms a hard, flexible transparent non-yellowing film.

3,463,751

# DRY POWDERY NONBLOCKING VINYL ESTER-ETHYLENE COPOLYMER COMPOSITIONS AND PROCESS FOR THE PRODUCTION THEREOF

Noboru Hasegawa, Nobuo Ishikawa, and Susumu Kondo, Ogaki-shi, Japan, assignors to Nippon Gosei Kagaku Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed June 15, 1966, Ser. No. 579,441  
Claims priority, application Japan, June 16, 1965, 35,817/65

Int. Cl. C08f 47/02  
U.S. Cl. 260—23 2 Claims

A dry powdery nonblocking vinyl ester-ethylene copolymer composition which will not become sticky during storage or shipping or under a high atmospheric temperature in the summer and which can be dry-blended with vinyl chloride resin. An antisticking agent is mixed with a polyvinyl chloride powder with a finely divided and nondried copolymer of ethylene and vinyl ester of an aliphatic carboxylic acid having 1 to 4 carbon atoms. Examples of said vinyl ester are vinyl formate, vinyl acetate, vinyl propionate and vinyl lactate. The copolymer is not only a copolymer of such vinyl ester and ethylene but may also contain a small amount of the other copolymerizable monomer selected from the group consisting of vinyl chloride and acrylic acid, methacrylic acid, crotonic acid, maleic acid, and  $C_1$  to  $C_8$  alkyl esters and anhydrides thereof.

3,463,752

# THERMOPLASTIC POLYMER OF A MONOOLEFIN

Norman D. Bornstein, Spartanburg, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut

No Drawing. Filed Apr. 2, 1965, Ser. No. 445,261  
Int. Cl. C08f 3/08

U.S. Cl. 260—27 3 Claims

This invention is directed to increasing the gas permeability of monoolefin films by incorporating an ester of a hydrogenated rosin into the film.

3,463,753

# TERPENE-URETHANE RESINS

Carlos T. Gonzenbach, Scotia, and Manuel A. Jordan, Schenectady, N.Y., assignors to Schenectady Chemicals, Inc., Schenectady, N.Y., a corporation of New York

No Drawing. Filed Mar. 23, 1966, Ser. No. 536,642  
Int. Cl. C09j 3/26

U.S. Cl. 260—27 17 Claims

A hot melt adhesive composition is prepared from paraffin wax or microcrystalline wax and the reaction product of an organic polyisocyanate and a terpene alcohol. Preferably there is added an ethylene-vinyl acetate copolymer.

3,463,754

# COATED FOOD AND BEVERAGE CANS, LIDS AND CLOSURES AND COATINGS AND PROCESSES THEREFOR

Lawrence Nusser, Cleveland, Ohio, and Adrian J. Good, Warsaw, Ind., assignors to SCM Corporation, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 858,819, Nov. 30, 1959. This application July 6, 1964, Ser. No. 381,613

Int. Cl. C09d 7/00; C08g 39/10; A23b 1/00  
U.S. Cl. 260—30.4 28 Claims

1. Coating compositions adapted for application to the interior of sanitary cans to provide adherent coatings resistant to elevated temperature pasteurizing treatments comprising a solvent medium comprising at least 75% by weight of liquid mononuclear aromatic hydrocarbon solvent and having dissolved therein at least 18% by weight of resin solids constituted by a mixture of copolymer components A and B in a weight ratio of copolymer component A to copolymer component B of from 98/2 to 25/75, copolymer component A being aromatic hydrocarbon-soluble copolymer of 55-75% of vinyl chloride with the balance of the copolymer consisting essentially of di-saturated hydrocarbon di-ester of acid selected from the group consisting of maleic, fumaric and chloromaleic acids and mixtures thereof, said diesters containing 6-24 carbon atoms and said copolymer component A being characterized by complete solubility in toluene at 25% solids and by a relative viscosity measured at 20° C. in 1% cyclohexanone of from 1.3-1.7, and copolymer component B being aromatic hydrocarbon-soluble copolymer of 55-75% of vinyl chloride with 14-35% of di-saturated hydrocarbon di-ester of acid selected from the group consisting of maleic, fumaric and chloromaleic acids and mixtures thereof, said di-esters containing 6-24 carbon atoms and from 5-10% of monohydrogen mono-saturated hydrocarbon ester of acid selected from the group consisting of maleic, fumaric and chloromaleic acids and mixtures thereof, said monoesters containing 5-14 carbon atoms and said copolymer component B being characterized by complete solubility in a 90/10 mixture of toluene and methyl ethyl ketone at 25% solids and by a relative viscosity measured at 20° C. in 1% solution in cyclohexanone of from 1.2-1.6.



3,463,755

**BLACK MASTERBATCHING BUTYL RUBBER**

Robert A. Forrester, Houston, and Kerwyn L. Pietsch, Baytown, Tex., assignors, by mesne assignments, to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed Dec. 31, 1962, Ser. No. 248,239

Int. Cl. C08f 45/06

U.S. Cl. 260—41.5

1 Claim

A method of preparing a readily-processable mixture of carbon black and a synthetic rubber-like polymer which is a copolymerization product of a major proportion of isobutylene and a minor proportion of isoprene which comprises: preparing the polymer in the form of a water-bearing crumb; mixing the water-bearing crumb with an organic rubber solvent characterized by the property of forming a separate phase when mixed with water and allowed to stand; limiting the organic rubber solvent added to said water-bearing crumb to an amount which is able to swell but not completely dissolve the polymer; mixing the mixture of water-bearing crumb and rubber solvent with an aqueous carbon black slurry in sufficient amount to provide in the resultant mixture a solvent-to-water ratio in the range of about 50/50 to about 75/25 by weight; permitting the last-mentioned mixture to stratify into a carbon black and polymer-bearing organic solvent phase and a substantially clear aqueous phase; separating the phases; and treating the solvent phase to obtain a dry, homogeneous carbon black-polymer mixture.

3,463,756

**VINYL CHLORIDE RESINS STABILIZED WITH ZINC OXIDE AND AN ORGANIC COMPOUND**

Robert Charnier and Francois Muller, Saint-Auban, France, assignors to Produits Chimiques Pechiney-Saint-Gobain, Neuilly-sur-Seine, France

No Drawing. Filed Feb. 16, 1967, Ser. No. 616,468

Claims priority, application France, Feb. 22, 1966, 50,607

Int. Cl. C08f 45/56, 45/60

U.S. Cl. 260—45.75

5 Claims

This invention is addressed to the stabilization of vinyl chloride polymers and copolymers to heat and light by the combination to include a stabilization system formulated of zinc oxide and an organic compound of the type urea, thiourea, biurea and biuret in amounts within the range of 0.1% to 2% by weight.

3,463,757

**PRODUCTION OF FIBROUS POLYOXYMETHYLENE**

Erich Bader, Hanau am Main, and Wolfgang Sibenborn, Steinheim am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed May 31, 1967, Ser. No. 642,346

Claims priority, application Germany, June 10, 1966, D 50,287

Int. Cl. C08g 1/04

U.S. Cl. 260—67

5 Claims

Production of morphologically homogeneous fibrous polyoxymethylene by homogeneous mixture of a small but effective amount of a cationic catalyst with molten trioxane, quenching the thus obtained mixture to a temperature below the melting point of trioxane to effect complete crystallization of the trioxane before any noticeable polymerization has initiated and then polymerizing the thus crystallized catalyst containing trioxane at a temperature below its melting point, for instance, between +25 and 62° C.

**HYDROLYSIS RESISTANT POLYESTER-URETHANES**

Floyd D. Stewart, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 19, 1965, Ser. No. 508,855

Int. Cl. C08g 22/04

U.S. Cl. 260—75

1 Claim

Linear polyesterurethane polymers are found to have higher molecular weights and greatly improved resistance to water hydrolysis when they are made from polyester having an acid number of zero.

3,463,759

**METHOD FOR THE PREPARATION OF RUBBER-LIKE ELASTIC URETHANE POLYMERS**

Hans A. Peters, Stieglitzstrasse 20, 6078 Neu-Isenburg, Germany

No Drawing. Filed Dec. 7, 1965, Ser. No. 512,242

Claims priority, application Germany, Dec. 14, 1964, Z 11,231

Int. Cl. C08g 22/04

U.S. Cl. 260—75

7 Claims

Rubberlike elastic polymers containing urethane groups and which are capable of formation from solution, are prepared by reacting an isocyanate-modified polyhydroxy compound containing at least two terminal isocyanate groups with a diamine bifunctional chain-extending and cross-linking agent in the presence of ammonia comprising from about 0.01 to 0.7 mol per mol of diamine.

3,463,760

**METHOD FOR COOLING MOLTEN POLYESTER PREPOLYMER**

Kenneth Thomas Barkey, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 1, 1966, Ser. No. 598,196

Int. Cl. C08g 17/003

U.S. Cl. 260—75

7 Claims

In the preparation of polyester prepolymers for subsequent "solid phase" polymerization (for example, in a heated fluidized bed) it has been found that by using a special method of cooling molten prepolymer, better reactivity in the subsequent solid phase polymerization reaction can be obtained. This special cooling method involves the initial spraying of water droplets under controlled conditions directly onto the top surface of molten prepolymer in order to effect controlled crystallization of the prepolymer at such surface.

3,463,761

**POLYURETHANES OF FLUORINE CONTAINING POLYCARBONATES**

Floyd D. Trischler and Jerome Hollander, San Diego, Calif., assignors to Whittaker Corporation, Los Angeles, Calif., a corporation of California

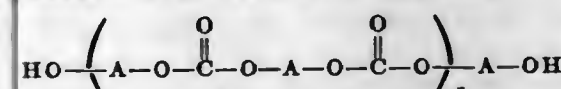
No Drawing. Filed Dec. 30, 1966, Ser. No. 606,027

Int. Cl. C08g 22/10

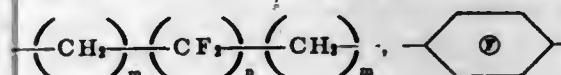
U.S. Cl. 260—77.5

10 Claims

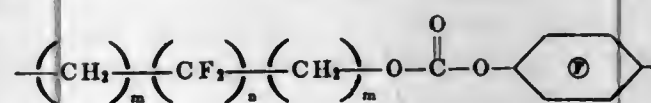
The polyurethane polymer prepared by reacting a hydroxy-terminated carbonate of the formula



wherein A is selected from the group consisting of



and



wherein  $m$  is an integer from 1 to 5,  $n$  is an integer from 1 to 10, and  $x$  is an integer from 1 to 500, with an organic diisocyanate of the formula



wherein  $\text{A}'$  is a divalent organic group.

3,463,762

**POLYURETHANES FROM FLUOROALKYL PROPYLENEGLYCOL POLYETHERS**

Floyd D. Trischler, San Diego, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California

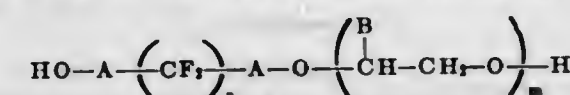
No Drawing. Filed Dec. 30, 1966, Ser. No. 606,036

Int. Cl. C08g 22/14

U.S. Cl. 260—77.5

11 Claims

This patent describes highly stable polyurethane polymers prepared by reacting a polyether having the formula:



wherein A is an alkylene group, B is a fluorine-containing alkyl group,  $n$  is an integer from 1 to about 10 and  $m$  is an integer from 1 to about 200, with a diisocyanate having the formula:



wherein  $\text{A}'$  is a divalent organic group. Compounded stocks of these polymers may be shaped and cured in conventional equipment used in the rubber industry. The solutions are dispersed gels prepared from the polymers of this invention and may be used for forming supported or unsupported films for coating fabrics or solid surfaces, and for forming adhesive bonds between a wide variety of plastics, elastomers, fabrics, metals, wood, leather, ceramics and the like.

3,463,763

**PROCESS FOR REACTIVATING POLYAMIDE RESIN USED IN DIBITTERING CITRUS JUICES**

Francis P. Griffiths, Weslaco, Tex., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Oct. 22, 1963, Ser. No. 318,128. Divided and this application June 2, 1967, Ser. No. 655,701

Int. Cl. B01d 15/06

U.S. Cl. 260—78

2 Claims

A process is provided for reactivating the resins, polyhexamethylene adipamide and polyvinylpyrrolidone, which have absorbed thereon the bitter ingredients removed as a result of the resin having been used in the debittering of citrus juice. The process comprises washing the resin in boiling water, further washing it in ethyl alcohol or a similar solvent, and then drying the washed resin at a temperature of about from 40° to 80° C.

3,463,764

**PROCESS FOR PREPARING COPOLYMERS**

John Joseph Hopwood, Glen Waverley, Victoria, and David Jankiel Wiuka, East St. Kilda, Victoria, Australia, assignors to Balm Paints Limited, Melbourne, Victoria, Australia, a company of Australia

No Drawing. Filed Oct. 4, 1966, Ser. No. 584,103

Claims priority, application Australia, Oct. 7, 1965, 65,010/65

Int. Cl. C08f 19/02

U.S. Cl. 260—78.5

20 Claims

A process which comprises copolymerizing at least one derivative of a mono-ethylenically unsaturated dicarboxylic compound with one or more copolymerizable ethylenically unsaturated co-mers, with which it has a strong tendency to yield alternating copolymers, characterized in that the copolymerization is carried out in

solution in the presence of a dipolar aprotic solvent, thereby producing a homogeneous copolymer comprising a substantially lower proportion of co-mer 1 than obtained in the absence of said dipolar aprotic solvent.

3,463,765

**VINYL CHLORIDE POLYMER COMPOSITIONS**

James A. Cote, Arlington Heights, Ill., and Thomas E. Ferington, Sandy Spring, and Razmik S. Gregorian, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Dec. 21, 1967, Ser. No. 692,297

Int. Cl. C08f 47/12, 45/00, 29/18

U.S. Cl. 260—85.5

4 Claims

This invention relates to improving the orientation and shrink characteristics of polyvinyl chloride homopolymers and copolymers by adding to the polymeric material a minor amount, 0.1 to 25% by weight of the polymeric material of an additive selected from the group consisting of nitrilotriacetic acid, nitrilotriacetonitrile and iminodiacetic acid dialkyl esters.

3,463,766

**PROCESS FOR PREPARING 1,4 CIS POLYBUTADIENE USING  $\text{AlBr}_3$ , AN ALUMINUM MONOHYDRIDE AND A COBALT COMPOUND**

Alessandro Mazzei, Gabriele Lugli, and Walter Marconi, San Donato Milanese, Italy, assignors to Snam S.p.A., Milan, Italy, a company of Italy

No Drawing. Filed Dec. 2, 1964, Ser. No. 415,498

Claims priority, application Italy, Dec. 9, 1963, 25,138/63

Int. Cl. C08d 1/14, 3/08

U.S. Cl. 260—94.3

5 Claims

1,4 cis polybutadiene is prepared by contacting butadiene with a multicomponent catalyst consisting of (1) a cobalt compound, (2) an aluminum bromide, and (3) an aluminum monohydride of the general formula  $\text{HA}1\text{XY}2\text{Z}$  where X is a halogen, Y is a halogen or a residue of a secondary amine and Z is a Lewis base, the Z compound not being present if Y is a residue of a secondary amine, the molar ratio between the monohydride and the halide being between 1.1 and 1.6, the molar ratio between the monohydride and the cobalt compound is higher than 100.

3,463,767

**PROCESS FOR EMULSIFYING HIGH MOLECULAR WEIGHT POLYETHYLENE**

Richard W. Bush, Laurel, and Thomas R. Marrero, Ellicott City, Md., assignors, by mesne assignments, to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation of application Ser. No. 513,556, Dec. 13, 1965. This application Dec. 4, 1967, Ser. No. 687,906

Int. Cl. C08f 47/16, 29/04

U.S. Cl. 260—94.9

1 Claim

Oxidized polyethylene having improved emulsifiability, particularly in the wax-to-water technique of emulsification, may be prepared by oxidizing polyethylene in particulate form in the presence of  $10^{-3}$  to  $10^{-2}\%$ , by weight based on the polyethylene, of cobalt or manganese as a carboxylate salt.

3,463,768

**METHOD OF REACTING ROSIN WITH FORMALDEHYDE**

Edward Strazdins, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 27, 1966, Ser. No. 589,851

Int. Cl. C09f 1/04

U.S. Cl. 260—97

6 Claims

A rosin is reacted with a minor amount of formaldehyde at 130° C–200° C. in the absence of an acid catalyst,



an acid dehydration catalyst is added to the rosin, and the resulting mixture is maintained at 150–220° C. until evolution of water has subsequently ceased. The rosin employed may be a fortified rosin, or the rosin may be an unfortified rosin and may be reacted with a fortifying agent during the steps described.

3,463,769

# **DIEPOXIDE FROM LEVOPIMARIC ACID TRANSANNULAR PEROXIDE**

Walter H. Schuller and Ray V. Lawrence, Lake City, Fla., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Apr. 2, 1964, Ser. No. 356,987

Int. Cl. C09f 1/04; C07d 1/10

U.S. Cl. 260—99

1 Claim

1. The product prepared by the process of thermally rearranging the mixed transannular peroxides resulting from the photosensitized oxidation of pine gum to give the corresponding diepoxides which process comprises the following operations performed in sequence:

- heating the photosensitized oxidized pine gum in an inert organic solvent with stirring to a temperature of about 110°–265° C.
- continuing the heating at said temperature until the peroxide content is reduced to essentially zero,
- removing the solvent by stripping under reduced pressure, and
- recovering the thermally rearranged products by drying in vacuo.

3,463,770

# **PREPARATION OF PROTEIN CONCENTRATES BY EXTRACTING GLUTEN AND WATER-SOLUBLE PROTEINS FROM A SLURRY OF WHEAT FLOUR, WATER, AND EDIBLE GLYCERIDE OIL**

David A. Fellers, El Cerrito, Calif., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed June 8, 1966, Ser. No. 556,823

Int. Cl. A23j 1/12; C07g 7/00

U.S. Cl. 260—112

3 Claims

Protein concentrates are prepared from wheat flour by the following technique: The flour is slurried with water and an edible gluten-modified agent such as corn oil. The slurry is then centrifuged, yielding a supernatant liquid which contains essentially all the protein from the flour. This liquid may be dried and used as a protein supplement in bread and other foods.

3,463,771

# **CHROMIUM OR COBALT COMPLEXES OF MONO-AZO DYESTUFFS CONTAINING A TRIHALO-PYRIMIDYL GROUP**

Jakob Benz, Oberwil, and August Schweizer, MuttENZ, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz AG), Basel, Switzerland

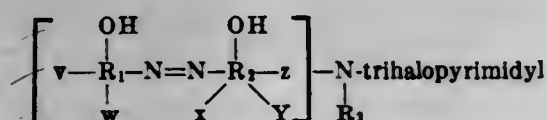
No Drawing. Continuation-in-part of application Ser. No. 588,630, Oct. 19, 1966. This application Aug. 9, 1967, Ser. No. 659,309

Int. Cl. C09b 29/36

U.S. Cl. 260—146

6 Claims

2:1-chromium and 2:1-cobalt complexes of a monoazo dyestuff of the formula



wherein R<sub>1</sub> is a radical of the benzene or naphthalene series,

R<sub>2</sub> is a radical of the naphthalene or 1-phenyl-3-methyl-5-pyrazolone series,

R<sub>3</sub> is hydrogen or lower alkyl,

z is chlorine, —SO<sub>3</sub>H, —SO<sub>2</sub>—NH<sub>2</sub>, or

—SO<sub>2</sub>—NH—CH<sub>3</sub>,

w is hydrogen, nitro, —SO<sub>3</sub>H or acetylamino,

x is hydrogen or chlorine,

y is hydrogen, chlorine, methyl or acetylamino,

z is hydrogen, —SO<sub>3</sub>H or —SO<sub>2</sub>NH<sub>2</sub>, and halo is Cl or Br,

the —OH groups being bound in positions vicinal to the azo group, the monoazo dyestuff of Formula I containing 1 or 2 sulfonic acid groups, are suitable for dyeing, padding and printing a wide variety of fibers.

3,463,772

# **SYNTHESIS OF 3'→5' LINKED ARABINO-OLIGONUCLEOTIDES**

Joseph Nagyvary, Omaha, Neb., assignor to the United States of America as represented by the Secretary of Health, Education, and Welfare

No Drawing. Filed Nov. 21, 1967, Ser. No. 684,609

Int. Cl. C07d 51/50

U.S. Cl. 260—211.5

4 Claims

3'→5' linked arabino-oligonucleotides are prepared by a method that eliminates the utilization of the scarce arabino-nucleoside as a starting material. The triesters of the pyrimidine nucleoside 2',3'-cyclic phosphates can completely undergo a rearrangement to diesters containing O<sub>2</sub>,2'-cyclonucleosides. Alkaline hydrolysis of these labile intermediates produces the desired arabino-nucleosides. Oligonucleotides consisting of a homologous sequence of cytosine-arabinoside phosphates and of uracil-arabinoside phosphates, respectively, and ending in various nucleosides such as thymidine and uridine were obtained in about 50% yield based on the nucleoside 2',3'-cyclic phosphate.

3,463,773

# **CELLULOSE ESTER MOLDED PRODUCTS AND METHODS OF MANUFACTURING SAME**

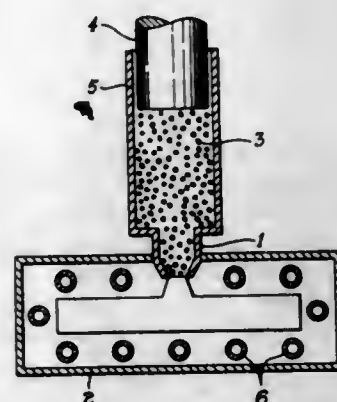
Robert F. Williams, Jr., and George P. Calloway, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, New York, N.Y., a corporation of New Jersey

Continuation of application Ser. No. 522,641, Jan. 24, 1966, which is a continuation-in-part of applications Ser. No. 159,235, Dec. 14, 1961, and Ser. No. 213,503, July 30, 1962. This application July 18, 1967, Ser. No. 654,276

Int. Cl. B29c 25/00

U.S. Cl. 260—227

15 Claims



Molding certain cellulose triesters in a carefully controlled manner in order to make the molded articles crystalline in nature has been found to substantially increase the heat distortion temperature of the molded products.

Both the identity of the cellulosic raw material and the manufacturing process are critical elements in the successful practice of this invention. The claimed processes involve holding the article for a period of time (after it is formed) at a temperature approaching, but nevertheless below, the melting point of the cellulosic material.

3,463,774

# **NOVEL 4,1-BENZOTHAZEPIN-2-(1H)-ONES AND 4,1-BENZOTHAZEPINES**

Wilhelm Wenner, Upper Montclair, and Milan Radoje Uskokovic, Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Original application Mar. 21, 1966, Ser. No. 535,722, now Patent No. 3,400,119, dated Sept. 3, 1968. Divided and this application May 10, 1968, Ser. No. 738,758

Int. Cl. C07d 93/40; A61k 27/00

U.S. Cl. 260—239.3

15 Claims

4,1-benzothiazepin-2(1H)-ones and 4,1-benzothiazepines as intermediates useful in the preparation of pharmacologically active 4,1-benzothiazepin-2(1H)-ones and 4,1-benzothiazepines having a basic side chain on the 1 nitrogen atom. These compounds having a basic side chain on the 1 nitrogen atom are useful as antidepressants.

3,463,775

# **17α-METHYL-RETROSTEROIDS**

Arthur Boller, Binningen, Andor Furst, Basel, and Marcel Muller, Frenkendorf, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed May 3, 1967, Ser. No. 635,691

Claims priority, application Switzerland, May 17, 1966, 7,114/66

Int. Cl. C07c 169/34; A61k 17/06

U.S. Cl. 260—239.55

2 Claims

17α-methyl-9β,10α-pregn-4-ene-3,20-dione is prepared. This compound is useful as a progestational agent. It is gestagenically active and induces the formation of deciduum.

3,463,776

# **STEROIDAL 6-CYCLOPROPYL-4-EN-3-ONES AND PROCESS FOR PREPARING SAME**

Michael George Lester, Oliver Stephenson, and Vladimir Petrow, London, England, assignors to The British Drug Houses Limited

No Drawing. Filed Sept. 9, 1966, Ser. No. 578,154

Claims priority, application Great Britain, Sept. 23, 1965, 40,556/65

Int. Cl. C07c 173/00, 169/36; A61k 17/00

U.S. Cl. 260—239.57

3 Claims

Steroidal 6-cyclopropyl-4-en-3-ones having useful biological properties are prepared by reacting steroidal 6-methylene-4-en-3-ones with a dialkyl or diarylsulphoxonium methylide in an anhydrous unreactive solvent medium.

3,463,777

# **ORTHOESTER PROCESS FOR PRODUCING 1,4,5,6-TETRAHYDRO-AS-TRIAZINE**

Donald L. Trepanier, Indianapolis, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 5, 1966, Ser. No. 598,947

Int. Cl. C07d 55/10; A61k 27/00

U.S. Cl. 260—248

6 Claims

1,4,5,6-tetrahydro-as-triazines, such as 3-ethyl-1,4,5,6-tetrahydro-as-triazine and 1,3,5-trimethyl-1,4,5,6-tetrahydro-as-triazine, are prepared by the reaction of an orthoester with a β-aminohydrazine. The 1,4,5,6-tetrahydro-as-triazine products have pharmacological activity. For example, 1,3,5-trimethyl-1,4,5,6-tetrahydro-as-triazine has analgesic activity as indicated by its antagonism of hydrochloric acid induced writhing in mice.

3,463,778

# **SUBSTITUTED 2,3-DIHYDRO-4(1H)-QUINAZOLINONES**

Harry L. Yale, New Brunswick, N.J., assignor to E. R. Squibb & Sons Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 13, 1967, Ser. No. 608,989

Int. Cl. C07d 51/48; A61k 27/00; A01n 9/22

U.S. Cl. 260—251

2 Claims

This invention relates to novel substituted 2,3-dihydro-4(1H)-quinazolinones, which have shown activity in inhibiting the multiplication of Earle's L cell line of mouse fibro blasts growing in suspension.

3,463,779

# **ESTERS OF 6,7-DISUBSTITUTED-4-HYDROXY-QUINOLINE-3-CARBOXYLIC ACID**

Raymond Alexander Bowle, Mervyn Stuart Grant, and William Glynn Moss Jones, Macclesfield, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed June 23, 1967, Ser. No. 648,245

Claims priority, application Great Britain, July 11, 1966, 30,974/66

Int. Cl. C07d 33/36, 33/46, 33/48

U.S. Cl. 260—287

7 Claims

The invention relates to new 4-hydroxy-quinoline-3-carboxylic esters which are substituted in the 7-position by an alkoxyalkoxy, aryloxyalkoxy or aralkoxyalkoxy substituent and may also be substituted in the 6-position by an alkyl, alkenyl or alkoxy substituent. The new quinoline derivatives are useful for the prophylactic treatment of coccidiosis in poultry.

3,463,780

# **4(2'-BETA-PYRIDYL METHYLOXYCARBONYL PHENYLAMINO)-CHLOROQUINOLINES**

André Allais, Les Lilas, France, assignor to Roussel UCLAF, Paris, France, a corporation of France

No Drawing. Filed June 25, 1968, Ser. No. 739,661

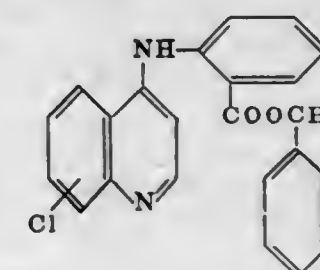
Claims priority, application France, June 28, 1967, 112,485

Int. Cl. C07d 57/00; A61k 25/00

U.S. Cl. 260—287

3 Claims

A chloroquinoline of the formula



wherein the chlorine atom is present in the molecule in a position selected from the group consisting of the 7 position and the 8 position, as well as its non toxic, pharmaceutically acceptable acid addition salts. The chloroquinolines of the invention have a very noteworthy anti-inflammatory action and a valuable analgesic action.

3,463,781

# **DEHYDROGENATION AND CYCLIZATION OF AMINES**

William Hamilton Bell and John Dewing, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Feb. 28, 1966, Ser. No. 530,338

Claims priority, application Great Britain, Mar. 19, 1965, 11,769/65; May 27, 1965, 22,587/65

Int. Cl. C07d 31/04

U.S. Cl. 260—290

11 Claims

A process for the production of pyridine or a hydrocarbyl-substituted pyridine, wherein an aliphatic, nitro-



gen-containing compound, particularly a primary or secondary amine, or an imine, containing at least five carbon atoms, is dehydrogenated and cyclized by heating with iodine in the vapor phase, in the presence of molecular oxygen and an alkali or alkaline-earth metal compound, preferably together with compounds of silver and/or rare-earth metals such as didymium, and of transition metals such as iron. An advantage of the process is that it permits the effective use of relatively small quantities of iodine.

3,463,782

**7,10-ETHANO-1-THIA-4,7-DIAZASPIRO[4.5]DECANE**  
Samuel Elkin and Warren B. Shapiro, Philadelphia, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Department of Health, Education, and Welfare  
No Drawing. Filed Feb. 6, 1967, Ser. No. 614,004  
Int. Cl. C07d 99/10; A61k 27/00

U.S. Cl. 260—293.4 2 Claims  
The compound 7,10-ethano-1-thia-4,7-diazaspiro [4.5] decane and its hydrochloride salt is synthesized. The compound displays vasomotor, antimalarial (*Plasmodium berghei*) activity, and oxytocic effects, and has an LD<sub>50</sub> in mice of 210 mg./kg.

3,463,783

**PROCESS FOR THE CONVERSION OF MERCAPTO-BENZTHIAZOLE TO MERCAPTOTHIAZYL**  
Richard Strauss, Lexington, and Walter Beck, Bedford, Mass., assignors to National Polychemicals, Inc., Wilmington, Mass., a corporation of Massachusetts  
No Drawing. Filed Feb. 24, 1966, Ser. No. 529,641  
Int. Cl. C07d 91/48

U.S. Cl. 260—306.5 7 Claims  
Dithiazyl disulfides are prepared from the corresponding mercaptothiazole by reacting an aqueous mixture containing the mercaptothiazole with an aqueous solution containing an oxidizing amount of a mono-halogenated urea mixture stabilized with urea.

3,463,784

**THIAZOLIDINE DERIVATIVE AND PROCESS THEREFOR**  
Peter Doyle, Geoffrey Swain, and Alastair Graham Wylie, Macclesfield, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain  
No Drawing. Filed Nov. 10, 1966, Ser. No. 593,281  
Claims priority, application Great Britain, Dec. 10, 1965, 53,525/65; Mar. 10, 1966, 10,545/66  
Int. Cl. C07d 91/18; A61k 27/00

U.S. Cl. 260—306.7 2 Claims  
The preparation of the salt of p-toluene-sulphonic acid with 2-imino-3-(2-hydroxy-2-phenylethyl) thiazolidine is described by reacting thiourea or thiocyanic acid with N-(2-bromoethyl)-N-(2-hydroxy-2-phenylethyl) ammonium bromide, or an analogue, under reflux in a lower alkanol.

3,463,785

**S-THIOCYANOMETHYL COMPOUNDS OF 2-MERCAPTOTHIAZOLES, 2-MERCAPTOTHIAZOLES, AND 2-MERCAPTOTHIAZIMIDAZOLES**

Stanley J. Buckman, John D. Pera, and Fred W. Rath, Memphis, Tenn., assignors to Buckman Laboratories, Inc., Memphis, Tenn., a corporation of Tennessee  
No Drawing. Filed May 25, 1966, Ser. No. 552,693  
Int. Cl. C07d 91/48, 85/48, 49/38

U.S. Cl. 260—306.6 7 Claims  
S-thiocyanomethyl compounds of 2-mercaptobenzothiazoles, 2-mercaptobenzoxazoles, and 2-mercaptobenzimidazoles prepared by reacting a metal salt of 2-mercaptobenzothiazole, 2-mercaptobenzoxazole, 2-mercaptobenz-

imidazole or substituted compounds thereof with chloromethylthiocyanate in an alcoholic solution are useful as fungicides.

3,463,786

**METHOD OF RESOLVING dl 6-PHENYL-2,3,5,6-TETRAHYDROIMIDAZO[2,1-b]-THIAZOLE AND NOVEL COMPOUNDS RESULTING THEREFROM**  
Milton Walker Bullock, Hopewell, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine  
No Drawing. Continuation-in-part of application Ser. No. 554,307, June 1, 1966. This application Dec. 19, 1967, Ser. No. 691,710  
Int. Cl. C07d 91/32; A61k 27/00

U.S. Cl. 260—306.7 11 Claims  
The preparation and isolation of the optically active chemical compounds 1(-)-6-phenyl-2,3,5,6-tetrahydroimidazo[2,1-b]thiazole free or substantially free of contaminating dextro-isomer, and d(+)-6-phenyl-2,3,5,6-tetrahydroimidazo[2,1-b]thiazole free or substantially free of l-isomer is described. The l-isomer is superior as an anthelmintic.

3,463,787

**4-IMINO-3-PHENYL-2-OXOIMIDAZOLIDINE-1-ACETONITRILES**  
Frederick K. Kirchner, Bethlehem, and Andrew W. Zalay, Albany, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 524,829, Feb. 3, 1966. This application May 31, 1968, Ser. No. 733,232  
Int. Cl. C07d 49/30; A61k 27/00

U.S. Cl. 260—309.7 3 Claims  
4-imino-3-phenyl-2-oxoimidazolidine-1-acetonitriles having utility as antiinflammatory agents are obtained by interacting iminodiacetonitrile with phenyl isocyanates.

3,463,788

**CONJUGATED ACETYLENIC KETONE AND PARASITICIDE THEREOF**  
Roland Chretien, Paris, and Georges Wetroff, Le Thillay, France, assignors to Produits Chimiques Pechiney-Saint-Gobain, Neuilly-sur-Seine, France  
No Drawing. Filed Mar. 16, 1966, Ser. No. 534,658  
Claims priority, application France, Mar. 18, 1965, 9,752  
Int. Cl. C07d 63/12, 13/00, 5/16

U.S. Cl. 260—332.3 4 Claims  
A conjugated acetylenic ketone having the general formula R-SO-C≡C-C≡C-R' in which R and R' is a heterocycle having a pentagonal, hexagonal or condensed nuclei heterocyclic residue containing a heteroatom of oxygen, sulphur or nitrogen and in which R' represents in addition an organic group such as methyl, ethyl, phenyl, indenyl, naphthyl and anthracenyl and a parasiticide formed thereof.

3,463,789

**GLYCIDYL OXETYL ETHERS**  
John A. Wojtowicz, East Haven, Conn., and Joel A. Zaslowsky, Baltimore, Md., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia  
No Drawing. Filed June 2, 1966, Ser. No. 554,683  
Int. Cl. C07d 1/00, 3/00, 21/00

U.S. Cl. 260—333 4 Claims  
Allyloxyoxetanes are hypochlorinated by reaction with chlorine, bromine or iodine in the presence of water to yield halogenated oxetane compounds. In turn, the novel oxetane halohydrins are dehydrohalogenated in the presence of aqueous alkali metal hydroxide to give glycidyl oxetyl ethers which are useful as stabilizers for halogen-containing resins, such as vinyl chloride.

3,463,790

**1,6-DIAMINO-2,3,4,5-DI-O-BENZYLIDINE-1,6-DIDEOXYGALACTITOL**

William A. Black, Falkirk, Eric T. Dewar, Dalkeith, and David Rutherford, Edinburgh, Scotland, assignors to United States of America as represented by the Secretary of Agriculture  
No Drawing. Application Sept. 20, 1962, Ser. No. 225,168, now Patent No. 3,225,012, dated Dec. 21, 1965, which is a continuation-in-part of application Ser. No. 140,618, Sept. 25, 1961. Divided and this application June 16, 1965, Ser. No. 527,995  
Int. Cl. C07d 13/04

U.S. Cl. 260—340.9 1 Claim  
1,6-diamino-2,3,4,5-di-O-benzylidene-1,6-dideoxygalactitol is reacted with sebacoyl dichloride to produce the corresponding nylon-type polyamide containing a carbohydrate residue. Also disclosed are other polyamides which contain carbohydrate residues. These polyamides have the advantages of not darkening substantially during polymerization and do not develop brittleness that prevent cold drawing of fibers. Some of the polyamides are optically active, rendering them useful as light filters.

3,463,791

**7-CHLORO-4-DEDIMETHYLAMINO-12,12a-SECO-TETRACYCLINE-12-OIC ACID-6,12-LACTONES**  
Saul L. Neldelman, Lawrence Township, N.J., Roland W. Kinney, Berwyn, Pa., and Frank L. Welsenborn, Somerset, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 290,173, June 24, 1963. This application Oct. 23, 1965, Ser. No. 504,083  
Int. Cl. C07d 5/06; A61k 21/00; C07c 103/19

U.S. Cl. 260—343.6 3 Claims  
This invention relates to lactone derivatives of 7-chlorotetracycline and 7-chloro-6-demethyltetracycline. The novel compounds, which possess ultraviolet absorption properties, can be prepared by subjecting the latter tetracyclines to the action of the enzyme peroxidase in the presence of dihydroxyfumaric acid.

3,463,792

**SYNTHESIS OF STEROIDS**  
Seymour D. Levine, North Brunswick, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware  
No Drawing. Original application Oct. 1, 1965, Ser. No. 492,286, now Patent No. 3,367,965, dated Feb. 6, 1968. Divided and this application Sept. 1, 1967, Ser. No. 664,902  
Int. Cl. C07c 171/06; A61k 17/06

U.S. Cl. 260—348 4 Claims  
6 $\alpha$ , 7 $\alpha$ -oxido-17 $\alpha$ -substituted- $\Delta^3$ -A-norandrostene-2-one-17 $\beta$ -ols, wherein the 17-substituent is vinyl, ethynyl, halo substituted vinyl, trifluoromethyl substituted vinyl, halo substituted ethynyl or trifluoromethyl substituted ethynyl, are prepared by treating a 17 $\alpha$ -substituted-5 $\beta$ -cyano-A-norandrostane-17 $\beta$ -ol-2-one with a base to yield the corresponding  $\Delta^3$ -androstene derivative, treating the latter with a halogenating agent to yield the corresponding 7 $\alpha$ -halo derivative, then with a tertiary base to yield the corresponding 6-dehydro derivative, and finally with a peracid to give the 6 $\alpha$ ,7 $\alpha$ -oxido derivative. The 6 $\alpha$ ,7 $\alpha$ -oxido compounds are useful as intermediates, which upon treatment with a hydrohalic acid yield the corresponding 6 $\beta$ -halo-7 $\alpha$ -hydroxy derivative, which yield upon heating in an acid solution the corresponding 6-halo-6-dehydro derivatives, compounds that possess anti-androgenic activity.

3,463,793

**PROCESS FOR THE PREPARATION OF 9 $\alpha$ -HALOGENO-11 $\beta$ -SUBSTITUTED STEROIDS**

Hershel L. Herzog, Glen Ridge, William H. Gebert, Morris Plains, Nathaniel M. Murrill, Orange, and Raymond G. Grocela, Wayne, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey  
No Drawing. Filed May 23, 1966, Ser. No. 551,926  
Int. Cl. C07c 167/08, 169/34, 169/30

U.S. Cl. 260—349 15 Claims  
A process for introducing nucleophilic anions into the 11 $\beta$ -position of steroids comprises reacting a 9 $\alpha$ -halogeno-11 $\beta$ -X-steroid, X being a leaving group (preferably a halogeno or sulfonyloxy radical), with a nucleophile, YZ, Y being a strong nucleophilic anion (preferably anion (preferably hydroxyl, azide or halide) and Z being a cation, whereby is effected replacement of said 11 $\beta$ -X group by said anion, Y, and there is formed a 9 $\alpha$ -halogeno-11 $\beta$ -Y-steroid. Preferred embodiments of this process are those wherein the nucleophilic reagent, YZ, is water and the 11 $\beta$ -X leaving group is either 11 $\beta$ -chloro- or 11 $\beta$ -tosyloxy- whereby are obtained 9 $\alpha$ -halogeno-11 $\beta$ -hydroxy-steroids. This process is useful for preparing new classes of compounds, e.g. 9 $\alpha$ -halogeno-11 $\beta$ -azido steroids, and in preparing known, pharmacologically active steroids, e.g. hydrocortisone and prednisolone.

3,463,794

**2,5-DICHLORO-3,6-DIHYDRAZINOBENZOQUINONES AND DERIVATIVES THEREOF**

Robert C. Slagel, Burnsville, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky  
No Drawing. Filed Feb. 25, 1966, Ser. No. 529,927  
Int. Cl. C07c 97/08, 49/64

U.S. Cl. 260—396 4 Claims  
Dichloro-dihydrizinobenzoquinones and the addition salts thereof with a strong acid having utility as resin intermediates and biocidal agents, respectively, as well as a process for the preparation of such benzoquinones involving the reaction of chloranil with a hydrazine, are disclosed.

3,463,795

**UNSATURATED CYCLOHEPTANO PERHYDRO PHENANTRENES AND THEIR PREPARATION**

Shalom Sarel, Yehuda Yanuka, and Yehuda Shalom, all % School of Pharmacy in conjunction with The Hebrew University, P.O. Box 1172, Hadassah Medical School, Jerusalem, Israel  
No Drawing. Continuation-in-part of applications, Ser. Nos. 385,781, 385,760 and 415,215, all dated July 28, 1964. This application Jan. 13, 1967, Ser. No. 609,006  
Int. Cl. C07c 169/52, 173/00

U.S. Cl. 260—397.1 21 Claims  
The present disclosure relates to the production of intermediates used for producing cardio-active compounds such as 14-desoxy-digitoxigenin. The intermediates include unsaturated carboxylic acids derived from 17-alkyl perhydro cyclopentano phenantrene in which the double bond is in the  $\alpha$ ,  $\beta$ -position to the carboxylic group. These compounds are formed from the saturated compounds, by way of corresponding bromo derivatives.

3,463,796

**17 $\alpha$ -ALKA-1',3'-DIYNYL STEROIDS AND PROCESS FOR PREPARING SAME**

Peter Feather and Vladimir Petrow, London, England, assignors to The British Drug House Limited  
No Drawing. Filed June 23, 1966, Ser. No. 559,737  
Claims priority, application Great Britain, July 2, 1965, 28,063/65  
Int. Cl. C07c 167/20, 169/10; A61k 17/00

U.S. Cl. 260—397.4 20 Claims  
This invention is for improvements in or relating to



organic compounds and has particular reference to a new class of steroidal materials, namely the 17 $\alpha$ -alka-1',3'-diynyl derivatives of perhydrocyclopentenophenanthrene and to a process for their preparation. The new compounds have utility for the control of fertility and other conditions of the reproductive system. They are produced by alkylating metal derivatives of the corresponding 17 $\alpha$ -butadiynyl steroids.

3,463,797

# **SUBSTITUTED - 17 $\alpha$ - BUTA - 1',3'-DIYNYL-17 $\beta$ -HYDROXY(17 $\beta$ -ALKOXY)-STERIODS AND PROCESS FOR PREPARATION THEREOF**

Peter Feather and Vladimir Petrow, London, England, assignors to The British Drug House Limited  
No Drawing. Filed Jan. 27, 1967, Ser. No. 612,081  
Claims priority, application Great Britain, Feb. 3, 1966, 4,766/66

Int. Cl. C07c 169/08, 169/20; A61k 17/00

U.S. Cl. 260—397.4 22 Claims  
17 $\alpha$ -buta-1',3'-diynyl-17 $\beta$ -hydroxy (17 $\beta$ -alkoxy)-steroids in which the terminal hydrogen atom of the butadiynyl group has been replaced by an alkyl, hydroxyalkyl, alkenyl, alkynyl or aryl group are prepared by treating an ethynyl compound R''—C $\equiv$ CH with a cuprous salt and a bromoethynyl compound R'''—C $\equiv$ CBr where one of R'' and R''' represents a steroidal moiety with the ethynyl or bromoethynyl group attached at C-17 and the other of R'' and R''' represents the alkyl, hydroxyalkyl, alkenyl, alkynyl or aryl group.

3,463,798

# **COMPOUNDS WITH ANTI-HORMONAL ACTIVITY WHICH ARE OF THE 4 $\alpha$ ,8 $\alpha$ ,14 $\beta$ -TRIMETHYL-18-NOR-ANDROSTANE SERIES, INCLUDING ESTERS**

Wagn Ole Godtfredsen, Vaerlose, and Welf von Daehne, Copenhagen, Denmark, assignors to Løvens Kemiske Fabrik Produktionsaktieselskab, Ballerup, Denmark, a firm of Denmark  
No Drawing. Filed Feb. 21, 1967, Ser. No. 617,478  
Claims priority, application Great Britain, Feb. 25, 1966, 8,517/66

Int. Cl. C07c 169/22, 169/20, 169/24

U.S. Cl. 260—397.45 6 Claims  
This relates to 4 $\alpha$ ,8 $\alpha$ ,14 $\beta$ -trimethyl-3R<sub>1</sub>-11R<sub>2</sub>-17R<sub>3</sub>-5 $\alpha$ ,9 $\alpha$ -or- $\beta$ ,13 $\beta$ -trihydrogen-18-nor-androstane compounds and their 3, 11 and 17 esters with monocarboxylic and dicarboxylic acids, where R<sub>1</sub> is either keto or  $\beta$ -hydroxy and R<sub>2</sub> and R<sub>3</sub> are either keto or  $\alpha$ - or O-hydroxy, together with intermediates.

The end products disclosed, including the esters, have anti-hormonal effects.

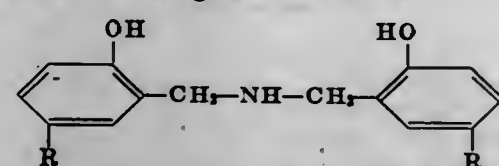
3,463,799

# **DIMETHYLAMINO - BIS - (2 - HYDROXYPHENYL) SULFONIC AND CARBOXYLIC ACID AND METAL CHELATES THEREOF**

Jeno Szava, Magdolna Sarosi, and Rosa Totos, Budapest, Hungary, assignors to Chemolimpex Magyar Vegyiaru Kulkereskedelmi Vallalat, Budapest, Hungary  
Filed June 19, 1967, Ser. No. 646,957

Int. Cl. C07f 15/02; C07c 101/72; A01n 5/00

U.S. Cl. 260—429 2 Claims  
Compounds of the general formula



wherein R is selected from the group consisting of carboxylic and sulfonic acid residues in free and in salt form, and the heavy metal complexes thereof, possess valuable properties in treating trace element deficiency disease of plants.

3,463,800

# **ORGANO ALUMINUM-FLUOROACETYLACETONATES AND PREPARATION THEREOF**

Wolfram R. Kroll, Linden, N.J., assignor to Ezzo Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 19, 1967, Ser. No. 654,340  
Int. Cl. C07f 5/06; A01n 9/24

U.S. Cl. 260—448 17 Claims  
Organo aluminum fluoroacetylacetonates are prepared by reacting aluminum alkyls with tri- or hexafluoroacetylacetonates at low temperatures. The products are useful as polymerization catalysts, reducing agents, germicides and pesticides. They are also active cocatalysts for a number of polymerization and co-polymerization systems.

3,463,801

# **RANDOM POLY-m-CARBORANYLENESILOXANE COPOLYMERS**

Stelvio Papetti and Hansjuergen A. Schroeder, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Dec. 29, 1967, Ser. No. 694,403  
Int. Cl. C07f 7/08

U.S. Cl. 260—448.2 6 Claims  
Random poly-m-carboranylenesiloxane copolymers are provided by reacting a 1,7-bis[alkoxydialkyl(or diaryl)silyl]-m-carborane with a dihalodialkyl(or diaryl)silane and a 1,7-bis[halodialkyl(or diaryl)silyl]-m-carborane in the presence of a reaction catalyst. A dihalo vinyl-containing silane compound can also be included as a co-reactant. These random poly-m-carboranylenesiloxane copolymers are mixed with a boron-oxygen-containing compound to provide adhesive forming compositions. They may also be mixed with inert fillers and cured to provide compositions useful as gaskets, o-rings, etc.

3,463,802

# **TETRAKIS PERFLUORO-ALKYL ORTHOSILICATES**

Edward S. Blake and James A. Webster, Dayton, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

Filed July 28, 1964, Ser. No. 385,647  
Int. Cl. C07f 7/04; C10m 3/46

U.S. Cl. 260—448.8 5 Claims  
Organic silicates containing partially fluorinated alkoxy groups of the formula Si[O(CH<sub>2</sub>)<sub>m</sub>(CF<sub>2</sub>)<sub>n</sub>CF<sub>3</sub>]<sub>4</sub> wherein m is a number of 3 to 11 and n is a number of 0 to 6, useful as hydraulic fluids.

3,463,803

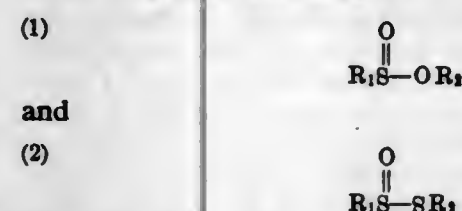
# **POLYHALOETHYL AND POLYHALOVINYL SULFINATE AND THIOSULFINATE ESTERS**

Paul C. Alchenegg, Prairie Village, Kans., assignor to Chemagro Corporation, Kansas City, Mo., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 584,104, Oct. 4, 1966. This application Oct. 28, 1966, Ser. No. 590,212

Int. Cl. C07c 143/68; A01h 9/14

U.S. Cl. 260—453 15 Claims  
Compounds are prepared having a formula selected from the group consisting of



where R<sub>1</sub> is a tri- or tetrahaloethyl or di- or trihalovinyl and R<sub>2</sub> is alkyl, mono, di or tri halogen lower alkyl, phenyl, alkylphenyl, mono, di or trihalophenyl, monohalogen monomethyl phenyl, the halogen atoms of the compound

being chlorine or bromine. The compounds are useful in killing fungi, nematodes, insects, undesired plants and are also useful as defoliants and dessicants.

3,463,804

# **PREPARATION OF $\alpha$ -CYANOACRYLIC ESTERS**

Neil Hunter Ray and Peter Doran, Northwich, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Mar. 6, 1967, Ser. No. 620,591

Claims priority, application Great Britain, Apr. 6, 1966, 15,344/66

Int. Cl. C07c 121/40

U.S. Cl. 260—465 6 Claims

Monomeric esters of  $\alpha$ -cyanoacrylic acid are prepared by heating for several hours under reflux a mixture of the corresponding ester of cyanoacetic acid, formaldehyde, anthracene and a basic catalyst in an inert, non-aqueous organic solvent. Water formed in the reaction is distilled out of the system, preferably as an azeotrope with the organic solvent and the ester is obtained in the form of its adduct with anthracene. It is displaced from the adduct by heating the latter alone or with an olefinic compound preferably maleic anhydride. Preferred reaction temperatures are 60°–100° C. and suitable basic catalysts, which are required to the extent of about 0.10 to 0.50% by weight of the reactants, are piperidine, quinoline, alkali metal hydroxides and alkoxides. Monomeric esters of  $\alpha$ -cyanoacrylic acid, particularly methyl and ethyl  $\alpha$ -cyanoacrylates, are known adhesives of outstanding value. Their anthracene adducts are stable over long periods and show no tendency for the esters in them to polymerise.

3,463,805

# **PRODUCTION OF AMINONITRILES UNDER ADIABATIC CONDITIONS**

Charles R. Morgan, Laurel, and John J. Godfrey, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed May 8, 1967, Ser. No. 636,658

Int. Cl. C07c 121/66, 121/28, 121/50

U.S. Cl. 260—465.5 8 Claims

Aminonitriles are prepared by reacting an amine, formaldehyde, and HCN in the presence of an acidic catalyst under substantially adiabatic conditions.

3,463,806

# **PROCESS FOR THE REDUCTIVE DIMERIZATION OF UNSATURATED NITRILES**

George de Winter Anderson and Denis Pemberton, Blackley, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed June 18, 1965, Ser. No. 465,148

Claims priority, application Great Britain, July 2, 1964, 27,369/64, Patent 1,069,326

Int. Cl. C07c 121/02, 121/26, 103/02

U.S. Cl. 260—465.8 7 Claims

A process for the reductive dimerization of alpha beta olefinically unsaturated nitriles, esters and amides by treating the alpha beta olefinically unsaturated compound with a medium capable of providing reactive hydrogen and an alkali metal or alkaline earth metal amalgam in the presence of a sulphonate. Acrylonitrile is an especially important starting material to make adiponitrile. Preferred sulphonates are aromatic mono-sulphonates and condensates of such sulphonates with an aliphatic aldehyde.

3,463,807

# **ALPHA-BENZOYL-OMEGA-DIALKYLAMINO ACID ESTERS**

Donald L. Trepanier, Indianapolis, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 28, 1966, Ser. No. 582,515

Int. Cl. C07c 101/34; A61k 27/00

U.S. Cl. 260—471 4 Claims  
 $\alpha$ -Benzoyl- $\omega$ -dialkylamino acid esters are prepared by the reaction of a lower alkyl ester of benzoyl acetic acid with sodium hydride and a dialkylaminoalkyl chloride. The compounds are useful as chemical intermediates, as anthelmintics, as sedatives and as anticonvulsants.

3,463,808

# **NAPHTHALENE DERIVATIVES**

Peter Anthony Bond and Ralph Howe, Macclesfield, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 30, 1964, Ser. No. 422,400

Claims priority, application Great Britain, Jan. 20, 1964, 2,437/64

Int. Cl. C07c 91/04, 91/00, 95/08

U.S. Cl. 260—479 4 Claims

There are disclosed certain 1-(2-naphthyl)-2-amino-ethanol derivatives which are  $\beta$ -adrenergic blocking agents. These derivatives carry a hydroxy or acyloxy substituent in the 5–8 position of the naphthyl radical. Pharmaceutical compositions containing these derivatives are also disclosed. Representative compounds are 1-(7-acetoxy-2-naphthyl)-2-isopropylaminoethanol, 1-(7-hydroxy-2-naphthyl)-2-isopropylaminoethanol, and the acid-addition salts thereof.

3,463,809

# **PROCESS FOR PREPARING ALKYL SULFONATE**

Richard E. Crocker, Anaheim, and Henry J. Kuenn, Lakewood, Calif., assignors to Atlantic Richfield Company, a corporation of Pennsylvania

No Drawing. Filed Sept. 27, 1965, Ser. No. 490,674

Int. Cl. C07c 139/00

U.S. Cl. 260—513 12 Claims

A process for producing alkyl sulfonates by contacting trialkyl aluminum with sulfur dioxide at temperatures of about –50° C. to about 75° C. is disclosed.

3,463,810

# **METHOD FOR SELECTIVE REDUCTION OF $\alpha,\beta$ -ETHYLENICALLY UNSATURATED CARBONYL COMPOUNDS**

Sudarshan K. Malhotra, Northboro, Douglas F. Moakley, Framingham, and Francis Johnson, Newton Lower Falls, Mass., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 23, 1967, Ser. No. 610,792

Int. Cl. C07c 45/00, 119/08

U.S. Cl. 260—534 14 Claims  
Selective reduction of  $\alpha,\beta$ -ethylenic bond in  $\alpha,\beta$ -ethylenically unsaturated carbonyl compounds by conversion to Schiff base with primary amine, followed by catalytic rearrangement and subsequent hydrolysis.

3,463,811

# **PROCESS FOR PREPARING SODIUM NITRILOTRIACETATE**

John J. Godfrey and James A. Sykes, Silver Spring, and James L. Harper and Charles R. Morgan, Laurel, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Sept. 1, 1967, Ser. No. 664,920

Int. Cl. C07c 121/02

U.S. Cl. 260—534 4 Claims

In abstract, this invention is directed to a process for preparing sodium nitrilotriacetate by; (a) forming a



nitrilotriacetone nitrile slurry by reacting hydrogen cyanide, formaldehyde, and ammonia or hexamethylenetetramine in an aqueous sulfuric acid solution; (b) separating sulfuric acid from the nitrilotriacetone nitrile; and (c) hydrolyzing the nitrilotriacetone nitrile to sodium nitrilotriacetate by heating said nitrilotriacetone nitrile in the presence of an aqueous sodium hydroxide solution wherein sulfuric acid is separated from the nitrilotriacetone nitrile by extracting an aqueous slurry of nitrilotriacetone nitrile and sulfuric acid with a hydrocarbon oil solution of a high molecular weight, oil soluble, substantially water insoluble amine, all as recited hereinafter.

3,463,812

### PROCESS FOR PREPARING DIALKALI METAL IMINODIACETATE

Jon C. Thunberg, Amherst, and James J. Hegarty, Nashua, N.H., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Nov. 17, 1967, Ser. No. 683,772

Int. Cl. C07c 85/12, 85/00

U.S. Cl. 260—534

8 Claims

In abstract, this invention is directed to a process for preparing dialkali metal salts of iminodiacetate from methylenbisiminodiacetonitrile, said process comprising heating said methylenbisiminodiacetonitrile with an aqueous alkali metal hydroxide solution, freeing said solution of ammonia, and separating, washing, drying, and recovering the precipitated dialkali metal iminodiacetate, all as recited hereinafter.

3,463,813

### DIAZAPHOSPHORUS RING COMPOUNDS AND PROCESS FOR PREPARATION THEREOF

Richard T. Dickerson, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

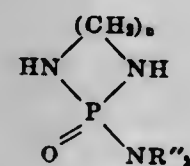
No Drawing. Filed Sept. 21, 1964, Ser. No. 398,069

Int. Cl. C07d 105/02

U.S. Cl. 260—551

8 Claims

1. A compound having the formula



wherein

R'' is a hydrocarbon radical selected from the class consisting of:

- (a) an alkyl radical having 1–20 carbon atoms,
  - (b) an alkenyl, an alkadienyl, or an alkynyl radical having 2–6 carbon atoms,
  - (c) a cycloalkyl or a cycloalkenyl radical having 5–6 carbon atoms or an alkyl derivative thereof having 1–8 carbon atoms in the alkyl moiety thereof,
  - (d) phenyl, naphthyl, or biphenyl radical, or alkyl or alkenyl derivative thereof having 1–8 carbon atoms in the alkyl moiety or alkenyl moiety thereof, or
  - (e) benzyl or cyclopentadienyl radical,
- n is an integer having a value no less than 2 and no more than 3.

### 3,463,814 CHEMICAL CYCLE FOR EVAPORATIVE WATER DESALINATION PLANT

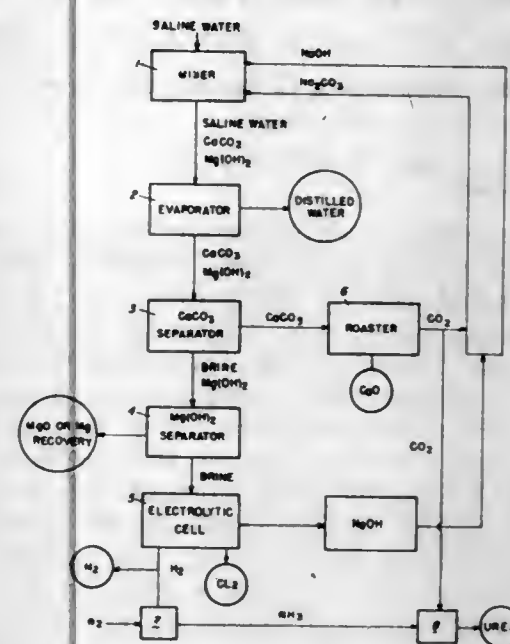
Raymond E. Blanco, Walter E. Clark, and William C. Yee, Oak Ridge, Tenn., assignors to the United States of America as represented by the Secretary of the Interior

Filed Mar. 24, 1967, Ser. No. 626,377

Int. Cl. C07c 127/00; C02b 1/06

U.S. Cl. 260—555

1 Claim



A process for preventing scale and obtaining by-products from the conversion of saline waters which includes: the contacting of saline water with an alkali containing sodium carbonate to precipitate out calcium carbonate, the recovery of purified water by the evaporation and condensation of a portion of the saline water, treating the calcium carbonate to form carbon dioxide, electrolyzing a portion of the concentrated brine to produce hydrogen, chlorine and caustic, and treating the caustic with a portion of the carbon dioxide to produce recycle sodium carbonate and which may further include the precipitation of magnesium of the saline water with a strong base, and the production of urea using hydrogen from electrolysis and carbon dioxide.

3,463,815

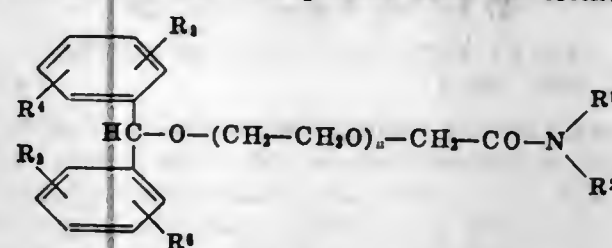
**BENZHYDROXYACETAMIDE DERIVATIVES**  
Cornelis van der Stelt, Reaellann-Haarlem, the Netherlands, assignor to N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades-Scheeman & Pharmacia Amsterdam, Netherlands, a corporation of the Netherlands  
No Drawing. Filed Sept. 9, 1966, Ser. No. 578,124  
Claims priority, application Great Britain, Sept. 9, 1965, 38,637/65; Sept. 23, 1965, 40,644/65  
Claims priority, application Denmark, Oct. 27, 1965, 5,520/65

Int. Cl. C07c 103/22

U.S. Cl. 260—559

7 Claims

Benzhydroxyacetamide derivatives are provided which have sedative, anticonvulsant and weed controlling activity. The new compounds have the formula:



wherein R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> are the same or different and each represents an alkyl group, R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> are the same or different and each represents a hydrogen atom or an alkyl group, and n represents 0 or 1.

### 3,463,816 PROCESS FOR PREPARING BISAMINOALKYL SULFIDES

George F. Button, Lake Jackson, and David L. Childress, Angleton, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware  
No Drawing. Filed Jan. 3, 1967, Ser. No. 606,536

Int. Cl. C07c 149/24

U.S. Cl. 260—583

7 Claims

Bisaminoalkyl sulfides (e.g., bis(2-aminoethyl) sulfide) are prepared in a two-step process by adding hydrogen sulfide to an alkylenimine (e.g., ethylenimine) until the resulting exotherm subsides and then adding the same or a different alkylenimine to the intermediate thus formed.

3,463,817

**PROCESS FOR PRODUCING AMINE OXIDES**  
Henry Mahnken, West New York, N.J., assignor to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 18, 1967, Ser. No. 631,604

Int. Cl. C07c 135/02

U.S. Cl. 260—583

6 Claims

This relates to the preparation of amine oxides by the reaction of tertiary aliphatic amines having an aliphatic group of at least 18 carbon atoms, with hydrogen peroxide in aqueous composition, wherein the amine, water and chelating agent are initially heated to a temperature above 80° C., at which time an approximately stoichiometric amount of the hydrogen peroxide is added to the mixture. There is then an exothermic reaction during which the temperature rises and gelling begins to take place. The gel then spontaneously breaks down at approximately 100° C., and the product remains fluid as it cools until, at about 60° C., it would ordinarily begin to set as a viscous paste. However, in order to avoid this paste formation, a small amount of a salt is added at a temperature of about 105°–60° C., which is the temperature at which it is still fluid. The salt is added in an amount of about 0.25–4% by weight of the mixture, and, preferably, about 1% by weight. This serves to maintain the fluidity of the mixture until it reaches about room temperature, at which time, it sets to a mobile dispersion.

3,463,818

**UNSATURATED ALDEHYDES AND ALCOHOLS**  
Jack H. Blumenthal, Oakhurst, N.J., assignor to International Flavors & Fragrances Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 25, 1966, Ser. No. 522,844

Int. Cl. C07c 47/20

U.S. Cl. 260—601

7 Claims

1. A compound selected from the group consisting of 3,7-dimethyl-2-methylene-6-octenal; 3,7-dimethyl-2-methylene-6-octenol; 2,3,7-trimethyl octanal; 3,7-dimethyl-2-methylene-7-hydroxyl octanal; 2-methylene-10-undecenal; and 3,5,5-trimethyl-2-methylene-hexanal.

3,463,819

**GLYCOL PRODUCTION**  
Curtis W. Smith, Old Greenwich, Conn., and Gerhard N. Schrauzer, Orinda, Richard J. Windgassen, Oakland, and Kenneth F. Koetitz, Pleasant Hill, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,296

Int. Cl. C07c 47/18

U.S. Cl. 260—602

8 Claims

Reaction of lower alkyl epoxides with carbon monoxide and hydrogen in the presence of certain phosphine-modified cobalt carbonyl catalysts results in production of 1,3-glycols and β-hydroxyaldehyde.

### 3,463,820 REACTION PRODUCTS OF DECABORANE AND ACETYLENES AND THEIR PREPARATION

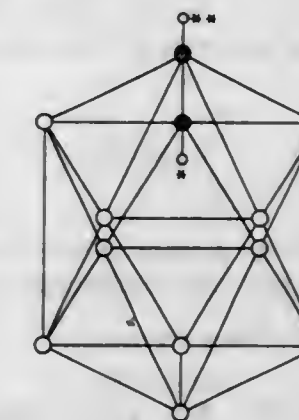
John W. Ager, Jr., Buffalo, Theodore L. Heying, Tona-wanda, and Donald J. Mangold, Youngstown, N.Y., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

Continuation-in-part of application Ser. No. 741,976, June 13, 1958. This application May 13, 1959, Ser. No. 813,032

Int. Cl. C06d 5/06, 5/10; C071 5/02

U.S. Cl. 260—606.5

42 Claims



○ Boron  
● Carbon  
○ Hydrogen on Carbon  
(Hydrogen atoms on boron omitted for clarity)

This invention relates to organoboron compounds and to a method for their preparation. The organoboron compounds are prepared by the reaction of decaborane or an alkylated decaborane having 1 to 2 alkyl groups containing 1 to 5 carbon atoms in each group with an acetylenic hydrocarbon containing from two to ten carbon atoms. The reaction products prepared by the method of this invention can be either solid or liquid and are useful as fuels.

3,463,821

### PROCESS FOR THE PRODUCTION OF ARALIPHATIC SULFOXIDES

Hanswilli von Brachel, Offenbach (Main), and Karl Hintermeler, Frankfurt am Main-Fechenheim, Germany, assignors to Cassella Farbwerke Mainkur Aktiengesellschaft, Frankfurt am Main-Fechenheim, Germany, a German company

No Drawing. Filed Aug. 24, 1966, Ser. No. 574,573  
Claims priority, application Germany, Sept. 2, 1965, C 36,790

Int. Cl. C07c 147/14

U.S. Cl. 260—607

4 Claims

A process for the production of araliphatic sulfoxides comprising the catalyzed addition of arylconjugated olefins or styrenes to methyl sulfoxides of the aliphatic or aromatic series employing potassium hydroxide as the catalyst and a reaction temperature of 75 to 150° C.

3,463,822

### SUBSTITUTED AROMATIC VINYL OXY THIOETHERS

Kenneth Wayne Ratts, Creve Coeur, and Angelina Ngo Yao, University City, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

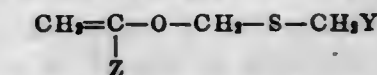
No Drawing. Filed May 11, 1966, Ser. No. 549,168

Int. Cl. C07c 149/10; A01n 9/12; A61k 27/00

U.S. Cl. 260—609

14 Claims

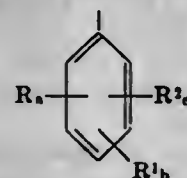
Compounds of the formula



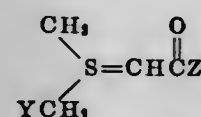
wherein Y is hydrogen or R<sup>3</sup>X<sub>n</sub>, wherein R<sup>3</sup> has a maximum of 12 carbon atoms and is alkyl, alkenyl or mono-



cyclicaryl, X is halogen and  $n$  is an integer from zero to five inclusive, and Z is naphthyl or



wherein R is halogen or alkyl of not more than 4 carbon atoms,  $R^1$  is nitro or alkoxy of not more than 4 carbon atoms,  $R^2$  is phenyl,  $a$  is an integer from 0 to 5 inclusive,  $b$  is an integer from 0 to 2 inclusive and  $c$  is an integer 0 or 1; are prepared by heating above about 50° C. in the presence of a liquid proton donor medium a compound of the formula



wherein Y and Z are as defined above. These compounds are useful as fungicides and nematocides.

3,463,823

#### DIVINYL ACETALS BY DEHYDROHALOGENATION OF BIS(2-HALOETHYL) ACETALS

Joseph Vebra, New Haven, John A. Wojtowicz, East Haven, and Venkataramaraj S. Urs, Cheshire, Conn., assignors to Olin Mathieson Chemical Corporation  
No Drawing. Filed Feb. 2, 1967, Ser. No. 613,447  
Int. Cl. C07c 43/14, 43/00, 43/30

U.S. Cl. 260—615 3 Claims  
Process for preparing a divinyl acetal by dehydrohalogenating the corresponding bis(2-haloethyl) acetal in the presence of a solution of an alkali metal alcoholate of certain highly-branched secondary or tertiary alcohols or glycols in the same alcohol or glycol or in the presence of a dispersion of a finely-divided, alkali metal hydroxide in the highly-branched secondary or tertiary alcohols or glycols.

3,463,824

#### PROCESS FOR THE METHYLATION OF PHENOL

Günter Velling, Hersel, near Bonn, Germany, assignor to Union Rheinische Braunkohlen Kraftstoff Aktiengesellschaft, Wesseling, near Cologne, Germany, a corporation of Germany  
No Drawing. Filed Apr. 26, 1966, Ser. No. 545,295  
Claims priority, application Germany, May 3, 1965, U 11,684

Int. Cl. C07c 37/16 4 Claims  
In the production of alkylated phenols at temperatures of between 180 and 240° C. with an aqueous catalyst solution containing zinc halide and hydrogen halide, the improvement of reducing the formation of higher alkylated products by conducting the reaction in the presence of a reducing agent.

3,463,825

#### PROCESS FOR THE PRODUCTION OF SUBSTITUTED AROMATIC COMPOUNDS

David James Le Count and James Angus Wilson Reid, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain  
Filed June 13, 1966, Ser. No. 556,953  
Claims priority, application Great Britain, July 22, 1965, 31,242/65

Int. Cl. C07c 37/00, 39/06 4 Claims  
p-Cresol is prepared by a continuous cyclic process which involves oxidizing a mixture of o- and p-iodotoluenes to the corresponding iodosotoluenes, condensing such iodosotoluenes with toluene in the presence of

a strong acid to form a ditolyl iodonium salt, hydrolyzing the said salt to produce cresol and regenerate iodosotoluene, recycling the regenerated iodosotoluene, and isolating p-cresol from the product cresol fraction. Once a steady state is achieved, the yield of p-cresol is high.

3,463,826

#### MANUFACTURE OF HALOGENATED PINACOLS

Hermann Richtzenhain, Cologne-Sulz, and Paul Riegger, Bonn, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Bezirk-Cologne, Germany, a corporation of Germany  
No Drawing. Filed Jan. 3, 1966, Ser. No. 517,949  
Claims priority, application Germany, Mar. 17, 1965, D 46,817

Int. Cl. C07c 31/18; B01j 1/10 6 Claims  
Halogenation of pinacols by the reaction of a halogen with pinacol under substantially anhydrous conditions, under the influence of visible or ultra-violet radiation, and preferably in the presence of an inert reaction medium at the boiling point of the reaction medium.

3,463,827

#### NOVEL METAL CARBONYL CATALYSTS AND THEIR USE

Robert L. Banks, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
No Drawing. Filed Mar. 13, 1961, Ser. No. 94,996  
Int. Cl. C07c 3/62, 11/00

U.S. Cl. 260—666 25 Claims  
1. A catalyst composition comprising a Group VI-A metal hexacarbonyl selected from the group consisting of molybdenum hexacarbonyl and tungsten hexacarbonyl and a material selected from the group consisting of silica, alumina and silica-alumina.

4. A process for converting acyclic mono-unsaturated alkene hydrocarbon reactants selected from the group consisting of 1-alkenes and 2-alkenes principally to higher molecular weight products which comprises contacting at least one of said reactants at reaction conditions within the range of 0 to 600° F. wherein the desired conversion is obtained with a catalyst comprising a Group VI-A metal hexacarbonyl associated with a material selected from the group consisting of silica, alumina, and silica-alumina.

3,463,828

#### BIS(CYCLOALKENYL)-SUBSTITUTED OLEFINS

Donald L. Crain, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware  
No Drawing. Continuation-in-part of application Ser. No. 502,544, Oct. 22, 1965. This application Sept. 5, 1967, Ser. No. 665,239

Int. Cl. C07c 3/10, 13/02 10 Claims  
Bis(cycloalkenyl) - substituted olefins prepared by contacting an alkenyl-substituted cycloalkene with a catalyst formed from a molybdenum- or tungsten-containing compound.

3,463,829

#### NONDESTRUCTIVE CATALYTIC HYDROGENATION OF AROMATICS

Frederick W. Steffen, Laguna Beach, Calif., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania  
Continuation-in-part of application Ser. No. 534,092, Mar. 14, 1966. This application June 4, 1968, Ser. No. 734,299

Int. Cl. C07c 5/10 5 Claims  
A process for the nondestructive hydrogenation of aromatic compounds which contain sulfur and/or nitrogen contaminants in the range of several hundred parts

per million comprising reacting the contaminated aromatic compound with hydrogen in a molar ratio of above 5 moles of hydrogen per mole of aromatic in the presence of a platinum metal catalyst supported on substantially silica-free alumina in the temperature range of between about 320° C. and about 425° C. at a pressure of between 500 and 1500 p.s.i.g. and a liquid hourly space velocity of between about 0.25 and 15 is disclosed.

3,463,830

#### HYDROGENATION WITH A ZEROVALENT PLATINUM OR PALLADIUM CATALYST

Robert William Dunning, Kamalakant Krishnarao Joshi, Alan Roger Oldham, and Michael Christopher Kenneth Willott, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain  
No Drawing. Filed July 20, 1967, Ser. No. 654,711  
Claims priority, application Great Britain, Aug. 10, 1966, 35,787/66

Int. Cl. C07c 5/14; C07f 9/50, 15/00 5 Claims  
U.S. Cl. 260—683.9 Process for the hydrogenation of an unsaturated organic substrate in homogeneous liquid media which comprises contacting the substrate with hydrogen in the presence of a zerovalent compound of platinum or palladium.

3,463,831

#### DIMERISATION PROCESS

James Keith Hambling, Frimley, near Aldershot, and John Robert Jones, Walton-on-Thames, England, assignors to The British Petroleum Company, Limited, London, England, a corporation of England  
No Drawing. Filed Dec. 28, 1966, Ser. No. 605,194  
Claims priority, application Great Britain, Jan. 4, 1966, 287/66

Int. Cl. C07c 3/10, 3/18 8 Claims  
U.S. Cl. 260—683.15 A dimerization product containing a significant proportion of linear dimers is obtained by contacting an alpha olefin with a homogeneous catalyst comprising a reaction product of an aluminium halide and a cobalt halide in the presence of an organo-aluminium compound at a temperature in the range -100° to +200° C. under such conditions of pressure that the reactants are maintained in the liquid or partially condensed phase. In an example, propylene was polymerized using a catalyst comprising the reaction product of aluminium chloride and cobalt chloride with diethyl aluminium ethoxide giving a liquid polymer containing 72.5% hexenes, 31.5% of which were linear hexenes.

3,463,832

#### STABILIZED CHLORINATED POLYVINYL CHLORIDE COMPOSITIONS CONTAINING A POLY-EPOXIDE AND AN ALKYL PHENOL

Friedrich Wollrab, Forest, Brussels, and Pierre Decroly, Uccle, Brussels, Belgium, assignors to Solvay & Cie, Brussels, Belgium, a corporation of Belgium  
No Drawing. Filed Mar. 14, 1967, Ser. No. 622,895  
Claims priority, application Belgium, Mar. 16, 1966, 25,307, Patent 677,885

Int. Cl. C08f 45/58, 29/20 13 Claims  
U.S. Cl. 260—837 Stabilized chlorinated polyvinyl chloride compositions containing per 100 parts of chlorinated polyvinyl chloride from 0.5 to 5 parts of an epoxidized derivative selected from the group consisting of polyglycidyl ethers and cycloaliphatic epoxides, from 0.1 to 2 parts of an alkylphenol, and, optionally, from 0.1 to 2 parts of pentaerythritol.

3,463,833

#### THERMOPLASTIC RESINOUS BLENDS OF ALPHA METHYL STYRENE-METHYL METHACRYLATE COPOLYMERS WITH GRAFT COPOLYMERS

Masataka Isogawa, Hyogo-ku, Kobe, Japan, assignor to Kanegafuchi Chemical Industry Company, Ltd., Osaka, Japan, a corporation of Japan  
Filed Oct. 14, 1966, Ser. No. 586,708  
Claims priority, application Japan, Oct. 28, 1965, 40/66,458

Int. Cl. C08f 41/12 1 Claim  
U.S. Cl. 260—876 Thermoplastic composition comprising 60 to 90 parts by weight of a resin copolymer obtained by emulsion polymerization of a monomer mixture selected from the group consisting of (a) alpha methyl styrene, and methyl methacrylate, and (b) alpha methyl styrene, methyl methacrylate and acrylonitrile; and 40 to 10 parts by weight of a graft copolymer obtained by emulsion polymerization of from 35 to 65 percent by weight of synthetic diene rubber selected from the group consisting of polybutadiene, and copolymers of butadiene and monomers such as styrene, and acrylonitrile, and having latex particles at least 80 percent by weight of which being more than 0.1 micron in diameter, and from 65 to 35 percent by weight of a monomer composition selected from the group consisting of (a) methyl methacrylate, (b) methyl methacrylate and styrene, and (c) methyl methacrylate, styrene, and acrylonitrile.

3,463,834

#### HEAT-RESISTANT, HIGH-IMPACT BLENDS OF POST CHLORINATED VINYL CHLORIDE RESINS AND A RUBBERY TETRAHYDROFURAN POLYMER

Patricia M. Dreyfuss, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York  
No Drawing. Filed Jan. 2, 1968, Ser. No. 694,862  
Int. Cl. C08f 29/24, 45/58

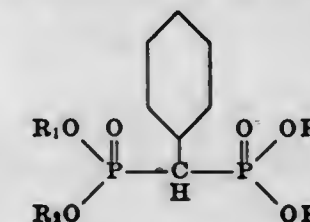
U.S. Cl. 260—899 5 Claims  
There is disclosed a resinous blend of (1) for every 100 parts/wt. of apost-chlorinated vinyl chloride resin (2) from about 2 to about 20 parts/wt., more preferably from about 5 to about 15 parts/wt., of a rubbery tetrahydrofuran polymer. The rubbery tetrahydrofuran polymer should have a moderate-to-high molecular weight as evidenced by an intrinsic viscosity in benzene at 25° C. of at least about 1.5 dl./gm. in order to impart to the blend maximum resistance to impact with minimum effect on the intrinsically high heat distortion temperature of the post-chlorinated vinyl chloride resin. An antioxidant stabilizes the blend against loss of impact strength during extended mixing and service.

3,463,835

#### AROMATIC POLYPHOSPHONIC ACIDS, SALTS AND ESTERS

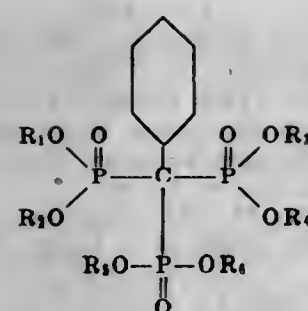
Edward G. Budnick, Garwood, N.J., assignor to Plains Chemical Development Co., Garwood, N.J., a corporation of New Jersey  
No Drawing. Continuation-in-part of application Ser. No. 485,624, Sept. 7, 1965. This application Oct. 5, 1965, Ser. No. 493,217

Int. Cl. C07f 9/38, 9/02 7 Claims  
U.S. Cl. 260—932 There are prepared compounds having a formula selected from the group consisting of





(b)



where  $R_1, R_2, R_3, R_4, R_5$  and  $R_6$  are selected from the group consisting of hydrogen, hydrocarbyl, haloaryl, metal, ammonium and hydrocarbyl tin.

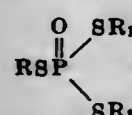
### 3,463,836 S,S-HYDROCARBYL-S-CHLOROETHYL OR CHLOROVINYL PHOSPHATES

Paul C. Aichenegg, Prairie Village, Kans., assignor to Chemagro Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 553,022, May 26, 1966. This application June 14, 1966, Ser. No. 557,367

Int. Cl. C07d 105/04; C07f 9/16; A01n 9/36  
U.S. Cl. 260-937 15 Claims

Compounds are prepared having the formula



where R is trihaloethyl or dihalovinyl and  $R_1$  and  $R_2$  are hydrocarbon, haloaryl, haloalkyl, nitrophenyl, alkoxyphenyl or alkylthioalkyl or  $R_1$  and  $R_2$  are a divalent alkylene chain and are joined with the two sulfur atoms and phosphorus atom to form a 5 to 6 member ring, all halogen atoms being chlorine or bromine. The compounds are useful as defoliants, desiccants, nematocides, post emergent herbicides, fungicides, and insecticides.

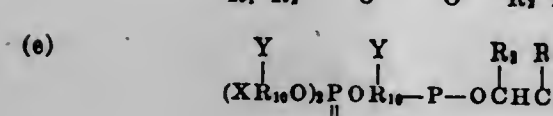
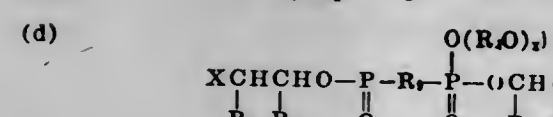
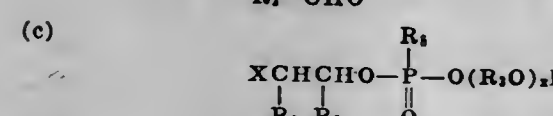
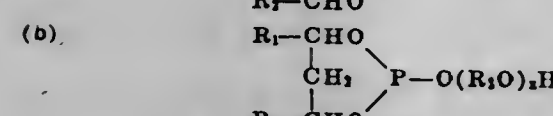
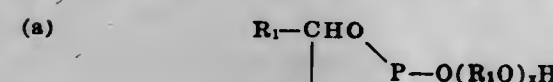
### 3,463,837 2-HYDROXYPOLYALKOXY DIOXAPHOSPHOLANE OR DIOXAPHOSPHORINANE

Lester Friedman, Beachwood, Ohio, assignor to Weston Chemical Corporation, Newark, N.J., a corporation of New Jersey

No Drawing. Original application Dec. 2, 1965, Ser. No. 511,215, now Patent No. 3,433,856, dated Mar. 18, 1969. Divided and this application July 18, 1968, Ser. No. 755,484

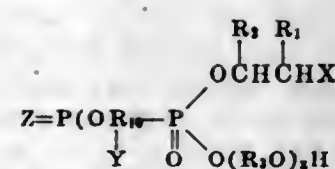
Int. Cl. C07d 105/04; C07f 9/40; C08k 1/60  
U.S. Cl. 260-937 6 Claims

Compounds are prepared having the formulae



and

(f)



where  $R_1$  and  $R_2$  are hydrogen or lower alkyl,  $R_3$  is lower alkylene of at least 2 carbon atoms,  $x$  is an integer of at least 2,  $R_4$  is alkyl, alkenyl, aralkyl, haloaralkyl, cycloalkenyl-alkyl and halocycloalkenylalkyl,  $X$  is halogen of atomic weight 35 to 127,  $R_5$  is divalent hydrocarbon or divalent haloalkyl.  $Y$  is hydrogen or halogen of atomic weight 35 to 127,  $R_{10}$  is 2 to 4 carbon alkylene and  $Z$  is nothing or oxygen. The compounds are useful to improve the flame resistance of polyurethane and as stabilizers for halogen containing polymers and olefin polymers.

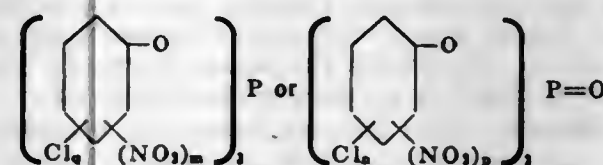
### 3,463,838 CHLORO AND NITRO CONTAINING PHENYL PHOSPHITES

Jack Hensel, Fairway, Kans., and Delta W. Gler, Parkville, Mo., assignors to Chemagro Corporation, New York, N.Y., a corporation of New York

No Drawing. Original application Dec. 9, 1965, Ser. No. 512,778, now Patent No. 3,416,911, dated Dec. 17, 1968. Divided and this application Feb. 14, 1968, Ser. No. 724,306

Int. Cl. C07f 9/12; A01n 9/36  
U.S. Cl. 260-954 5 Claims

Phosphites and phosphates are prepared having the formula



where  $n$  is an integer from 0 to 3 and  $m$  and  $p$  are integers from 1 to 2. The compounds are useful for defoliating and desiccating plants.

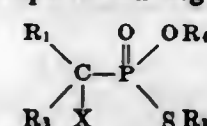
### 3,463,839 ALPHA-HALOALKYL PHOSPHONOTHIOATES

Erik A. Regel, Mission, Kans., assignor to Chemagro Corporation, Kansas City, Mo., a corporation of New York

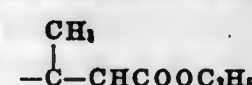
No Drawing. Original application Sept. 15, 1964, Ser. No. 396,753, now Patent No. 3,385,688, dated May 28, 1968. Divided and this application Nov. 16, 1967, Ser. No. 701,795

Int. Cl. C07f 9/40; A01n 9/36  
U.S. Cl. 260-958 12 Claims

Compounds are prepared having



where  $R_1$  is alkyl of 1 to 8 carbon atoms,  $R_2$  is selected from the group consisting of alkyl of 1 to 8 carbon atoms, phenyl, chlorophenyl and benzyl,  $R_1$  and  $R_2$  taken together are  $CH_2(CH_2)_nCH_2$  where  $n$  is an integer from 1 to 3 inclusive;  $R_3$  is selected from the group consisting of alkyl of 1 to 8 carbon atoms and chloroalkyl having 1 to 3 carbon atoms;  $R_4$  is selected from the group consisting of alkyl of 1 to 8 carbon atoms, alkenyl of 3 to 8 carbon atoms, phenyl, alkylphenyl having 1 to 4 carbon atoms in the alkyl group, chlorophenyl, dichlorophenyl, trichlorophenyl, nitrophenyl and



and  $X$  is halogen of atomic weight 35 to 80. The compounds are useful as herbicides.

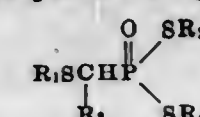
### 3,463,840 PROCESS FOR PRODUCING ALKYLTHIOALKYL PHOSPHONODITHIOIC ESTERS

Marion F. Botts, Independence, Mo., and Erik K. Regel, Mission, Kans., assignors to Chemagro Corporation, New York, N.Y., a corporation of New York

No Drawing. Original application June 24, 1966, Ser. No. 560,097. Divided and this application Jan. 3, 1968, Ser. No. 708,745

Int. Cl. C07f 9/40; A01n 9/36 8 Claims

Compounds are prepared having the formula



where  $R_1, R_2$ , and  $R_3$  are alkyl or monohaloalkyl and  $R_4$  is hydrogen, alkyl, monohaloalkyl, aryl, haloaryl or alkylthioalkyl by (1) reacting 1 mole of phosphorus trichloride with one mole of an aldehyde having the formula  $R_2CHO$  at a temperature below  $0^\circ C$ , and (2) reacting this product with 3 moles of a mercaptan or mixture of mercaptans having the formula  $R_1SH, R_2SH$  and  $R_3SH$  at a temperature below  $0^\circ C$ . The compounds are useful as nematocides.

### 3,463,841 MALATHION MANUFACTURE

Gerald Richard Backlund, Maplewood, Joseph Francis Martino, Elizabeth, and Ralph Dettmer Divine, Rahway, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Nov. 1, 1966, Ser. No. 591,115

Int. Cl. C07f 9/16; A01n 9/36 7 Claims

Malathion preparation which involves condensating O,O-dimethyldithiophosphoric acid with diethyl maleate, then terminating the reaction prior to its complete conversion and removing any unreacted starting materials under reduced pressure is provided.

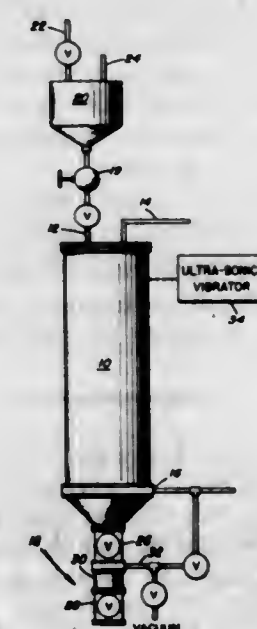
### 3,463,842 MICROSPHERE PROCESS

Herbert P. Flack, Ellicott City, and Henry H. McClamahan, West River, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed June 13, 1967, Ser. No. 645,786

Int. Cl. G21c 21/02; B29b 1/03 4 Claims

U.S. Cl. 264-5



A process for preparing uniform sized microspheres below 50 microns in diameter from sols or solutions. Uniform microspheres are prepared using an ultrasonic vibrator in the sol feed line or in the column.

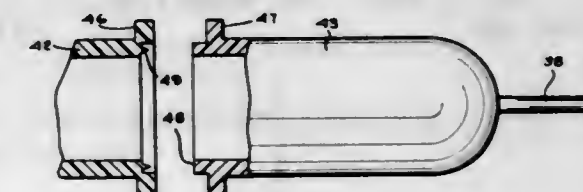
### 3,463,843 METHOD OF MAKING A FLOAT FOR A LIQUID LEVEL GAUGE

Leta S. Taylor, Paul B. Johnson, and Eugene D. Huskey, all % J. Y. Taylor Mfg. Co., Garland, Tex. 75040

Filed Sept. 28, 1965, Ser. No. 490,998

Int. Cl. B29c 27/08 1 Claim

U.S. Cl. 264-68



The process of making a hollow float body of thermoplastic material for a liquid level gauge including the provision of a sharp edge narrow circular ridge of the thermoplastic material on one element and a flat circular surface on the other element for forming a spin welded joint.

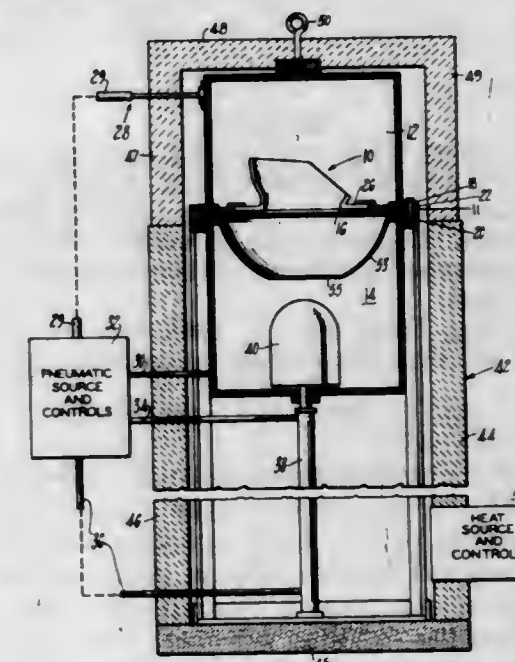
### 3,463,844 METHOD OF PARTIAL CAVITY MOLD FORMING

Kenneth R. Griffin, West Suffield, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed June 1, 1967, Ser. No. 642,821

Int. Cl. B29c 17/04 2 Claims

U.S. Cl. 264-89



A thermoplastic sheet is brought to molding temperature, the sheet is then ballooned, by fluid pressure, to contact a partial hemispherical mold, the balloon of material is guided into a partially broken away cavity mold by means of an assisting plug, the cavity mold being oriented opposite to the direction into which the thermoplastic sheet is initially ballooned by pneumatic pressure, and finally the thermoplastic material is inflated within the partially broken away cavity mold so as to cause the material to assume the shape of the cavity mold in portions thereof which contact said mold, and to assume a natural three-dimensional curvilinear configuration as a result of fluid pressure in areas thereof which are not in contact with said mold. The article is cooled and then removed from a multisection mold. Using a partially broken away cavity mold permits forming a portion of the article without contact with the cavity mold, whereby surface properties of the thermoplastic material are unimpaired by contact with the mold over some surface of the article.



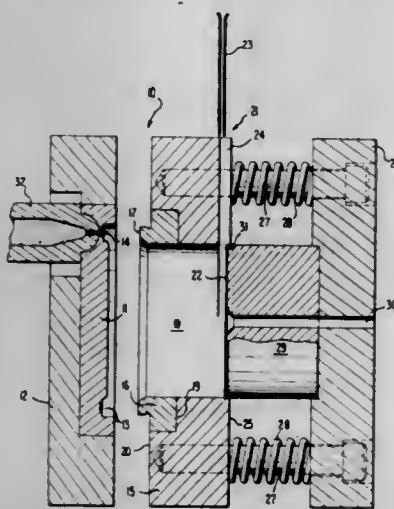
3,463,845

**INJECTION MOLDING APPARATUS FOR MAKING COMPOSITE PAPER-PLASTIC LIDS AND METHOD**

Ernest T. De Pass, Bound Brook, and Thomas J. P. Cook, Kendall Park, N.J., assignors to Union Camp Corporation, New York, N.Y., a corporation of Virginia  
Filed Apr. 6, 1967, Ser. No. 628,976  
Int. Cl. B29f 1/00; B29d 3/00

U.S. Cl. 264—90

2 Claims



An injection molding apparatus for molding container lids formed of paper center blanks and outer plastic rims includes orienting means to feed and position the blank within the injection opening perpendicular to the axis thereof and moving means to bring the blank into registry with a lip on the male die of the molding apparatus.

3,463,846

**METHOD FOR THE PRODUCTION OF ACRYLONITRILE COMPOSITE FIBERS**

Kazumi Nakagawa and Keijiro Kuratani, Saidaiji, Nobuhiro Tsutsui, Okayama, and Shinsaku Minami, Saidaiji, Japan, assignors to Japan Exlan Company Limited, Osaka, Japan  
No Drawing. Filed Sept. 7, 1966, Ser. No. 577,623  
Claims priority, application Japan, Sept. 25, 1965, 40/58,845

Int. Cl. D01d 5/22; D01f 7/00

U.S. Cl. 264—168

2 Claims

A method of manufacturing helically crimped composite fibers of the acrylonitrile type, comprising concurrently extruding two or more spinning solutions of the same polymer but having different concentrations of the polymer therein to form a bicomponent fiber, washing and stretching the resulting gel fiber, then drying the resulting fiber under relaxed conditions at temperatures below 80° C. and steaming the crimped fiber in a relaxed and confined state at a temperature of at least 110° C.

3,463,847

**METHOD OF PRODUCING IMPROVED POLY-AMIDIC FIBROUS MATERIAL HAVING THREE DIMENSIONAL CRIMPABILITY**

Keizo Ueda, Nishinomiya, Satoshi Ando, Osaka, and Tetsuo Kinoshita, Kobe, Japan, assignors to Kanegafuchi Boseki Kabushiki Kaisha, Tokyo, Japan, and to Snia Viscosa Societa Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy  
No Drawing. Filed Dec. 12, 1966, Ser. No. 600,765  
Int. Cl. D02j 1/00

U.S. Cl. 264—168

12 Claims

Composite polyamide fibers with superior three-dimensional crimp, bonding property, elasticity and dyeability are produced by conjugate-spinning of a conventional polyamide, such as nylon, and a copolymer of a polyamide with a heterocyclic diamine-dicarboxylic acid salt, such as the salt of N,N'-di(γ-aminopropyl)piperazine with adipic acid or 4-amino-3, 5-di(aminoalkyl)-1,3,4-triazole.

3,463,848

**EXPENDABLE MAGNESIUM CORES FOR USE IN CASTING PLASTICS OF ORGANIC POLYMERS**

John C. St. Clair, Box 333, R.R. 2, London, Ohio 43140  
No Drawing. Filed Jan. 11, 1967, Ser. No. 608,506  
Int. Cl. B29c 1/06

U.S. Cl. 264—238

1 Claim

A method for casting large and complicated plastic objects, using a magnesium core, in which, after the casting is made, the magnesium core is dissolved out by iodine, the iodine preferably being dissolved in ethyl ether. The magnesium is recovered for reuse by electrolyzing in the molten state or by heating to high temperatures the magnesium iodide formed by the reaction of the iodine on the magnesium core.

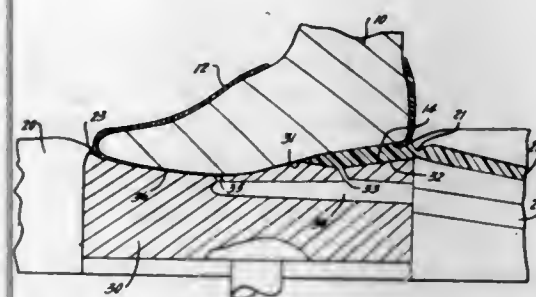
3,463,849

**METHOD OF INJECTION MOLDING FOOTWEAR**

Julius G. Winkler, Lexington, Mass., assignor to Compo Shoe Machinery Corporation, Waltham, Mass.  
Filed Jan. 17, 1967, Ser. No. 609,830  
Int. Cl. B29c 9/00; B29f 1/12; B29h 1/08

U.S. Cl. 264—244

3 Claims



The method of injection molding wedge-heel type footwear wherein the shoe bottom is formed of multi-colored and/or different kinds of plastic and/or rubber or like materials and comprising the steps of mounting an upper on a last and bringing it into contact with an open top mold cavity having a movable bottom member provided with a built-in depression rearwardly of the heel breast line; moving the bottom member adjacent the bottom of the last so that it abuts the same forwardly of the heel breast line; injecting a first bottom forming compound directly into the cavity formed by said depression and the bottom of the last to form the wedge-heel; lowering the bottom member a distance away from the bottom of the last and injecting a second bottom forming compound of a color and/or material different from the first compound so as to form the midsole; again lowering the bottom member a still further distance away from the bottom of the last and injecting a third bottom forming compound, preferably of the same color and kind as the first compound so as to form the outsole of the footwear; allowing the injected compounds to harden and set and then, by opening the mold, stripping the finished footwear therefrom.

3,463,850

**ARABINOFURANOSYL 2-THIOPYRIMIDINES AND PHARMACEUTICAL COMPOSITIONS THEREOF**

Tsung-Ying Shen, Westfield, and William V. Ruyle, Scotch Plains, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey  
No Drawing. Filed Jan. 3, 1967, Ser. No. 606,524  
Int. Cl. A61k 27/00; C07d 51/52

U.S. Cl. 424—180

15 Claims

2-thiouracil arabinosides are prepared by treating with hydrogen sulfide a 2,2' - anhydro-1-(5'-OR'-β-D-arabinofuranosyl)uracil, where R' is a protecting group, to afford the corresponding 1-(β-D-arabinofuranosyl)-2-thiouracil.

3,463,855

**INSECT REPELLENT COMPOSITIONS OF N-(META-TOLUYL)-METHYL PIPERIDINES**

Clayton W. Yoho, Racine, Wis., assignor to S. C. Johnson & Son, Inc., Racine, Wis.

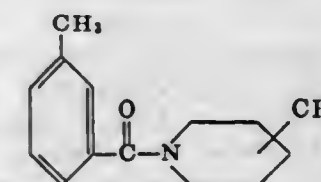
No Drawing. Original application May 12, 1965, Ser. No. 455,301. Divided and this application Feb. 26, 1968, Ser. No. 707,969

Int. Cl. A01m 9/22, 17/00

U.S. Cl. 424—267

5 Claims

N-(meta-toluy)-methylpiperidines having the structural formula



which are useful as insect repellents.

3,463,856

**METHOD FOR CONTROLLING PHYTOPATHOGENIC FUNGI AND BACTERIA ON PLANTS BY APPLYING DICHLOROALKENYLHYDRO-PHTHALIMIDES THERETO**

Masaru Kado, Shimizu, Japan, assignor to Ihara Chemicals Company Limited, Shimizu, Japan

No Drawing. Filed Apr. 27, 1967, Ser. No. 634,108

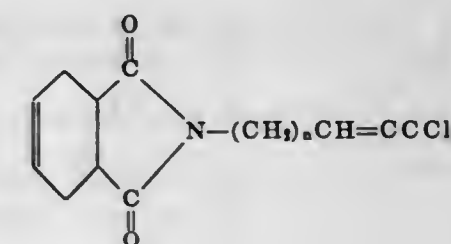
Claims priority, application Japan, Apr. 5, 1967, 42/21,165

Int. Cl. A01n 9/22; C07d 27/36

U.S. Cl. 424—274

2 Claims

A fungicidal and bactericidal composition comprising as an active ingredient the compound of the formula



wherein n is an integer selected from the group consisting of 1, 3, 5 and 7, in the presence of an inert diluent and a method for controlling phytopathogenic fungi and bacteria by using said composition.

3,463,857

**ANTICONVULSANT COMPOSITIONS AND METHOD EMPLOYING NAPHTHALENE-DICARBOXIMIDE COMPOUNDS**

Eugene R. Wagner, Zionsville, Ind., and Allen D. Rudzik, Kalamazoo, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 15, 1967, Ser. No. 638,619

Int. Cl. A61k 25/00

U.S. Cl. 424—274

10 Claims

Method for combating convulsions in animals comprising administering to the animal a substituted 4a,8a-naphthalenedicarboximide or 1,4,5,8-tetrahydro-4a,8a-naphthalenedicarboximide, and the resulting compositions.

The protecting group is then removed. Acylation and thiation of the 2-thiouracil affords the 2,4-dithiouracil-analog, and subsequent amination yields the corresponding 2-thiocytosine arabinoside. The 2-thiouracil compounds are versatile intermediates useful in the preparation of potent antimetabolites, and are convertible into the 2-thiocytosine compounds having antiviral activity.

3,463,851

**INSECT CHEMOSTERILANTS DERIVED FROM BORON**

Alexej B. Borkovec, Kensington, and Joseph A. Settepani, Ellicott City, Md., assignors to the United States of America as represented by the Secretary of Agriculture  
No Drawing. Filed Nov. 23, 1966, Ser. No. 596,727  
Int. Cl. A01n 9/00

U.S. Cl. 424—185

11 Claims

The insect chemosterilants of the present invention are boron derivatives and include trialkyl borates wherein the alkyl groups are straight or branch chain saturated aliphatic hydrocarbons containing from 1 to 6 carbon atoms, borane compound with trimethylamine, and 2,3-dihydro-2-phenyl-1H-1,3,2-benzodiazaborole.

3,463,852

**TREATING ALLERGIES WITH STEROIDS OF THE PREGNANE SERIES**

Hans Reimann, Wayne, and Irving I. A. Tabachnick, North Caldwell, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey  
No Drawing. Filed Jan. 14, 1966, Ser. No. 520,675  
Int. Cl. A61k 17/00, 13/00

U.S. Cl. 424—243

6 Claims

This invention relates to pharmaceutical compositions comprising 6α-fluoro-16-methyl-1,4,9(11) - pregnatriene-17α,21-diol-3,20-dione, 6α-fluoro-16-methyl-1,4 - pregnadiene-17α,21-diol-3,20-dione and the 21-pharmaceutically acceptable esters thereof, and to methods for the use thereof in eliciting an anti-allergic effect.

3,463,853

**LUNGWORM DISEASE TREATING COMPOSITION CONTAINING N-DITHIOCARBOXY DERIVATIVES OF AMINO ACIDS AND METHOD OF USING SAME**

Hakaru Ueno, Tokyo-to, and Shinsuke Ose, Takarazuka-shi, Japan, assignors to Daiinippon Pharmaceutical Co., Ltd., Osaka, Japan, a corporation of Japan  
No Drawing. Filed Oct. 11, 1965, Ser. No. 496,740  
Claims priority, application Japan, Oct. 26, 1964, 39/60,682/64

Int. Cl. A61k 27/00; C07c 153/03

U.S. Cl. 424—250

10 Claims

Compositions for treating animal lungworm disease comprising, as the effective ingredient, an N-dithiocarboxy derivative of an amino acid and methods of administering the same.

3,463,854

**METHOD OF TREATMENT FOR EFFECTING VASODILATION OF THE SMALL ARTERIES IN HUMAN BEINGS**

Tibor L. Kopjas, 95 W. Moreland, Collinsville, Ill. 62234  
No Drawing. Continuation-in-part of application Ser. No. 586,025, Oct. 12, 1966. This application May 8, 1968, Ser. No. 727,708

Int. Cl. A61k 27/00

U.S. Cl. 424—251

3 Claims

A method of treating human beings for effecting vasodilation of the capillary vascular system by administration of folic acid.



### 3,463,858 ORGANIC ZINC FEED ADDITIVE AND METHOD OF MAKING SAME

Dean R. Anderson, Des Moines, Iowa  
(1947 Elmhurst Drive, Elkhart, Ind. 46514)  
No Drawing. Continuation-in-part of application Ser. No. 373,049, June 5, 1964. This application May 6, 1965, Ser. No. 453,808

Int. Cl. A23k 1/16

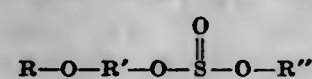
U.S. Cl. 424—289 27 Claims  
Process for making feed additive including inorganic zinc growth factor by slurring a mixture of an amino acid source and a water soluble zinc salt in water heating, acidifying and drying the slurry.

### 3,463,859 METHOD OF PROTECTING PLANTS WITH SULFURIC ACID ORGANIC ESTERS

Rupert A. Covey, Wolcott, Allen E. Smith, Bethany, and Winchester L. Hubbard, Woodbridge, Conn., assignors to Uniroyal, Inc., a corporation of New Jersey  
No Drawing. Original application July 18, 1963, Ser. No. 296,107, now Patent No. 3,272,854. Divided and this application Mar. 23, 1966, Ser. No. 536,621

Int. Cl. A01n 9/14, 5/00; C07c 143/28

U.S. Cl. 424—303 6 Claims  
Plants are protected against attack by insects by treating the plants with a composition having the formula



in which R and R'' are selected from the group consisting of aliphatic and aromatic radicals and R' is a divalent cycloaliphatic radical in which the two valences are on different carbon atoms.

### 3,463,860 FEED COMPOSITION FOR INCREASING FERTILITY IN ANIMALS

Frede B. Strandkov, North Caldwell, and Hyman L. Schulman, Oradell, N.J., assignors of one-half to Washine Chemical Corporation, Lodi, N.J., and one-half to The F. & M. Schaefer Brewing Co., both corporations of New York  
No Drawing. Continuation-in-part of application Ser. No. 559,720, June 17, 1966. This application May 17, 1967, Ser. No. 639,052

Int. Cl. A61k 27/00; A23k 1/16

U.S. Cl. 424—308 5 Claims  
Feed compositions for warm-blooded animals are provided which increase the fertility of the animals to which

they are administered. The method is provided by which such compositions are administered to the animals. The compositions consist essentially of feed and an effective amount of a compound of the formula



wherein

R is n-heptyl,

X is a member of the group consisting of H, alkali metal, and alkaline earth metal, and

n is an integer equal to the valence of X.

### 3,463,861 COMPOSITIONS AND METHOD OF TREATING MYCOBACTERIUM TUBERCULOSIS WITH 2, 2'-(ETHYLENEDIIMINO)-DI-1-BUTANOLS

Raymond George Wilkinson, Montvale, and Robert Gordon Shepherd, Ridgewood, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 432,423, Feb. 12, 1965. This application Feb. 5, 1968, Ser. No. 702,790

Claims priority, application Great Britain, Feb. 7, 1961, 4,517/61

Int. Cl. A61k 27/00

U.S. Cl. 424—325 10 Claims  
This disclosure describes compositions of matter useful for the treatment of *Mycobacterium tuberculosis* infections in warm-blooded animals and the method of treating *Mycobacterium tuberculosis* infections in warm-blooded animals therewith, the active ingredients of said compositions of matter being certain unsymmetrically substituted ethylenediamines.

### 3,463,862 ALBUMIN CONTAINING COSMETIC LOTION

Geneva Carol Mazza, 11805 Mentone Road, Silver Spring, Md. 20901

No Drawing. Filed May 21, 1964, Ser. No. 369,287

Int. Cl. A61k 7/02

U.S. Cl. 424—359 2 Claims  
A cosmetic lotion for application to the skin is disclosed, which tightens the same and smoothes wrinkled areas for as long as 10 to 12 hours. It consists essentially of albumin, an astringent and a non-irritating oil.

## ELECTRICAL

### 3,463,863 HEATING DEVICE FOR THE EQUALIZING HEARTH OF A PUSHER-TYPE FURNACE WITH COOLED SLIDE BARS

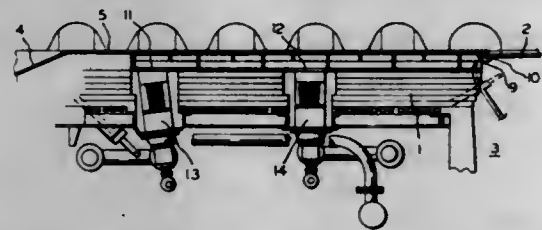
Gottfried Strauss and Helmut Heuss, Essen, and Gerhard Simon, Remscheid, Germany, assignors to Didier-Werke A.G., Wiesbaden, Germany

Filed Dec. 19, 1966, Ser. No. 603,002

Claims priority, application Germany, Dec. 17, 1965, D 48,936

Int. Cl. H05b 3/02

U.S. Cl. 13—20 5 Claims



The heating device comprises heating hollow beams

which are a continuation of the slide bars or rails of a pusher type furnace extending into an equalizing hearth to eliminate temperature differences in the material heated. The beams may be heated by gas or electricity and are constructed of heat resistant and erosion resistant material.

### 3,463,864 CORELESS CHIP MELTING FURNACES

Mario Tama, Cortland, Ohio, assignor to Ajax Magnethermic Corporation, Warren, Ohio, a corporation of Ohio

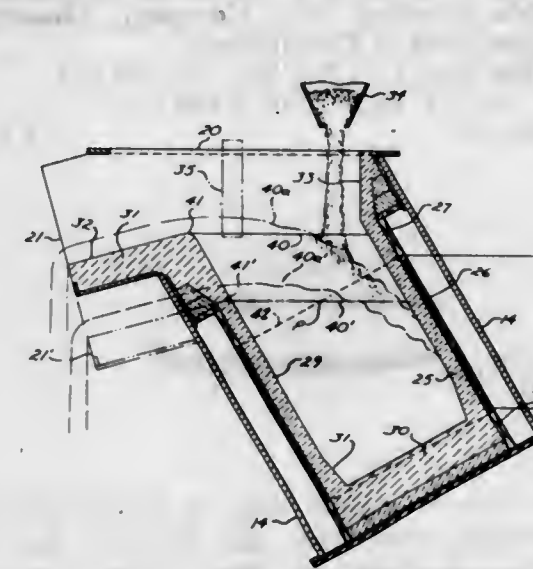
Filed Mar. 20, 1967, Ser. No. 624,535

Int. Cl. H05k 5/02, 5/16

U.S. Cl. 13—33 9 Claims

Electric furnace method and apparatus for continuous melting of finely divided particles of metal and continuous discharge of the melted metal, by depositing the particles in a turbulent, circulating portion of the melt and

discharging the melted metal from a relatively quiescent a signal representing the response to the servo; that is, portion of the melt. This is achieved in an induction furnace the flight control system is simulated with hardware which



nance inclined to the vertical in a constant continuous over-flow pattern therefrom.

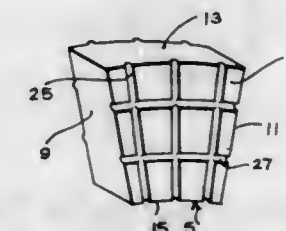
### 3,463,865 REFRACTORY BLOCK FOR ANNULAR LININGS

Edward M. Sarraf, 22290 Blossom Drive, Rocky River, Ohio 44116

Filed Jan. 3, 1967, Ser. No. 606,944

Int. Cl. H05k 5/12, 5/02

U.S. Cl. 13—35 2 Claims



Refractory linings for barrel type channel furnace induction furnaces and other vessels having an annular refractory lining. The shapes are characterized as having generally opposed curved side surfaces, opposed end surfaces and opposed face surfaces. The shapes contain complementary tongues and grooves in opposed face surfaces extending between the opposed side surfaces and also between the opposed end surfaces.

### 3,463,866 FLIGHT SIMULATOR CONTROL LOADING SYSTEM

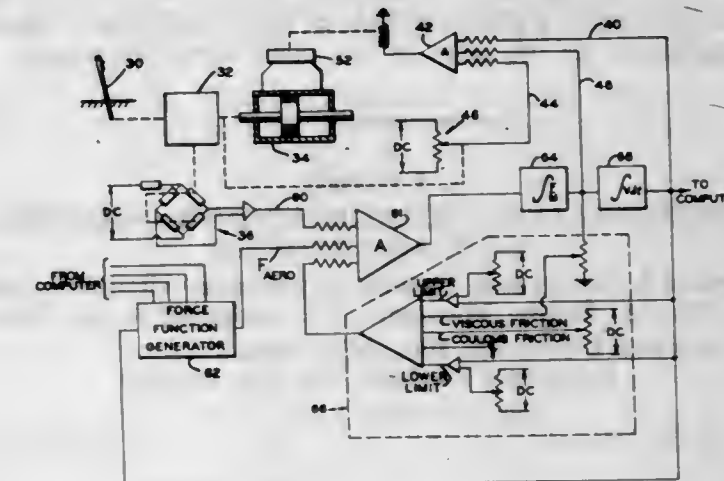
Lynn Allen Staples, Binghamton, N.Y., assignor to Singer-General Precision, Inc., a corporation of Delaware

Filed June 18, 1964, Ser. No. 376,039

Int. Cl. G09b 9/08

U.S. Cl. 35—10.2 7 Claims

A control loading system for a grounded flight trainer having a servo feedback loop to provide realistic opposition to mechanical input by a student pilot to a flight control member of the trainer wherein a math model simulation of the control member is provided to enable accurate computation of the response of such control member to programmed, simulated flight data as well as to the student pilot's mechanical input before applying



can accurately compute its reaction and this hardware is slaved to the servo feedback of the trainer.

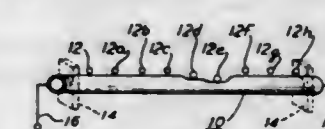
### 3,463,867 ELECTRONIC ORGAN KEYING SYSTEM

Leonard W. Pavla, Florham Park, N.J., assignor to Pavla-Farmy Associates, Morris Plains, N.J.

Filed Apr. 28, 1966, Ser. No. 545,987

Int. Cl. G10h 1/02

U.S. Cl. 84—1.21 4 Claims



An electronic organ keying system is disclosed in which a plurality of conductive bus bars are used to connect individual tone generators through filters to a common amplifier and speaker system. The bus bars are tubular members of a conductive rubber and have both longitudinal and vertical resistances. Each key carries a plurality of electrical contacts, each of which depresses against one of the bus bars and makes electrical contact therewith so that the electrical resistance decreases as the key is depressed and the contact bears more firmly against the bus bar.

Each bus bar is individually scaled by displacing output contacts in relation to the key contacts so that different amounts of longitudinal resistance are encountered by the tones in traversing the bus bars and through the individual filters to the common amplifier.

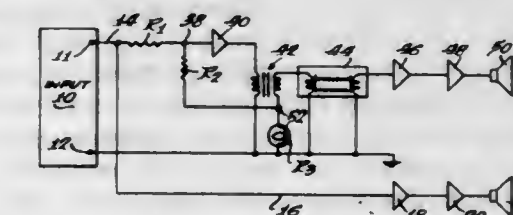
### 3,463,868 ELECTRIC MUSICAL INSTRUMENT REVERBERATION NONLINEAR CONTROL SYSTEM

Hans Laube, Chicago, Ill., assignor to Hammond Corporation, a corporation of Delaware

Filed June 2, 1966, Ser. No. 554,727

Int. Cl. G10h 1/02

U.S. Cl. 84—1.24 5 Claims



A control system for proportioning an artificial reverberation signal relative to the main signal of an electrical



musical instrument in which a nonlinear element is connected to receive the main signal and develops a nonlinear control signal thereacross which is fed back in inverse phase to reduce the gain of the reverberation signal nonlinearly as the level of the main signal increases.

3,463,869

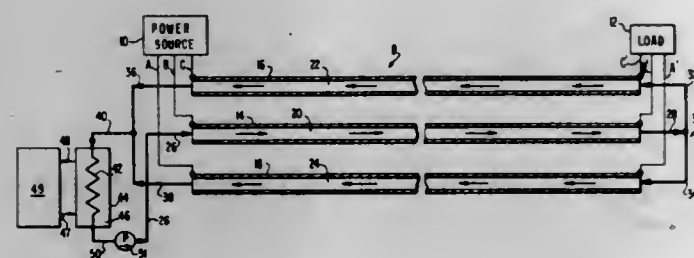
# REFRIGERATED UNDERGROUND TRANSMISSION LINE AND PROCESS

Gerald J. Cooley and Thomas E. Cormier, Allentown, and Peter A. Sipple, Macungie, Pa., assignors to Air Products and Chemicals, Inc., Allentown, Pa.  
Filed July 13, 1966, Ser. No. 564,969

Int. Cl. H01b 7/34, 9/06

U.S. Cl. 174-15

16 Claims



A refrigerated electrical transmission line operating in the non-superconductive range, which utilizes a subcooled liquid at superatmospheric pressure, whereby the conductor is first cooled by the sensible heat of subcooling and then cooled by the latent heat of vaporization. The vapor is then expanded rapidly so as to recover and utilize the refrigeration of expansion.

3,463,870

# SPACER/DAMPER

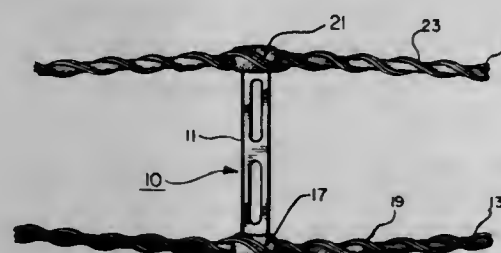
Robert A. Eucker, Brooklyn, Ohio, assignor to Preformed Line Products Company, Cleveland, Ohio, a corporation of Ohio

Filed Feb. 14, 1968, Ser. No. 705,374

Int. Cl. H02g 7/12, 7/14

U.S. Cl. 174-42

8 Claims

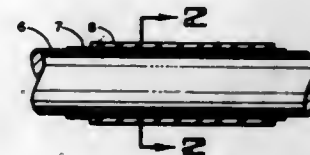


A device is disclosed for maintaining a desired spacing between a pair of electrical transmission cables or the like. A rigid spacer bar preferably includes opposed, integral U-shaped end portions for receiving respective ones of the cables intermediate the opposed legs of each end portion. A rubber-like cushion is interposed between the cables and the respective spacer end portions to resiliently support each cable and damp excessive movement thereof. The cables and the respective spacer end portions are held in a closely adjacent relationship by retaining means, preferably a series of helically preformed elements interwound about each cable and its associated spacer end portion.

3,463,871  
**STRIPPABLE INSULATED ELECTRICAL WIRE**  
Gerson George Rogers, Cinnaminson, N.J., assignor to Philadelphia Insulated Wire Company, Moorestown, N.J., a corporation of Pennsylvania  
Filed May 27, 1965, Ser. No. 459,279  
Int. Cl. B32b 7/06; B44d 1/14

U.S. Cl. 174-120

3 Claims



Electrical wire is coated with an inner fluorocarbon polymer colloidal silica layer and an outer layer of a polyimide resin in which the inner layer is releasably bonded to the wire and securely bonded to the outer layer.

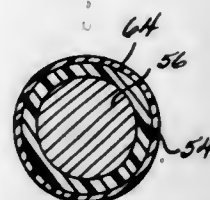
3,463,872  
**INSULATED ALKALI METAL CONDUCTOR**  
Alvin Gutttag, Bethesda, Md., assignor to Weston Chemical Corporation, New York, N.Y., a corporation of New Jersey

Filed Sept. 25, 1967, Ser. No. 670,166

Int. Cl. H01b 7/28

U.S. Cl. 174-120

15 Claims



Electrical conductors comprising an alkali metal conducting core are coated with a preformed heat shrinkable inert olefin hydrocarbon polymer film or sheet and the hydrocarbon shrunk into tight engagement with the alkali metal. The heat of the molten metal or of the metal while it is cooling can be used to shrink the polymer.

An alkali metal conductor having a coating of an inert olefin hydrocarbon polymer has the surface of the coating modified to render it receptive to a vinylidene chloride polymer and then a vinylidene chloride polymer is directly integrated into said modified surface to render the olefin hydrocarbon polymer substantially impervious to oxygen and carbon dioxide.

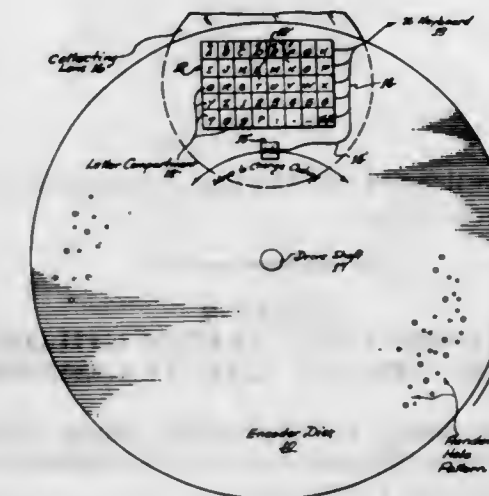
3,463,873  
**COMMUNICATION CODING SYSTEM**  
Jesse J. Halstead, La Verne, Calif., assignor to General Dynamics Corporation, a corporation of Delaware  
Filed Nov. 30, 1966, Ser. No. 598,066  
Int. Cl. H04n 1/44

U.S. Cl. 178-5.1

9 Claims

1. A secure communication system comprising: a transmitting station including an encoder disk, means for rotating said disk, said disk being provided with a random pattern of apertures therethrough, a network of selectively energized lights arranged to represent symbol and index locations and adapted to shine through said apertures in said disk, means for selectively energizing said lights, optical means positioned to receive light beams from said lights and for transmitting such beams to a light sensing

means, and means adapted for modulating and transmitting signals produced by said light sensing means; a receiving station including a decoder disk having apertures therein corresponding to the random pattern of said encoder disk, means for synchronously rotating said decoder disk with said encoder disk, means adapted for receiving sig-



nals from said transmitting station and directing same to a signal modulated light source, said light source being adapted for directing light pulses through at least an optical means to a readout means and an element of said synchronously rotating means positioned on the opposite side of said decoder disk when certain of said apertures of said decoder disk are aligned therewith.

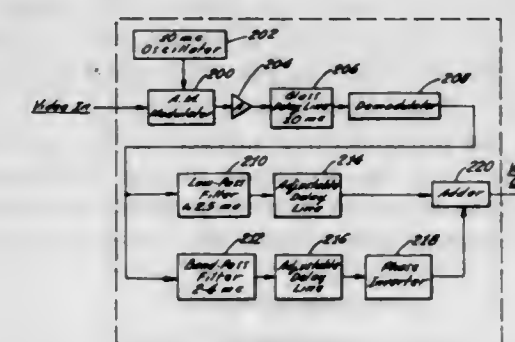
3,463,874  
**DROPOUT COMPENSATOR FOR NTSC COLOR TELEVISION**  
Frederick J. Hodge and Ralph R. Barclay, Camarillo, Calif., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed May 25, 1966, Ser. No. 552,779

Int. Cl. H04n 1/46, 9/02

U.S. Cl. 178-5.2

14 Claims



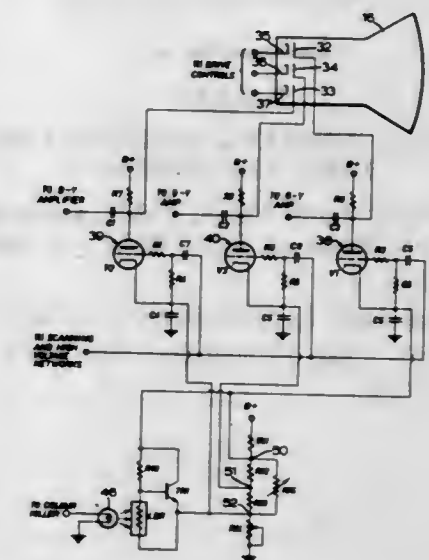
The present invention is directed to a dropout compensator for the NTSC color television system which compensates for dropouts in color video signals with a high degree of accuracy. Both luminance and color information are delayed for a period of substantially one line of video information wherein the color video signal is subdivided into two channels, one representing the luminance information and the other representing the color information. The color information is phase reversed so as to provide for a proper phase relationship of the color information and the two channels are recombined to provide a compensating signal which is substituted for the original color video signal when a dropout occurs.

3,463,875  
**CIRCUIT FOR AUTOMATICALLY VARYING COLOUR TEMPERATURE BETWEEN MONOCHROME AND COLOUR RECEPTION IN A COMPATIBLE COLOUR TELEVISION RECEIVER**

John D. Lovely, Waterloo, Ontario, Canada, assignor to Electrohome Limited, Kitchener, Ontario, Canada  
Filed July 17, 1967, Ser. No. 653,970  
Int. Cl. H04n 5/44

U.S. Cl. 178-5.4

10 Claims



The colour temperature of the image reproduced by the picture tube of a colour television receiver is automatically changed when the signal being received changes between a monochrome and a colour television signal by means of a radiation emitting device whose radiation emitting state varies for monochrome and colour reception and a radiation-sensitive electrical device that has an electrical characteristic that varies dependent upon the radiation emitting state of the radiation emitting device, and that is located in a position to receive radiation from the latter. The radiation-sensitive device is connected in circuit with at least one of the electron guns of the picture tube and automatically varies the grid-cathode potential difference of this gun and hence the beam current of this gun relative to the beam current of another gun in response to changes in the electrical characteristic of the radiation-sensitive electrical device.

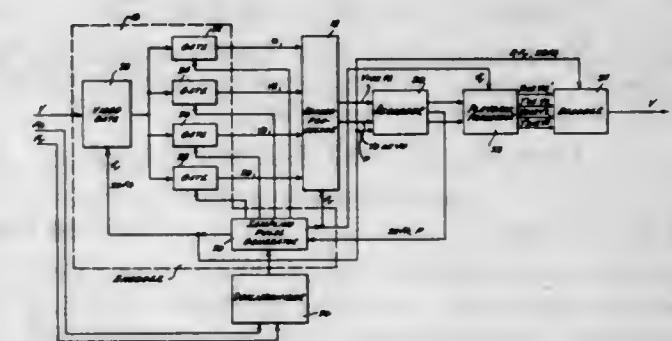
3,463,876  
**TV BANDWIDTH REDUCTION**  
Russell R. Law, Malibu, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Nov. 22, 1966, Ser. No. 596,178

Int. Cl. H04n 7/00, 5/76; H04b 1/66

U.S. Cl. 178-6

29 Claims



1. In a television system of the type in which video information is sequentially sampled in a pattern of in-



formation bits that is repeated every X horizontal lines, an improvement therein of:

means responsive to a base frequency signal of the video information for generating enable signals and inhibit signals; and  
gate means coupled to receive the sequentially sampled video information bits and coupled to receive the enable signals and the inhibit signals for processing the received information bits in response to the enable signals and inhibit signals by conducting only evenly-spaced ones of the information bits during a select number of video fields.

3,463,877

### ELECTRONIC EDITING SYSTEM FOR VIDEO TAPE RECORDINGS

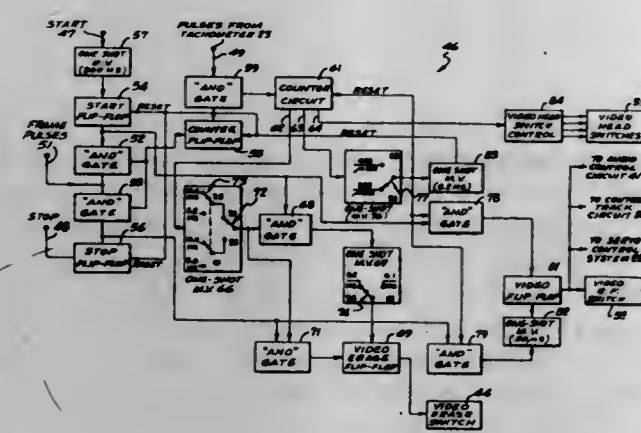
Charles W. Crum, Santa Clara, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Aug. 2, 1965, Ser. No. 476,444

Int. Cl. H04n 5/76

U.S. Cl. 178—6.6

21 Claims



An electronic system for editing video recordings on magnetic tape wherein the timing intervals for controlling the editing operations are established by counting head drum tachometer pulses. The number of pulses relate to a unit of tape length, the unit of which may be dependent upon the television signal standards. The system may include means responsive to an initiating signal and to a frame pulse of the video signal recorded on said tape following an initiating signal for generating a control pulse which control pulse actuates an erase means. It may further include means responsive to a predetermined number of tachometer pulses to allow the tape to move a predetermined distance before recording is effected.

3,463,878

### VIDEO RECORDING APPARATUS

Ernie G. Nassimbene, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 13, 1967, Ser. No. 609,110

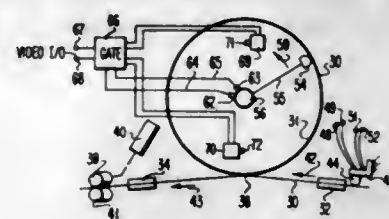
Int. Cl. H04n 5/76

U.S. Cl. 178—6.6

10 Claims

Helical scan recording apparatus for recording video pictures transversely across a magnetic recording tape. The tape is wrapped completely around the rotary head unit which transversely scans across the entire width of the tape. Each transverse track comprises one video frame of two fields. The apparatus records two video fields on each helical track of the tape, leaving a gap between the

fields at the center of the tape for linear recording thereat of audio and control tracks. To accommodate the gap, the



bottom seven lines of the 256-line video picture are eliminated for both fields.

3,463,879

### IMAGE TRANSMITTING SYSTEM UTILIZING ONE TUBE FOR DISPLAY AND TRANSMISSION OF IMAGES

Shoichi Miyashiro, Yokohama-shi, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

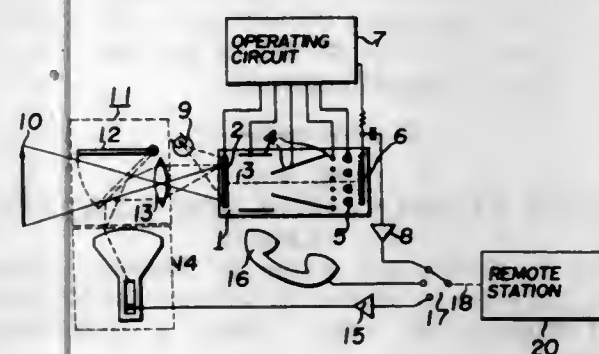
Filed Apr. 15, 1966, Ser. No. 542,846

Claims priority, application Japan, Apr. 19, 1965, 40/22,735

Int. Cl. H04n 7/04, 7/14

U.S. Cl. 178—6.8

6 Claims



A direct viewing type photoelectric storage tube, into which a fluorescent surface is incorporated, provides a display and image transmitter for use with slow speed scanning; an optical system projects a light image of an object onto the storage tube, a flying spot scanner provides a scanning current for the photoelectric surface of the tube, and a flood light source is provided for further illuminating the photoelectric surface of the storage tube so that images may be displayed on the fluorescent surface. A changeover switch may be provided for converting the image transmission system to an image reception system.

3,463,880

### HALFTONE IMAGE GENERATOR SYSTEM

Carl R. Conson, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Mar. 21, 1966, Ser. No. 535,884

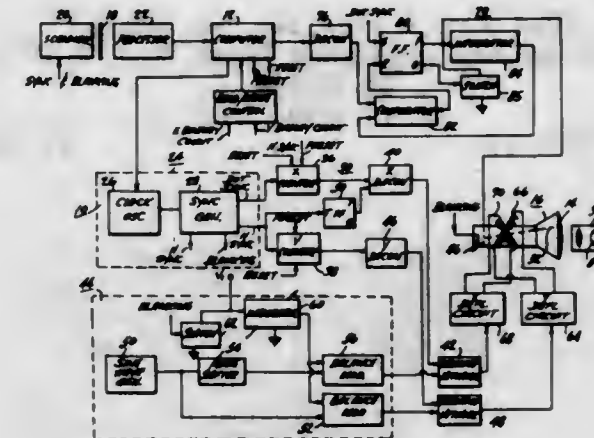
Int. Cl. H04n 5/38

U.S. Cl. 178—7.2

9 Claims

A halftone image generator generates a halftone image that simulates an original picture having a continuous tone image thereon. The halftone image generator includes an imaging device having a surface and scanning means for scanning the surface to create a plurality of halftone dots for forming images on the surface. The original picture is initially scanned to provide a plurality of analog image signals corresponding to the tones of the continuous tone picture. The analog image signals are digitized and stored in the memory in the form of digital signals. The memory

is read and the digitized signals are converted back into analog signals which are applied to the scanning means of



the imaging device to control the size of the halftone dots in accordance with the tones on the original picture.

3,463,881

### NOISE-GATED SYNC SEPARATOR AND AGC FOR TELEVISION RECEIVER

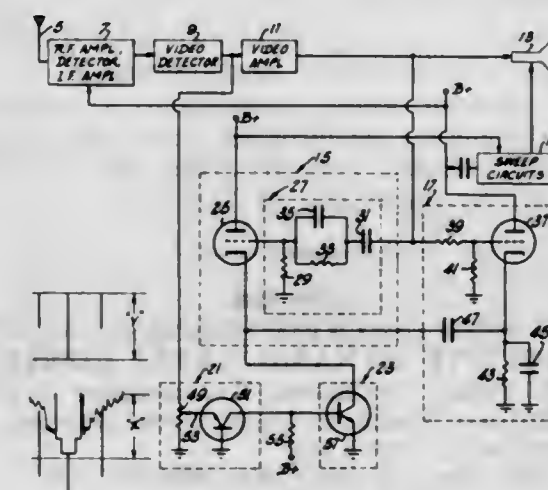
Robert Dwight Gantt and Robert Charles Wheeler, Batavia, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Mar. 28, 1967, Ser. No. 626,444

Int. Cl. H04n 3/16, 5/38

U.S. Cl. 178—7.3

11 Claims



Noise-gating of the synchronizing pulse separation and automatic gain control circuitry in a television receiver is accomplished by providing a means for amplifying and limiting noise signals of a magnitude greater than the magnitude of the synchronizing pulse signals of a composite video signal and switching means coupling said synchronizing pulse separation and automatic gain control circuitry to circuit ground and responsive to said amplified and limited noise signals to reduce conduction through said synchronizing pulse separation and automatic gain control circuitry. The means for amplifying and limiting the noise signals includes an amplifying and limiting means having a given conduction bias level and means for altering the magnitude of the conduction bias level and the synchronizing pulse signals with respect to one another such that the conduction bias level is of a magnitude slightly greater than the synchronizing pulse signals. Also, means are provided for dynamically altering the magnitude of the conduction bias level and synchronizing pulse signals with respect to one another.

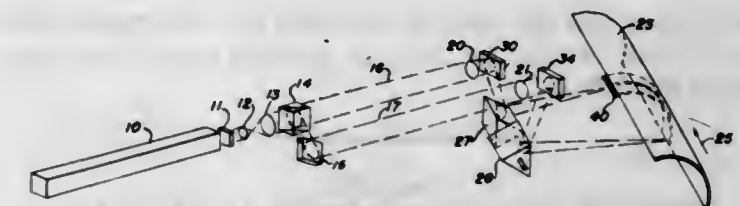
### 3,463,882 ROTATING MIRROR SCANNER

Robert J. Herbold, Sunnyvale, Calif., assignor, by mesne assignments, to Technical Operations, Incorporated, Burlington, Mass., a corporation of Delaware  
Filed May 11, 1966, Ser. No. 549,225  
Int. Cl. H04n 3/02

U.S. Cl. 178—7.6

10 Claims

This disclosure depicts an optical flying spot scanning system including beam swinging means and a novel anamorphic lens in the form of a filar disposed contiguous to



the scan plane in the path of the spot-forming beam for reducing spot jitter transverse to the beam path.

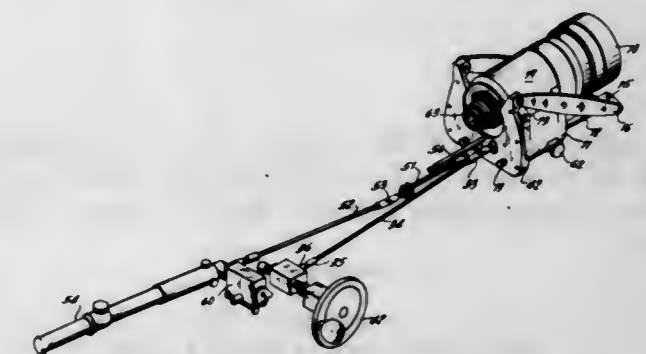
3,463,883

### TELEVISION CAMERA LENS CONTROL DEVICE

Frank G. Back, Glen Cove, N.Y., assignor to Zoomar, Inc., Glen Cove, N.Y., a corporation of New York  
Filed Aug. 15, 1966, Ser. No. 572,537  
Int. Cl. H01j 29/89

U.S. Cl. 178—7.92

4 Claims



A television varifocal lens control device in which the lens is removably carried upon an upstanding plate secured to the camera having spaced forwardly extending rods thereon to support the lens. Positive rotary motion to focus, and drive the movable elements within the lens is supplied by two elongated telescoping rod-like systems in which non-circular inner members are driven by sleeves having non-circular bores to receive the inner members.

3,463,884

### ELECTRONIC TYPING MACHINE AND TRANSFER TUBE THEREFOR

Eugene Norman, Cincinnati, Ohio, assignor of thirty-four percent to Charles E. McVaugh, twenty-two percent to David P. Kohnen, and ten percent to Arthur H. Bein-kemper, Jr., all of Cincinnati, Ohio  
Filed Oct. 4, 1965, Ser. No. 492,598  
Int. Cl. H04l 17/16

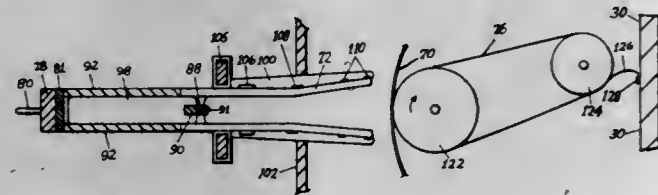
U.S. Cl. 178—30

16 Claims

Typing machine having plurality of key switches each of which actuates a non-destructive readout memory unit, and a parallel to serial converter for receiving digital information from said memory unit and feeding serial digital information to an open faced scanning tube which fires high energy particles toward an accelerator to produce an image on an image receiving surface disposed between the tube and the accelerator. The open faced scanning tube includes an evacuated chamber with a cath-



ode at each end, means for causing one cathode to emit electrons, a magnetic field for confining these electrons centrally of the evacuated chamber, and means for sup-

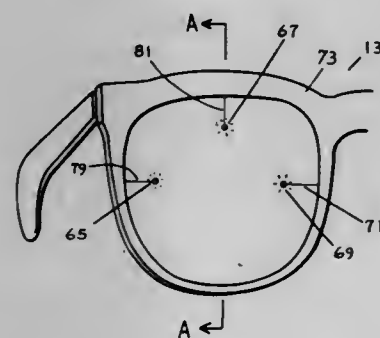


plying electrical impulses to the other cathode causing the first cathode to emit an energetic particle toward the open face of the tube.

**3,463,885**  
**SPEECH AND SOUND DISPLAY SYSTEM**  
Hubert W. Upton, Arlington, Tex., assignor to  
George Galerstein, Dallas, Tex.  
Filed Oct. 22, 1965, Ser. No. 505,136  
Int. Cl. H04m 1/02

U.S. Cl. 179—1

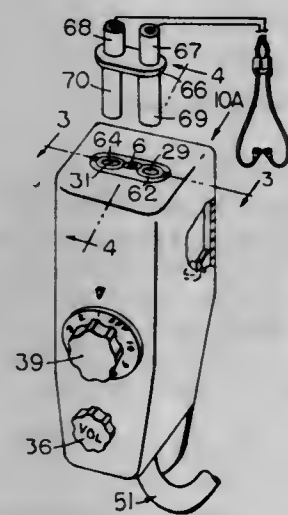
14 Claims



To augment normal lip reading, such characteristics of speech as plosive sounds, fricatives, and voicing are displayed as lights superimposed upon a normal field of vision.

**3,463,886**  
**TRANSDUCER APPARATUS**  
Thomas Albert Scanlon, Barrington, R.I., assignor to  
P M & E Electronics, Inc., East Providence, R.I., a corporation of Rhode Island  
Continuation-in-part of application Ser. No. 592,519,  
Nov. 7, 1966. This application Sept. 15, 1967, Ser.  
No. 668,034  
Int. Cl. H04m 1/05; H04r 3/00  
U.S. Cl. 179—1

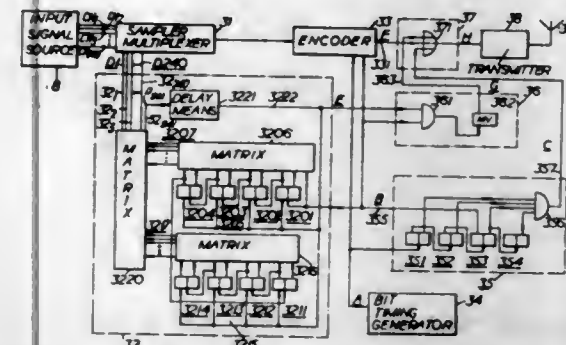
4 Claims



This invention relates to a transducer apparatus and sound tube head set combination, and features an electrical means for opening or closing a selected electrical circuit in the transducer, thereby to control the functioning of the sound tube head set.

**3,463,887**  
**TIME-DIVISION MULTIPLEXED PCM TRANSMISSION SYSTEM**  
Sukehiro Ito, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan  
Filed Nov. 3, 1964, Ser. No. 408,517  
Claims priority, application Japan, Nov. 7, 1963,  
38/60,066  
Int. Cl. H04j 3/02  
U.S. Cl. 179—15

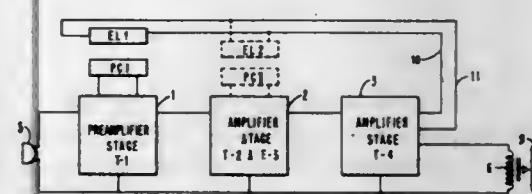
17 Claims



A time division multiplex PCM transmission system is provided according to this invention wherein the transmitted information signals and the received information signals includes both a frame synchronizing series in a specified channel location of said information signals as well as a discrete synchronizing pulse located in each channel position of said information signal whereby rapid discovery and correction of a true non-synchronous condition is achievable. Further, apparatus for synchronizing the transmitter and receiver in such a time division multiplex PCM transmission system is provided, according to one embodiment of this invention, wherein if a loss of synchronism with regard to a channel and a frame occurs substantially simultaneously, the restoration of a synchronous condition occurs according to a fixed priority schedule whereby the synchronous condition of a channel will first be restored and thereafter the synchronous condition of the frame will be restored.

**3,463,888**  
**CIRCUITS WITH ELECTROLUMINESCENT-PHOTO-CONDUCTIVE DYNAMIC LEVEL CONTROL**  
William R. Yount, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Dec. 30, 1965, Ser. No. 517,636  
Int. Cl. H03f 17/00  
U.S. Cl. 179—100.1

7 Claims



An amplifier circuit has photoconductive elements and an associated electroluminescent panel. The panel and the elements are arranged in a lighttight set. A portion of the electroluminescent panel extends outside the packet to provide a visual indication of signal levels in the circuit to an observer. The light output from the panel is directed through the photocells in a negative feedback relationship to compress the peak signals, thereby minimizing distortion and overloading in the circuit. One of the photoconductive elements in the set is switchable in and out of the circuit. Additional complete sets can be switched in and out of the circuit.

**3,463,889**  
**MOVING MAGNET STEREOGRAPHIC PICKUP**  
Erhard Ahrens, Kiel, Schleswig-Holstein, Germany, assignor, by mesne assignments, to Shure Brothers, Incorporated, a corporation of Illinois  
Filed Oct. 21, 1958, Ser. No. 768,785  
Claims priority, application Germany, Oct. 30, 1957,  
E 14,862; Feb. 15, 1958, E 15,377  
Int. Cl. H04r 1/16, 9/14  
U.S. Cl. 179—100.41

30 Claims

**3,463,891**  
**CONTROL UNITS FOR VALVE ACTUATORS**  
Jeremy J. Fry, Bath, Somerset, England, assignor to Rotork Engineering Company Limited, Somerset, England  
Filed Nov. 3, 1967, Ser. No. 680,579  
Claims priority, application Great Britain, Dec. 15, 1966,  
56,137/66  
Int. Cl. H01h 3/16, 15/14  
U.S. Cl. 200—47

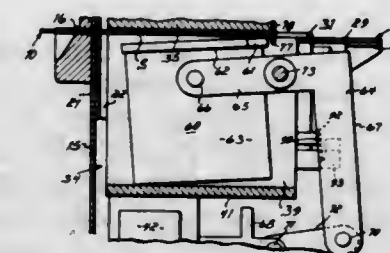
11 Claims



1. A phonograph pickup transducer system comprising a pair of electromagnetic systems each comprised of a core terminating in a pair of spaced apart pole pieces forming a gap therebetween and a coil arranged about said core, the orientation of said pole pieces being such that they form a common gap and the pole spacing directions of the respective pairs of pole pieces are perpendicular to each other, an armature comprising a permanent magnet operatively supported in said common gap for angular vibration therein substantially about a point within said magnet, the magnetic axis of said armature being oriented substantially perpendicular to both said pole spacing directions, resilient means for supporting said armature and maintaining the proper orientation thereof, and means including a stylus connected with said armature for transmitting vibrations thereto.

**3,463,890**  
**CARD READING DEVICE HAVING SELECTIVELY OPERABLE PLATEN**  
Thomas J. Schinner and Ernest B. Zimmer, Cincinnati, Ohio, assignors to The Cincinnati Time Recorder Company, Cincinnati, Ohio, a corporation of Ohio  
Filed Aug. 1, 1966, Ser. No. 569,180  
Int. Cl. H01h 43/08  
U.S. Cl. 200—46

19 Claims

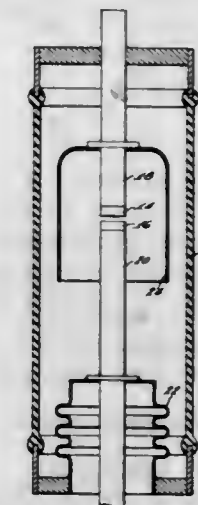


A coded card reader having a movable slide assembly provided with a shelf for supporting a card, an abutment mounted to the slide assembly at the end of the shelf which is engageable with the leading edge of a card inserted into the reader and which is supported by the shelf for reciprocating the slide assembly in a direction parallel to card insertion to a read position in response to insertion movement of the card. Also included is a selectively operable platen movable in a direction substantially normal to the plane of the inserted card supported by said shelf for forcing the card in a direction substantially normal to the reciprocating direction of said slide assembly, thereby facilitating reading of the coded card. Also disclosed are means for disabling one reader when another reader with which it is interconnected is in use.

865 O.G.—47

**3,463,892**  
**CONTACT SUPPORTING STUD AND METHOD FOR MAKING THE SAME**  
Henry J. Wesoloski, Milton, Mass., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.  
Filed June 29, 1966, Ser. No. 567,337  
Int. Cl. H01h 9/30, 33/66  
U.S. Cl. 200—144

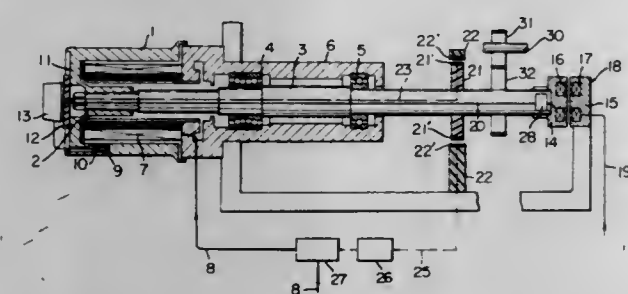
5 Claims



In a vacuum type electric circuit interrupter having a pair of relatively movable contact studs therein, at least one of the studs is made of an alloy comprising 99.7+ % copper, .2% zirconium and .03 to .08% vanadium, which alloy has first been heated to at least 980° C. for 3 to 5 minutes and subsequently reheated to about 400° C. for 10 to 16 hours.

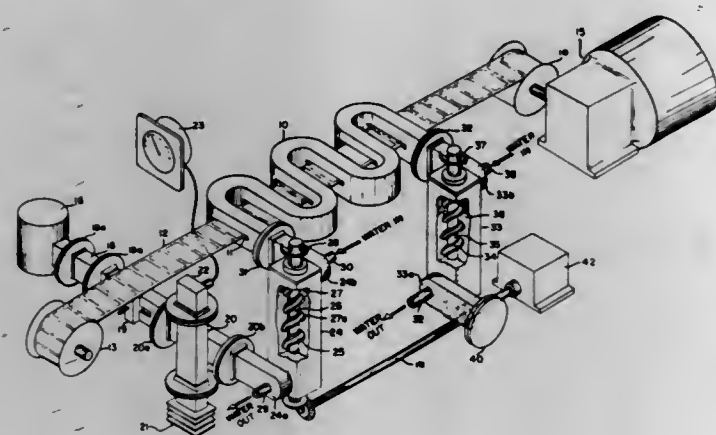


**3,463,893**  
**TEMPERATURE CONTROL APPARATUS FOR ROTARY HEATING ROLLER**  
 Masao Chifu, Ibaragi-shi, Japan, assignor to Teijin Limited, Osaka, Japan  
 Filed Apr. 24, 1967, Ser. No. 633,092  
 Int. Cl. H05b 5/00, 9/06  
 U.S. Cl. 219—10.61 13 Claims



A temperature controlling apparatus for a heating roller rotatable around a shaft. The roller is equipped with a detector such as a quartz crystal resonator for detecting the temperature of the roller and supplying the detected signal to the controlling device; the input to and output from the detector are electrically coupled respectively to the energy source and the above device without mechanical contact therewith.

**3,463,894**  
**MICROWAVE DRYING SYSTEM USING PHASE SHIFTERS**  
 William J. Bleackley, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada  
 Filed May 31, 1967, Ser. No. 642,575  
 Claims priority, application Canada, July 8, 1966 964,965  
 Int. Cl. H05b 9/06  
 U.S. Cl. 219—10.61 4 Claims

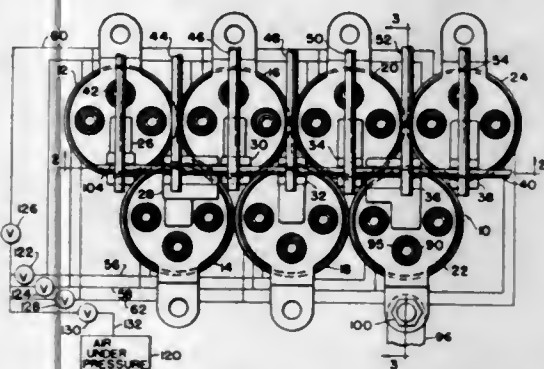


A microwave drying system for film, paper, and the like of the type using a tuner in the input to provide a tuned circuit in the drying section wherein the undesirable effects of stationary standing waves on the material being dried are eliminated by cyclically shifting the standing wave pattern in the drying section by means of phase shifters placed ahead of and after the drying section.

**3,463,895**  
**MESH WELDER**  
 Charles Senn, 12633 Wilfred Ave., Detroit, Mich. 48205  
 Filed Dec. 6, 1965, Ser. No. 511,942  
 Int. Cl. B23k 11/10  
 U.S. Cl. 219—56 7 Claims

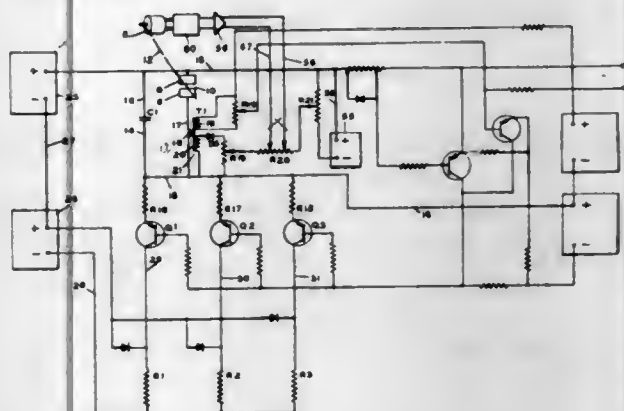
Apparatus for welding longitudinally extending linear members at selected spacing to a transversely extending linear member to provide mesh for reinforcing concrete or the like is provided. The apparatus includes a plurality

of welding guns having electrodes secured thereto which electrodes are eccentric to the guns and are positioned at selected spacing along the transversely extending linear member. The electrodes are engageable with the linear members at different selected spacing on actuation of



different welding guns. A plurality of separate manifolds are connected to the welding guns for actuating separate groups of the welding guns to bring selected electrodes into engagement with the linear members at the selected spacing along the transversely extending linear member.

**3,463,896**  
**ELECTRO-DISCHARGE MACHINING APPARATUS**  
 Robert L. Henry, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio  
 Original application May 18, 1961, Ser. No. 117,256, now Patent No. 3,286,127, dated Nov. 15, 1966. Divided and this application Aug. 15, 1966, Ser. No. 572,324  
 Int. Cl. B23k 9/16  
 U.S. Cl. 219—69 3 Claims



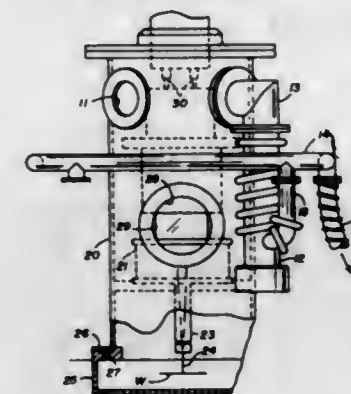
A servo-feed control for spark discharge machining apparatus having a gap current transformer for producing a voltage responsive to current pulses flowing through the gap which is then combined in series opposing relation with the voltage across the gap to produce a resultant voltage which is compared with a reference voltage to produce an error voltage that is representative of the difference between the actual gap spacing and the preselected gap spacing.

**3,463,897**  
**MULTIPLE DIFFUSION PUMP ARRAY FOR IMPROVED STATISTICAL PUMPING OF VACUUM WORK CHAMBER**  
 Hugh M. Rush, Coronado, Calif., assignor of Rohr Corporation, San Diego, Calif., a corporation of California  
 Filed Apr. 17, 1967, Ser. No. 631,494  
 Int. Cl. B23k 9/00  
 U.S. Cl. 219—121 2 Claims

Increased efficiency of diffusion pumping of a vacuum work chamber is achieved by reducing the distance between an available pump inlet and the gas molecules to be pumped thereby, and by placing a plurality of such

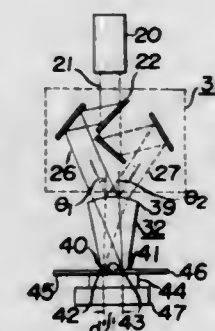
pump inlets strategically about the chamber. Small pumps used for this purpose operate into a common manifold, and the vacuum work chamber and its pumps and manifold

vacuum enclosure is positioned over the weld joint and includes inflatable and cooled sealing means to provide leak-tightness of the enclosure irrespective of the shape



are thus operable together as a portable unit. An electron beam gun is positioned within the vacuum work chamber so as to perform a welding operation.

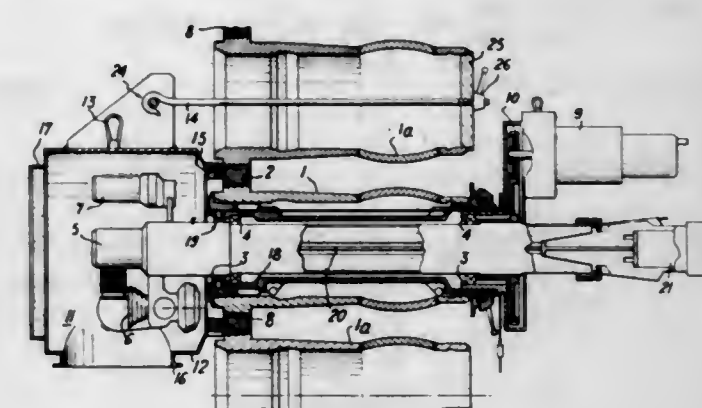
**3,463,898**  
**WELDING DEVICE UTILIZING LASER BEAMS**  
 Takashi Takaoka, Kawasaki-shi, and Yuji Okabe, Tokyo, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan  
 Filed July 6, 1966, Ser. No. 563,118  
 Claims priority, application Japan, July 9, 1965, 40/40,820; Dec. 17, 1965, 40/77,339  
 Int. Cl. H05b 7/18  
 U.S. Cl. 219—121 2 Claims



A laser beam welding apparatus for simultaneously welding a plurality of desired points wherein a single laser beam emitted from a laser source is divided into a plurality of laser beams propagating in different directions. The divided laser beams are then focused on a plurality of welding points according to the angle at which the divided laser beams impinge a focusing member.

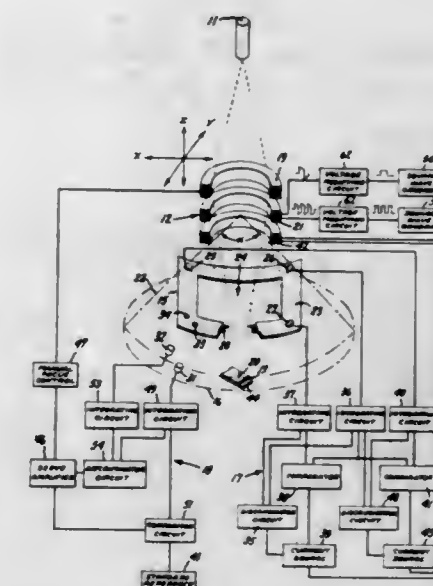
**3,463,899**  
**DEVICE FOR WELDING PARTS BY ELECTRON BOMBARDMENT**  
 Henri Foulquier, La Celle-Saint-Cloud, René Roudier, Sucy-en-Brie, and Paul Thome, Saint-Cloud, France, assignors to Commissariat a l'Energie Atomique, Paris, France  
 Filed Apr. 6, 1967, Ser. No. 628,931  
 Claims priority, application France, Apr. 15, 1966, 57,795  
 Int. Cl. B23k 15/00, 7/04  
 U.S. Cl. 219—121 3 Claims

A device is disclosed for welding a sleeve to a plate by the use of an electron beam device. The electron beam device is supported within the sleeve and adapted to weld an annular joint between the sleeve and plate. A



of the sleeve and plate. The electron beam gun may also be driven by the use of a self-driven trolley arrangement mounted on rails positioned within the vacuum enclosure.

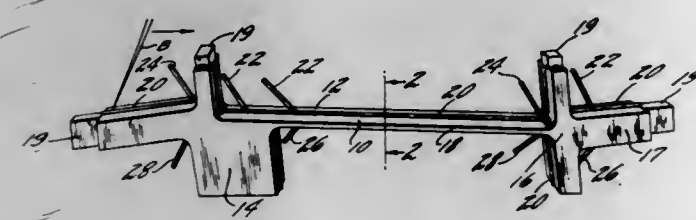
**3,463,900**  
**ELECTRON BEAM WELDING APPARATUS**  
 Robert D. Downing, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York  
 Filed July 10, 1967, Ser. No. 652,123  
 Int. Cl. H05b 7/18  
 U.S. Cl. 219—121 8 Claims



The location of an electron beam utilized in electron beam welding is determined by a detector having three Faraday cages right triangularly disposed about the electron beam and lying in a plane perpendicular to the desired axial disposition of the electron beam during a welding operation. The beam is simultaneously scanned and swept across the three Faraday cages and the output signals from the cages produced by the electron beam traversal are compared to determine the location of the beam in the plane of the workpiece. A fourth Faraday cage is situated along an arc defined by the focal point of a properly positioned electron beam during a beam traversal and the output from the fourth Faraday cage functions to produce a signal proportional to the position of the focal point of the beam along the axial plane. Feedback circuits are provided to automatically position and focus the electron beam upon the focal spot location required for the production of high quality welds in the workpiece.

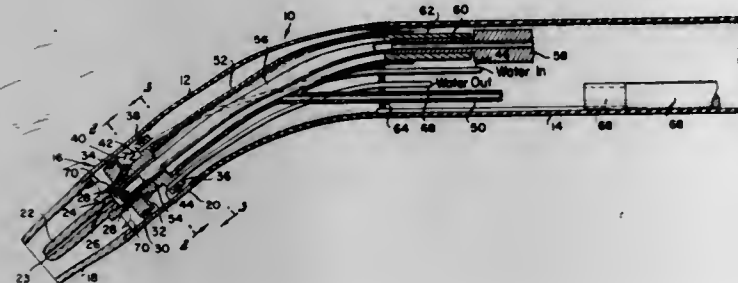


**3,463,901**  
**METHOD OF ELECTRON BEAM WELDING AND PRODUCTS THEREOF**  
 Romeo Leon Lamonde, Glastonbury, and John Joseph Fiedorowicz, Cromwell, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware  
 Filed Apr. 30, 1968, Ser. No. 725,382  
 Int. Cl. H05b 7/18  
 U.S. Cl. 219—121 10 Claims



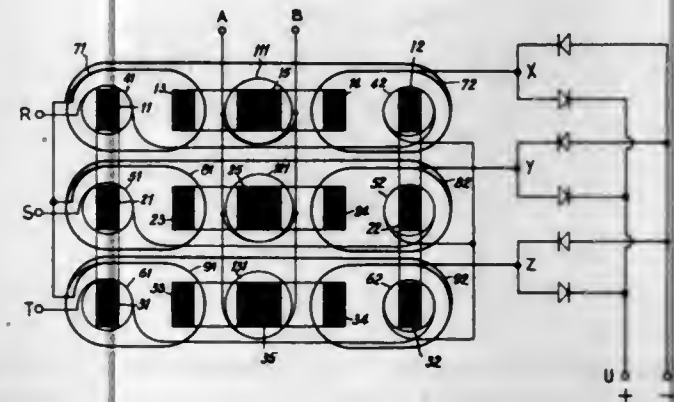
This disclosure relates to a method of welding and the welded article formed by means of a high intensity beam such as an electron beam. The disclosure is concerned particularly with workpieces which have varying thicknesses along the plane of the desired weld seam and employs elongated segments of filler material attached to the workpieces in the welding plane at locations along the desired weld seam where the thickness changes abruptly. The elongated segments of filler material may be slanted in the plane swept by the welding beam so that the beam impinges on the projecting ends of the segments and melts small portions of the segments progressively as the beam advances along the seam.

**3,463,902**  
**WELDING GUN**  
 Willis A. Bircher, Box 195, Dunkard, Pa. 15328  
 Filed Aug. 25, 1966, Ser. No. 575,023  
 Int. Cl. B23k 9/00  
 U.S. Cl. 219—130 7 Claims



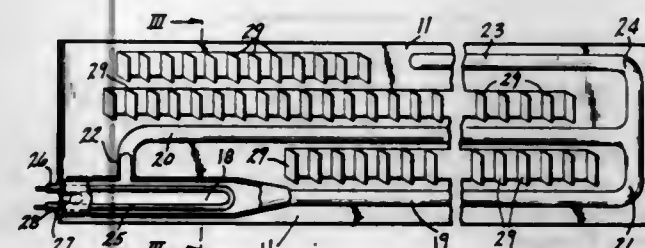
An electric arc welding gun for use with a consumable electrode comprising a barrel having a nozzle at one terminal, a gas conveying tube within the barrel, an electrode guiding tube within, and in spaced relation to, the walls of said gas conveying tube, a tubular nozzle portion connected to a terminal of the gas conveying tube and spaced from the electrode guiding tube to permit passage of the gas therebetween, a pair of spaced flanges extending outwardly from the nozzle portion into sealing engagement with the barrel to form a cooling chamber, inlet and outlet openings in one of the flanges for admitting a cooling fluid to the cooling chamber, a contact tip having a bore through which an electrode passes, connected to the terminal of the nozzle portion, the contact tip being proximate, but spaced from, a terminal of the electrode guiding tube to provide a space into which gas from the gas conveying tube passes, a back pressure of gas being created in the electrode guiding tube to prevent air from entering the nozzle area through the electrode guiding tube.

**3,463,903**  
**DEVICE FOR THE FEED OF AN ELECTRIC ARC WELDING SET FROM THREE-PHASE CURRENT**  
 Albi Rudaz, Meyrin, Switzerland, assignor to Société Anonyme des Ateliers de Secheron, Geneva, Switzerland  
 Filed Apr. 4, 1966, Ser. No. 539,926  
 Int. Cl. B23k 9/10  
 U.S. Cl. 219—131 7 Claims



A three phase electric arc welding power supply set having a three phase power input with two three-phase transformers each having a magnetic core with three columns and three primary windings. A magnetic amplifier has three magnetic cores with three columns each, having a control power input with a control winding and three secondary windings. The three magnetic cores of the amplifier are disposed symmetrically between the two magnetic cores of the transformer so that one magnetic core of the amplifier is between one column of one transformer core and one column of the other transformer core. Each outer column of each amplifier core is adjacent to one column of one transformer core and each primary winding of a phase is connected to the power input and surrounding two corresponding columns of the two primary magnetic cores. Each secondary winding is connected to the power output and surrounding a pair of said adjacent columns. The control winding is connected to the control power input and surrounding the middle columns of each amplifier core, and the rectifying elements are disposed after the power output to rectify the welding current.

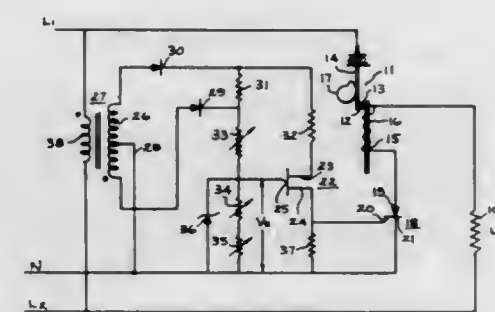
**3,463,904**  
**ELECTRICAL BASEBOARD HEATER**  
 Theron F. Pauls, Godfrey, Ill., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia  
 Filed June 2, 1965, Ser. No. 460,679  
 Int. Cl. H05b 3/02  
 U.S. Cl. 219—341 2 Claims



An electric baseboard heater comprises a pair of metal sheets united along a plane and having portions extending away from the plane in a pattern to form a self-contained, sealed tubular fluid circulation path. The path includes a lower horizontal run, an upper horizontal run

and curved end portions interconnecting the upper and lower runs. An integral fluid expansion tube communicates with the circulation path. An electric heating element is received in an enlarged pocket portion formed in one end of the lower run. The fluid circulating path is filled with a heat exchange fluid. In order to increase the heat exchange surface, areas of the sheets not employed in forming the fluid circulating path and expansion tube are provided with fins.

**3,463,905**  
**COMBINATION INFINITE HEAT SWITCH AND SOLID-STATE TEMPERATURE CONTROL**  
 Stanley B. Welch, Louisville, Ky., assignor to General Electric Company, a corporation of New York  
 Filed June 30, 1966, Ser. No. 561,824  
 Int. Cl. H05b 1/02  
 U.S. Cl. 219—494 16 Claims



A solid-state temperature control circuit for controlling electrical heating devices. An infinite heat switch is connected serially with a silicon controlled rectifier (SCR) and a temperature responsive unijunction is connected with a divider circuit to generate control signals for firing the SCR on alternate half cycles when the temperature of an area to be heated is above a first level. Control signals are generated for firing the SCR on both half cycles when the temperature of the area to be heated exceeds a second higher level or final desired temperature. A timing device may be included to terminate the heating process after a predetermined period has elapsed.

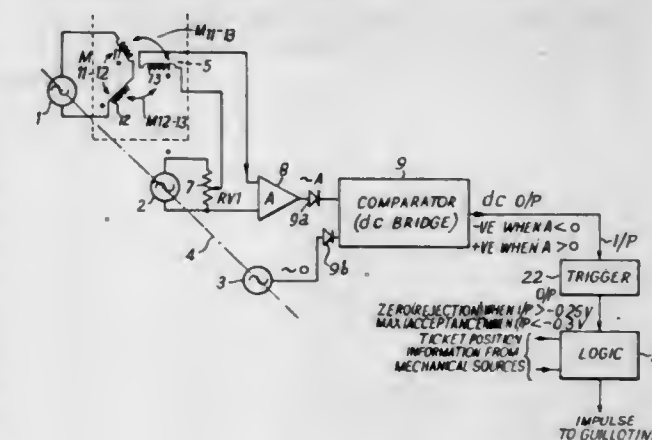
**3,463,906**  
**OPTICAL CARD READER**  
 Franklin C. Chiang, Palo Alto, Calif., assignor to Hewlett-Packard Company, a corporation of California  
 Filed Apr. 6, 1965, Ser. No. 445,975  
 Int. Cl. G06k 7/10  
 U.S. Cl. 235—61.11 13 Claims



Input and output card drive rollers are supported above a transport bed by guides spaced apart substantially the width of the data cards. The output card drive rollers are driven at a slightly greater surface velocity than the input card drive rollers to tension a data card flat against the

transport bed as it is driven past an optical reader including a row of data photosensors. A control circuit is responsive to a pair of edge detecting photosensors for electrically energizing the data photosensors only while the data card is driven through the data reading zone of the transport bed. Another photosensor may be employed for detecting a missing corner of the data card to indicate whether or not the data card is being driven in the appropriate orientation through the data reading zone. Alternatively, coincidence circuitry responsive to the data and edge detecting photosensors may be employed for indicating the orientation of a position coded data card as it is being driven through the data reading zone and for providing a correct indication of the data on the data card for any orientation in the reading zone.

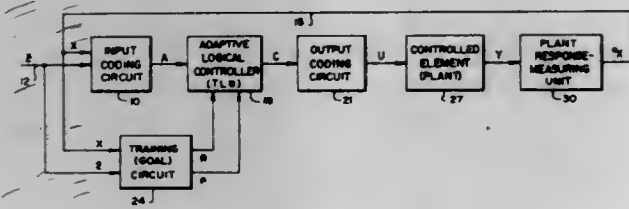
**3,463,907**  
**TICKET-CHECKING MACHINES**  
 Eric Lewis, Malmesbury, England, assignor to The Plessey Company Limited, Ilford, England, a British company  
 Filed Jan. 27, 1966, Ser. No. 529,169  
 Claims priority, application Great Britain, Feb. 11, 1965, 5,978/65  
 Int. Cl. G06k 7/08  
 U.S. Cl. 235—61.11 7 Claims



A device controlling the automatic cutoff of a single-journey section, containing a magnetic deposit, from an inserted ticket comprises three parallel ferromagnetic cores, each having a winding, which are arranged at the three corners of an equilateral triangle. When the ticket is in its check position, its deposit affects the coupling between two cores. The windings of one of these and of the third core are so fed from a common A.C. source that, in the absence of a ticket deposit the voltage induced in the winding of the remaining core supplemented if desired by a supplement voltage derived from the same A.C. source constitutes a small bias voltage in antiphase to the output voltage produced by a magnetic deposit, and the resultant biased output is rectified and compared with a reference voltage, also derived from the same A.C. source and rectified to produce a D.C. output of one polarity in the presence of a magnetic deposit between given limits of magnetic conductance and of the opposite polarity in all other cases. This D.C. comparator output is utilized to operate a guillotine and printer via a trigger circuit and a logic circuit, the latter controlled by a front microswitch opened by the presence of a ticket and a rear microswitch opened by abutment of the ticket against the stop, to prevent operation of the guillotine and printer until the ticket rests against the stop and to prevent reoperation until the front microswitch has been cleared.

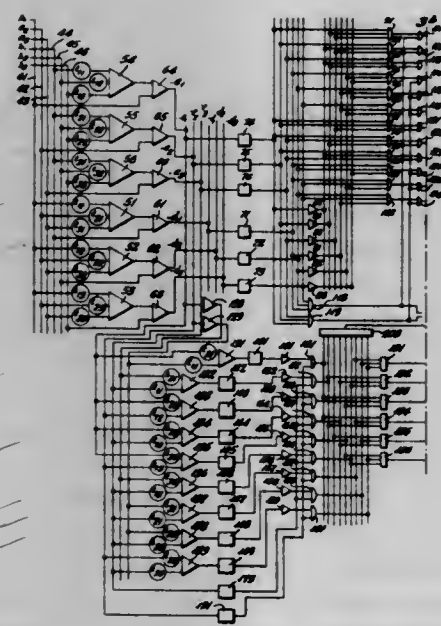
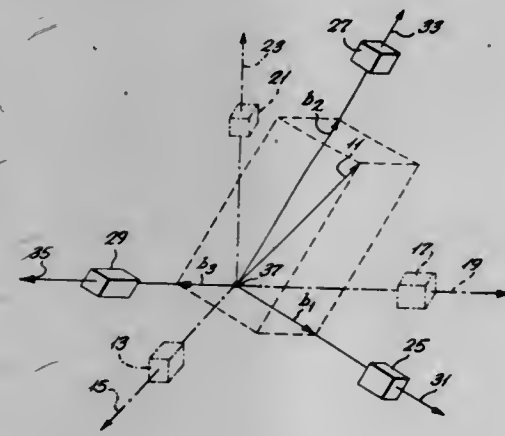


**3,463,908**  
**ADAPTIVE CONTROL SYSTEMS FOR IMPLEMENTING STABILITY CRITERIA**  
 Edward M. Connelly, Springfield, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware  
 Filed Oct. 23, 1965, Ser. No. 504,021  
 Int. Cl. G06f 15/18  
 U.S. Cl. 235—150.1 13 Claims



A self-organizing control system provides stability direction to the operation of a plant by adaptive response to training stimuli developed from a Lyapunov function of the state variables of the plant to generate a control function that drives the plant to a stable operating state. The control system can be trained to rapidly accomplish this desired goal, with the Lyapunov function implemented within the goal circuitry of the control system.

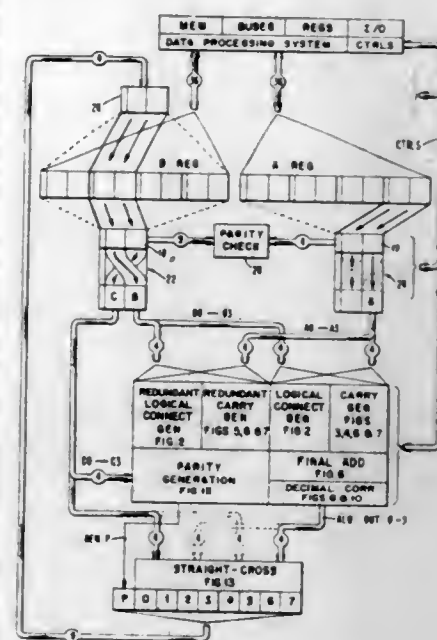
**3,463,909**  
**VECTOR SENSING SYSTEM**  
 Robert Weiss, Santa Clara, Calif., assignor to Singer-General Precision, Inc., a corporation of Delaware  
 Filed Aug. 15, 1966, Ser. No. 572,417  
 Int. Cl. G06f 15/50; G06g 7/70, 7/78  
 U.S. Cl. 235—150.25 11 Claims



A vector sensing system with malfunction detection comprising three primary vector sensors sensing the com-

ponents of a vector along a first set of three axes, a plurality of redundant vector sensors sensing the components of said vector along three axes skewed relative to said first set of axes, and malfunction detection means responsive to the output signals of said primary and redundant vector sensors to indicate which, if any, of said primary vector sensors is malfunctioning.

**3,463,910**  
**DIGIT PROCESSING UNIT**  
 Robert Keslin, Hyde Park, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
 Continuation-in-part of application Ser. No. 223,431, Sept. 13, 1962. This application Jan. 4, 1966, Ser. No. 518,619  
 Int. Cl. G06f 11/00; G11b 13/00  
 U.S. Cl. 235—153 5 Claims

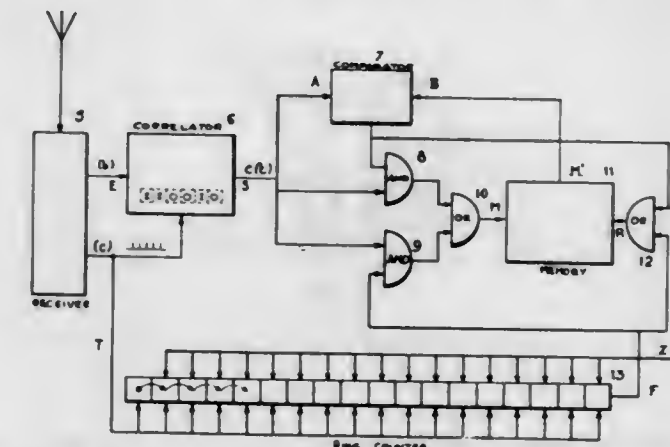


This disclosure relates to a high speed processing unit capable of performing arithmetic and logical functions on selectable digits while maintaining parity of larger word factors from which the digits are selected. The arithmetic and logical functions are performed by a single data path having a logical connective generator and a final adder stage acting together to perform logical connective functions upon two inputs of data or to perform addition functions upon two inputs of data.

**3,463,911**  
**VARIABLE THRESHOLD CORRELATOR SYSTEM FOR THE SYNCHRONIZATION OF INFORMATION SIGNALS BY A CYCLICALLY REPEATED SIGNAL GROUP**  
 Jacques Dupraz and Thaddeus Hawkes, Paris, France, assignors to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France  
 Filed Mar. 18, 1966, Ser. No. 535,416  
 Claims priority, application France, Apr. 6, 1965, 12,176  
 Int. Cl. G06g 7/19; G06f 15/34, 15/20  
 U.S. Cl. 235—181 6 Claims

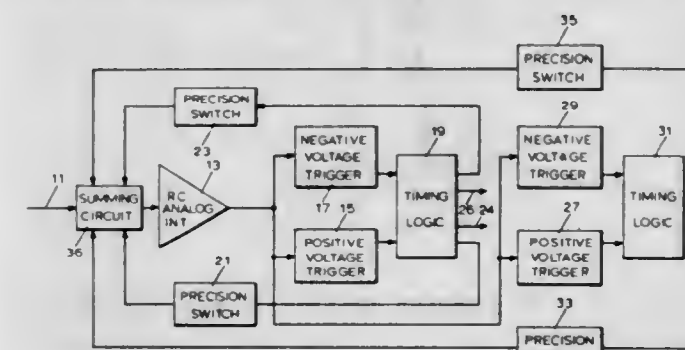
A variable threshold correlator for the synchronization of a continuous flow of information signals by a cyclically repeated predetermined signal group comprising a correlator for correlating this flow of signals with this predetermined group and a memory for storing the correlation signal provided by the correlator. A logical circuit controlled by a comparator transmits the correlation signal from the correlator to the memory when this

signal rises to a value higher than the stored value. A counter reset to zero by the comparator provides the



synchronization pulses, these pulses also controlling the inscription of the correlation signal in the memory.

**3,463,912**  
**DUAL SPEED RESET INTEGRATOR**  
 Harold Lerman, Paramus, N.J., and Murray S. Goldstein, Spring Valley, N.Y., assignors to Singer-General Precision Inc., a corporation of Delaware  
 Original application Sept. 30, 1963, Ser. No. 312,684. Divided and this application Jan. 25, 1968, Ser. No. 718,280  
 Int. Cl. G06g 7/18  
 U.S. Cl. 235—183 2 Claims

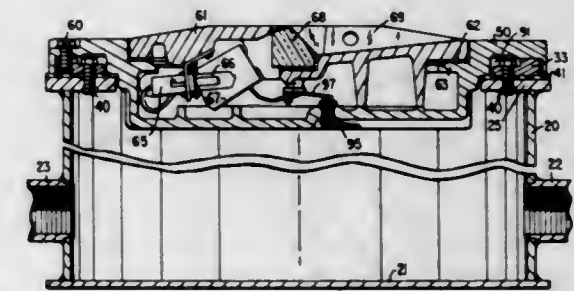


A drive arrangement for feeding an input to a stepper motor limited in the number of pulses per second that it can receive. The input is fed to summing means and the summing mean output is to an analog integrator whose output is to two separate reset integrators which feed two types of pulses to the stepper motor. Feedback lines go from the reset integrators to the summing means. Both types of reset pulses have the same impulse content and are actually identical in the dual speed reset integrator of the present invention. The different effect in the resetting of the analog integrator output is achieved by means of the summing means, which combines the reset pulses of the first type and the second type and applies them to the input of the analog integrator. This summing means achieves the desired different resetting effects by attenuating the reset pulses of the one type ten times as much as the reset pulses of the other type are attenuated.

**3,463,913**  
**AIRPORT RUNWAY MARKER LIGHTING UNIT**  
 Marion Fred Shavaller, North Syracuse, N.Y., assignor to Crouse-Hinds Company, Syracuse, N.Y., a corporation of New York  
 Filed Mar. 31, 1967, Ser. No. 627,490  
 Int. Cl. B64f 1/18  
 U.S. Cl. 240—1.2 6 Claims

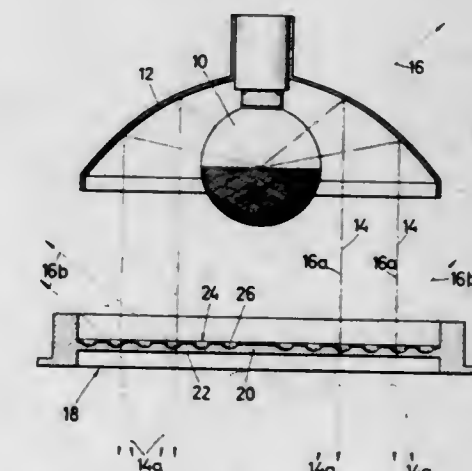
A ring member is positioned on the top edge of the housing embedded in the runway. The ring is formed with a circular series of apertures, and also with sighting indicia

to aid in orienting the ring on the housing, with one of the apertures in a plane extending diametrically of the ring and parallel to the runway. Means is provided, such as screw fasteners, to fixedly secure the ring to the housing in such oriented position. A top closure, including a light emitting assembly, is positioned on the ring and



is formed with apertures complementary to those in the ring. One of said apertures is located in a plane extending parallel to the light beam whereby, when said aperture in the top closure is aligned with the one aperture in the ring member and the top closure fixed to the ring member, the light beam is emitted parallel to the runway.

**3,463,914**  
**LIGHTING ARRANGEMENT**  
 Theodor Lutter, Bochum, Germany, assignor to Original Hanau Quarzlampen GmbH, Hanau am Main, Germany  
 Filed July 11, 1967, Ser. No. 652,557  
 Claims priority, application Germany, July 30, 1966, Q 906  
 Int. Cl. F21v 33/00, 17/00  
 U.S. Cl. 240—1.4 2 Claims



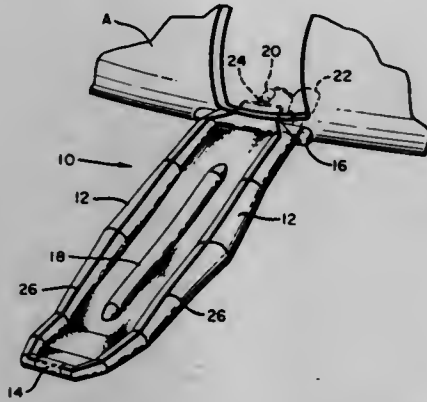
A lighting arrangement used as a surgical operating lamp including a cover plate disposed beneath its reflector having both an infra-red mirror and a light diffusing surface. The light diffusing surface is provided on the internal surface of the cover plate and includes a vapor deposited infra-red mirror which deflects the infra-red rays at lateral angles in order to prevent excessive heating of the reflector and the area illuminated by the visible light.

**3,463,915**  
**CHEMICAL LIGHT INDICATOR FOR EMERGENCY ILLUMINATION**  
 Ronald H. Day, Mill Valley, Calif., assignor to Industrial Covers, Inc., San Francisco, Calif., a corporation of California  
 Filed Feb. 9, 1968, Ser. No. 704,476  
 Int. Cl. F21v 9/16  
 U.S. Cl. 240—2.25 10 Claims

A chemical light indicator for emergency illumination comprising a pair of frangible containers supported within a housing on a movable platform which when



depressed allows pointed members to puncture the containers causing chemicals within them to mix and form a luminescent fluid which flows into translucent vessels, e.g., tubes, connected to the housing indicating an area to be illuminated. The tubes are particularly useful in



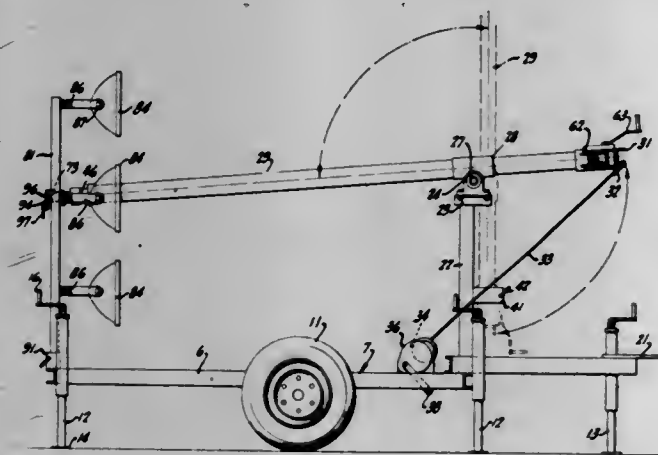
illuminating aircraft exits, rafts, air-dropped articles, and the sides of an aircraft emergency escape chute and, when such include inflatable beam members, the means for depressing and puncturing the containers may be driven by the inflating pressure fluid.

### 3,463,916 PORTABLE LIGHT TOWER

Gasper V. DeBella, Los Altos, Calif., assignor to Cal-West Electric, Inc., a corporation of California  
Filed Jan. 19, 1967, Ser. No. 610,427  
Int. Cl. F21p 5/00

U.S. Cl. 240—3

4 Claims



A portable light tower has a vertical mast mounted on a carriage. A telescoping tubular boom is attached to the upper end of the mast such that the boom may pivot about a horizontal axis. Winches are provided for raising and telescoping the boom. At the upper end of the boom a grid carrying lights mounted in a vertical plane is pivotally mounted. The mounting point is above the center of gravity of the grid such that as the boom is raised and lowered the grid will pivot freely to maintain the vertical orientation of the plane of lights.

### 3,463,917 POST TOP-MOUNTED LUMINAIRE

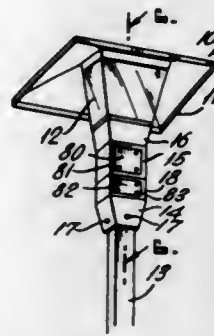
Bernard R. Stockwell, Sunbury, and Frank Van Steenhoven, Newark, Ohio, assignors to Holophane Company, Inc., New York, N.Y., a corporation of Delaware  
Filed Feb. 14, 1967, Ser. No. 616,052  
Int. Cl. F21s 1/10

U.S. Cl. 240—3

8 Claims

A luminaire which is mounted on top of a post and in which the ballast units are individual housings corre-

sponding in number to the number of lamps used in the luminaire. The ballast units are interposed between the



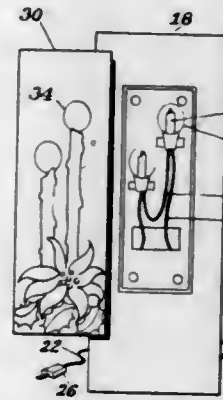
post and the base of the lamps proper to increase the area illuminated by the luminaire.

### 3,463,918 ILLUMINATED ORNAMENT

Charles Franc, 1501 1st Ave., New York, N.Y. 10021  
Filed Apr. 7, 1967, Ser. No. 629,282  
Int. Cl. F21p 1/02

U.S. Cl. 240—10

8 Claims



An electrically illuminated ornament using replaceable miniature electric lamps. Each lamp is detachably securable to a socket which is secured in turn to one surface of an insulated support member. A reflector is mounted on each lamp socket and each lamp is mounted so as to be in alignment with one of a plurality of holes in the support member. Ornamental means, with transparent or translucent members overlying the holes in the support member, are detachably secured to the support member.

### 3,463,919 AUTOMATIC BRAKING SYSTEM AND APPARATUS FOR USE THEREIN

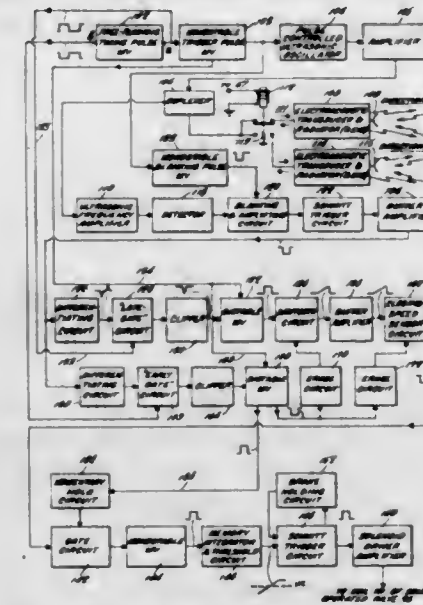
James J. Da Rold, Huntington Station, and Rudolph F. Trevisin, Huntington, N.Y., assignors to AMBAC Industries, Incorporated, Columbus, Miss., a corporation of New York  
Filed Jan. 5, 1967, Ser. No. 607,512  
Int. Cl. B61 3/00; B61b 1/00

U.S. Cl. 246—182

22 Claims

Automatic braking-control equipment is provided which is suitable for use in reducing the impact between railroad cars during car-sorting operations. A pulse-reflection type object-detector on the front of each car detects the car ahead when within a first predetermined distance of it and applies the brakes to bring the car to a slow speed for safe impacting. A closing-speed sensor utilizing a special capacity-charging circuit prevents initiation of braking during sorting unless the equipment-carrying car is approaching the car ahead at more than a predetermined closing speed. An "early gate" circuit prevents initiation of braking if the equipment-carrying car is within a second, smaller distance of a car ahead, as when

the equipment-carrying car is part of a train. An integrating memory circuit is also preferably used to prevent

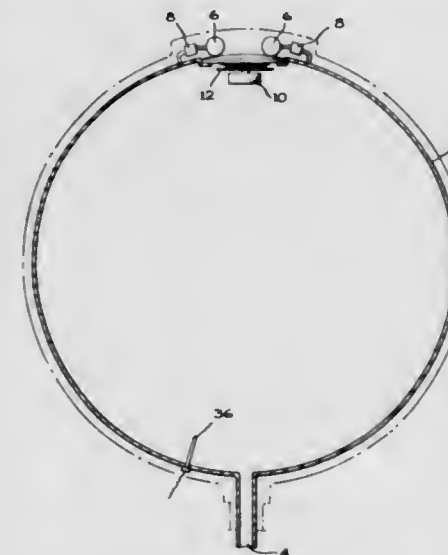


braking in response to transient, spurious reflective objects.

3,463,920  
CRYOGENIC FUEL GAUGING APPARATUS UTILIZING NEUTRON ABSORPTION TECHNIQUES  
Robert J. Kraushaar, Tenafly, N.J., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York  
Filed Aug. 31, 1965, Ser. No. 483,996  
Int. Cl. G01n 23/12

U.S. Cl. 250—43.5

3 Claims



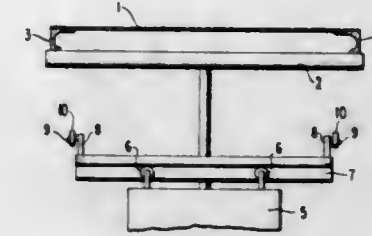
A fuel gauging system for measuring the quantity of cryogenic propellant in a tank utilizing a trace material of Helium<sup>3</sup> in the pressurizing gas normally associated with the propellant in a closed tank. A density measurement is made of the trace gas by measuring the attenuation of a neutron flux passing through a gap of fixed length located within the tank. For this purpose there is provided a thermal neutron source and two neutron detectors and an absorption chamber.

3,463,921  
X-RAY TABLE EQUIPMENT  
Hans Erik Warden, Infanterigatan 3, Solna, Sweden  
Filed June 28, 1967, Ser. No. 649,634  
Claims priority, application Sweden, June 29, 1966, 8,846/66  
Int. Cl. G01n 23/00

U.S. Cl. 250—54

5 Claims

An X-ray table has a top that is rollably slidable in both horizontal directions on a support. The table top



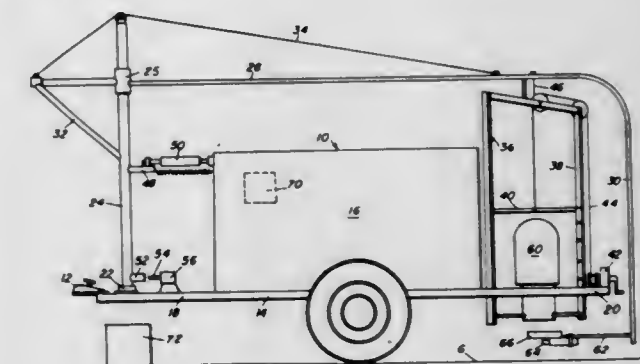
channels secured to the under side of the table top. The rolls are arranged in pairs whose axes are at an angle to one another to facilitate engagement in the channels.

### 3,463,922 MINERAL ORE EXPLORATION APPARATUS UTILIZING NEUTRON ACTIVATION

Frank E. Senftle, Chevy Chase, Md., Alfred F. Hoyte, Washington, D.C., and Prudencio Martinez, Jr., Accokeek, Md., assignors to the United States of America as represented by the Secretary of the Interior  
Filed July 29, 1966, Ser. No. 568,985  
Int. Cl. G01t 1/16

U.S. Cl. 250—83.3

3 Claims



Apparatus facilitating the analysis of the mineral ore content of a zone of substances in the ground. Adjustable mechanisms operable in the apparatus position a neutron generating source to irradiate the zone for a limited time, and thereafter release a detector to take a position over the zone to measure gamma rays emitted by the substances due to neutron absorption.

### 3,463,923 MAGAZINE FOR THE TEMPORARY STORAGE OF NUCLEAR FUEL RODS

Bernard Bouchet, Villeteuse, Seine-Saint-Denis, France, and Robert Charles, Chatelet, Hainaut, Belgium, assignors to European Atomic Energy Community (Euratom), Brussels, Belgium  
Filed Aug. 10, 1966, Ser. No. 578,954  
Claims priority, application France, Aug. 10, 1965, 27,900  
(Filed under Rule 47(a) and 35 U.S.C. 116)  
Int. Cl. G21h 5/00

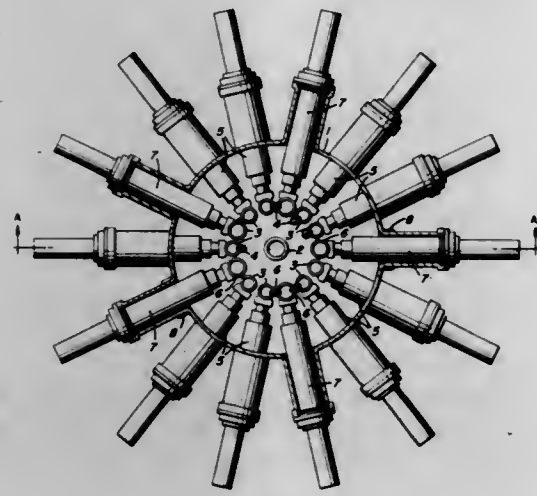
U.S. Cl. 250—106

4 Claims

A movable magazine for the temporary storage of nuclear fuel rods during reactor loading and discharging operations comprising a tank filled with a reactor coolant fluid. The tank has two aligned passageways through opposed walls of the tank. Several storage supports are



mounted on movable arms around each passageway, which arms enable movement of the supports from their



respective storage locations to a position of alignment with the passageways.

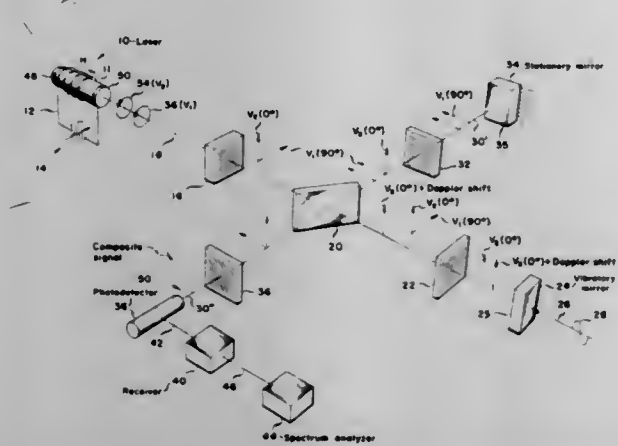
3,463,924

### OPPOSITE CIRCULARLY-POLARIZED OPTICAL HETERODYNE DETECTION SYSTEM

William Culshaw, Los Altos, and John A. Dahlquist and Don G. Peterson, Palo Alto, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.  
Filed Dec. 16, 1966, Ser. No. 605,125  
Int. Cl. H04b 9/00

U.S. Cl. 250-199

7 Claims



A helium-neon gas laser with an axial magnetic field produces interaction between two oscillation modes of widely separated frequency oppositely polarized components of the atomic transition of the neon gas utilized in the laser. The two oscillation modes have different frequencies and are separable during the measuring event within the system for recombination to produce optical heterodyne signals for precision measurement and communication purposes.

3,463,925

### DIGITATED PHOTOELECTRIC QUADRANT STRUCTURE FOR RADIATION TRACKING DEVICES

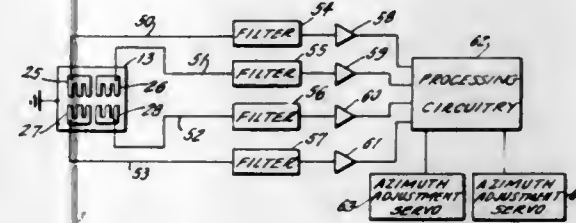
Burt Walker, Plainview, Herbert Wollman, Hollis, and Robert C. Chrouh, Bayport, N.Y., assignors to Kollsman Instruments Corporation, Elmhurst, N.Y., a corporation of New York  
Filed Apr. 6, 1967, Ser. No. 628,882  
Int. Cl. G01j 1/20

U.S. Cl. 250-203

8 Claims

The image of a light source to be tracked is oscillated through a predetermined excursion. This image falls on a photosensing device formed by a semi-conductor wafer having four isolated photosensitive areas therein in four

quadrants of a square. A digitated electrode is applied to each of the photosensitive quadrants with the spacing between any two digitated members plus the width of one digitated member being approximately equal to the total excursion of the light source image. Each of the



quadrants are then separately electrically connected to processing circuitry which drive servos which adjust the optical axis of the tracker device until the excursion of the image will be around the adjacent corners of the four quadrants with null tracking.

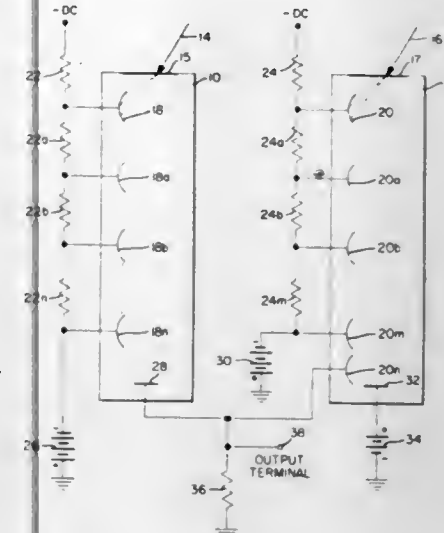
3,463,926

### DIFFERENTIAL LIGHT SENSING MEANS WITH ONE PHOTOMULTIPLIER CONNECTED TO ONE OF THE DYNODES OF THE OTHER PHOTOMULTIPLIER

Bob V. Martevitch, Palo Alto, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California  
Filed Dec. 18, 1967, Ser. No. 691,584  
Int. Cl. H01j 39/12

U.S. Cl. 250-207

4 Claims



Light is collected by two photomultipliers, wherein the last dynode of one is connected to the anode of the other. The anode supplies the dynode current if the gain is balanced, resulting in zero output. A change in light level unbalances the circuit and provides a representative output signal.

3,463,927

### APPARATUS FOR MEASURING ABSORBANCE DIFFERENCES

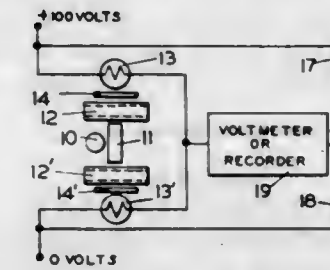
Robert W. Allington, Lincoln, Nebr., assignor to Instrumentation Specialties Company, Lincoln, Nebr., a corporation of Nebraska  
Filed Aug. 2, 1966, Ser. No. 569,638  
Int. Cl. H01j 39/12

U.S. Cl. 250-211

14 Claims

Apparatus for measuring the differences of light absorbance between two light absorbance cells includes a light source transmitting light through each absorbance cell, a pair of photocells individually responsive to light rays emerging from the absorbance cells and means re-

sponsive to the output voltages of the photocells; the photocells being connected in series so as to respond sub-



stantially logarithmically to the intensity of light impinging on them.

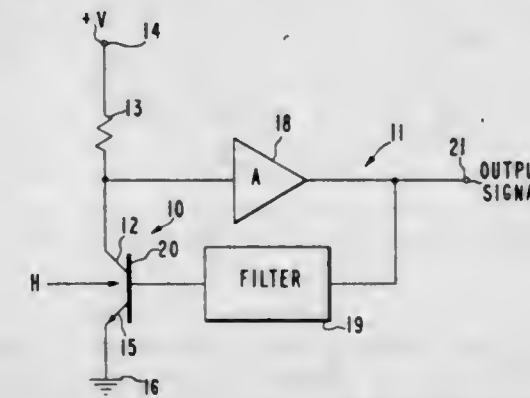
3,463,928

### FREQUENCY-SELECTIVE NEGATIVE FEEDBACK ARRANGEMENT FOR PHOTOTRANSISTOR FOR ATTENUATING UNWANTED SIGNALS

Howard E. Murphy, Redwood City, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware  
Filed Nov. 3, 1966, Ser. No. 591,916  
Int. Cl. H01j 39/12

U.S. Cl. 250-214

4 Claims



1. A photodetector circuit for detecting intensity modulated light signals having a predetermined band of modulation frequencies comprising:

- a phototransistor having its emitter and collector connected in series with a load resistor between a supply voltage input terminal and a point of reference potential, said load resistor being of a conductivity type opposite to that of said phototransistor and having its collector connected to the collector of said phototransistor and its emitter connected to a supply voltage terminal, said load resistor being biased for constant collector current;
- a negative feedback path connected between the collector and the base of said phototransistor, said feedback path including an amplifier connected in series with a filter circuit which passes D.C. signals and only those A.C. signals having frequencies outside of said predetermined frequency band; and
- an output terminal for said circuit connected to said feedback path between the output of said phototransistor and the collector of said filter circuit.

3,463,929

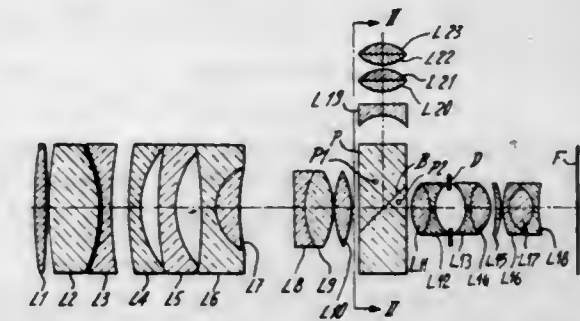
### LIGHT INTENSITY MEASURING DEVICE IN THE OBJECTIVE-LENS OF A FILM-ING APPARATUS

Francois Laurent, Yverdon, Vaud, Switzerland, assignor to Pailard S.A., Sainte-Croix, Vaud, Switzerland, a company of Switzerland  
Filed Oct. 5, 1966, Ser. No. 584,420  
Claims priority, application Switzerland, Oct. 22, 1965, 14,650/65

U.S. Cl. 250-216

5 Claims

A light intensity measuring device for a cinematographic camera having an objective lens including a prism



provided with a central area within the path of the light directing light beams to both a viewfinder on the one hand and the film on the other hand while lateral reflective areas of the prism outside the path of light to the film direct light beams to a photosensitive means.

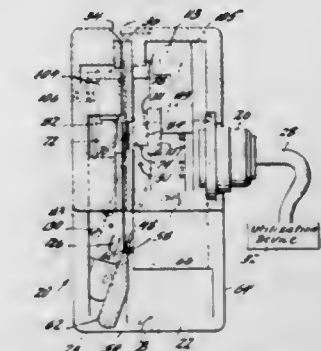
3,463,930

### MANUALLY OPERABLE PHOTOELECTRIC CARD READER CONTAINING ALIGNMENT CHECKING APPARATUS

Charles Henry West, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army  
Filed May 26, 1966, Ser. No. 554,285  
Int. Cl. G01n 21/30

U.S. Cl. 250-219

3 Claims



A card reading apparatus utilizing a light responsive means for reading records containing data in patterns of light-transmitting areas. When the card is to be read, it is inserted into the card reader and is brought to a stop by a control means positioned within the card receiving passage. The control means is manually moved to the read position, the movement energizing a photoelectric means at the reading station in the reader housing, and also permitting the card to be grasped and to be pulled manually past the reading station and out of the housing, the card being read as it is moved past the reading station.

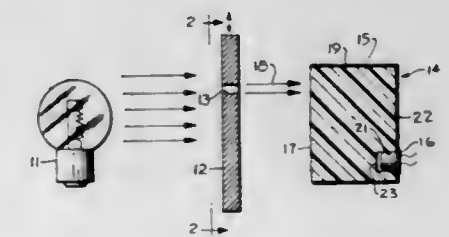
3,463,931

### SHUTTER CONTROL OF ILLUMINATION OF PHOTOELECTRIC TRANSDUCER WITHIN LIGHT-TRANSMITTING BLOCK

Kalman Kormos, North Scituate, R.I., assignor to General Signal Corporation, a corporation of New York  
Filed May 16, 1967, Ser. No. 638,946  
Int. Cl. G01d 5/34

U.S. Cl. 250-231

8 Claims



A photoelectric motion transducer including a light source, at least one photocell, and a movable element for controlling illumination of the photocell by the source.



Interposed between the photocell and the illumination control element is a block of transparent, light-conducting material having a light-diffusing surface across which the control element causes light rays to move in a predetermined path.

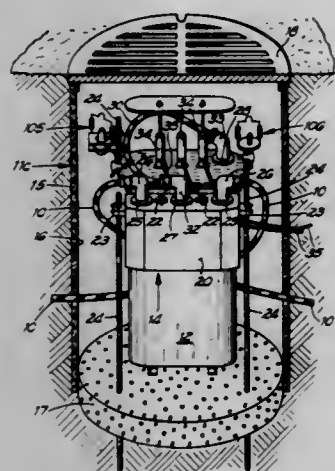
3,463,932

**UNDERGROUND DISTRIBUTION SYSTEM**  
William J. Weinfurt, Elm Grove, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Dec. 12, 1966, Ser. No. 601,098  
Int. Cl. H02j 3/04

U.S. Cl. 307—17

10 Claims



An underground distribution system for electrical power from one or more sources to several locations of consumption. This system includes a plurality of vault means, each having a surrounding side wall extending below ground level, a separate, sealed distribution transformer component supported within each of a plurality of the vault means independently of the side walls thereof, cable junction means disposed within each of the vault means independently of the side wall of the vault and the transformer, first primary cable means entering the vault means and terminating at the cable junction means whereby the cable junction means is connected to a source, and second primary cable means extending between the cable junction means and the transformer component. The junction means is independently grounded, and cable terminator means and connector means used in the system are all preferably substantially identical. Therefore, the system is versatile and interchangeable, and a great variety of arrangements can be made using standard component parts and a standard transformer component.

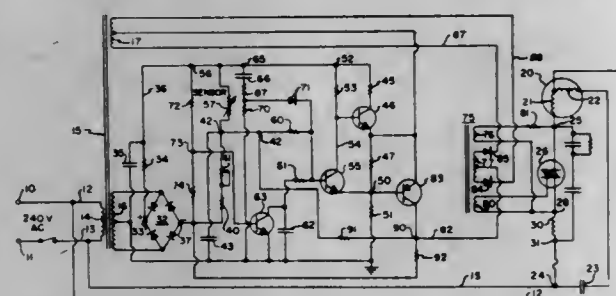
3,463,933

**SOLID STATE MOTOR SPEED CONTROL**  
Arlon D. Kompellen, Richfield, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed May 19, 1967, Ser. No. 639,682  
Int. Cl. H01h 9/56

U.S. Cl. 307—133

8 Claims



A solid-state motor speed control system having the firing angle of a triac or a pair of controlled rectifiers controlled in response to a condition. In order to control

an inductive load having a lagging power factor such as an A.C. motor, especially when maximum power is to be delivered to the load, a special circuit provides a triggering pulse to the triac for a full on condition when the sine wave current drops to zero and needs to be triggered for the opposite current direction.

3,463,934

**MEASURING CIRCUIT**

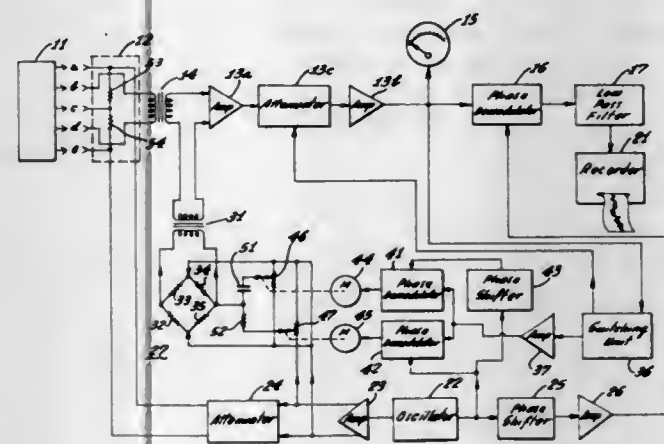
Wilhelm Nobis, Merzhausen im Breisgau, Germany, assignor to Fritz Hellige & Co. G.m.b.H., Freiburg im Breisgau, Germany

Filed Oct. 13, 1967, Ser. No. 675,185  
Claims priority, application Germany, Oct. 14, 1966, H 60,761

Int. Cl. H02j 3/28

U.S. Cl. 307—149

4 Claims



A measuring circuit is described which is suitable for use with a variety of alternating current operated transducers. A terminating device serves to supply operating carrier voltages to the transducers and connect the modulated voltage to an amplifying and indicating or recording circuits. Complex unbalances of the transducer and cable are automatically corrected by a self-adjusting auxiliary bridge circuit.

3,463,935

**CIRCUIT FOR LIMITING CURRENT TO INTEGRATED CIRCUITS**

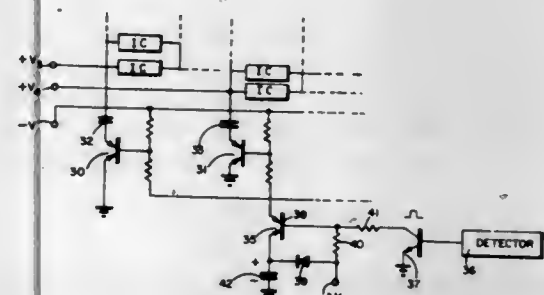
Alexander Rovell, Downey, Calif., assignor to North American Rockwell Corporation

Filed Aug. 22, 1966, Ser. No. 574,223

Int. Cl. H02h 7/20

U.S. Cl. 307—202

6 Claims



The circuit includes signal actuated switching means which disconnects a filter capacitor from a voltage reference level during periods of circuit operation when the filter capacitor functions as a power source for supplying excessive currents to an integrated circuit. The switch also provides a minimum impedance during normal circuit operations so that the filtering action of the capacitor is not hampered.

3,463,936

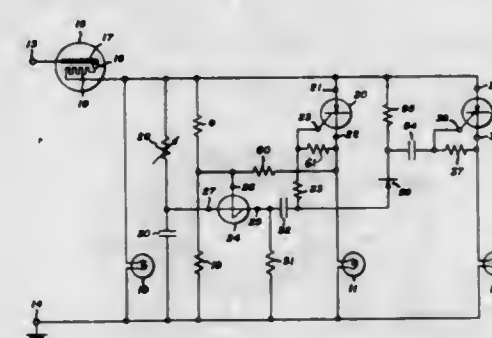
**SEQUENTIAL LOAD ENERGIZING CIRCUIT**  
Abdulahat Adem, Auburn, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 28, 1966, Ser. No. 605,459

Int. Cl. H03k 5/20

U.S. Cl. 307—223

1 Claim



A circuit is provided for energizing two or more loads (e.g., lamps) sequentially and de-energizing all of the loads once all have been energized in order to start the sequential cycle over again which incorporates a series of parallel connected load normally open circuits which are connected across a supply terminal and a normally closed switch in the supply circuit which is opened in response to load current flowing through all of the parallel connected load circuits. A solid state switching means is provided which fires the first of the load current carrying solid state switches a predetermined time after energization at the circuit terminals and each subsequent load (lamp) of the parallel connected load circuits in sequence of predetermined time after the preceding load circuit is rendered conductive thereby sequentially to render each of the load circuits conductive. The firing arrangement for each of the solid state switches incorporates solid state switches which are rendered conductive in response to the output of a voltage comparator circuit to render firing essentially independent of voltage level variations. Once all of the load circuits are conductive, they are all de-energized by the opening of the normally closed switch which closes again a predetermined time after opening in order to restart the firing cycle.

3,463,937

**REGENERATIVELY SWITCHED SAWTOOTH AND SQUAREWAVE GENERATOR**

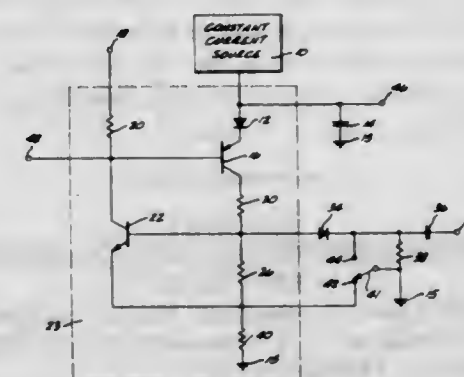
Elmer N. Taylor, Escondido, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed July 1, 1966, Ser. No. 562,203

Int. Cl. H03k 4/00, 3/26

U.S. Cl. 307—228

2 Claims



The sawtooth and squarewave generator of this disclosure comprises a capacitor, a constant current source

for charging the capacitor, and a two-transistor regenerative switch that discharges the capacitor. The capacitor is discharged through the regenerative switch when the voltage of the capacitor reaches a predetermined level determined by the amplitude of an applied voltage. The generator may be operated in a single pulse mode or in a repeating pulse mode.

3,463,938

**LOW DISTORTION WIDE DYNAMIC RANGE PHASE DETECTOR**

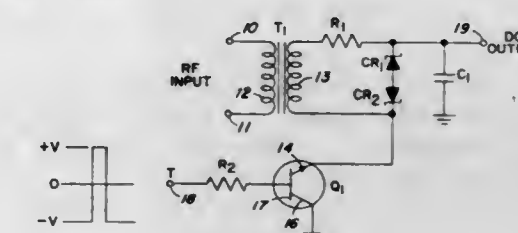
William D. McCoy, Garland, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed May 13, 1966, Ser. No. 549,943

Int. Cl. H03k 5/20

U.S. Cl. 307—232

2 Claims



A phase detector with a transformer receiving one signal input and a transistor receiving a trigger signal input establishing a reference to ground for the transformer secondary and a capacitor charging path for attaining a DC integrating output through charging of the capacitor during each trigger pulse signal to the average voltage of the signal of the secondary through the intervals of the trigger signal pulses. Back to back Zener diodes across the transformer secondary and a resistor in series therewith both limit voltage excursion in the secondary signal developed and also protectively limit voltage levels imposed on the transistor to the voltage drop through the two back to back Zener diodes above the instantaneous voltage value charge level of the capacitor at any such particular time.

3,463,939

**PULSED DIFFERENTIAL COMPARATOR CIRCUIT**

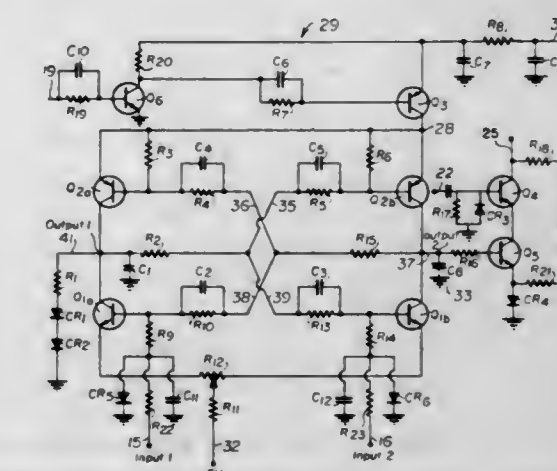
John C. Sturman, Fairview Park, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Feb. 10, 1966, Ser. No. 526,631

Int. Cl. H03k 5/20

U.S. Cl. 307—235

4 Claims



A comparator circuit is provided in which two non-varying voltages to be compared are fed through a differ-



ential amplifier to respective ones of a pair of input transistors connected in a differential amplifier configuration. The emitter-collector circuits of the input transistors are connected through the emitter-collector circuits of respective ones of a pair of amplifying transistors and through a gate circuit to a D-C potential, the amplifying transistors serving as loads for the input transistors.

A first output is derived at a point between one of the input transistors and the amplifying transistor connected serially therewith. This output is applied across a dummy load and is also directed through feedback networks to the other input transistor and the other amplifying transistor. A second output is derived between the other input transistor and the other amplifying transistor. This second output is fed to a NAND circuit and is also directed through feedback networks to the one input transistor and the amplifying transistor connected therewith.

3,463,940

**D.C. RESTORATION CIRCUIT**

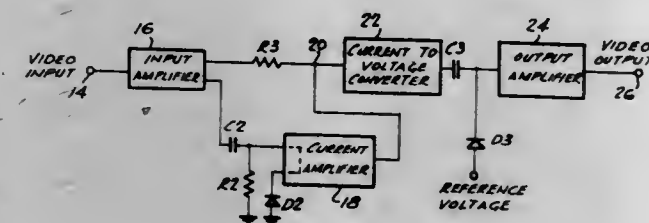
Alan R. Kaye and Gordon C. Field, Ottawa, Ontario, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Feb. 2, 1966, Ser. No. 524,381

Int. Cl. H03k 5/08

U.S. Cl. 307—264

6 Claims



A D.C. restoration circuit, especially for composite video signals, provides an auxiliary D.C. restorer for generating a compensation signal that is used in the main D.C. restorer to compensate for differences in amplitude between sync pulses of white and black video signals that would otherwise occur after D.C. restoration.

3,463,941

**ACTIVE PULSE DELAY LINE**

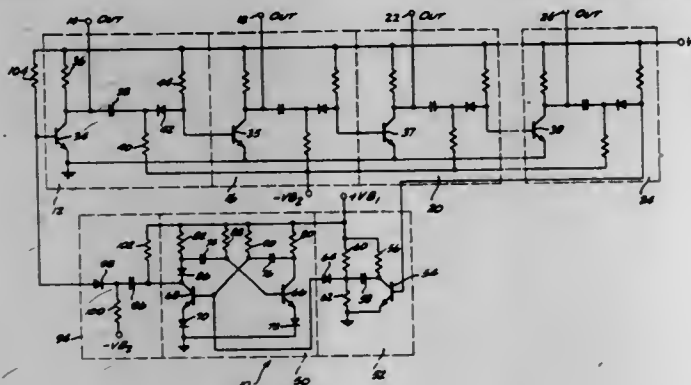
James R. McLendon, Richardson, Tex., and Peter Laakmann, Los Angeles, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Dec. 2, 1966, Ser. No. 598,677

Int. Cl. H03k 17/28

U.S. Cl. 307—293

5 Claims



The disclosed active pulse delay line includes a plurality of transistor switching stages that are sequentially enabled for a time determined by an RC network. When the final switching stage is enabled, regenerator circuitry enables the initial stage. The regenerator circuitry includes a multivibrator triggered by a signal from the final

switching stage and providing pulses having a pulse width greater than one-half of the time required for enabling each of the switching stages.

3,463,942

**CENTRIPETAL FORCE PIEZOELECTRIC GENERATOR (ELECTRO-MECHANICAL OSCILLATOR)**

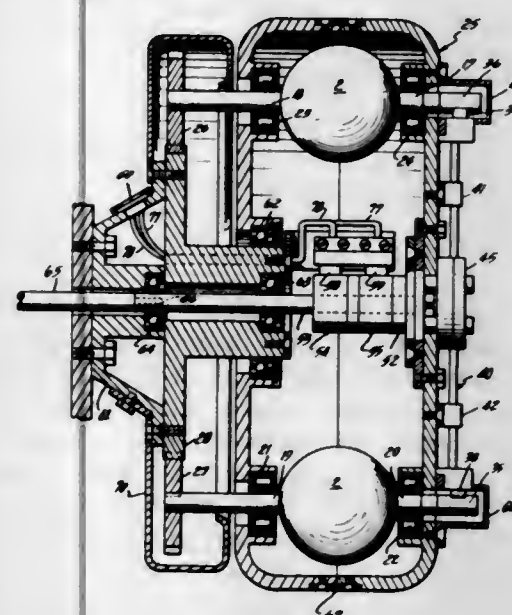
Charles M. Mellon, 1517 Hillcrest St., Orlando, Fla. 32803

Filed Feb. 21, 1967, Ser. No. 617,624

Int. Cl. H01v 7/00

U.S. Cl. 310—8.0

4 Claims



An apparatus for generating electric power utilizing a plurality of rotating piezoelectric mass assemblies within a rotating housing.

3,463,943

**PIEZOELECTRIC VOLTAGE SOURCE**

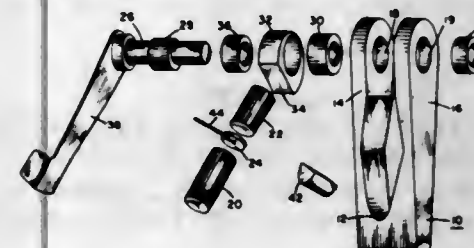
David B. Parkinson, Cleveland, Ohio, assignor to Clevite Corporation, a corporation of Ohio

Continuation of application Ser. No. 541,794, Apr. 11, 1966. This application Dec. 23, 1968, Ser. No. 786,855

Int. Cl. H01v 7/00

U.S. Cl. 310—8.3

2 Claims



This invention relates to a voltage source comprising a U-shaped frame member with a piezoelectric element located therebetween. An actuating device at the open end of the frame member for compressing the piezoelectric element. The actuating device is a camming member on a rotatable shaft that is in contact with a cam follower that actually compresses the piezoelectric element as the camming member is rotated.

3,463,944

**ELECTROHYDRODYNAMIC APPARATUS AND METHOD**

James R. Melcher, Lexington, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

Filed June 20, 1967, Ser. No. 647,526

Int. Cl. H02k 45/00; G21d 7/02

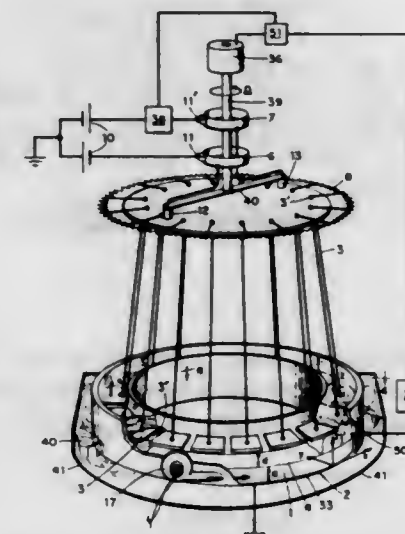
U.S. Cl. 310—10

20 Claims

Apparatus for effecting interaction between an electro-quasistatic traveling wave and a high resistance material,

thereby to perform a pump function or a generator function depending upon whether energy is removed from or added to the wave, the interaction being effected by the

the capsule being removably held within a coil, both the coil and the direction of movement of the magnet being aligned with a sensitive axis of the vibrometer within a vibrometer housing. The hermetic seal of the magnet



electrostatic field of the wave without requiring electrical contact between the source of the traveling wave and the material.

3,463,945

**PIEZO-ELECTRIC CRYSTAL CIRCUIT ARRANGEMENTS**

David John Fewings, Essex, England, assignor to The Marconi Company Limited, Strand, London, England

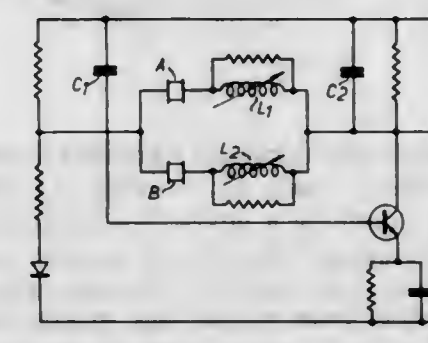
Filed Jan. 23, 1967, Ser. No. 610,870

Claims priority, application Great Britain, Jan. 28, 1966, 3,944/66; Sept. 30, 1966, 43,834/66

Int. Cl. H03b 5/32

U.S. Cl. 310—8.9

5 Claims



Piezo-electric circuit arrangement of good temperature stability consisting of a number of crystals each having a parabolic frequency/temperature characteristic and each connected in one of a like number of paralleled circuits. The crystals are chosen to have their individual "turnover temperatures" at the same frequency but at different temperatures spaced apart over a temperature range to be covered.

3,463,946

**VIBROMETER WITH HERMETICALLY SEALED MAGNET CAPSULE**

Michael Tone Zimmerman, West Covina, Calif., assignor, by mesne assignments, to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

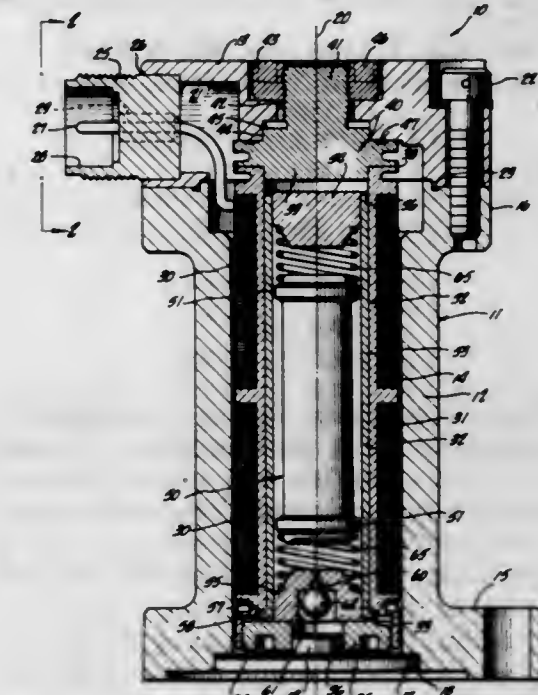
Filed Mar. 20, 1968, Ser. No. 714,502

Int. Cl. H02k 33/16, 35/02

U.S. Cl. 310—15

8 Claims

An instrument vibrometer in which a magnet is mounted for reciprocation within a hermetically sealed capsule,



capsule assures that the bearings which mount the magnet within the capsule for movement relative to the coil cannot become clogged by foreign matter entering the housing.

3,463,947

**RESONANT REED DEVICE**

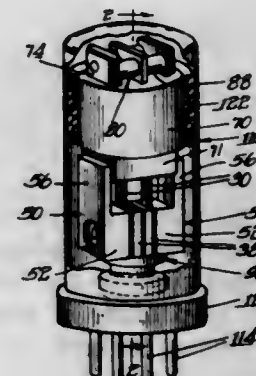
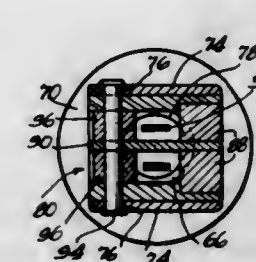
William R. Taylor, Buffalo, N.Y., assignor to Perry Laboratories, Inc., Buffalo, N.Y., a corporation of New York

Filed Apr. 12, 1966, Ser. No. 542,145

Int. Cl. H02k 35/06

U.S. Cl. 310—25

10 Claims



A resonant reed device having a permanent magnet structure cooperable with one or two vibrating reeds. The permanent magnet structure comprises three magnetically susceptible members held in spaced-apart relation by a pair of spacers at one end of the members, and by a pair of small permanent magnets at the opposite end, the two permanent magnets having like poles confronting one another, whereby the center of the three members becomes a pole of one polarity, and the two outer members become poles of opposite polarity. In a circuit utilizing the particular resonant reed device, input and output coils comprise a part of a bridge which is unbalanced at the resonant frequency of the reeds. The reeds are electrically isolated from the bridge circuit.

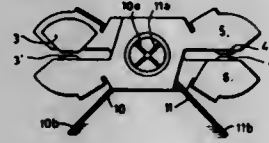


**3,463,948**  
**DEVICE FOR STABILISING THE OSCILLATION**  
**FREQUENCY OF A MECHANICAL OSCILLATOR**  
**FOR TIME KEEPING INSTRUMENT**

Robert Favre, Lausanne, Switzerland, assignor to  
 Fabriques Movado and Manufacture des Montres  
 Universal Perret Freres S.A., La Chaux-de-Fonds,  
 Switzerland

Filed Aug. 1, 1966, Ser. No. 569,151  
 Claims priority, application Switzerland, Aug. 12, 1965,  
 11,350/65

Int. Cl. H02k 33/00, 35/00  
 U.S. Cl. 310—25 5 Claims



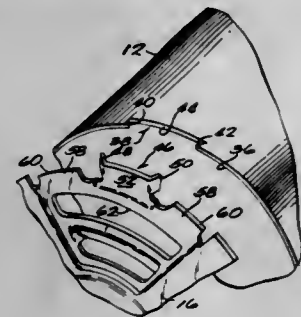
In a mechanical oscillator for an electronically controlled timepiece having a predetermined frequency of vibration and which comprises two spaced vibratory elements oscillating in opposition of phase with a given amplitude, said elements having elastic return forces of mechanical origin along a principal direction; magnets are mounted on each of the elements, facing one another and lying entirely within the space operating the elements in order to generate magnetic forces in the same principal direction as the elastic return forces in order to stabilise the vibration frequency of the oscillator in a manner responsive to the amplitude.

**3,463,949**  
**END FRAME ATTACHMENT FOR DYNAMO-**  
**ELECTRIC MACHINE**

Thomas W. Stone, Owosso, Mich., assignor to Controls  
 Company of America, Melrose Park, Ill., a corpora-  
 tion of Delaware

Filed June 11, 1968, Ser. No. 736,202  
 Int. Cl. H02k 15/14

U.S. Cl. 310—42 10 Claims



An end frame is held in place on a motor shell by bent end frame wedge tabs being inserted into dovetail notches in the end edge of the shell and then straightened in the notches to provide a wedge connection. The end frame also includes radially extending tabs which engage the end edge of the shell to cooperate in locating the end frame and holding it against axial movement. The end frame also includes trimmed register surfaces engaging the inner surface of the shell to provide air gap orientation between the end frame and the motor frame of which the shell is a part.

**3,463,950**  
**MOTOR VIBRATION ISOLATING ARRANGEMENT**

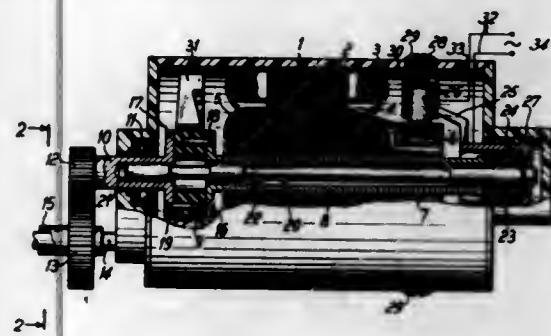
Fritz Schädlich, Echterdingen, Germany, assignor to  
 Robert Bosch GmbH, Stuttgart, Germany

Filed Nov. 2, 1966, Ser. No. 591,576  
 Claims priority, application Germany, Nov. 9, 1965,  
 B 84,420

Int. Cl. H02k 5/24 14 Claims

U.S. Cl. 310—51  
 An arrangement for isolating vibrations of a motor. A source of alternating current drives a commutator mo-

tor which, in turn, rotates a mechanical load. A resilient power transmission member is secured between the rotating shaft of the motor and the load. The elasticity of



a resilient power transmission member is such that it can absorb mechanical vibrations having a frequency at least twice that of the source of alternating current.

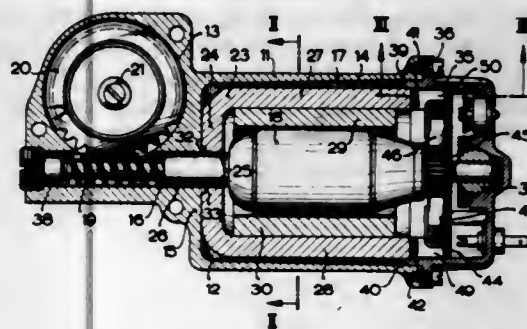
**3,463,951**  
**ELECTRIC MOTOR AND GEAR TRAIN WITH**  
**ANTIVIBRATION HOUSING ARRANGEMENT**

Wilhelm Bauerle, Stuttgart-Rohracker, and Wolfgang  
 Rentsch, Schwieberdingen, Germany, assignors to  
 Robert Bosch GmbH, Stuttgart, Germany

Filed May 2, 1968, Ser. No. 726,100  
 Claims priority, application Germany, May 6, 1967,  
 B 92,397

Int. Cl. H02k 5/24, 7/06, 7/10 13 Claims

U.S. Cl. 310—51



A drive arrangement includes a housing having a chamber which defines an axis of rotation. An open end of the housing is closed by a cover. An electromotor is received in the housing, including a magnet arrangement which is not connected with the housing and which includes a U-shaped yoke whose legs extend substantially parallel to the axis, abutment faces on the housing being engaged by corresponding faces of the yoke received therein so as to position the magnet arrangement in predetermined relation to the axis of rotation. A resilient instrumentality is arranged between the housing and the yoke for pressing the latter against at least one of the abutment faces to prevent vibrating of the magnet arrangement during operation of the motor.

**3,463,952**  
**COOLING DUCTS FOR FIELD COILS**

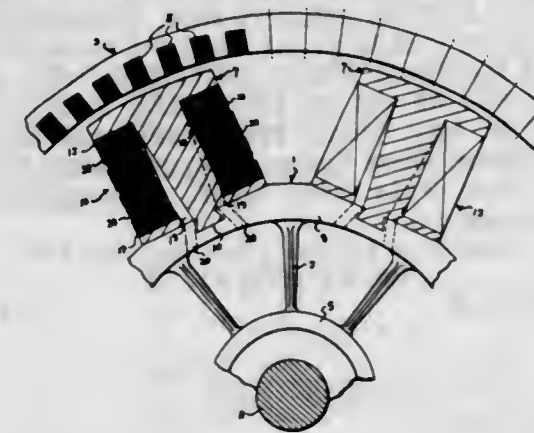
Rollin H. Norris, Schenectady, N.Y., assignor to General  
 Electric Company, a corporation of New York

Filed Apr. 20, 1966, Ser. No. 543,853  
 Int. Cl. H02k 9/02

U.S. Cl. 310—58 3 Claims

In a dynamoelectric machine, an internally cooled conductor bar comprises two bar portions secured together by suitable means such as insulating tape wrapped thereabout at spaced intervals along the bar. Interposed between the two bar portions is a spacer wire, which spacer wire extends from one side of the conductor bar to the other side to form one or more ventilating passageways there-

through. The spacer wire extends between opposed sides of the bar portions in a generally serpentine manner so that a plurality of ventilating passageways are formed. The spacer wire, at each side of the conductor bar extends outwardly therefrom a short distance and this "loop" is



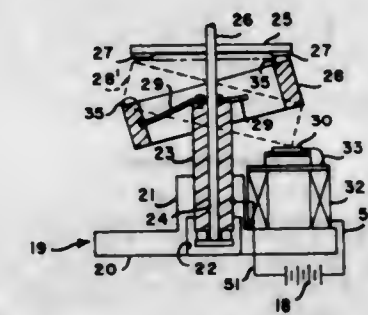
bent against the side wall of one of the bar portions so that when the conductor bar is assembled, the spacer wire is held in place between the bar portions, and the coolant gas can flow between the two portions without being obstructed by the "loop."

**3,463,953**  
**RESONANT MOTOR**

Gilbert A. Maxwell, 930 Di Giulio Ave.,  
 Santa Clara, Calif. 95050

Filed Mar. 20, 1967, Ser. No. 624,361  
 Int. Cl. H02k 7/10, 7/06

U.S. Cl. 310—82 7 Claims



A resonant motor employing a rotor, such as a ring or a disc. By movably supporting the rotor about an axis passing perpendicular to the plane of the rotor, the rotor can be made to oscillate with a wobble type motion. Output means having a surface brought into contact, by friction or geared surfaces, with the wobbling rotor can be given useful motion, such as rotation, which is proportional to the resonant frequency of the rotor.

**3,463,954**  
**MOTOR ARMATURE BEARING ASSEMBLY**  
**RESILIENTLY SUPPORTED IN A LONGI-**  
**TUDINALLY SPLIT HOUSING**

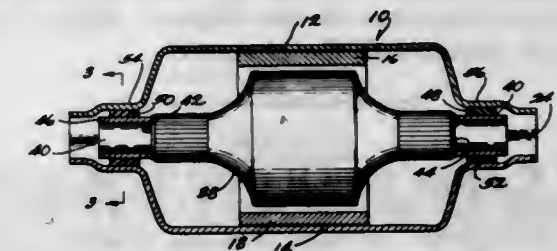
Edward Latta, Owosso, Mich., assignor to Controls Com-  
 pany of America, Melrose Park, Ill., a corporation of  
 Delaware

Filed Aug. 3, 1967, Ser. No. 658,161  
 Int. Cl. H02k 7/08, 5/16

U.S. Cl. 310—90 12 Claims

A pair of axially aligned bearing receiving areas are formed in a longitudinally split motor housing. A sleeve bearing is assembled onto each of the opposite axial ends of the motor armature shaft and a resilient sleeve is engaged between the outer surface of the sleeve bearing and the inner surfaces of the bearing receiving areas. The

resilient sleeve holds the sleeve bearings with a desired adjusted axial spacing therebetween, specifically in en-



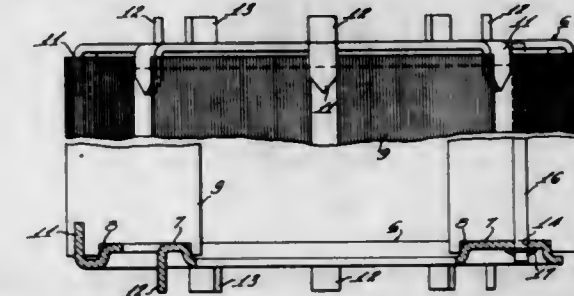
gagement with shoulders at the opposite axial ends of the armature, to eliminate armature end play.

**3,463,955**  
**LAMINATED CORE**

Virgil R. Scardina, Milford, and Paul D. Wagner, Cin-  
 cinnati, Ohio, and Raymond L. Brezic, Garland, Tex.,  
 assignors to Allis-Chalmers Manufacturing Company,  
 Milwaukee, Wis.

Filed Nov. 14, 1966, Ser. No. 594,116  
 Int. Cl. H02k 1/06

U.S. Cl. 310—217 5 Claims



A laminated core for an electrical machine having a plurality of laminations each disposed in a plane parallel to the axis of the machine. End heads are provided at each end of the laminations to hold the assembly together. At least one of the end heads is provided with holding means which mate with complementary holding means on the end edge of each lamination to thereby hold the laminations in the axially stacked position during assembly of the core.

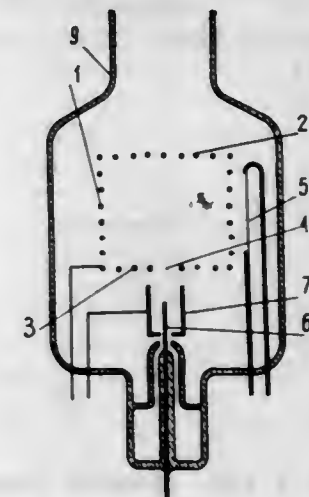
**3,463,956**  
**IONIZATION VACUUM GAUGE WITH X-RAY AND**  
**ULTRAVIOLET RAY SHIELDING**

Janusz Groszkowski, Nowowiejska 22/7,  
 Warsaw, Poland

Filed May 17, 1967, Ser. No. 639,102  
 Claims priority, application Poland, May 17, 1966,  
 P 114,624

Int. Cl. H01j 7/16 3 Claims

U.S. Cl. 313—7



A vacuum gage having an anode defining an ionization chamber adapted for containing a fluid whose pressure is to be measured, a cathode being adjacent the anode



for emitting electrons to ionize the fluid in the chamber such that the ions flow through an orifice in the chamber to a collector located outside the chamber and adjacent the orifice, the ion flow to the collector being a function of the fluid pressure in the chamber.

3,463,957

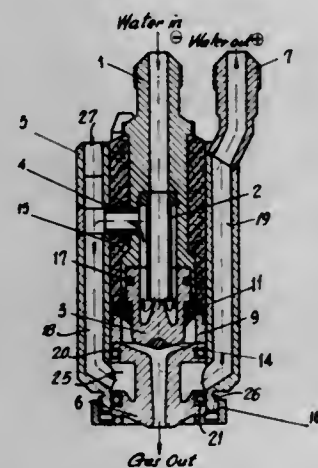
### ARC PLASMA TORCH WITH SAME LIQUID COOLING MEANS FOR ELECTRODES

Edmund Fukulewicz, Otwock, Poland, assignor to Instytut Badan Jadrowych, a corporation of Poland  
Filed Apr. 6, 1966, Ser. No. 540,750  
Claims priority, application Poland, Apr. 9, 1965, P 108,328

Int. Cl. H01j 7/24, 61/52

U.S. Cl. 313—32

5 Claims



Plasma torch with an electrode assembly in a generally cylindrical housing having channels for the circulation of a cooling fluid and for the admission of a gas, the assembly including a hollow stem seated in the housing through the intermediary of a resinous layer, a generally cup-shaped cathode structure engaging the open end of the stem, a nozzle-shaped anode confronting that structure and a guide ring for the gas flow contacting the anode but separated from the cathode through an interposed insulating spacer; water admitted through the stem flows through a feeding tube into the cathode structure, then passes through a duct within the layer into a channel of the housing which opens toward the anode, and leaves via another housing channel.

3,463,958

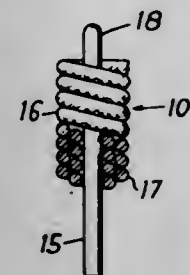
### ELECTRODE FOR A HIGH-PRESSURE DISCHARGE LAMP

John F. Smalley, London, England, assignor to British Lighting Industries Limited, London, England  
Filed Sept. 12, 1967, Ser. No. 667,273  
Claims priority, application Great Britain, Sept. 13, 1966, 40,832/66

Int. Cl. H01j 17/04, 61/06

U.S. Cl. 313—211

3 Claims



Electrodes for a high pressure mercury vapour discharge lamp consist of a tungsten rod about which a layer or layers of a tubular braid of tungsten wires are wound, the braid being filled with thermionically emissive material.

### ERRATUM

For Class 313—250 see:  
Patent No. 3,463,978

3,463,959

### CHARGED PARTICLE ACCELERATOR APPARATUS INCLUDING MEANS FOR CONVERTING A ROTATING HELICAL BEAM OF CHARGED PARTICLES HAVING AXIAL MOTION INTO A NON-ROTATING BEAM OF CHARGED PARTICLES

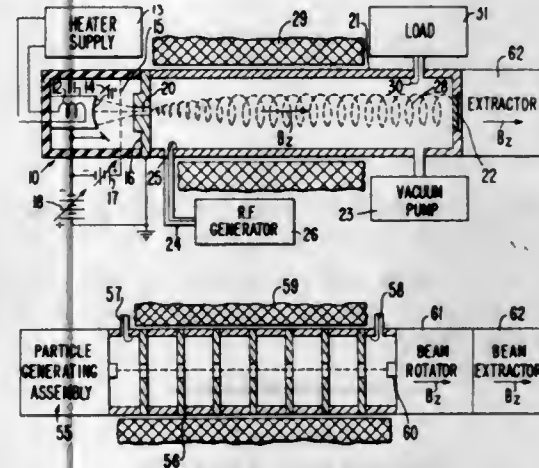
Howard R. Jory, Menlo Park, Calif., and Alvin W. Trivelpiece, Silver Spring, Md., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Filed May 25, 1967, Ser. No. 641,225

Int. Cl. H01j 25/02

U.S. Cl. 315—5

21 Claims



A helical shaped beam of charged particles, e.g., electrons from a cyclotron wave accelerator which has both rotational and linear motion can be converted into a beam having only one component of velocity by electrostatic and/or magnetostatic beam extraction mechanisms in order to render the beam more suitable for use in practical applications, e.g., basic particle studies, polymerization, sterilization, etc. The beam takes on a strip configuration in a preferred embodiment which may be scanned if desired.

3,463,960

### EYE PROTECTING ELECTRONIC VIEWER

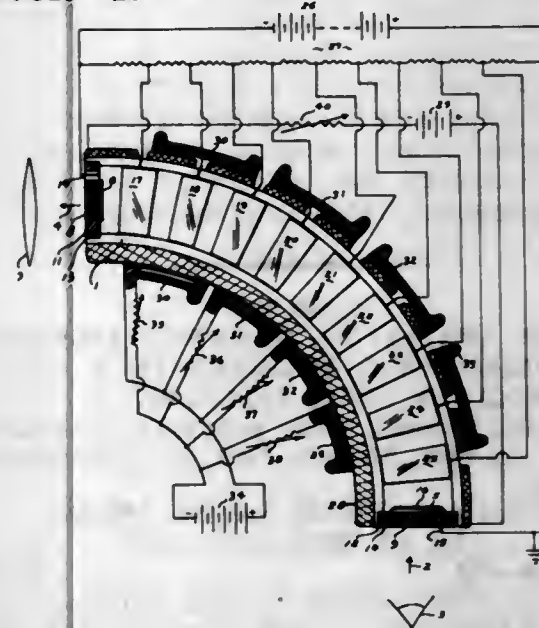
Radames K. H. Gebel, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

Filed Jan. 3, 1968, Ser. No. 695,394

Int. Cl. H01j 31/26

U.S. Cl. 315—10

2 Claims



An electronic right angle viewer that forms an electron image on the phosphor of a viewing screen that is located out of the direct line of observation.

3,463,961

### RASTER CORRECTION CIRCUIT ARRANGEMENT

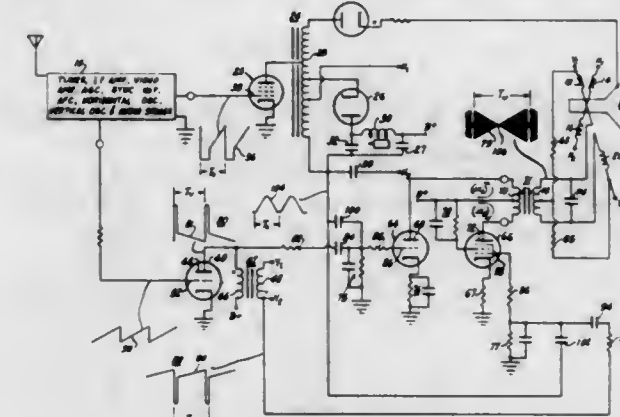
Charles Bailey Neal and Lawrence R. Poel, Batavia, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 23, 1964, Ser. No. 420,535

Int. Cl. H01j 29/70

U.S. Cl. 315—24

6 Claims



A circuit for effecting pincushion and barrel distortion correction occurring in the direction of vertical scan in a television receiver, which utilizes two amplifying devices having their outputs connected to opposite ends of a center tapped primary winding of a transformer. A periodically recurring signal at the horizontal deflection frequency is applied in parallel to the control electrode of the two amplifying devices and opposite phases of a periodically recurring ramp signal are also applied to the respective control electrodes. The oppositely phased ramp signals cause the amplifying devices to be alternately conducting. The push-pull output arrangement causes phase reversal of the modulated horizontal signal component which is coupled to the secondary winding of the transformer connected in series with the vertical deflection cells thereby effecting the desired raster correction in the direction of vertical scan.

3,463,962

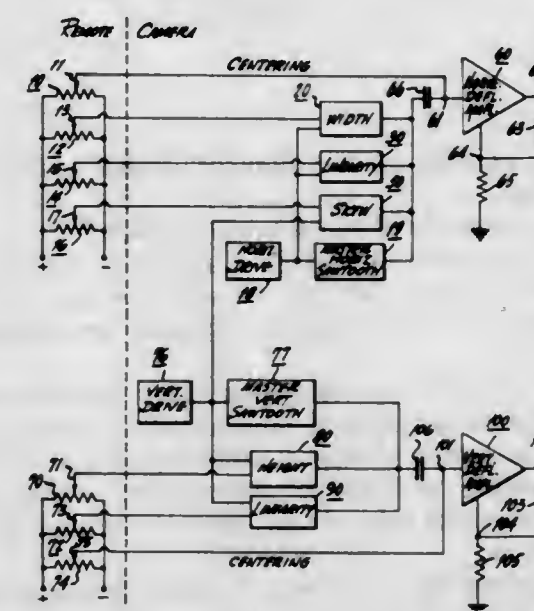
### REMOTE CONTROL FOR DEFLECTION SYSTEM OF A TELEVISION CAMERA

Lucas J. Bazin, Stratford, N.J., assignor to Radio Corporation of America, a corporation of Delaware  
Filed Oct. 17, 1968, Ser. No. 768,255

Int. Cl. H01j 29/70

U.S. Cl. 315—24

6 Claims



In a television camera, apparatus is provided for remotely controlling the deflection system of the camera. DC voltages at the remote control location are adjustably

selected and sent along a cable to the camera at which the DC voltages control the vertical and horizontal centering of the raster and control waveforms which correct the height, width, linearity and skew of the raster.

3,463,963

### SPARK IGNITION CIRCUIT

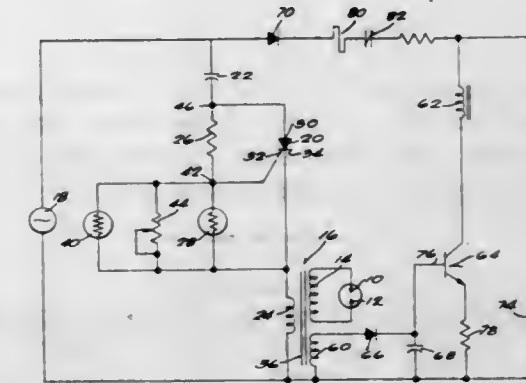
Richard K. Fairley, Deerfield, and Reinhold Mueller, Arlington Heights, Ill., assignors to Controls Company of America, Melrose Park, Ill., a corporation of Delaware

Filed Dec. 28, 1967, Ser. No. 694,200

Int. Cl. H05b 41/14

U.S. Cl. 315—206

19 Claims



In the ignition circuit spark electrodes are connected in the secondary of an ignition transformer and, with respect to the electrical source, a capacitor and a silicon controlled rectifier (SCR) are connected in series with each other and the ignition transformer primary. The SCR is initially non-conductive interrupting the electrical circuit of the capacitor and primary and is rendered conductive to momentarily complete that circuit to provide a steep wave front pulse to the transformer primary. The operational state of the SCR is controlled by a voltage divider circuit which determines the voltage drop across the anode and gate of the SCR. In one form the ignition circuit includes a thermistor connected in one branch of the voltage divider circuit so that the thermistor determines the relative voltage condition of the SCR anode and gate in accordance with a temperature condition to which the thermistor is exposed. In another alternative circuit this relative voltage condition of the SCR gate is determined by a voltage divider circuit which includes the primary of a voltage step-down transformer, the secondary of the transformer being connected to a low voltage thermostat exposed to a temperature condition which is to be the basis of control. The change in operational state of the thermostat is transmitted through the transformer coils and is reflected in a change in impedance of the transformer primary altering the voltage condition of the voltage divider circuit and the operational state of the SCR in accordance with the sensed temperature condition.

3,463,964

### FLUORESCENT LAMP-DIMMING CIRCUIT

Herbert L. Privett, Birstall, Leicester, and Harold R. Ruff, London, England, assignors to British Lighting Industries Limited, London, England

Filed Nov. 28, 1967, Ser. No. 686,050

Int. Cl. H05b 41/42

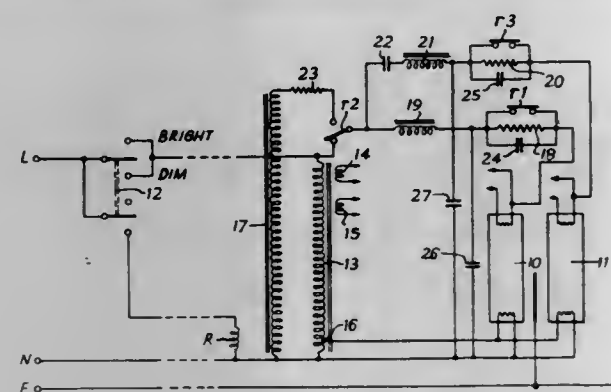
U.S. Cl. 315—247

5 Claims

A light dimming circuit for gas lamps provides a high and low or dim state. In the high state the lamp is directly connected to the power supply through a ballast reactor. In the low state the lamp is connected to the high voltage

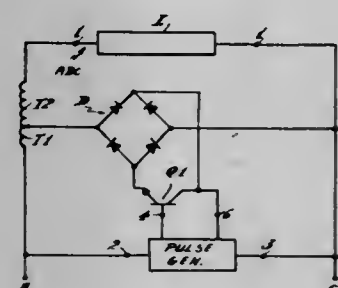


terminal of an autotransformer through first and second resistors and a reactor. In the low state a transfer relay with its contacts makes the necessary connections. The primary winding of the autotransformer is permanently



connected across the power supply and may also furnish the supply for the heaters of the lamp. Condensers for power factor, RF elimination, shimmering of lights and other purposes may be added if so desired.

**3,463,965**  
**GAS DISCHARGE LAMP STARTING CIRCUIT WITH A FUSE GENERATOR CONTROL**  
Sandford C. Peek, Ipswich, Mass., assignor to Sylvania Electric Products, Inc., a corporation of Delaware  
Filed June 29, 1967, Ser. No. 650,008  
Int. Cl. H05b 41/16, 41/24  
U.S. Cl. 315-272 2 Claims

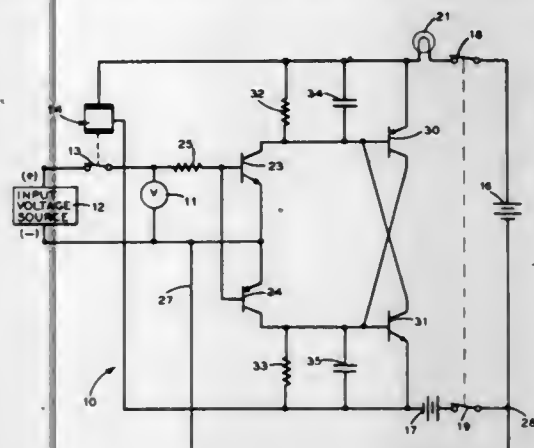


A control circuit for a fluorescent lamp wherein alternating current is supplied to the lamp through the primary and secondary of an autotransformer and a pulse generating current supplies a voltage pulse to the autotransformer primary to step up the voltage pulse and ionize the lamp for a half of the AC cycle. The pulse generating circuit includes a bidirectional gate shut off, semiconductor device connected to the primary and controlled by a pulse generator connected to the AC line.

**3,463,966**  
**FAIL-SAFE CIRCUITS FOR PROTECTING METERS AND THE LIKE AGAINST BIPOLAR VOLTAGE OVERLOADS**  
Charles E. Evans, Scotch Plains, and John Nagy, Jr., Union, N.J., assignors to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware  
Filed Sept. 14, 1967, Ser. No. 667,692  
Int. Cl. H02h 3/28  
U.S. Cl. 317-31 7 Claims

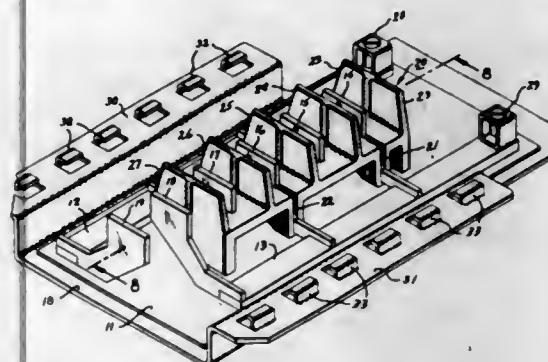
A fail-safe circuit is disclosed for protecting meter circuits and the like against bipolar voltage overloads. Among the components included in the circuit are (1) a voltage overload detection circuit connected in parallel with the meter circuit input terminals for producing an output signal when a voltage overload condition is detected; (2) a relay which is normally maintained energized by a relay energizing source so that the meter circuit terminals are normally maintained connected to an

input voltage source through closed relay contacts; (3) a switching circuit connected in parallel with the relay which circuit may be triggered into turning on by an output signal from the detection circuit; and (4) an alarm or overload indicating device for providing a bilevel output signal. The latter device connects the relay and the relay energizing source and normally provides a low level alarm signal which may or may not be detectable but



produces a recognizably higher level alarm signal when the switching circuit is triggered into turning on to shunt and thereby de-energize the relay. When the relay de-energizes, it opens its hitherto closed contacts to disconnect the input voltage source from the meter. Failure of the device caused by, for example, its burning out, and/or failure of the relay energizing source also operates to de-energize the relay.

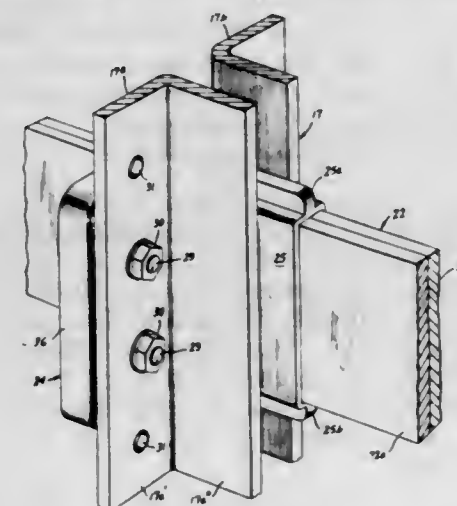
**3,463,967**  
**PANELBOARD LOAD CENTER**  
Keith W. Klein, Simsbury, Conn., assignor to General Electric Company, a corporation of New York  
Filed Dec. 24, 1964, Ser. No. 420,876  
Int. Cl. H02b 1/02, 11/02  
U.S. Cl. 317-119 8 Claims



1. An electric circuit control device panel assembly comprising:
  - (a) a generally planar supporting base;
  - (b) a plurality of electrical contacts supported in insulated spaced relation on said base and each having generally planar contact surfaces on opposite sides thereof;
  - (c) a plurality of rigid insulating barriers each positioned in juxtaposed relation to at least one of said contacts and having a generally planar side surface extending parallel to and spaced a short distance from one of said planar contact surfaces of said one contact;
  - (d) a plurality of electrical control devices mounted on said base and each including a resilient spring means projecting between one of said electrical contacts and the corresponding juxtaposed insulating barrier, said spring means comprising a first part in sidewise abutting engagement with said planar side surface of said

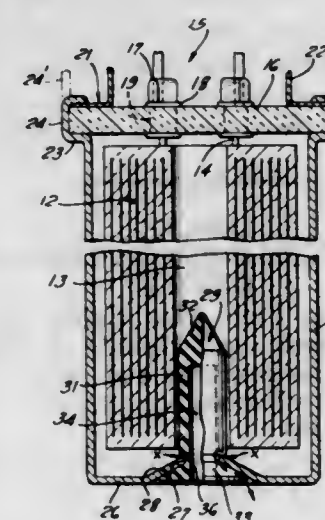
insulating barrier and an oppositely disposed contact portion in electrical contact with said one of said planar contact surfaces of said electrical contact, said spring means, upon insertion thereof between said barrier and said contact, urging said first part into engagement with said barrier and urging said contact portion into engagement with said planar contact surface of said contact, said spring means contacting only one of said generally planar surfaces of said contact.

**3,463,968**  
**MODULAR COMPONENT BUS SYSTEM WITH PASS-THRU INSULATOR**  
William F. Olashaw, Plainville, Conn., assignor to General Electric Company, a corporation of New York  
Filed Mar. 14, 1968, Ser. No. 713,062  
Int. Cl. H02b 1/08, 1/20; H02g 5/00  
U.S. Cl. 317-120 6 Claims



A modular component bus system for a switchboard includes "pass-thru" insulators which allow adapter straps which interconnect the terminals of the devices housed in the switchboard with vertical bus bars arranged in sets or tiers in the switchboard, to pass thru intervening tiers to the vertical bus bars requiring connection, without offsetting.

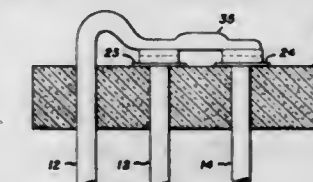
**3,463,969**  
**PRESSURE VENTED ELECTROLYTIC CAPACITOR**  
Edward J. Wershey, Summerville, S.C., assignor to Aero-vox Corporation, New Bedford, Mass., a corporation of Massachusetts  
Filed July 25, 1967, Ser. No. 655,810  
Int. Cl. H01g 9/00  
U.S. Cl. 317-230 9 Claims



This invention relates to the art of electrolytic capacitors, more particularly of the type comprising a cylindrical container in which the capacitor section is positioned. The container has a mouth in which a terminal

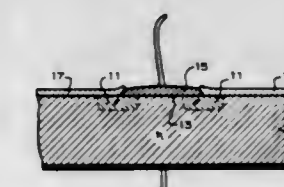
carrying disc is mounted, the terminals being electrically connected to the terminal leads of the capacitor. The floor of the capacitor has an opening in which a valve member is positioned to permit escape of gas in the container when the pressure therein exceeds a predetermined amount.

**3,463,970**  
**INTEGRATED SEMICONDUCTOR RECTIFIER ASSEMBLY**  
Frank W. Gutzwiller, Auburn, N.Y., assignor to General Electric Company, a corporation of New York  
Filed Oct. 26, 1966, Ser. No. 589,585  
Int. Cl. H01l 19/00  
U.S. Cl. 317-234 5 Claims



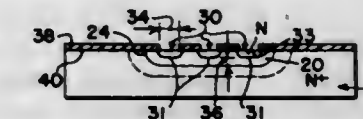
An electrically insulative header supports two pellets mounted side-by-side. One of the pellets is N conductivity type with a plurality of laterally spaced P type regions while the other pellet is P conductivity type with a plurality of N type regions spaced to correspond with the P type regions. Output electrodes cooperate with the pellets. Input wire leads each extend between one of the P type regions and the corresponding N type region on the remaining pellet. The wire leads may extend through the header to one side of the pellets and be bent over for electrical contact. The pellets may be sealingly encapsulated.

**3,463,971**  
**HYBRID SEMICONDUCTOR DEVICE INCLUDING DIFFUSED-JUNCTION AND SCHOTTKY-BARRIER DIODES**  
Richard W. Soshea, Sunnyvale, and Robert A. Zettler, Los Altos, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California  
Filed Apr. 17, 1967, Ser. No. 631,538  
Int. Cl. H01l 3/00, 5/00  
U.S. Cl. 317-234 4 Claims



A semiconductor device includes a Schottky-barrier diode surrounded by a p-n junction diode.

**3,463,972**  
**TRANSISTOR STRUCTURE WITH STEEP IMPURITY GRADIENTS HAVING FAST TRANSITION BETWEEN THE CONDUCTING AND NONCONDUCTING STATE**  
Peter O. Lauritzen, Seattle, Wash., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware  
Filed June 15, 1966, Ser. No. 557,782  
Int. Cl. H01l 11/00, 15/00, 5/00  
U.S. Cl. 317-235 6 Claims



Steep impurity gradients are formed in the base and collector regions of a transistor, with the increase in im-



purity concentration being a function of the distance away from the collector-base junction. Electric fields are thus built into each region, which keep minority carriers at the junction. The transition time between the conducting and nonconducting state of the transistor is substantially reduced, providing a step-recovery characteristic.

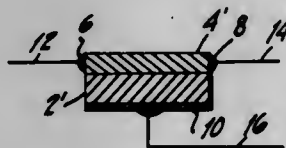
### 3,463,973 INSULATING FERROELECTRIC GATE ADAPTIVE RESISTOR

Ennio Fatuzzo, Savona, Italy, and Walter J. Merz, Zurich, Switzerland, assignors to Radio Corporation of America, a corporation of Delaware

Filed Sept. 12, 1967, Ser. No. 667,283  
Int. Cl. H011 11/00, 3/00

U.S. Cl. 317-235

3 Claims



An adaptive resistor of the insulating ferroelectric gate type comprises a body of single crystal ferroelectric insulating material, such as barium titanate, a layer portion of which has been converted to the semiconducting state and which constitutes a current path, electrodes connected to opposite ends of the layer, and a gate electrode attached to the insulating body portion. Resistivity of the semiconductor layer current path is varied by inducing charges of either similar or opposite type to those in a majority in the semiconductor layer. This is accomplished by selective polarization of the ferroelectric gate. Since the semiconducting current path portion and the insulating gate portion are integral parts of the same body, the undesirable effects of interface states are not present.

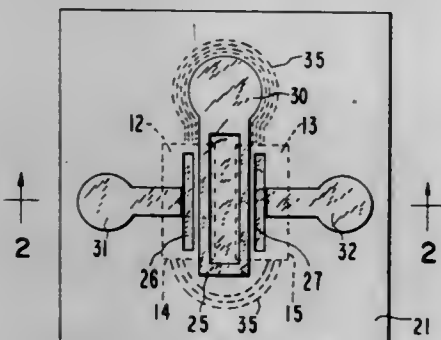
### 3,463,974 MOS TRANSISTOR AND METHOD OF MANUFACTURE

James W. Kelley, Sunnyvale, and Charles T. Plough, Portola Valley, Calif., assignors to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware

Filed July 1, 1966, Ser. No. 562,402  
Int. Cl. H011 7/00

U.S. Cl. 317-235

2 Claims



A field effect transistor having a dielectric layer with two portions, the first portion under the gate overlying the channel region and having a surface charge density less than about  $5 \times 10^{-11}$  charges per square centimeter, and a second portion over the remainder of the surface having a higher surface charge density in excess of about  $1 \times 10^{-12}$  charges per square centimeter.

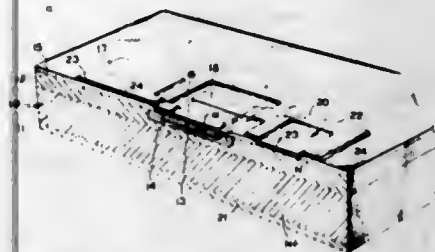
### 3,463,975 UNITARY SEMICONDUCTOR HIGH SPEED SWITCHING DEVICE UTILIZING A BARRIER DIODE

James Robert Biard, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 31, 1964, Ser. No. 422,774  
Int. Cl. H011 11/00, 15/00

U.S. Cl. 317-235

6 Claims



Disclosed is a semiconductor device which comprises a transistor having a metal semiconductor barrier diode shunting the base and the collector junction, the diode having a lower forward voltage drop than the P-N junction between the base and the collector.

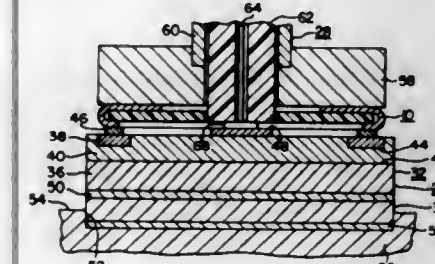
### 3,463,976 ELECTRICAL CONTACT ASSEMBLY FOR COMPRESSION BONDED ELECTRICAL DEVICES

John J. Steinmetz, Jr., Monroeville, and Herbert E. Ferree and Thomas P. Nowalk, Hempfield Township, Greensburg, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 21, 1966, Ser. No. 535,838  
Int. Cl. H011 11/00, 15/00

U.S. Cl. 317-235

3 Claims



An electrical device has a contact assembly in electrical and physical contact with a semiconductor element of the device. The contact assembly comprises a partially restrictive, readily deformable cushioning member having good electrically and thermally conductive contact metal disposed on at least a portion of each of two opposed surfaces and electrically connected to each other. Under a force exerted on the contact assembly within the device, the cushioning member restrictively flows to mold itself about the contours of the surfaces in which it is in contact at the time. Thus, the cushioning member enables the force acting on the contact assembly to be uniformly distributed over the surface of the semiconductor element in electrical and physical contact therewith.

### 3,463,977 OPTIMIZED DOUBLE-RING SEMICONDUCTOR DEVICE

Andrew S. Grove, Palo Alto, Calif., Otto Leistiko, Trorod, Denmark, and Ronald J. Whittier, Los Altos, Calif., assignors to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware

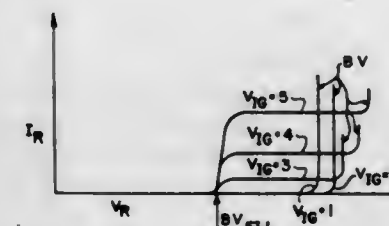
Filed Apr. 21, 1966, Ser. No. 544,229  
Int. Cl. H011 11/00, 15/00

U.S. Cl. 317-235

6 Claims

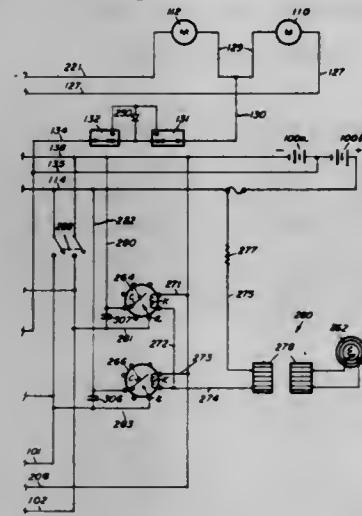
The metal contact to one region of a planar device containing a dish-shaped PN junction extending to one surface of the device, is extended across, but insulated from, the intersection of the PN junction with the surface. By selecting the correct insulation thickness, the breakdown

voltage of the semiconductor PN junction is made equal to the breakdown voltage of the PN junction induced by





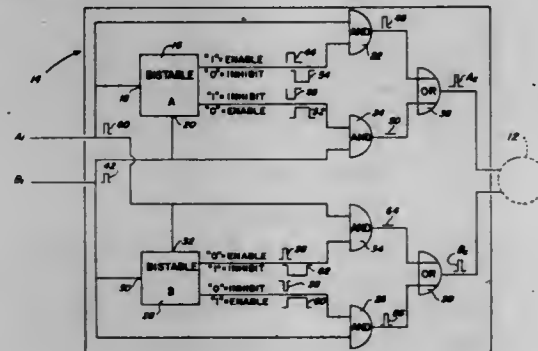
tuated armature which provides directive signals to motor control circuitry. Vertical displacements of the armature determine the polarity of transformer output signals to the motor control circuitry establishing directional opera-



tion of the drive motor, and a selective closure of switch contacts effective in another part of the motor control circuitry establishing directional operation of the over-drive motor.

**3,463,982**  
**PULSE INSERTION MEANS FOR ELIMINATION OF SERVO ERROR DUE TO PULSE DROP-OUT**  
Arthur H. Eldridge, Trenton, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Dec. 5, 1966, Ser. No. 599,236  
Int. Cl. H03k 19/22; G05b 11/00  
U.S. Cl. 318—18 4 Claims



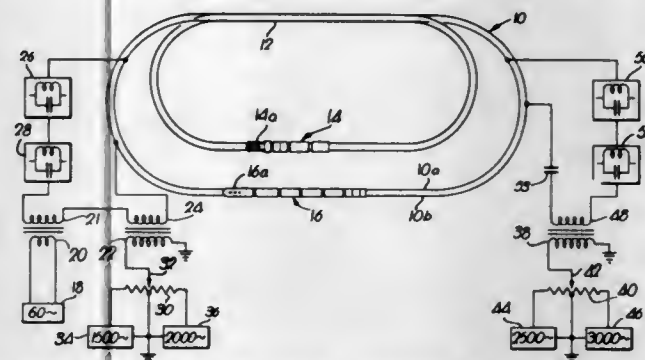
A servomechanism control having electronic binary memory and logic gating devices inserted between the servo control and its control signals for providing a signal pulse to replace a pulse which is lost or drops out, the electronic devices being responsive to a pulse that is present, in order that an erroneous error signal is not presented to the servo control and unwarranted action is not taken by the servo control.

**3,463,983**  
**METHOD AND APPARATUS FOR REMOTELY SELECTIVELY CONTROLLING ELECTRICAL DEVICES OPERATING FROM A COMMON SOURCE**  
William H. Ashley, Jr., Kansas City, Mo., assignor to Frank E. Baum, Kansas City, Mo.

Filed Jan. 19, 1967, Ser. No. 610,310  
Int. Cl. H02p 1/54 20 Claims

The speed and direction of movement of each of a plurality of direct current operated model electric trains is independently remotely controlled by selectively superimposing oscillatory control signals upon an alternating operating potential applied to the track. Each control signal is of a different frequency and two signals are utilized in the control of each train, one corresponding to movement in the forward direction and the other corresponding

to rearward movement. Frequency discriminating control circuitry in each train detects the presence of a particular signal and delivers either the positive or the negative

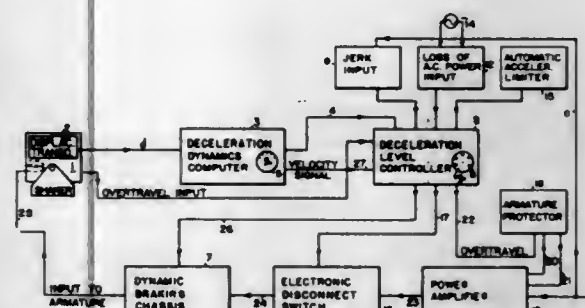


component of the operating potential to the train motor, the amplitude of the control signal determining the amount of power available for motor operation.

**3,463,984**  
**CONTROLLED DECELERATION SYSTEM FOR VIBRATION APPARATUS**

James A. Ross, Villa Park, Calif., and Theodore F. Bogart, Jr., Tucson, Ariz., assignors to LTV Ling Altec, Inc., Anaheim, Calif., a corporation of Delaware

Filed June 10, 1966, Ser. No. 556,761  
Int. Cl. H02p 5/04, 5/46, 7/80  
U.S. Cl. 318—127 17 Claims

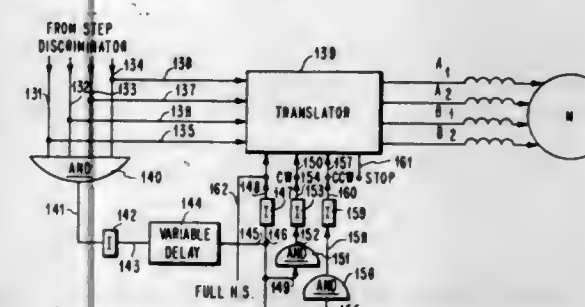


An electrical control for decelerating a moving system, in which means is automatically adjusted during deceleration. This accomplished deceleration as gradually as possible considering the initial conditions imposed; i.e., the velocity of the moving system and the distance available for accomplishing deceleration. Motional parameters are fed to a computer, the output of which provides information for adjusting the deceleration means. Deceleration at a selected value is possible, also for any of a plurality of operational hazards.

**3,463,985**  
**CLOSED LOOP STEPPING MOTOR CONTROL SYSTEM**

Thorbjørn R. Fredriksen, Los Gatos, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 10, 1965, Ser. No. 462,955  
Int. Cl. H02p 3/08, 5/06, 7/06  
U.S. Cl. 318—138 8 Claims

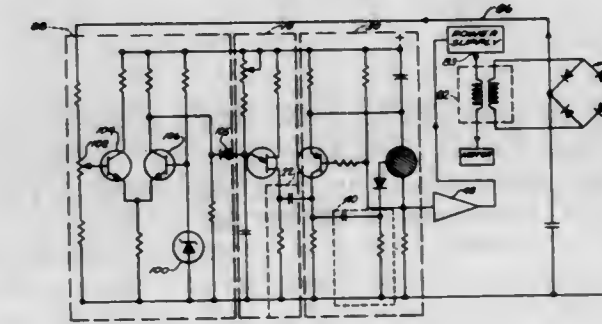


A bi-directional stepping motor capable of variable, high speed bang-bang or synchronous operation. A step

discriminator provides signals indicative of instantaneous rotor position. These are sent into a control circuit together with the input command signal. The output of the control circuit energizes the appropriate windings of the stepping motor such that the desired command is implemented irrespective of the instantaneous position of the motor shaft.

**3,463,986**  
**REDUCED-POWER MOTOR OPERATION**  
Loren E. Currison, Woodland Hills, and Bronius M. Draugelis, South Pasadena, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware

Filed Feb. 23, 1967, Ser. No. 617,956  
Int. Cl. H02p 1/46, 3/18, 5/28  
U.S. Cl. 318—166 12 Claims



An arrangement having a timing-circuit and a repetition-rate circuit for producing control-pulses that repeatedly trigger a power-supply to provide voltage-pulses of abnormally-high voltage, so that a motor—driven by said power-supply—operates substantially continually in a reduced-power state.

**3,463,987**  
**CONTROL FOR SYNCHRONOUS MOTORS UTILIZING A PERMANENTLY CONNECTED RESISTOR ACROSS THE FIELD WINDING**

David W. Schlicher, Richfield, and Thomas G. Rohner, Minneapolis, Minn., assignors to Electric Machinery Mfg. Company, Minneapolis, Minn., a corporation of Minnesota

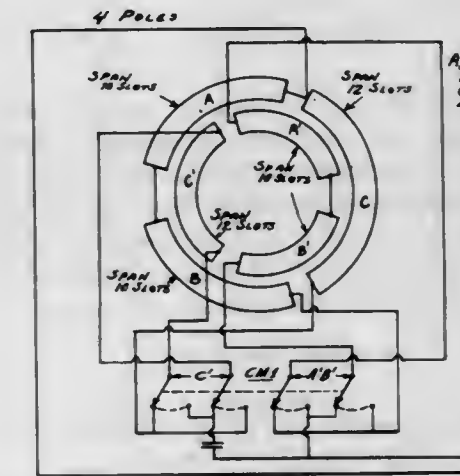
Filed Mar. 9, 1967, Ser. No. 621,898  
Int. Cl. H02p 5/28  
U.S. Cl. 318—176 2 Claims



A control for automatically exciting the field winding of a synchronous motor when proper speed is obtained

and for de-energizing the same in the event the motor pulls out of synchronism. A trigger valve in the exciter circuit actuated by a timing circuit excites the field winding and also energizes a field discharge resistor permanently connected across the field winding.

**3,463,988**  
**BI-PHASE AND SINGLE-PHASE MOTOR WITH POLARITY SWITCHING**  
Luciano Canadelli, Via Varesina 71/B, Como, Italy  
Filed Mar. 29, 1966, Ser. No. 538,366  
Int. Cl. H02p 1/38, 1/42, 3/18  
U.S. Cl. 318—224 4 Claims



A two-speed single phase motor having a stator provided with two similar groups of windings, each consisting of two series-connected inductive windings and a capacitive winding having a considerably greater number of coils than and spanning a much larger number of slots than each inductive winding, the two groups of windings being symmetrically located, with the inductive windings of one group diametrically opposite the inductive windings of the other group and the capacitive windings diametrically opposite each other. The windings are interconnected in a network including two parallel branches, one branch consisting of the two pairs of series-connected inductive windings and the other branch consisting of the capacitive windings connected in series with a capacitor. A 4-pole, double-throw switch is connected in the network to simultaneously reverse the connections of the series-connected inductive windings of one group and the connections of the capacitive winding of said one group. In a first position of the switch, the network connections provide a 4-pole stator configuration, with corresponding motor speed. In the second position of the switch, due to the reversal of the winding connections, a two-pole stator configuration is provided, with resultant doubled motor speed.

**3,463,989**  
**CONTROL CIRCUIT FOR ADJUSTING THE OPERATION OF AN ALTERNATING CURRENT MOTOR INCLUDING A COMMUTATOR**

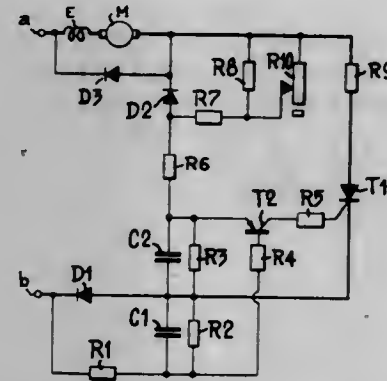
Jean-Claude Lagier, Onex, Geneva, Switzerland, assignor to Mefina S.A., Fribourg, Switzerland, a Swiss company

Filed Sept. 2, 1966, Ser. No. 576,912  
Claims priority, application Switzerland, Sept. 17, 1965, 12,912/65

Int. Cl. H02p 5/00; H02k 27/20; G05b 5/00  
U.S. Cl. 318—332 5 Claims  
A speed control circuit for an electric motor of the commutator type in which the motor is connected in a series feed circuit from a source of alternating current with an impedance, a controlled diode and an auxiliary



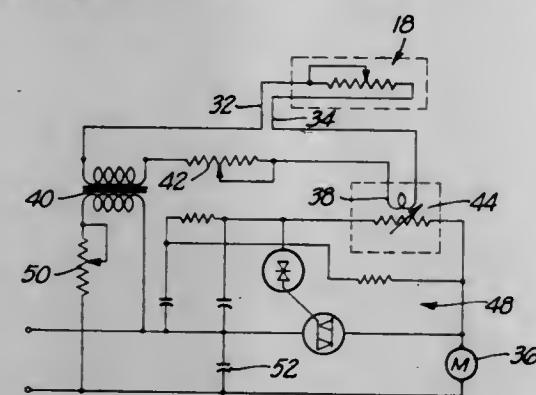
diode. A control circuit is connected to the control electrode of the controlled diode to control the conduction of the same, and is connected to the feed circuit between the motor and the impedance whereby the voltage across the impedance varies with the magnitude of the current passing through the motor to vary the signal level input



to the control circuit which biases the voltage on a capacitor in the circuit. An auxiliary condenser circuit is connected to said first condenser for charging by the opposite polarity of the supply signal such that the difference between the voltage on the two condensers controls the advance of the ignition point of the controlled diode when the current through the motor increases.

### 3,463,990 PRESSURE-SENSITIVE ELECTRICAL CONTROL DEVICE

Bernard A. Ross, Sherman Oaks, Calif. (12320 Burbank Blvd., Room 306, North Hollywood, Calif. 91607)  
Filed Nov. 28, 1966, Ser. No. 597,413  
Int. Cl. H02p 7/00; H02k 27/20  
U.S. Cl. 318—335

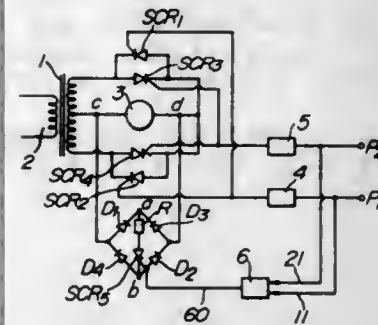


The device is preferably formed as a sleeve telescoped over the housing of a hand-held tool and includes a pressure-sensitive, sleeve-like member which automatically varies the amount of transmission of electrical power therethrough proportional to pressure applied thereto by a person's hand holding the tool. An electrical circuit electrically connects the pressure-sensitive member with the actuating means for the tool so that the actuating means receives proportionate amounts of electrical power upon electrical power being transmitted through said pressure-sensitive member. Thus, with the tool actuating means including a variable speed, electrical drive motor, variations in hand pressure against the pressure-sensitive member will vary the electrical power to the drive motor and thereby, the speed of the motor. The pressure-sensitive member is preferably mounted on the tool housing by an inner insulating sleeve telescoped by an electrical conducting sleeve, in turn, telescoped by the pressure-sensitive member in the form of a sleeve, the latter being sensitive to varying electrical transmissions by pressure at any point thereon. The pressure-sensitive sleeve is, in turn, telescoped by an outer electrical conducting sleeve which is covered by an outer insulating sleeve.

### 3,463,991 BRAKING APPARATUS FOR D-C MOTOR

Takeo Yuminaka and Tatsuo Iwasaka, Katsuta-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Mar. 4, 1966, Ser. No. 531,988  
Int. Cl. H02p 3/12, 3/22  
U.S. Cl. 318—379 7 Claims

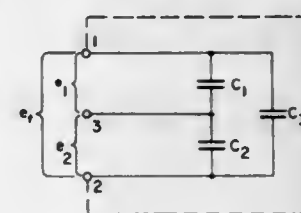


A braking apparatus for a DC motor operable both in normal and reverse directions wherein a diode bridge full-wave rectifier circuit is connected across the armature of the motor and a voltage controlled rectifier responsive to a control signal is connected in series with an impedance across the output of the diode bridge, a control signal being provided to the rectifier to provide braking of the motor in response to disconnection of the energizing DC voltage of either polarity from the armature.

### 3,463,992 ELECTRICAL CAPACITOR SYSTEMS HAVING LONG-TERM STORAGE CHARACTERISTICS

Willis O. Solberg, Fort Edward, N.Y., assignor to General Electric Company, a corporation of New York  
Filed June 13, 1966, Ser. No. 557,169  
Int. Cl. H02j 7/00

U.S. Cl. 320—1 5 Claims



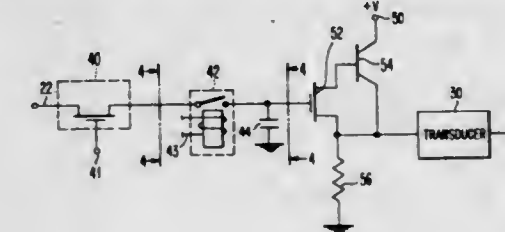
A long-term capacitive storage system is disclosed which employs capacitors of different time constants and connected in series and charged with a voltage magnitude and polarity different for each capacitor.

### 3,463,993 HIGH SPEED-HIGH IMPEDANCE ELECTRICAL SWITCH

John William Beck and Charles John Steele, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York  
Filed Dec. 27, 1966, Ser. No. 604,942  
Int. Cl. H03k 3/26, 19/08

U.S. Cl. 320—1 14 Claims  
The high speed sampling and the subsequent storage of many electric signals at substantially constant values over extended time periods as in process controlling systems is enhanced by interposing low speed-high impedance relay switching contacts and high speed-low impedance semiconductor switching elements in series between the sources of electric signals and the corresponding storage capacitors. The relay contacts are closed a short time

before the semiconductor elements are rendered conducting for sampling and reopened a short time after the semiconductor elements are blocked so that the charges

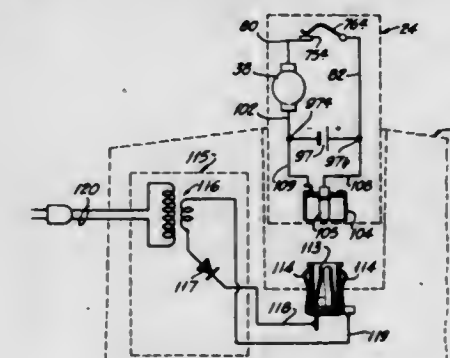


transferred to the respective capacitors do not leak off through the low impedance paths of the semiconductor elements.

### 3,463,994 RECESSED CONCENTRIC CHARGING CONTACTS FOR ELECTRIC CORDLESS TOOTHBRUSH

Albert R. Spahr, Park Ridge, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois  
Original application Mar. 20, 1964, Ser. No. 353,327, now Patent No. 3,274,631, dated Sept. 27, 1966. Divided and this application Jan. 28, 1966, Ser. No. 523,681  
Int. Cl. H02j 7/10

U.S. Cl. 320—2 5 Claims



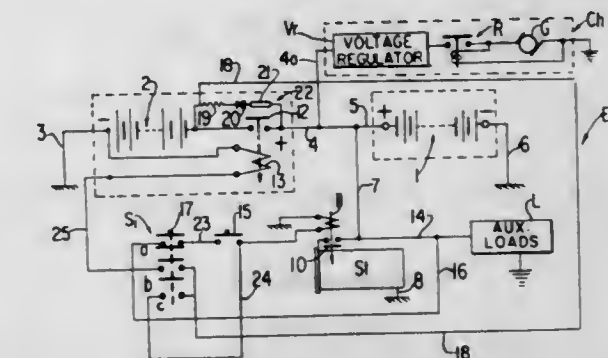
Electric cordless appliance comprising hand held generally cylindrical power unit with a recess at one end housing a pair of concentrically arranged contacts, the recess being open at the bottom. A storage and charging unit for the power unit formed of a molded plastic housing having a centrally disposed chamber for receiving the recessed end of the power unit. Concentrically arranged contacts are disposed in said chamber for electrically engaging the contacts in the recess in the power unit when the power unit is in the chamber. Storage means for the power cord of the charging unit are provided in said plastic housing to one side of the chamber and the battery charging apparatus is disposed on the other side of the chamber.

### 3,463,995 ELECTRIC FEEDING INSTALLATION ON IN- TERNAL COMBUSTION VEHICLES AND ENGINES

Rodolphe André Herold, Boulogne-Billancourt, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, Seine-Saint-Denis, France, a company of France  
Filed Dec. 27, 1966, Ser. No. 604,787  
Claims priority, application France, Dec. 28, 1965, 44,057  
Int. Cl. H02j 7/14; H01m 45/04

U.S. Cl. 320—6 10 Claims  
The disclosure herein relates to electric power supply apparatus for vehicles and engines equipped with internal combustion engines, an electric starter, and auxiliary loads. The apparatus has a main battery having a high capacity C capable of delivering a maximum current of approximately 2C or 3C for a short period of

time and lower continuous discharge currents for longer periods and a second complementary battery which has the same rated voltage as the main battery and a low capacity C<sub>0</sub>, but which is capable of delivering a maximum current of 20 C<sub>0</sub> to 30 C<sub>0</sub> for short periods of time. By the use of various connections, relays, and switches, the main battery alone delivers power to the auxiliary loads

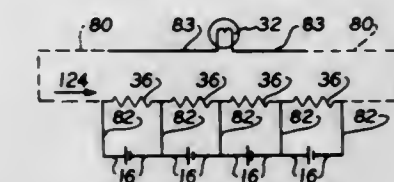


while the starter can be powered either by the main battery alone or by both the main and complementary batteries in parallel. Automatic charging of both batteries while the engine is running is provided for with limitation of the charging current to the complementary battery in addition to circuitry to prevent discharge of the complementary battery into the main battery.

### 3,463,996 BATTERY DISCHARGE APPARATUS

James A. Frezzolini, Bronx, N.Y., assignor to United Aerotest Laboratories, Inc., Deer Park, N.Y., a corporation of New York  
Filed Nov. 14, 1966, Ser. No. 593,968  
Int. Cl. H01m 45/04

U.S. Cl. 320—17 18 Claims



A battery discharge apparatus for simultaneously discharging a plurality of battery cells comprising a plurality of load impedances connected in a series loop. Lead means is provided for connecting individual ones of the load impedances across respective battery cells whereby the battery cells are discharged and the possibility of damage to the cells by reverse polarity charging is eliminated.

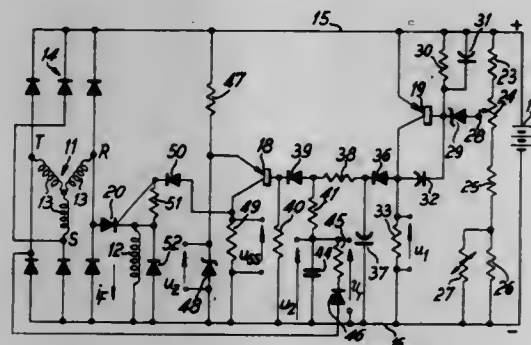
### 3,463,997 EXCITATION SYSTEM FOR A POLYPHASE ALTERNATING CURRENT GENERATOR

Franz W. Dietl, Bietigheim, and Edgar Kuhn, Gerlingen, Germany, assignors to Robert Bosch GmbH, Stuttgart, Germany  
Filed Dec. 14, 1966, Ser. No. 601,604  
Claims priority, application Germany, Dec. 22, 1965, B 85,101  
Int. Cl. H02p 9/02, 11/06

U.S. Cl. 322—24 13 Claims  
A system for maintaining a constant voltage across the load of a generator by controlling the percent of time per cycle during which field current flows through a rectifier adapted to stop the field current when the sum



of two voltages, one proportional to a positive change of output voltage of one phase and the other proportional



to the output voltage of another phase, exceed a constant reference voltage.

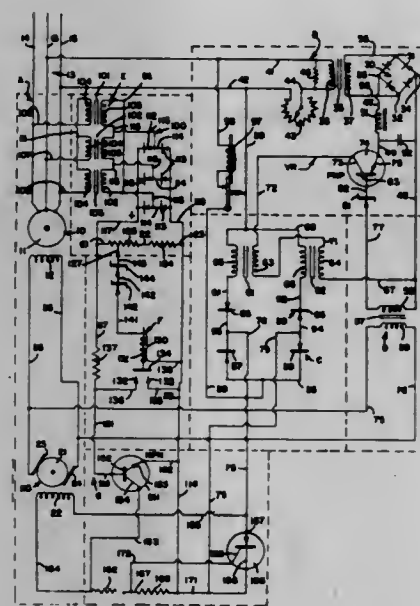
3,463,998

#### OVERVOLTAGE CONTROL

Forest D. Smith and Derrick N. Alcock, Minneapolis, Minn., assignors to Electric Machinery Mfg. Company, Minneapolis, Minn., a corporation of Minnesota  
Filed Dec. 27, 1966, Ser. No. 604,775  
Int. Cl. H02h 7/06

U.S. Cl. 322-28

8 Claims



An overvoltage control for use with an alternating-current electric power supply including a generator having a field winding energized by a direct current exciter, also having a field winding, a conventional voltage regulator, supplying direct current of regulated voltage to said exciter field winding, said control having a sensing circuit sensitive to the voltage of the power supply and upon over voltage thereof operating a detecting circuit including a sensitive relay. This relay operates a switch means normally shunting resistive means in the exciter field winding circuit. Actuation of said relay opens said switch means to insert the resistive means in the circuit and to trigger locking means shorting the exciter field winding and the voltage regulator.

3,463,999

#### A.C. APPARATUS TEMPERATURE COMPENSATION

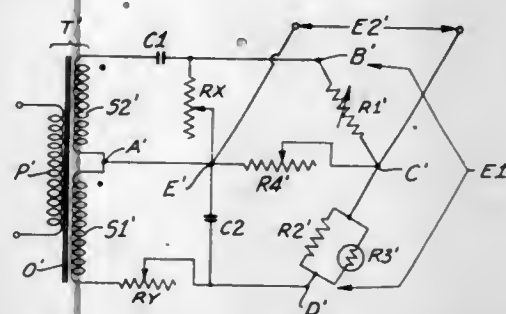
John E. Ames, Jr., Riverside, Calif., assignor to Bourns, Inc., a corporation of Delaware  
Filed May 8, 1967, Ser. No. 636,701  
Int. Cl. G05f 1/10, 3/02; G01r 17/02

U.S. Cl. 323-69

10 Claims

Means adapted to be energized from an A.C. power source and having a circuit device arranged to be connected in series with an adjunct apparatus energized by

the same power source or a different source of the same frequency and adapted to provide A.C. voltage or potential correction or compensation to the adjunct apparatus



for the electrical effects of mechanical, magnetic, and electrical changes in the components of the adjunct apparatus which effects result from changes in the ambient temperature.

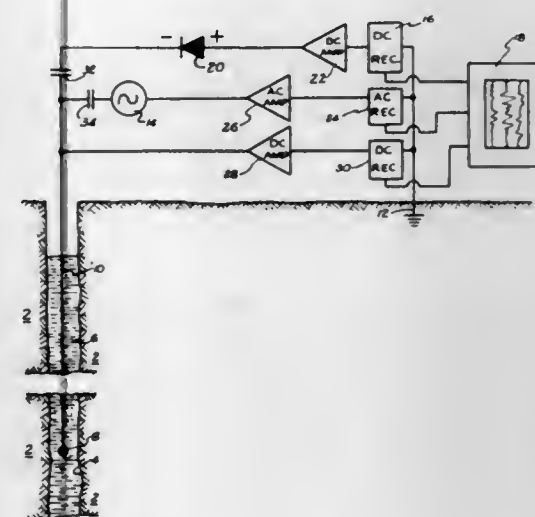
3,464,000

#### METHOD AND APPARATUS FOR LOGGING WELL BORES UTILIZING A PULSATING D.C. SIGNAL

Donald Theodore Ower, 8612 80th St., Edmonton, Alberta, Canada  
Filed Oct. 12, 1965, Ser. No. 495,240  
Int. Cl. G01v 3/18

U.S. Cl. 324-1

28 Claims



A method and apparatus for investigating subsurface earth formations traversed by a bore hole in which a unidirectional, varying-amplitude, electrical signal, preferably having an amplitude of 50 to 500 millivolts and a frequency of about 50 to 300 c.p.s., is passed through the earth formation of interest and simultaneously with the passage of the signal through the earth a unidirectional, varying-amplitude, electrical signal of a polarity opposite to the polarity of the exciting signal is measured across the earth formation of interest. The opposite polarity measurement is preferably accomplished by utilizing a polarized DC potentiometer having a polarization opposite that of the signal generator. A novel measurement of the resistivity of the formation in question may also be obtained by simultaneously measuring the resistivity across the formation of interest simultaneously with the excitation of the formation and the measurement of the opposite polarity signal. It is also possible to measure a conventional self-potential effect in the formation of interest and to record the opposite polarity log, the modified resistivity log, and the self-potential log in side-by-side relation. The method and apparatus has been found particularly useful in the evaluation of underground coal deposits.

3,464,001

#### APPARATUS FOR SEQUENTIALLY TESTING THE CROSSPOINTS OF A FERREED SWITCH FOR CONTACT RESISTANCE

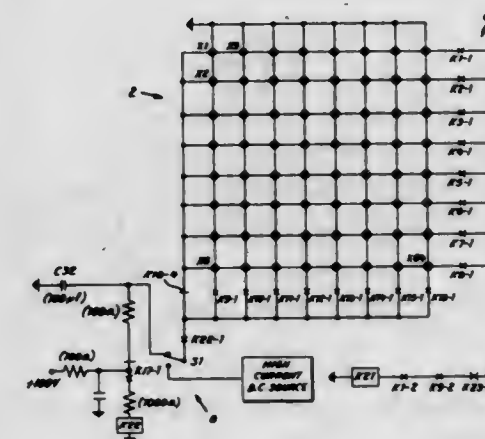
Arthur Edward Dodson, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed June 27, 1967, Ser. No. 649,347

Int. Cl. G01r 31/02, 27/02, 15/12

U.S. Cl. 324-28

9 Claims



A ferreed switch tester which closes a switch cross-point, injects current through a contact of such cross-point to measure its resistance, removes the current, and then opens the crosspoint. These functions are sequenced by a binary counter chain acting through a diode matrix. In one embodiment the counter chain selects for test all the switch crosspoints in sequence. In a further embodiment a high frequency oscillator drives the counter chain rapidly to life test the contacts without measuring their resistance, and a timer periodically connects a low frequency oscillator to the counter chain for slower testing during which contact resistance is measured.

3,464,002

#### LOW Q TEST COILS FOR MAGNETIC FIELD SENSING

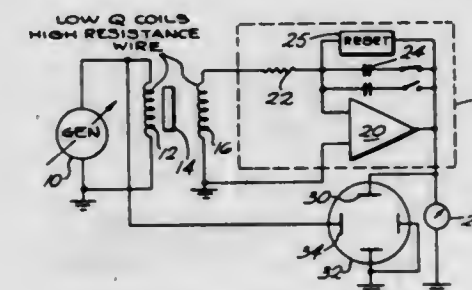
Rudolf G. Hentschel, 2010 Medford, Ann Arbor, Mich. 48104

Filed Sept. 28, 1967, Ser. No. 670,867

Int. Cl. G01r 33/14; H01f 27/28

U.S. Cl. 324-40

18 Claims



An eddy current testing instrument operable over a wide frequency range—4 kc. to 40 kc. in one embodiment. A variable frequency AC source is connected to a primary coil to generate an alternating magnetic field. Perturbations introduced by placing a test sample in the field are sensed by a secondary pickup coil magnetically linked to the field whose output is integrated to obtain a signal proportional to the field and compared to the signal from the AC source to determine changes in ampli-

tude and phase of the field caused by the eddy current properties of the sample. Wideband response is obtained by using low Q primary and secondary coils having a Q of 0.1 to 1.0 over the frequency range.

3,464,003

#### TORQUE MAGNETOMETER WITH TORSION FIBER SUSPENSION

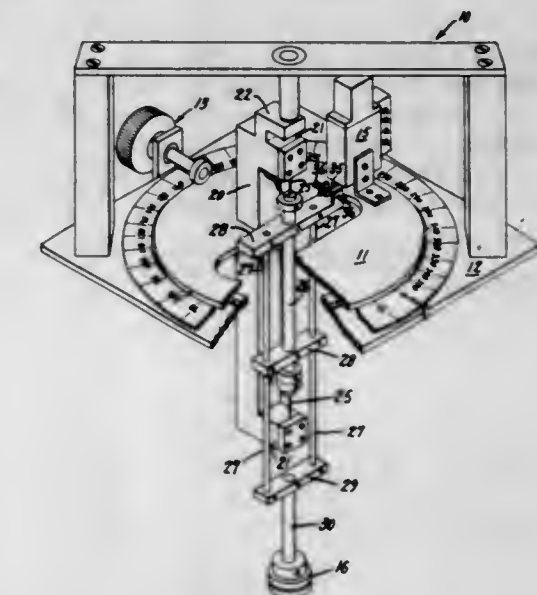
Joseph J. Becker, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Nov. 22, 1966, Ser. No. 596,126

Int. Cl. G01r 33/02

U.S. Cl. 324-43

1 Claim



A torque magnetometer is described in which the holder for the magnetic sample to be tested is operably connected to a rotatable instrument platform by means including torsion fibers. The torsion fibers, which replace the usual bearings, permit the sample to rotate slightly with respect to the instrument platform. This slight rotation is resisted by the strain transducer, whose output is proportional to the torque on the specimen.

3,464,004

#### AUTOMATIC BALANCING A.C. BRIDGE INCLUDING RESISTIVE AND REACTIVE BALANCING ELEMENTS CONNECTED ACROSS THE INPUT AND TO THE OUTPUT OF THE BRIDGE

Wilhelm Nobis, Merzhausen im Breisgau, Germany, assignor to Fritz Hellige & Co., G.m.b.H., Freiburg im Breisgau, Germany

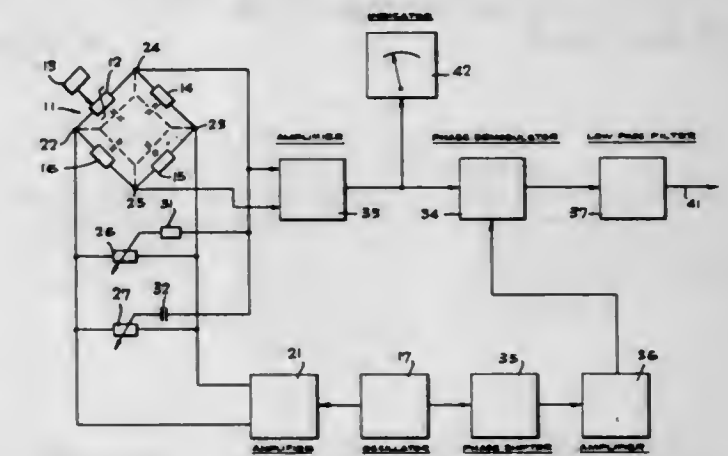
Filed Aug. 3, 1965, Ser. No. 476,835

Claims priority, application Germany, Aug. 4, 1964, H 53,479

Int. Cl. G01r 27/02

U.S. Cl. 324-57

4 Claims



A device for automatically balancing an alternating current bridge. Reactive and resistive balancing means are



13  
of  
of

coupled between the bridge and an alternating current generator. Circuit means are connected to the alternating current generator and the output of said bridge for separating the unbalance components of the output signal from said bridge. Servo means are connected to said reactive and resistive balancing means and may be coupled to said circuit means for ensuring the automatic balancing of the resistive and reactive components of the output signal from said bridge.

**3,464,005**  
**METHOD AND APPARATUS FOR THE MEASUREMENT OF CHANGE IN DIELECTRIC LOSS INCLUDING PERIODICALLY AND CONTINUOUSLY VARYING THE FREQUENCY OF THE RESONANT DETECTOR CIRCUIT**

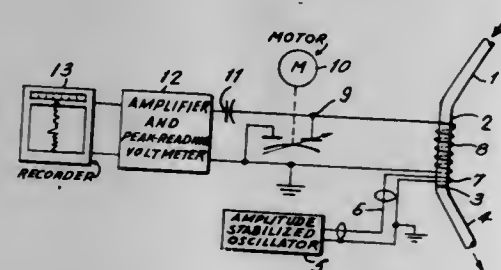
Herbert Holden Wood, St. Hilaire, Quebec, Canada, assignor to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed June 20, 1966, Ser. No. 558,810

Claims priority, application Canada, July 21, 1965, 936,439

U.S. Cl. 324-57 Int. Cl. G01r 27/26

9 Claims



An apparatus for the continuous measurement of moisture in dielectric materials by measurement of change in dielectric loss. The sample material is placed within the field of a tunable detector circuit which is coupled to a stable oscillator circuit. The resonant frequency of the detector circuit is varied periodically and continuously so that the circuit passes periodically and continuously with the oscillator circuit, the peak voltage received by the detector circuit providing a measure of the dielectric loss of the material. The apparatus has been used for the measurement of moisture insolid ammonium nitrate.

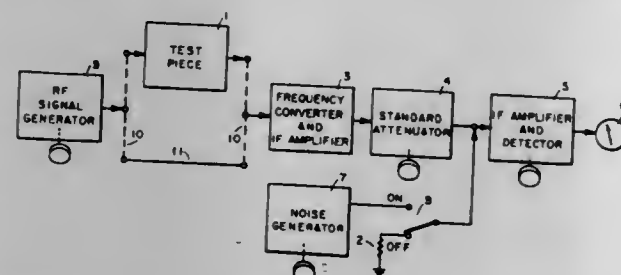
**3,464,006**  
**R-F ATTENUATION MEASUREMENT APPARATUS OF THE I-F SERIES SUBSTITUTION TYPE, WITH NOISE INJECTION FOR COMPENSATION OF ERROR DUE TO MIXER NOISE**

Harvey L. Kaylie, Brooklyn, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed June 1, 1967, Ser. No. 642,965

U.S. Cl. 324-57 Int. Cl. G01r 27/28

6 Claims



A superheterodyne test receiver with a calibrated adjustable I-F standard attenuator, and a noise generator to compensate error-producing change of the output noise level with change of the attenuator setting.

A device for measuring the oxygen content of molten metal in a container and including an electrolytic cell having a solid electrolyte and constituted by a block of refractory solid electrolyte material mounted in a wall of the container with one face of the block in contact

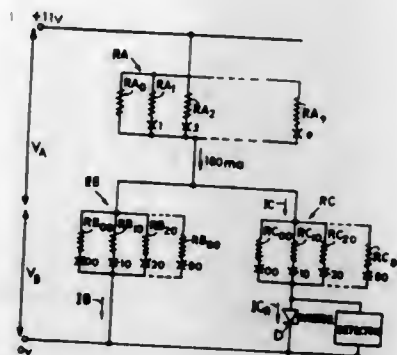
**3,464,007**  
**APPARATUS FOR SORTING ELECTRICAL COMPONENTS BY CURRENT CONSUMPTION AT PRESCRIBED VOLTAGE**

Dewi L. Williams, Chateauguay Centre, Quebec, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Nov. 22, 1966, Ser. No. 596,165

U.S. Cl. 324-64 Int. Cl. G01r 27/14

9 Claims



An apparatus for sorting electrical components into various groups according to their current consumption at a prescribed voltage, having a network composed of three pluralities of resistors, one plurality being in series with a parallel arrangement of the other two pluralities. A scanner, comprising stepping relays, sequentially selects combinations of at least one resistor from each plurality of resistors to step the current through a component under test until the prescribed voltage is reached, as determined by a voltage detector. A visual readout indicates the group number corresponding to the current flowing through the component when the voltage reaches the prescribed value.

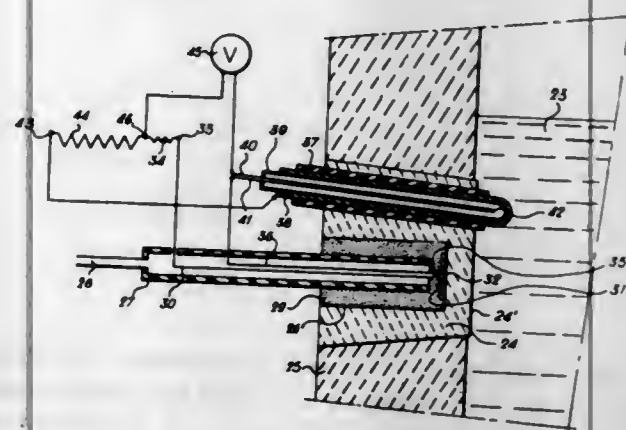
**3,464,008**  
**DEVICE FOR CONTINUOUSLY MEASURING THE OXYGEN CONTENT OF A MOLTEN METAL INCLUDING AN ELECTROLYTIC CELL HAVING A SOLID ELECTROLYTE**

Nicolas Meysson, Semecourt, Moselle, and Jacques Dumont-Fillon, Metz-Queuleu, Moselle, France, assignors to Institut de Recherches de la Sidérurgie Française, Saint-Germain-en-Laye, Yvelines, France

Filed Oct. 18, 1967, Ser. No. 676,165  
Claims priority, application France, Oct. 19, 1966, 80,610; July 13, 1967, 114,212

U.S. Cl. 324-71 Int. Cl. G01n 27/26

12 Claims



with the metal, and formed with a cavity having an end face adjacent to but spaced from the one face of the block and through which an oxygen-containing reference gas is circulated to maintain a constant partial oxygen pressure in the cavity, an electrode carried by the block in the cavity and surrounded by the reference gas circulated through the latter and having one end in contact with the end face of the cavity, and a conductor carried by the block insulated from the electrolyte and having an end adjacent the face of the block which is in contact with the molten metal and being likewise in contact with the latter; and means in circuit with the electrode and the conductor for measuring the potential difference between said faces of the block.

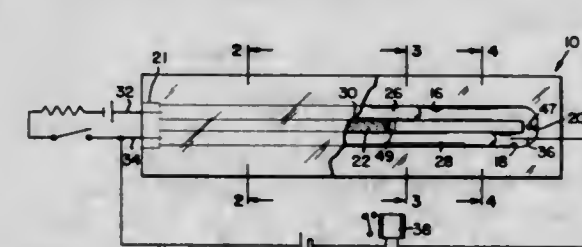
**3,464,009**  
**ELECTROLYTIC MERCURY COULOMETER INCLUDING A SLOTTED TUBE FOR CONTAINING MERCURY**

Lester Corrsin, Penfield, N.Y.  
(18 Wurts Ave., New Paltz, N.Y. 12561)

Filed Oct. 22, 1965, Ser. No. 502,065

U.S. Cl. 324-93 Int. Cl. G01r 27/22

4 Claims



An electrolytic mercury coulometer in which a column of mercury is confined by reason of its surface tension in a longitudinally slotted capillary. An electrolyte extends through the slot to contact the mercury for electrolysis.

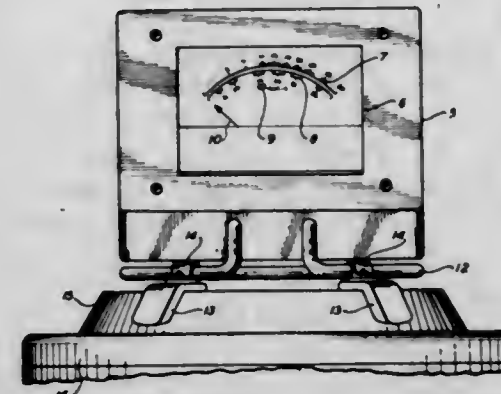
**3,464,010**  
**POWER METER FOR ATHERMAPEUTIC APPARATUS**

Robert Saul, Long Island City, N.Y., assignor to Diapulse Corporation of America, New York, N.Y., a corporation of Delaware

Filed Oct. 25, 1966, Ser. No. 589,402

U.S. Cl. 324-95 Int. Cl. G01r 23/04, 25/02, 27/02

4 Claims



An accurate meter for indicating the high frequency power emanating from the treatment head of an athermapeutic apparatus is provided. The high frequency radiations transmitted by the treatment head are variable depending upon the selected setting of the athermapeutic apparatus. In order to accurately indicate the precise power

of such radiations the meter is provided with a pick-up loop of preselected size and configuration which is positioned in definite relationship to the treatment head. When thus in proper place the meter-loop is accordingly located very accurately relative to maximum output field of the emitted high frequency radiations resulting in the meter scale thus accurately indicating the exact power output of high frequency radiations at all operative settings of the thermapeutic apparatus. The pick-up loop also functions as a support for the meter casing when in position upon the treatment head.

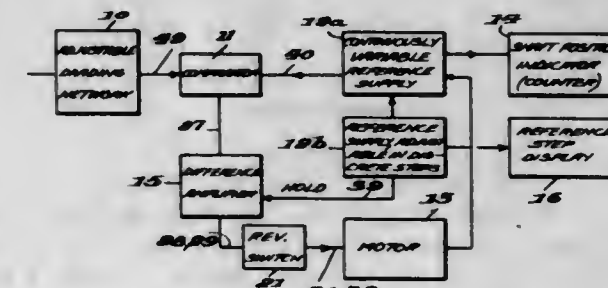
**3,464,011**  
**SELF-BALANCING SYSTEM FOR OBTAINING IN-LINE COUNTER-TYPE READOUT OF UNKNOWN VOLTAGE INPUT SIGNAL WITH EXPANDED OPERATIONAL MODE TO PROVIDE ADDITIONAL DIGIT IN READOUT**

Uwe L. Beckmann, Rockaway, N.J., assignor, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed May 31, 1966, Ser. No. 554,174

U.S. Cl. 324-99 Int. Cl. G01r 17/06

7 Claims



An electrical system of the self-balancing type for obtaining a counter-type digital readout of an unknown input voltage includes a multiple decade type input attenuator for the input voltage, a comparator circuit which compares the input voltage at the output of the attenuator with a variable reference voltage and a reversible motor driven by the difference voltage appearing at the output of the comparator circuit which adjusts the reference voltage in such direction as to effect rebalance between the signal and reference voltages. A mechanical turns counter of the decade type is mechanically coupled with the variable reference voltage so as to initially obtain a corresponding in-line coarse digital readout of the magnitude of the unknown voltage and a finer reading is then obtained by insertion of an extra digit in the readout corresponding to the most significant digit in the coarse reading. Insertion of the extra digit results in a corresponding change in the reference voltage accompanied by a reduction of one decade in the input signal attenuator, and the system is then allowed rebalance a second time.

**3,464,012**  
**AUTOMATIC SIGNAL RANGE SELECTOR FOR METERING DEVICES**

James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Charles T. McCormick, Jr., Houston, Robert A. Doughty, Alvin, and Ernest L. Camp, La Marque, Tex.

Filed Feb. 17, 1967, Ser. No. 617,778

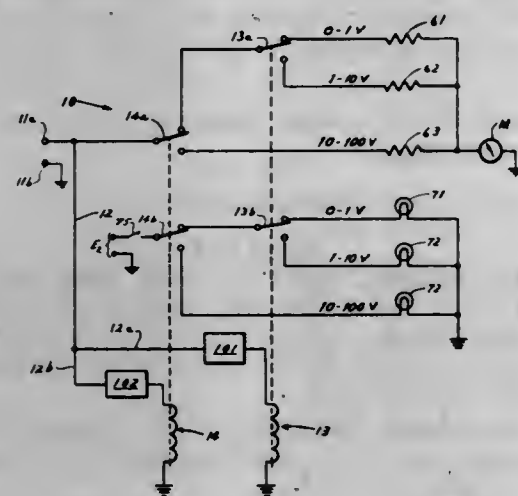
U.S. Cl. 324-115 Int. Cl. G01r 1/38, 15/08

2 Claims

A voltage range selection apparatus for automatically sensing and applying voltages to electronic instruments without loading the signal source. Signal voltages are sensed by a plurality of voltage sensing and triggering circuits each consisting of a voltage sensing unit and a modified Schmitt trigger which operates with low hysteresis



within one percent of the trigger level for operating an associated switching relay. When energized, the associated relay applies the input signal voltage to one of a plurality of meter ranging resistors and selectively applies power to one of a plurality of range indicating lamps.



The invention described herein was made in the performance of work under a NASA contract and is subject to the provision of Section 305 of the National Aeronautics and Space Act of 1958, Public Law 85-568 (72 Stat. 435; 42 U.S.C. 2457).

3,464,013

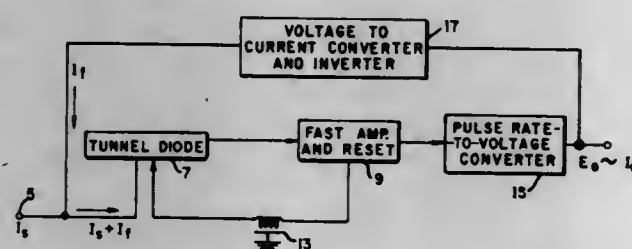
## PEAK CURRENT METER

John A. Biggerstaff, Oak Ridge, and Ronald Nutt, Knoxville, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Jan. 25, 1967, Ser. No. 612,292  
Int. Cl. G01r 19/26, 17/06

U.S. Cl. 324-120

8 Claims



This is an instrument for the accurate measurement of the average peak current over a given sample time of short, repetitive current pulses such as are obtained at the target of pulsed particle accelerators. A bistable biased tunnel diode is connected for sensing the current pulses to be measured. The diode is biased by a feedback loop which provides a current sufficient to bias the tunnel diode just at a value to cause the diode to switch to its second stable state after which it is switched back to its first stable state by a reset signal. The feedback current and the reset signal cause the diode to switch at a fixed rate which is inversely proportional to the open loop gain of the system. When the tunnel diode senses input current pulses, it would be switched at an increased rate except for the action of the feedback current which adjusts automatically to maintain a nearly constant switching rate. The switching signals from the tunnel diode are shaped into standardized current pulses. This output passes through a pulse rate-to-voltage converter circuit which provides a voltage output proportional to the input pulse current amplitude, and the output of the pulse rate-to-voltage converter is fed back through a voltage-to-current converter and inverter to maintain the tunnel diode bias at the correct value for its bistable operation.

### 3,464,014 ELECTRICAL INSTRUMENT HAVING A ROTATABLE MEMBER SUPPORTED BY A CATENARY SUSPENSION SYSTEM

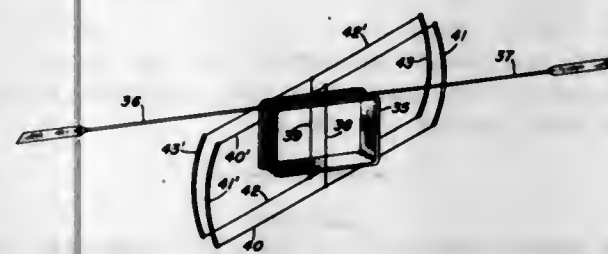
Richard W. Seabury, Jr., Towaco, N.J., assignor to Radio Frequency Laboratories, Inc., Boonton, N.J., a corporation of New Jersey

Filed July 2, 1965, Ser. No. 469,098

Int. Cl. G01r 1/00, 1/16, 1/20

U.S. Cl. 324-154

7 Claims



The rotatable member of an electrical instrument is supported for rotation about a predetermined axis solely by two sets of catenary wire suspensions extending normal to the said axis, said sets of wire suspensions lying in parallel planes spaced to either side of said axis. A pair of transverse wires are secured to the rotatable member, each such transverse wire having ends secured to an associate set of the wire suspensions substantially at the mid point thereof.

3,464,015

### NETWORK FOR MATCHING AN AERIAL TO A RADIO TRANSMITTER

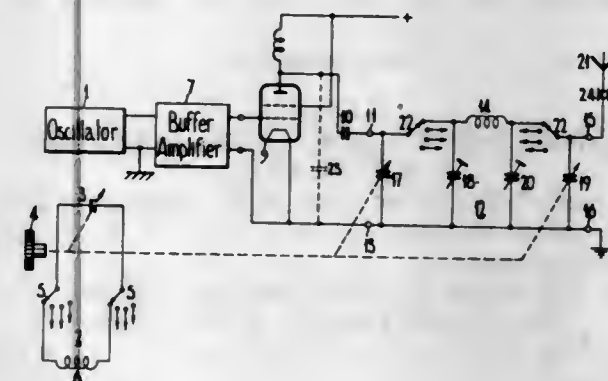
Hugh Basil Schofield Brabham, Netley Abbey, Southampton, England, assignor to The General Electric Company Limited, London, England, a British company

Filed Nov. 3, 1966, Ser. No. 591,887

Int. Cl. H04b 1/04, 1/66

U.S. Cl. 325-172

6 Claims



A radio transmitter utilizing a matching network of  $\pi$ -configuration to match the aerial to the final stage of the transmitter wherein capacitances in the shunt arms of the network are ganged to a variable reactance controlling the frequency of the output of the transmitter so that the tuning of the network and the frequency of the output of the transmitter are adjustable in step over a range of frequencies by means of a common control member.

3,464,016

### DEMODULATION SYSTEM

William J. Kerwin, Sunnyvale, Michael G. Dix, Monte Vista, and Robert M. Munoz, Los Altos, Calif., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Jan. 13, 1966, Ser. No. 520,839

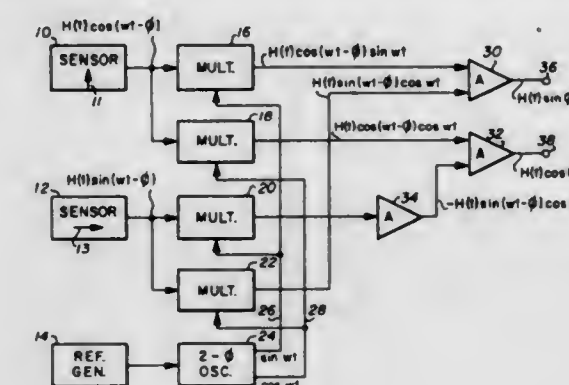
Int. Cl. G01n 27/00

U.S. Cl. 328-1

7 Claims

A demodulation system for removing unwanted amplitude modulation from two quadrature-displaced data-

bearing signals. Quadrature related reference signals logic gates, combined and supplied to a frequency divider to produce a square wave signal having a constant function are generated. The reference signals and fundamental component proportional to the mean pulse



data-bearing signals are processed in multipliers, an inverter and adders to provide data-bearing signals that have been stripped of the amplitude modulation.

3,464,017

### ELECTRICAL SQUARE WAVE GENERATING CIRCUIT

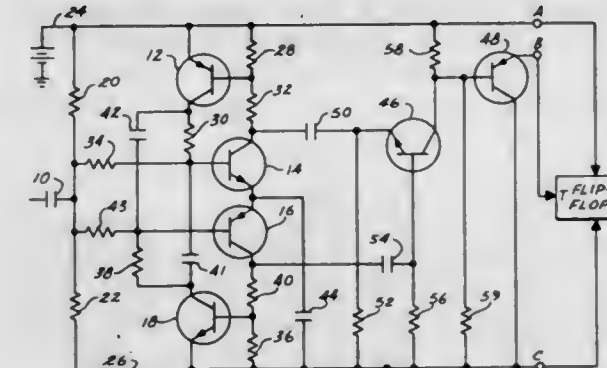
John W. Savage, Bethesda, Md., assignor to The Susquehanna Corporation, a corporation of Delaware

Filed June 24, 1966, Ser. No. 560,290

Int. Cl. H03k 5/08

U.S. Cl. 328-34

5 Claims



The illustrative embodiment of the electrical squaring circuit receives noisy, varying input signals and reshapes them into an output pulse train. The input signals are applied to a highly-sensitive trigger circuit composed of two regenerative switches which operate in a complementary manner. Thus, one of them is on while the other is off, and vice versa. When the input waveform crosses through its average value, it turns off the switching circuit which is on, and turns on the one which is off. The output from this switching circuit is then passed through a gating circuit to a multivibrator which provides an output pulse train, each pulse being initiated when the switching circuit switches states.

3,464,018

### DIGITALLY CONTROLLED FREQUENCY SYNTHESIZER

Rodger A. Cliff, College Park, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

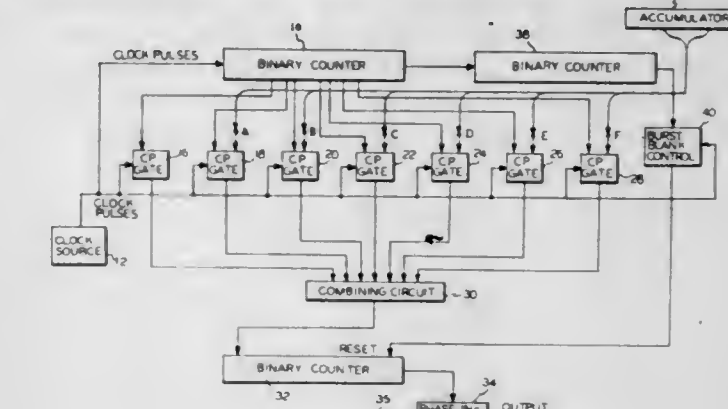
Filed Aug. 26, 1966, Ser. No. 576,183

Int. Cl. H03k 3/02

U.S. Cl. 328-61

3 Claims

A digital oscillator wherein a clock drives a first binary counter and associated logic gates to produce a number of pulse trains which are selectively gated through the



rate of the combined pulse train, and wherein a second binary counter responsive to the first periodically resets the frequency divider.

3,464,019

### REFERENCE SIGNAL PHASE SHIFT TRANSITION DETECTOR

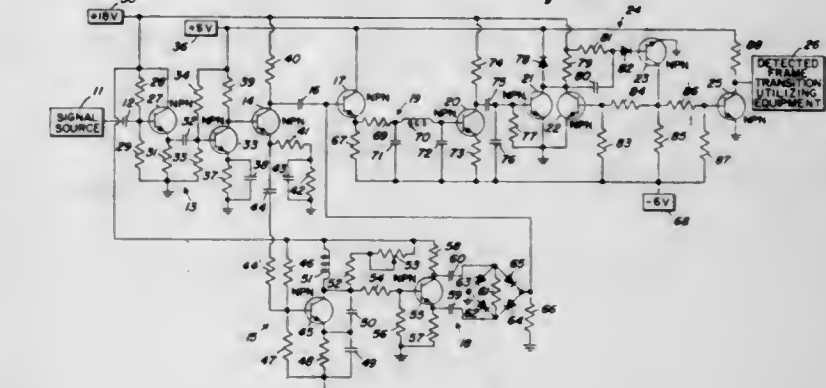
George C. Wilkinson, Jr., Dallas, Tex., and Hugh L. Selman, Tulsa, Okla., assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Oct. 17, 1966, Ser. No. 587,266

Int. Cl. H03d 3/18

U.S. Cl. 329-122

9 Claims



A phase shift intelligence, modulated reference signal detector circuit with parallel first and second signal paths through a portion thereof. This is with the reference frequency signal in the first path subject to immediate phase shift with such modulated phase shift in the signal input, and with a time lagged phase shift adjusting oscillator included in the second path and the oscillator output activating a phase detection circuit having a signal periodic ground path modulating connection to the first signal path in advance of a reference signal filter in the first signal path.

3,464,020

### MICROWAVE SEMI-CONDUCTOR DEVICE

Jiro Koyama, Masao Sumi, and Seiji Ohara, Tokyo-to, Japan, assignors to Nippon Telegraph and Telephone Public Corporation, Tokyo-to, Japan, a public corporation of Japan

Filed Dec. 13, 1966, Ser. No. 601,416

Claims priority, application Japan, Dec. 20, 1965, 40/78,068

Int. Cl. H03f 3/04; H01s 1/00

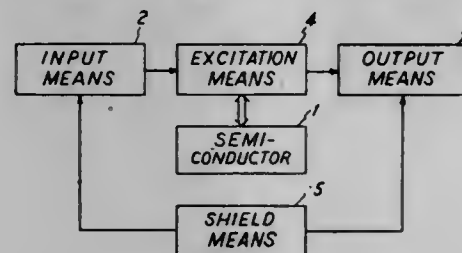
U.S. Cl. 330-5

8 Claims

A semiconductor device for amplifying microwave inputs comprising an n-type GaAs or InP semiconductor having a length considerably longer than the wave length



of an input microwave and capable of realizing a drift velocity of electrons in conduction bands which decreases as an applied DC electric field is increased to exceed a critical value. The input and output means are connected to end portions of the semiconductor. The semiconductor is excited by a DC source having ohmic contacts for applying the DC field in excess of the critical value along its longitudinal length effecting in the semiconductor distributed directional negative resistances with respect to

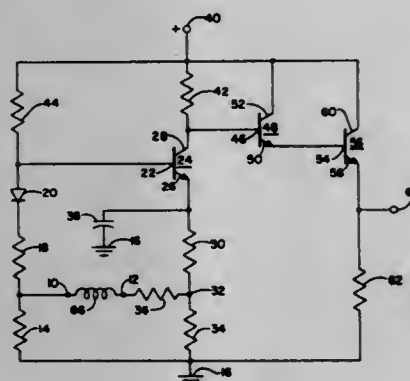


high frequency electric currents. The negative resistances have an active direction opposite to the direction of the DC electric field. Electrostatic shielding is provided between the input and output means is provided in the microwave region. The input microwave travels through the semiconductor from one end portion to the other and is amplified by the distributed directional negative resistances so that an amplified microwave is derived from the output means as the output microwave.

**3,464,021**  
**TRANSISTOR AMPLIFIER APPARATUS HAVING COMMON MODE REJECTION**  
William M. Davis, Jr., Boston, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Apr. 21, 1967, Ser. No. 632,710  
Int. Cl. H03f 3/68  
U.S. Cl. 330—30

4 Claims



This specification discloses a transistor amplifier designed in such a way that, when an ungrounded input signal source or differential input signal is applied between the base and emitter of the input transistor, common mode input signals are rejected.

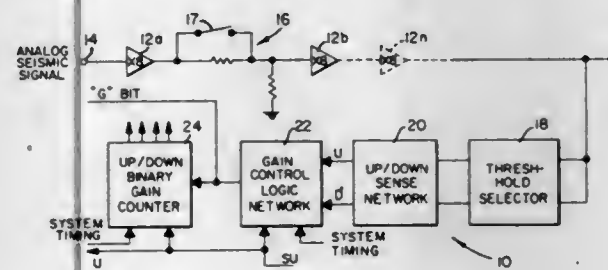
**3,464,022**  
**APPARATUS FOR CONTROLLING THE GAIN OF BINARY GAIN RANGING AMPLIFIERS**  
Edward W. Lockheed, Jr., and Herman E. Sheffield, Houston, Tex., assignors to Mandrel Industries, Inc., Houston, Tex., a corporation of Michigan

Filed Aug. 30, 1967, Ser. No. 664,453  
Int. Cl. H03f 1/30  
U.S. Cl. 330—144

3 Claims

Method and apparatus for effective bi-directional control of gain ranging amplifiers wherein a portion of the

analog signal from the amplifiers is fed back through a signal level sensing means, is compared to selected high and low signal thresholds and converted to digital signals

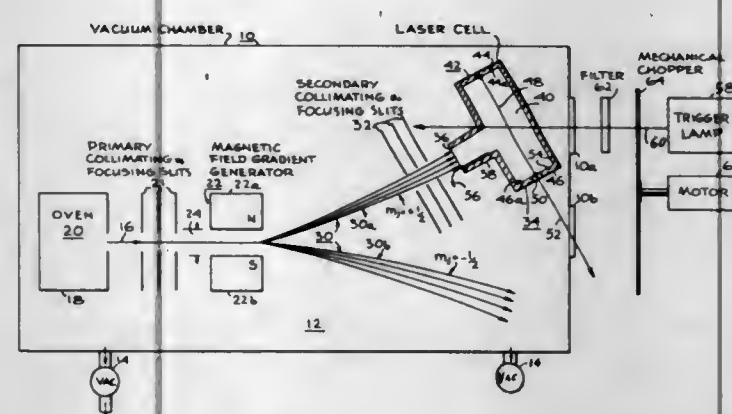


indicative of the analog signal level, and is then introduced to a gain control logic means which produces the required change in gain in synchronism with the overall system operation.

**3,464,023**  
**PULSED LASER ARRANGEMENT**  
Milton Birnbaum, Palos Verdes Estates, Calif., assignor to The Aerospace Corporation, Los Angeles, Calif., a corporation of California

Filed Mar. 8, 1963, Ser. No. 263,954  
The portion of the term of the patent subsequent to Mar. 18, 1986, has been disclaimed  
Int. Cl. H01s 3/00  
U.S. Cl. 331—94.5

7 Claims



1. In a pulsed laser the improvement comprising in combination:

means for generating a beam of optically orientable particles;  
magnetic field gradient generating means for subjecting said beam of optically orientable particles to a strong unidirectional magnetic field gradient to split said beam of optically orientable particles into a plurality of secondary beams and each of said plurality of secondary beams substantially homogeneous in optically orientable particles having energy in a preselected energy level;

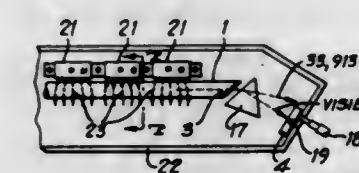
a laser cell having walls defining a cavity, a first portion of said walls comprising a passageway for communicating regions external said laser cell with said cavity and second portions of said walls transparent to preselected wavelengths of electromagnetic radiation and third portions of said walls comprising a pair of substantially flat, parallel and oppositely-disposed end members reflective of preselected wavelength of electromagnetic radiation in said cavity, and one of said end members partially transparent to

said preselected wavelength of electromagnetic radiation, and said passageway registrably aligned with a first of said plurality of secondary beam of optically orientable particles having energy in a first preselected energy level;  
optical pumping light generating means for generating an optical pumping light beam of electromagnetic radiation;  
means for circularly polarizing said optical pumping light beam;  
said optical pumping light beam generating means positioned to irradiate said first preselected secondary beam of optically orientable particles adjacent the entrance to said passageway to induce energy transitions of particles into said first preselected energy level;  
means for maintaining said particles in said cavity at a preselected pressure;  
trigger light generating means for generating an intense beam of electromagnetic radiation;  
means for cyclically operating said trigger light generating means; and  
means for irradiating said particles in said cavity with said intense beam of electromagnetic radiation to induce energy transitions of said particles from said first preselected energy level to a second preselected energy level higher than said first preselected energy level whereby an overpopulation of said second preselected energy level with respect to a third energy level of said optically orientable medium is induced, and said particles undergo a spontaneous decay from said second preselected energy level to said third energy level and a stimulated emission of electromagnetic radiation is induced and a coherent beam of electromagnetic radiation is emitted through said partially transparent member.

**3,464,024**  
**SELECTION AND CONTROL OF MASER TRANSITIONS BY INHOMOGENEOUS FIELDS**  
William E. Bell, Palo Alto, and Arnold L. Bloom, Menlo Park, Calif., assignors to Spectra-Physics, Inc., Mountain View, Calif., a corporation of California

Filed Oct. 21, 1963, Ser. No. 317,702  
Int. Cl. H01s 1/00  
U.S. Cl. 331—94.5

10 Claims

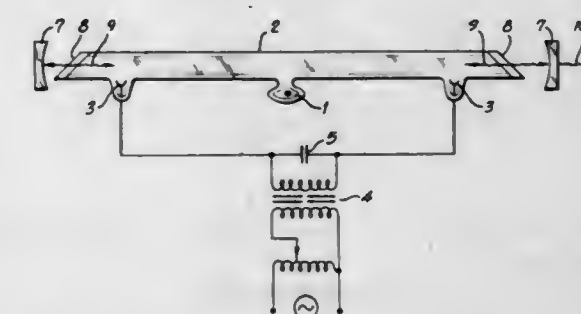


A maser in which the active medium is capable of maser action on at least two transitions, the resonance frequency of one of the transitions being substantially less affected by environmental fields than that of the other transition, and an inhomogeneous field is applied to selectively broaden the radiation linewidth of the other transition. In a described example, the active medium is a helium-neon gas mixture, the one transition is at 6,328 A, and the other transition is at 33,913 A. Since the natural Doppler width of the 6,328 A. transition is approximately six times that of the 33,913 A. transition, an inhomogeneous field will selectively reduce the intensity of maser action at 33,912 A. by line broadening for a range of field inhomogeneities which do not simultaneously broaden the 6,328 A. line. Such an inhomogeneous field is used to enhance the 6,328 A. output by reducing the competing effect of the 33,912 A. maser action.

**3,464,025**  
**GAS LASERS**  
William E. Bell, Palo Alto, Calif., assignor to Spectra-Physics, Inc., Mountain View, Calif., a corporation of California

Filed May 25, 1964, Ser. No. 369,853  
Int. Cl. H01s 3/22  
U.S. Cl. 331—94.5

24 Claims

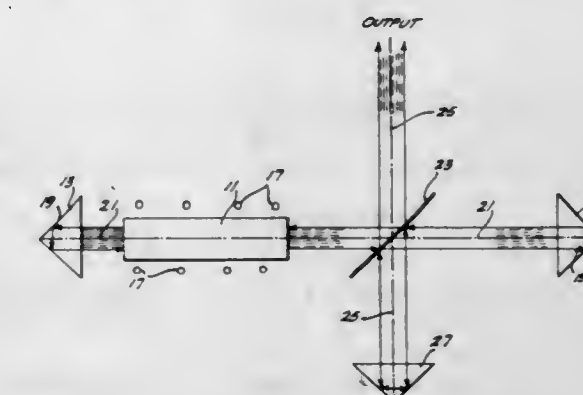


A gas laser in which the laser radiation results from electronic transitions of gaseous ions under the influence of a high current density discharge. In various modifications, the high current density is obtained by high-voltage diode discharges, hollow cathode discharges, discharges induced by an external alternating field source, and electron gun excitation.

**3,464,026**  
**LASER USING PORRO PRISM END REFLECTORS**  
Eric J. Woodbury, Tarzana, and Walter R. Sooy, Manhattan Beach, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed June 1, 1965, Ser. No. 460,235  
Int. Cl. H01s 3/02  
U.S. Cl. 331—94.5

6 Claims



1. A laser, comprising in combination: means including a pair of Porro prism surfaces for supporting laser energy along a designated beam axis therebetween; solid-state laser material disposed on said designated beam axis and adapted to produce a beam of stimulated light energy along this axis when excited to a lasing state; means coupled to said laser material for exciting said material to said lasing state; and means including a Fresnel beam splitting surface disposed on said designated beam axis for diverting a portion of said light energy to an output axis not coincident with said designated beam axis, and including a Porro prism surface disposed on said output beam axis for terminating one end thereof.

**3,464,027**  
**LASER MODULATION BY FOCUSED ACOUSTIC ENERGY**  
Anthony J. De Maria, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

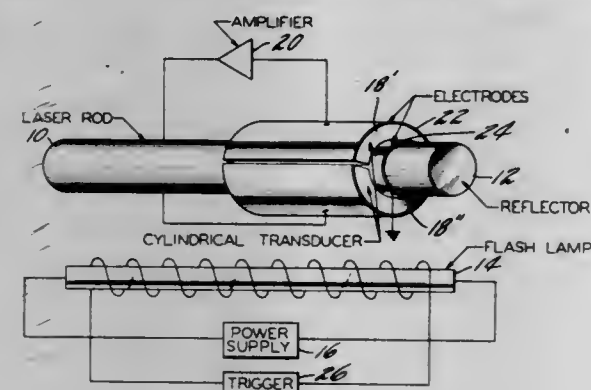
Filed Sept. 14, 1965, Ser. No. 487,181  
Int. Cl. H01s 3/10  
U.S. Cl. 331—94.5

9 Claims

A time-varying refractive index perturbation is generated internal to a laser medium for modulating or gating



the laser. A curved ceramic transducer is bonded to the laser, and an acoustic wave of wavelength approximately



equal to the width of the laser beam is focused within the laser medium.

3,464,028

### 10.6 MICRON CARBON DIOXIDE LASER WITH HELIUM ADDED

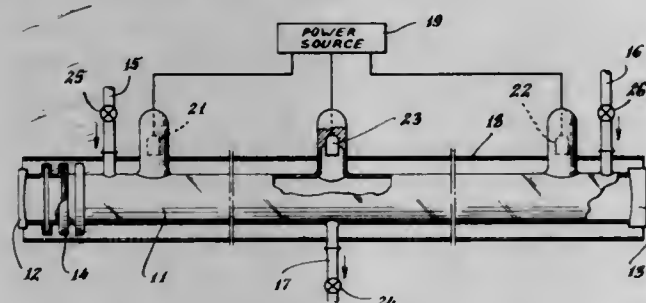
Guido K. Moeller, Norwalk, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed Nov. 15, 1965, Ser. No. 507,756

Int. Cl. H01s 3/22

U.S. Cl. 331—94.5

3 Claims



An optical maser for producing a beam of coherent radiation in the infrared wavelength region in which the active material is a mixture of carbon dioxide and helium.

3,464,029

### TRANSISTOR OSCILLATOR CIRCUIT EMPLOYING VARIABLE DEPLETION CAPACITANCE AND CARRIER STORAGE CAPACITANCE

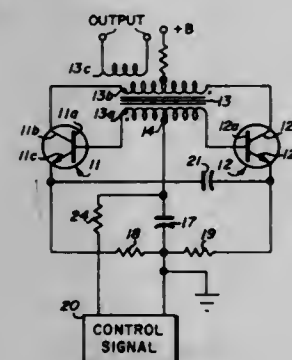
Nicholas Kovalevski, Menlo Park, Calif., assignor to Alfred Electronics, Palo Alto, Calif., a corporation of California

Filed Mar. 2, 1966, Ser. No. 531,088

Int. Cl. H03b 5/12

U.S. Cl. 331—117

1 Claim



1. An oscillator circuit, comprising:

a pair of semi-conductor devices each having an emitter electrode, a collector electrode and a base electrode, the inherent capacity between the base electrode and the collector electrode defining its depletion capacitance and between the base electrode and the emitter electrode defining its carrier storage capacitance;

a feedback transformer having a first winding and a second winding, said first winding being provided with a center tap and having its end terminals connected to said base electrodes, said second winding having its end terminals connected to said collector electrodes, coupled portions of said first and said second windings forming an inductive series feedback path in parallel with said depletion capacitance of each of said devices;

a radio frequency equalizing capacitor connected across said emitter electrodes;

a pair of emitter resistors connected serially between said emitter electrodes, said resistors having a common junction point;

an isolating capacitor connected between said center tap of said first winding and said common junction point;

a source of control current connected across said isolating capacitor; and

means for varying said control current supplied by said source to vary the emitter currents of said semi-conductor devices, the variations in said emitter current of each of said devices varying the value of said depletion capacitance and said carrier storage capacitance of each of said devices to thereby vary the frequency of the signal across said windings.

3,464,030

### WAVEFORM GENERATOR WITH AUDIO TONE CONTROL

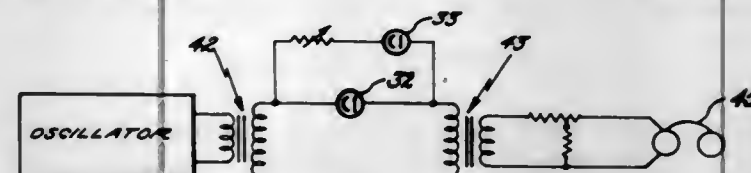
Francis A. Brogan, San Antonio, Tex., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Jan. 17, 1966, Ser. No. 521,224

Int. Cl. H03c 1/02

U.S. Cl. 332—3

2 Claims



A circuit for transferring tones of oscillators to a speaker including photo-conductive tubes in series with a transformer system and a rotating disc with slits interposed between the photo-conductive tubes and their light sources.

3,464,031

### SINGLE TRANSISTOR OSCILLATOR-MODULATOR-MULTIPLIER CIRCUIT

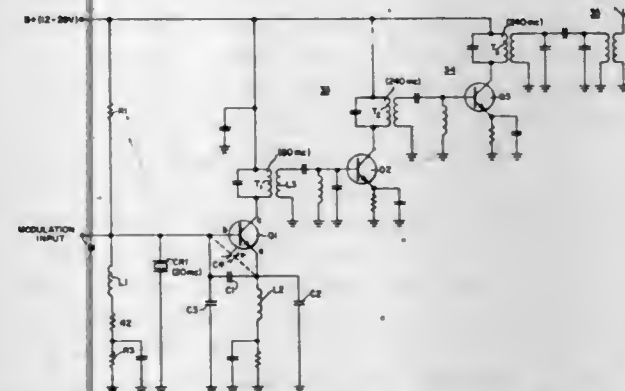
Charles Rosen, Philadelphia, Pa., assignor to Microcom Corporation, Horsham, Pa., a corporation of Pennsylvania

Filed Sept. 28, 1966, Ser. No. 582,691

Int. Cl. H03c 3/28

U.S. Cl. 332—26

5 Claims



A modulator-oscillator-multiplier circuit having but a single active element is disclosed. The single active ele-

ment is a three-element transistor, the base-emitter junction of which is biased by a D-C voltage to set the operating point of the phase modulation, and a piezoelectric crystal is connected across the base-emitter junction to control the generation of a fixed frequency oscillation signal. A capacitor is connected across the crystal to reduce the amplitude of the oscillation signal to a point where variation in the base-emitter bias will vary the internal capacitance of the base-emitter junction and will thereby cause amplitude and phase modulation of the oscillation signal. The input information is applied across the base-emitter junction of the crystal as a frequency modulated signal, each cycle of which amplitude modulates the base-emitter bias, thereby producing the desired phase modulation at the crystal frequency.

3,464,032

### MULTIPLE FREQUENCY TUNING FORK FILTER

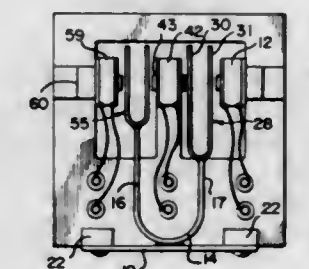
Orba O. Alderman, Alexandria, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware

Filed Mar. 28, 1967, Ser. No. 626,619

Int. Cl. H01p 5/12

U.S. Cl. 333—6

7 Claims



An electromechanical filter having a tuning fork with associated drive and pickup coils. One or both tines of the tuning fork is provided with subsidiary tuning forks for narrow band response to a plurality of driving frequencies equal in number to the number of tuning forks present.

3,464,033

### ACOUSTICAL DISPERSIVE DELAY LINE HAVING STRATIFIED WAVEGUIDE OF AT LEAST TWO SOLID MEDIA COUPLING INPUT AND OUTPUT TRANSDUCERS

Pierre Tournais, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed Mar. 14, 1967, Ser. No. 623,071

Claims priority, application France, Mar. 17, 1966, 53,860

Int. Cl. H03h 7/30

U.S. Cl. 333—30

8 Claims



Dispersive acoustic line comprising first and second electromechanical transducers coupled to each other by means of a stratified waveguide made of at least two laminated solid media. Rayleigh waves are generated along the waveguide in response to a frequency modulated electric pulse fed to the first transducer and they are collected by the second transducer which supplies a compressed pulse whose duration is inversely proportional to the frequency excursion.

### 3,464,034 WAVE FILTER WITH LOSSY INDUCTORS AND CAPACITORS

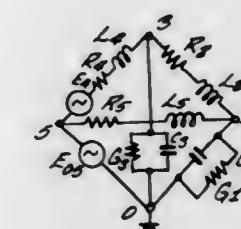
Bert Liljeberg, % Carl Miller, Woolworth Bldg., Room 3612, New York, N.Y. 10007

Filed Jan. 18, 1965, Ser. No. 426,097

Int. Cl. H03h 7/10

U.S. Cl. 333—70

1 Claim



An electrical wave filter which can be used as a low-pass filter or a high pass filter or a band pass filter or a band elimination filter. The filter is formed from individual electric components of a quality much lower than heretofore usable with filters.

3,464,035

### FILTER COUPLED TO MICROWAVE GUIDE

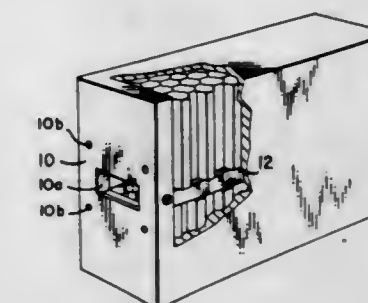
Gerald W. Van Kol, 10651 Santa Lucia Road, Monta Vista, Calif. 95014

Filed July 25, 1966, Ser. No. 567,501

Int. Cl. H01p 1/22, 5/14

U.S. Cl. 333—73

3 Claims



A broad band harmonic absorption microwave filter adapted for use with high power microwave guides of the TE<sub>10</sub> mode. This wave guide employs a pair of honeycomb cellular structures which are arranged to form the opposite broad walls of the wave guide. Each cellular structure employs a plurality of tubular cells honeycombed together and each tubular cell has a diameter approximately equal to the width of the narrow wall of the guide. These tubular cells are arranged so that a sufficient number thereof couple to the narrow wall TM<sub>11</sub>, TE<sub>01</sub>, and TE<sub>11</sub> modes and harmonics for the efficient absorption thereof. The continuity of the narrow walls does not have to be disturbed or cut with holes, slots, etc.

3,464,036

### R.F. ATTENUATOR WITH ELECTRONIC SWITCHING

Alfred J. Robinson, New Providence, and Walter A. Fox, Pompton Lakes, N.J., assignors to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Feb. 7, 1966, Ser. No. 525,733

Int. Cl. H01p 1/22

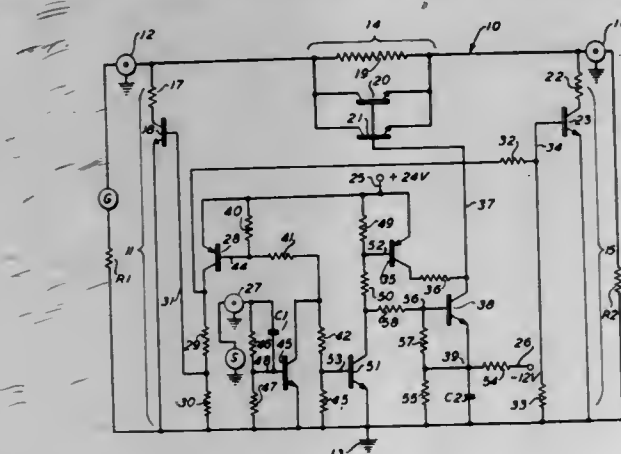
U.S. Cl. 333—81

8 Claims

An R.F. attenuator is provided which has an electronic switching circuit enabling the attenuator to be switched "on" and "off" at a very fast rate. The attenuator is op-



erable in a frequency range up to 100 megacycles and is designed to match specific input and output impedances



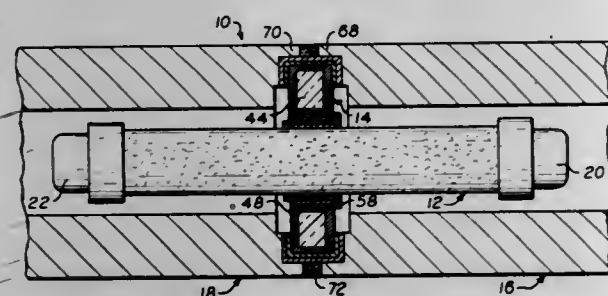
with close tolerances through this frequency range in both its "on" and "off" conditions.

### 3,464,037 MICROWAVE ATTENUATOR AND METHOD OF MAKING SAME

John O. Bramick, Bernardsville, and Charles W. Dreyer, Morris Plains, N.J., assignors to Microlab, Livingston, N.J., a corporation of New Jersey  
Filed Aug. 8, 1966, Ser. No. 570,850  
Int. Cl. H01p 1/22

U.S. Cl. 333-81

11 Claims



A coaxial attenuator comprising a unitary central resistance element having a contact intermediate its ends which is electrically connected to the central resistance element. A radially extending disc is mounted on the central element and is provided with a second contact in overlying relationship to the first contact. The first and second contacts are soldered together to mechanically and electrically connect together the central resistance element and the disc. Contact means is provided on the central resistance element and the disc resistance element for connecting the attenuator in an electrical circuit with a transmission line.

A method for fabricating the attenuator also is disclosed.

### 3,464,038 CIRCUIT INTERRUPTER

Wasaburo Murai, Osaka, and Yoshio Kobayashi, Nara, Japan, assignors to Terasaki Denki Sangyo Kabushiki Kaisha, Osaka, Japan

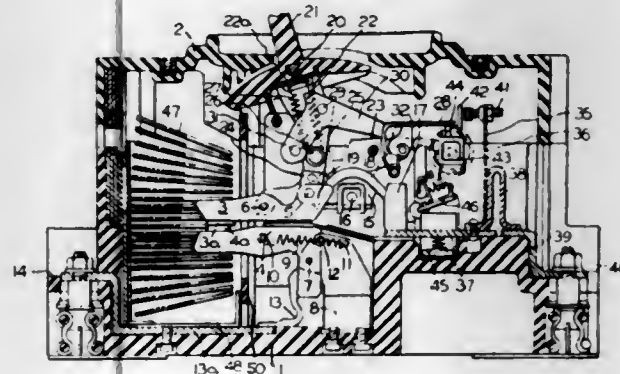
Filed Feb. 12, 1968, Ser. No. 704,777  
Claims priority, application Japan, Feb. 16, 1967, 42/9,548, 42/12,390

Int. Cl. H01h 75/00, 77/00, 83/00  
U.S. Cl. 335-16

5 Claims

A circuit interrupter comprises a pair of movable contact arms disposed in parallel relationship in their closed positions and a movable slotted coupling plate forming one side wall of an arc-extinguishing chamber. The contact arms have the respective contact bearing portions extending through a slot on the coupling plate in the arc-extinguishing chamber. Upon the occurrence

of a shortcircuiting current one of the movable contact arms is moved to its open position by the action of an electromagnetic repulsion generated between both arms. A little later after this movement the associated overcur-



rent responsive trip device is operated to move the other contact arm to its open position. This movement is accompanied by the movement of the coupling plate to return the one contact arm to its closed position.

### 3,464,039 ELECTROMAGNETIC SWITCHING DEVICE IN COORDINATE ARRAYS

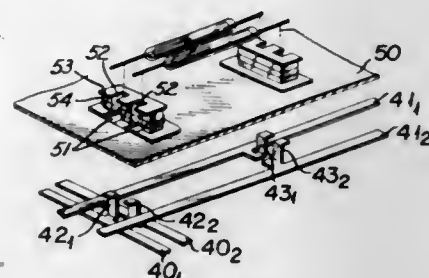
Masao Takamura, Shoji Mitsuishi, Katsuhiko Kato, Takeo Shinohara, Hisae Kikuchi, and Sadayuki Mitsuhashi, Tokyo, Japan, assignors to Nippon Telegraph and Telephone Public Corporation and Nippon Electric Company Limited, Tokyo, Japan, both corporations of Japan

Filed Apr. 26, 1967, Ser. No. 633,979  
Claims priority, application Japan, Apr. 30, 1966, 41/27,116

Int. Cl. H01h 67/14

U.S. Cl. 335-112

2 Claims



A plurality of sets of multiple straps constituting lines and columns of a matrix is composed of an electro-conductive magnetic material. An exciting winding for cross point selection is wound around each one of a pair of magnetic cores projecting perpendicularly to the plane of the matrix at each one of the cross points of lines and columns, and a reed switch acting as a speech path contact is connected between each pair of said magnetic cores. A perforated base plate made of soft magnetic material is inserted between the plane of the matrix and the exciting winding to avoid induction noise to a pair of multiple straps.

### 3,464,040 COMPACT CIRCUIT BREAKER CONSTRUCTION

David B. Powell, Bristol, Conn., assignor to General Electric Company, a corporation of New York

Filed Sept. 21, 1967, Ser. No. 669,466

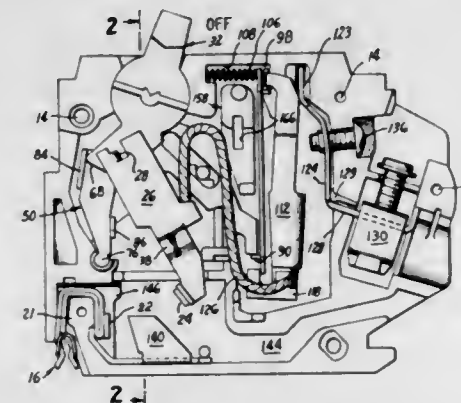
Int. Cl. H01h 3/46

U.S. Cl. 335-191

6 Claims

A circuit breaker construction adapted for relatively small width devices wherein the contact arm has an upper portion extending along one side of a lower portion on

the pivotally mounted operating handle and is itself pivotally engaged therewith at that side. The contact member has a center portion which extends transversely of the casing below the operating handle and a lower portion which provides the movable contact. The releasable cradle extends along the opposite side of the lower portion of the



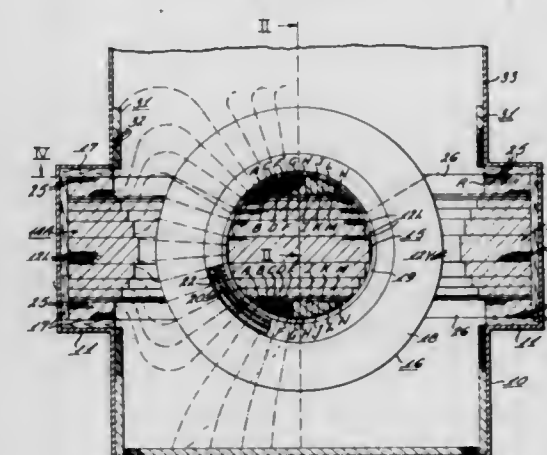
operating handle and a spring providing the toggle action for the mechanism extends between the cradle and the center portion of the contact arm. The casing provides guide means for aligning the action of the spring and the path of the contact arm as well as means isolating various components with the circuit breaker.

### 3,464,041 ELECTRICAL TRANSFORMER HAVING LEAKAGE FLUX SHIELD

Michael W. Waterman, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Mar. 6, 1968, Ser. No. 710,815  
Int. Cl. H01f 33/00, 15/04, 17/06  
U.S. Cl. 336-5

20 Claims



A shell type transformer has closed leakage flux shielding, secondary magnetic cores disposed between the tongue of the main magnetic core and the inner periphery of the coil to prevent excessive eddy current heating of the main core laminations caused by leakage flux. Each secondary core has a plurality of side-by-side core packs of narrow laminations disposed in vertical planes extending beyond the ends of the coil and spaced by an air gap from yoke portions of the secondary core positioned adjacent the axial ends of the coil. The core pack laminations carry leakage flux and only minimal main flux at normal excitation levels but carry a substantial portion of the main flux at overvoltages so that the saturation level of the main magnetic core is increased.

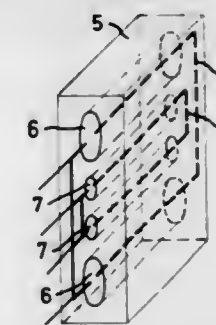
### 3,464,042 DEVICE FOR MEASURING PHYSICAL QUANTITY

Rune Raman, Stockholm-Vallingby, Sweden, assignor to Areco Electronics AB, Stockholm-Vallingby, Sweden  
Filed Dec. 4, 1967, Ser. No. 687,565

Claims priority, application Sweden, Dec. 9, 1966, 16,888/66

Int. Cl. H01f 21/02, 29/00, 17/04

8 Claims



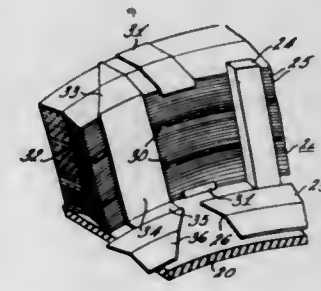
An arrangement for measuring physical quantities comprising a measuring body of magnetostrictive material, said body being influenced by mechanical forces depending on said quantities, through bores being disposed in said body, within said bores at least two windings being arranged, one of which constitutes an energizing winding and a second a measuring winding, the mutual inductance between said windings being dependent on the mechanical stresses produced by said forces, said bores presenting a cross section in the form of an ellipse or a super-ellipse, the transverse axes of said ellipses being arranged in parallel with the direction of said forces.

### 3,464,043 CONDUCTOR STRIP TRANSFORMER WINDING HAVING IMPROVED SHORT CIRCUIT STRENGTH

Joseph R. Benko and Hans J. Weber, Pittsburgh, Pa., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Oct. 16, 1967, Ser. No. 675,684  
Int. Cl. H01f 27/08, 27/30, 27/28  
U.S. Cl. 336-60

5 Claims



An electrical transformer winding having high short circuit strength comprises a plurality of coaxial, axially spaced disk coils of one-turn-per-layer connected in series and spirally wound from wide conductor strip having a longitudinal depression therein so that the turns interlock with each other to prevent axial movement. Flexible strip insulation wider than the conductor strip is wound between conductor strip turns and bent in conformity with the longitudinal depression by the tensioned conductor strip turns. Corrugated support members wound at radially spaced points between the conductor strip turns of each disk coil provide cooling ducts in an axial direction and have a longitudinal saw cut therein so that they

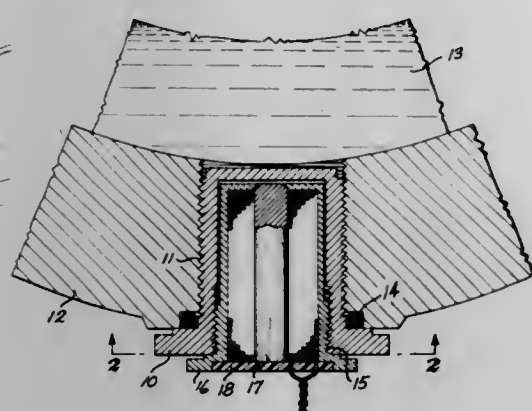


conform to the longitudinal depression in the conductor strip turns. The corrugated support members are as wide as the strip insulation and abut against radial spacers on both sides of each disk coil and have high compressive strength when held between the tensioned conductor strip turns and prevent axial movement of the disk coils and crushing of the insulation strip.

**3,464,044**  
**MAGNETIC TRANSDUCER ASSEMBLY**  
Bruno Strauss, Seattle, Wash., assignor to Electro Development Corporation, Seattle, Wash., a corporation of Washington  
Filed July 17, 1967, Ser. No. 653,692  
Int. Cl. H01f 27/02

U.S. Cl. 336—92

2 Claims

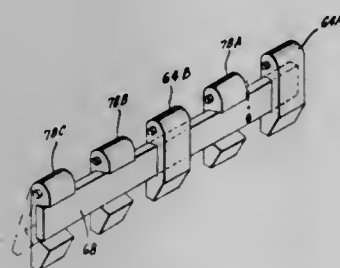


An improved transducer assembly including a section made of titanium is disclosed. The titanium acts as a "window" for the magnetic field and is adapted to hold a sensing assembly responsive to changes in a magnetic field passing through the titanium. The apparatus serves to protect the electronic sensing apparatus to an extent which permits extended usage of magnetic field sensing devices under conditions of extremely high pressure differentials.

**3,464,045**  
**CIRCUIT BREAKER SELECTIVE TRIP MECHANISM**  
Keith W. Klein, Simsbury, Conn., assignor to General Electric Company, a corporation of New York  
Filed May 11, 1967, Ser. No. 637,815  
Int. Cl. H01h 71/16

U.S. Cl. 337—35

6 Claims



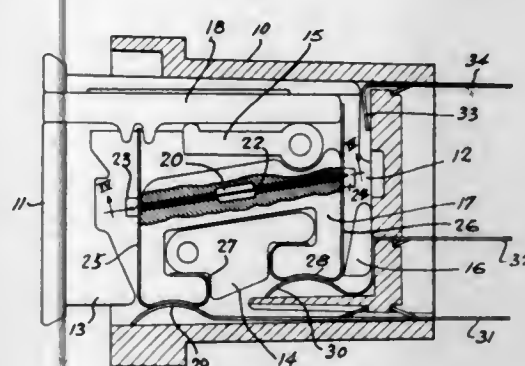
A circuit breaker assembly including a plurality of circuit breaker units having selectively interconnectable trip means. A trip bar is provided which connects circuit breakers so that trip action of a "master" or "controlling" cam causes tripping of all breakers, but tripping of a "slave," or "controlled" cam does not cause tripping of the other breakers. "Controlled" trip cams may in turn be provided with extensions so that a controlled cam may also act as a "subcontrolling" cam to cause other selected cams to trip therewith. A similar controlling-controlled relationship both on a primary and secondary basis, can be provided by special interconnection of the handles of the circuit breakers.

**3,464,046**  
**ELECTRIC FUSE DEVICE**  
Werner Frank Eisele, Stittsville, Ontario, and Helmut H. Lukas, Carleton Place, Ontario, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada  
Filed July 5, 1966, Ser. No. 562,669  
Int. Cl. H01h 85/36

U.S. Cl. 337—238

9 Claims

A tensioned fuse wire is stretched across a convex surface along a narrow channel and is thus drawn into close thermal contact with this surface to provide a heat sink effect. The wire will rupture at a central span which is out of contact with the surface and thus lacks the heat sink effect.

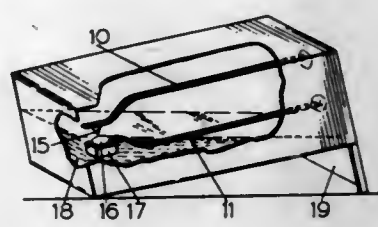


The device includes contacts for closing an alarm circuit on rupture of the wire; a visual indication on rupture of the wire; and a convenient method of testing the alarm circuit during normal operation.

**3,464,047**  
**TEMPERATURE-INCREASE WARNING DEVICE**  
Andrew George Heron, Northumberland, England, assignor to Heron Electrical Devices Limited, Newcastle-upon-Tyne, England, a British company  
Filed Oct. 11, 1966, Ser. No. 585,791  
Claims priority, application Great Britain, Oct. 15, 1965, 43,923/65; Feb. 15, 1966, 6,495/66  
Int. Cl. H01h 37/36, 37/08

U.S. Cl. 337—332

8 Claims

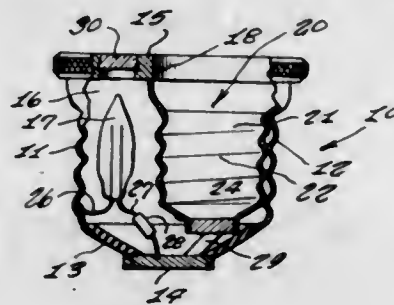


A switch designed to activate an alarm or warning device includes two contact members, one of which is movable into one of two positions, which are located in a fluid having a freezing point within a desired range. The movable contact is either mechanically or magnetically biased by a switch operating means into one of the two positions which may either make or break the alarm actuating circuit. The switch operating means may be in the form of a weight or a weighted magnet which moves the movable contact into a position relative to the second contact which serves either to make or break the circuit thereby activating the alarm system. The weight or weighted magnet is maintained in its initial position due to the liquid surrounding the contacts being in a frozen or solidified state. Upon melting, the contacts are allowed to move into the second of two positions due to the biasing influence of the weight or weighted magnet.

**3,464,048**  
**BLOWGUN FUSE ADAPTER**  
Grayson G. Stiles, 1212 Peggy Ann Drive, Rte. 4, Murray, Ky. 42071  
Filed Oct. 16, 1967, Ser. No. 675,707  
Int. Cl. H01h 85/32

U.S. Cl. 337—242

3 Claims

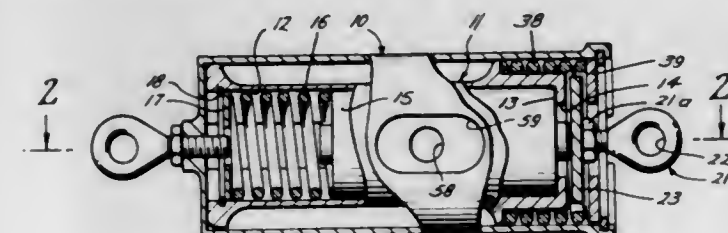


An adapter for an electric fuse, the adapter being receivable within a conventional fuse socket and the adapter carrying a neon lamp and a replaceable fuse, the neon lamp producing a glow when the fuse is defective.

**3,464,049**  
**LOAD CELL PROTECTION DEVICE**  
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Raymond Keith Kibbe, Solana Beach, Calif.  
Filed Dec. 19, 1967, Ser. No. 691,739  
Int. Cl. G01l 1/22

U.S. Cl. 338—5

6 Claims



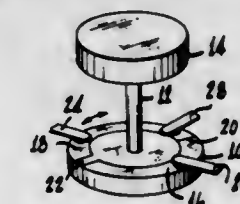
A load cell protection device incorporating a spring-loaded, break-away mechanism for axially directed compression or tension forces. The load cell is slidably enclosed within an inner cylindrical housing and spring-biased to one end thereof. The inner housing is slidably enclosed within an outer housing and spring-biased therein in the opposite direction. The device includes a filter for adapting to operation in corrosive atmospheres.

**3,464,050**  
**POTENTIOMETER**  
Gustaf R. Lawson, Somerset, N.J., assignor to Circle F Industries, Inc., a corporation of New Jersey  
Continuation-in-part of application Ser. No. 647,101, June 19, 1967. This application Dec. 20, 1967, Ser. No. 692,181

U.S. Cl. 338—89

Int. Cl. H01c 5/00

9 Claims



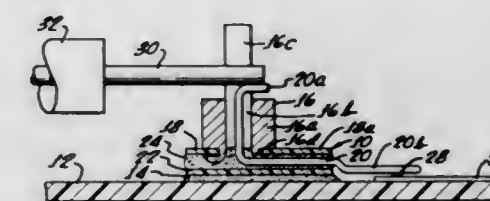
A potentiometer particularly for incorporation in phase shift circuitry to control current flow during both half-

waves of an alternating current cycle. A single, continuous, unidirectional operation of the potentiometer adjusts the phase angles of both half-waves consecutively. Abutting high and low resistance surfaces are moved conjointly in respect to a series of contacts. Assuming a starting position at full "off," a unidirectional shift of the abutting surfaces in respect to the contacts first adjusts the phase angle of one half-wave from a non-conducting current condition until there is conduction for substantially the full duration thereof, and thereafter adjusts the angle of the other half-wave correspondingly until, ultimately, there is current conduction over the duration of the full-wave.

**3,464,051**  
**ELECTRICAL SPOT TERMINAL ASSEMBLY**  
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Charles D. Baker, La Canada, Calif.  
Filed Sept. 15, 1967, Ser. No. 668,241  
Int. Cl. H05k 1/00; H01r 13/50

U.S. Cl. 339—17

11 Claims

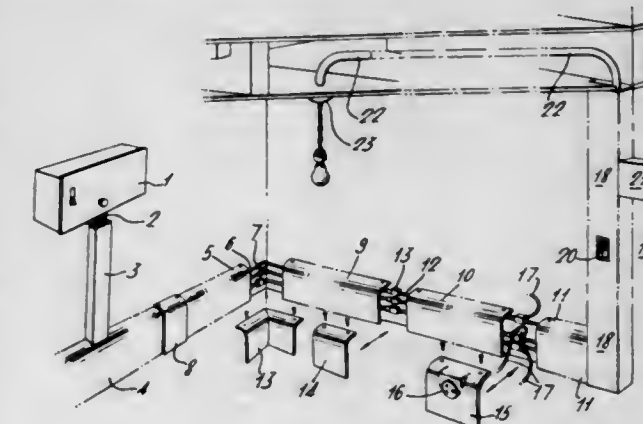


An electrical terminal is mechanically attached to a mounting plate which is adhered to an insulation plate by a layer of high temperature adhesive. This spot terminal assembly is mounted on a printed circuit board by a layer of adhesive which cures at ambient temperature. An electrical lead for connecting the terminal to a conductor on the printed circuit board is made of material having adequate electrical conductivity but low thermal conductivity to permit consecutive adjacent solder joints.

**3,464,052**  
**ELECTRICAL WIRING SYSTEMS**  
Arthur Shepherd Hukin, Cobham, England, assignor, by mesne assignments, to F. C. Blackwell and Company Limited, Liverpool, England  
Filed Sept. 20, 1966, Ser. No. 580,764  
Claims priority, application Great Britain, Oct. 1, 1965, 41,719/65  
Int. Cl. H01r 13/60

U.S. Cl. 339—22

16 Claims



An electrical wiring system comprising a plurality of ducting sections arranged end-to-end in longitudinally



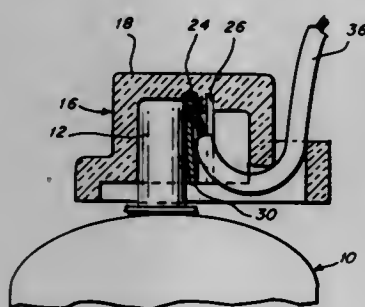
spaced relationship with a gap between adjacent sections. Each section carries one or more electrically insulated flexible electric conductor leads secured by lead support means spaced along said section. The conductor leads are preterminated with complementary electrical connector means disposed in said gaps between adjacent sections. Each ducting section also comprises mounting means for releasably securing it to a headed stud fixed to a building wall. Ducting lapping sections are provided to bridge the gaps between adjacent ducting sections, and at least some of said lapping sections carry respective electrical service fittings, such as a socket outlet.

3,464,053

## VARIABLE SIZE ANODE CAP

Edward C. Kowalewski, Palatine, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware  
Filed Sept. 25, 1967, Ser. No. 670,331  
Int. Cl. H01r 13/44, 13/46  
U.S. Cl. 339—149

3 Claims



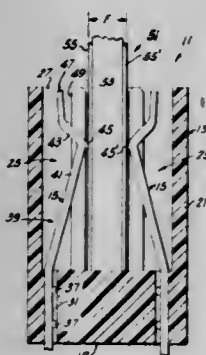
A variable size anode cap for use with vacuum tubes having anode terminals of different diameters.

3,464,054

## ELECTRICAL CONNECTOR

William Thomas Mansfield, Tiona, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware  
Continuation of application Ser. No. 501,827, Oct. 22, 1965. This application Jan. 15, 1968, Ser. No. 698,047  
Int. Cl. H05h 1/00; H01r 13/48  
U.S. Cl. 339—176

2 Claims



An electrical connector wherein a plurality of longitudinal one-piece resilient contact members are individually formed of material of substantially uniform cross-sectional area and oriented in a pre-tensioned manner relative to a channel therein. Each member has a resilient element of a first width with a contact area formed thereon and an integral laterally formed flexure restraining termination of a greater width formed to cooperate with a portion of the channel wall to provide restricted flexured movement of the resilient element and limited protrusion of the contact area into the channel.

3,464,055

## ELECTRICAL CONNECTOR

Jean B. Lescarboua, Nanterre, France, assignor to La Telemecanique Electrique, Nanterre, France

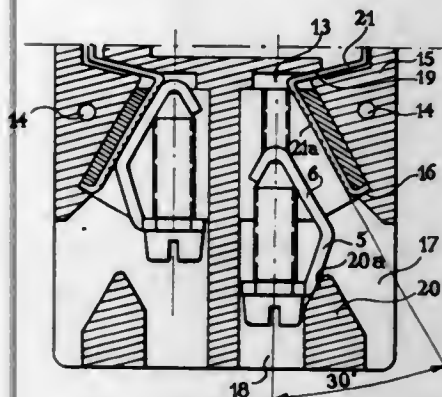
Filed June 19, 1967, Ser. No. 646,926

Claims priority, application France, June 21, 1966, 66,301; May 10, 1967, 105,871

Int. Cl. H01r 13/50, 7/06

U.S. Cl. 339—204

10 Claims



An electrical connector comprising a block in which the direction of insertion of the conductor or lead to be clamped makes an acute angle with the axis of the clamping screw. The block is split and is provided with longitudinal threaded portions on the inner faces of the split for guiding the clamping screw while the bottom of the block flares out in the direction of insertion of the conductor. A clamping stirrup is nonrotatably mounted on the clamping screw to be moved therewith and has an inclined portion facing the aforesaid flaring bottom; the conductor to be clamped between the said flaring portion and the movable stirrup inclined portion.

3,464,056

## APPARATUS FOR DISPLAYING THE DIRECTION OF INCIDENT PLANE WAVES

Gunter Ziehm, Bremen, Karl-Friedrich Triebold, Bremen-Osterholz, Alfred Schief, Eningen, near Reutlingen, and Reinhard W. Leisterer, Bremen, Germany, assignors to Fried. Krupp Gesellschaft mit beschränkter Haftung, Essen, Germany

Filed Jan. 30, 1968, Ser. No. 701,772

Claims priority, application Germany, Jan. 31, 1967, B 90,967

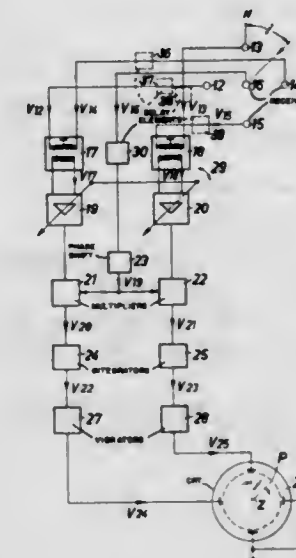
Int. Cl. H04b 13/00

U.S. Cl. 340—6

11 Claims

Apparatus for visually indicating the direction of propagation of plane waves, particularly sound waves in water, incident on a wave-detecting receiver arrangement. The apparatus includes a receiver arrangement which has two figure-eight-shaped sensitivity characteristics, the axes of symmetry of which form a 90° angle with respect to each other, and a circular shaped sensitivity characteristic. The receiver is operative to produce a first and a second output signal each of which is proportional to the angular value of the incident wave with respect to one of the figure-eight-shaped sensitivity characteristics and a third output signal proportional to the circular sensitivity characteristic. The apparatus also includes means for receiving the three output signals and visually indicating the angle of incidence of the plane waves on the receiver arrangement. This indicating means is operative to produce a fourth output signal which is proportional to the product of the first and third output signals shifted 90° in phase

with respect to each other, and to produce a fifth output signal which is proportional to the product of the second by blanking out the secondarily important pulse transmission channel in response to the primarily important



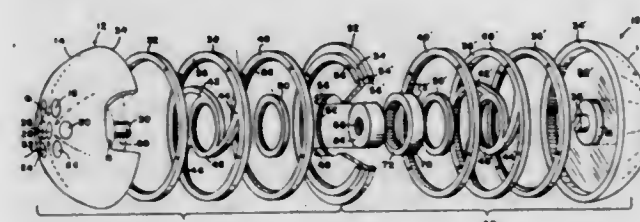
3,464,057

## SPHERICAL DIRECTIONAL HYDROPHONE WITH SEMISPHERICAL MAGNETS

Paul F. Hayner, Lexington, Mass., and Jirair A. Babkian, Providence, R.I., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware  
Filed Oct. 10, 1967, Ser. No. 674,238  
Int. Cl. H04b 13/00

U.S. Cl. 340—8

20 Claims



A hydrophone, having a magnetic assembly and a spring-coil assembly movable relative to the fixed magnetic field provided by the magnetic assembly, which spring-coil assembly is driven by sound pressure. The magnetic assembly includes an improved magnetic member including a semispherical shell element forming a portion of the hydrophone housing. The magnetic member provides, within a given hydrophone volume, a maximized flux per unit volume.

3,464,058

## METHOD AND APPARATUS FOR TRANSMITTING SIGNALS FROM A TOOL IN A BOREHOLE

Lee H. Gollwitzer, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

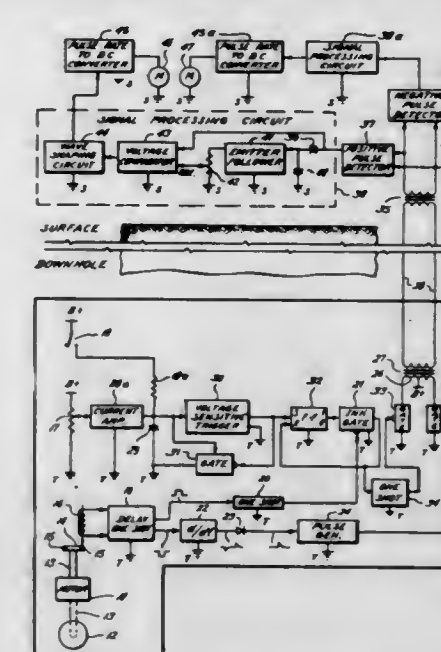
Filed Aug. 10, 1967, Ser. No. 659,784

Int. Cl. G01v 1/40

U.S. Cl. 340—18

13 Claims

The particular embodiments described herein as illustrative of the invention describe a technique for transmitting pulses of secondary importance from a well tool in a borehole to the surface of the earth on the same transmission medium with signals of primary importance which cannot be interfered with. This is accomplished



3,464,059

## TRAFFIC-ACTUATED CONTROL SYSTEM

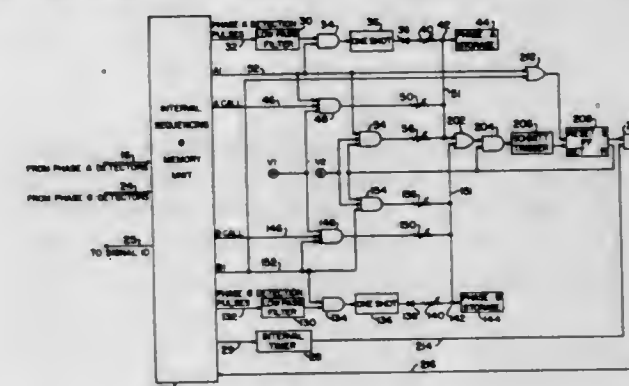
Peter C. Brockett, Milford, Conn., assignor to Laboratory for Electronics, Inc., Waltham, Mass., a corporation of Delaware

Filed Jan. 6, 1967, Ser. No. 607,811

Int. Cl. G08g 1/02, 1/08

U.S. Cl. 340—37

9 Claims



A traffic-actuated intersection right-of-way control system in which the minimum initial interval of the right-of-way period is timed concurrently with a variable initial interval having a duration determined by the number of vehicles awaiting the right-of-way. Each vehicle waiting for the right-of-way alters a stored voltage. When the right-of-way is transferred, a fixed interval timer times the minimum initial interval, and concurrently the stored voltage is driven to a value slightly beyond its quiescent value. When both of these have finished, an output to the remainder of the control system steps the right-of-way period to its next interval.

3,464,060

## AUTOMOBILE THEFT ALARM SYSTEM

Mordechai Arditti, Los Angeles, Calif.  
(7719 Yarmouth Ave., Reseda, Calif. 91335)  
Filed Aug. 13, 1965, Ser. No. 479,398  
Int. Cl. B60r 25/10, 25/04

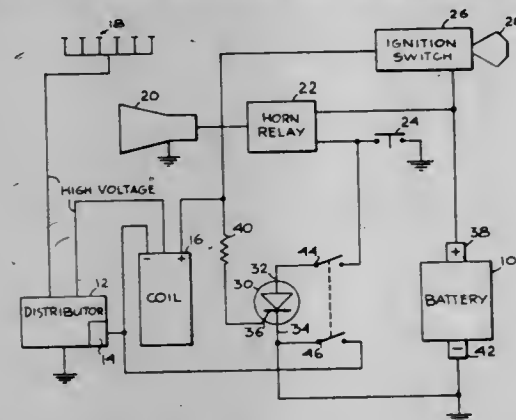
U.S. Cl. 340—64

7 Claims

There is disclosed herein an improved automobile alarm and theft warning arrangement in which the horn of the automobile is automatically sounded upon either



activation of the ignition switch or "hot wiring" around the ignition switch. Further, there is a direct short between the insulated contact of the breaker points on the distributor, which prevents the generation of any low



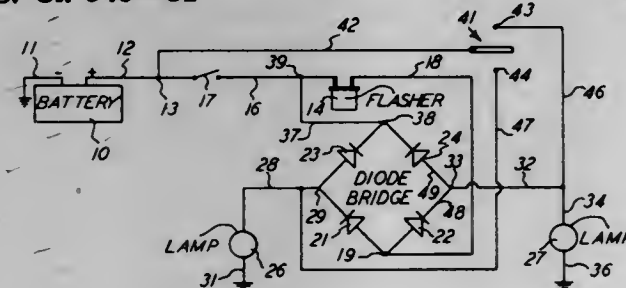
current pulses to the spark coil. Thus, no high voltage spark is generated, and it is impossible to start the engine regardless of how electricity is supplied to the ignition system.

### 3,464,061 COMBINED LIGHT FLASHER AND TURN SIGNAL FOR A VEHICLE

William R. Dollase, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin  
Filed Mar. 25, 1968, Ser. No. 715,867  
Int. Cl. B60q 1/46

U.S. Cl. 340—81

4 Claims



A combined light flasher and turn signal for a vehicle, including a battery, flasher means, gating components, a switch system, and lamps, all electrically connected together. These electric components permit the signal lamps to flash in unison, for indicating a slow moving or

parked vehicle, and secondly they provide for converting the condition of having two lamps flashing to a condition of having one lamp flashing while the other lamp is constantly energized in a non-flashing condition, and thirdly they provide for converting from a condition where neither lamp was neither flashing nor being constantly energized, to a condition of one lamp flashing while the other lamp is being constantly energized.

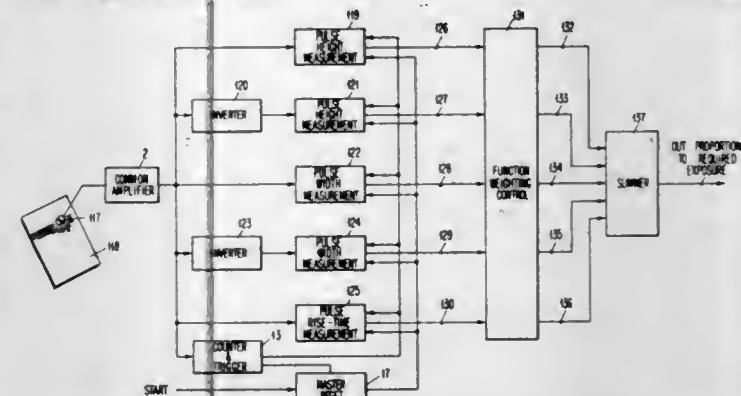
### 3,464,062 PRINT EVALUATION AND EXPOSURE CONTROL SYSTEM

Roy A. Jensen, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 23, 1964, Ser. No. 420,712  
Int. Cl. G06k 9/06, 9/02

U.S. Cl. 340—146.3

3 Claims



An image evaluation system wherein control signals are generated which are indicative of the print characteristics of a subject image which signals may be utilized for exposure control. As a scanner scans across a document having print thereon, there is generated an analog signal the amplitude of which is proportional to the reflectance of the print as well as the background. This analog signal is operated on to determine average line width, average print reflectance, average background reflectance, and average rise time and these print characteristics are weighed in a weighing system in accordance with the weight to be given to each and are then summed in a summing circuit to provide an output signal which may be used for controlling an exposure parameter such as time.

## DESIGNS

AUGUST 26, 1969

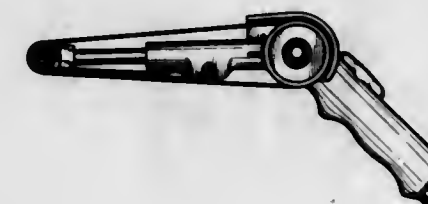
215,046  
PIN CUSHION OR SIMILAR ARTICLE  
George L. Zilg, Dunellen, N.J., and James S. Kirman, Media, Pa., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey  
Filed Sept. 4, 1968, Ser. No. 13,384  
Term of patent 14 years  
Int. Cl. D3—99

U.S. Cl. D3—19



215,047  
GRINDING TOOL  
Toshio Mikiya, Tokyo, Japan, assignor to Nitto Kohki Company, Limited, Tokyo, Japan  
Filed Aug. 6, 1968, Ser. No. 13,048  
Claims priority, application Japan Mar. 9, 1968  
Term of patent 14 years  
Int. Cl. D8—02

U.S. Cl. D8—62



215,048  
COMBINED LUGGAGE HANDLE AND  
ATTACHMENT BAR THEREFOR  
Peter Benenfeld, Bronx, N.Y., assignor to Peter's Bag Corporation, Bronx, N.Y., a corporation of New York  
Filed Apr. 26, 1968, Ser. No. 11,634  
Term of patent 14 years  
Int. Cl. D8—03

U.S. Cl. D8—154



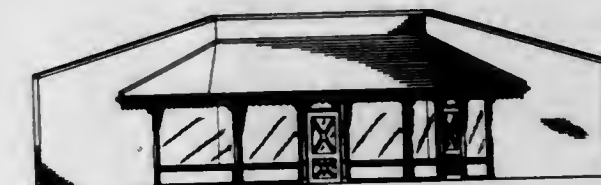
215,049  
BOTTLE  
Warren J. Luedtke, Racine, Wis., assignor to S. C. Johnson & Son, Inc., Racine, Wis.  
Filed Nov. 1, 1968, Ser. No. 14,270  
Term of patent 14 years  
Int. Cl. D9—01

U.S. Cl. D9—40



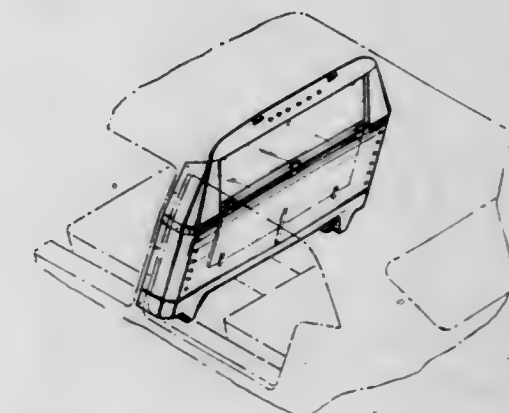
215,050  
SELF-SERVICE RESTAURANT BUILDING  
Earl S. Swenson, Nashville, Tenn., assignor to Miami Pearl's Chicken System, Inc., Nashville, Tenn., a corporation of Tennessee  
Filed Apr. 22, 1968, Ser. No. 11,541  
Term of patent 14 years  
Int. Cl. D25—04

U.S. Cl. D13—1



215,051  
SECURITY PARTITION FOR POLICE VEHICLES  
Karl G. Feth, 4258 Elm Park Drive, St. Louis, Mo. 63128  
Filed May 27, 1968, Ser. No. 12,093  
Term of patent 14 years  
Int. Cl. D12—14

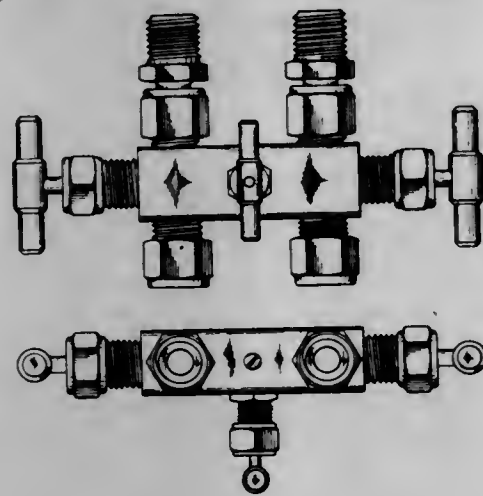
U.S. Cl. D14—6





**215,052**  
**EQUALIZING VALVE MANIFOLD**  
 Robert W. Evans, 11352 SE. Wichita St.,  
 Portland, Oreg. 97222  
 Filed Apr. 8, 1968, Ser. No. 11,358  
 Term of patent 14 years  
 Int. Cl. D23—01

U.S. Cl. D23—21



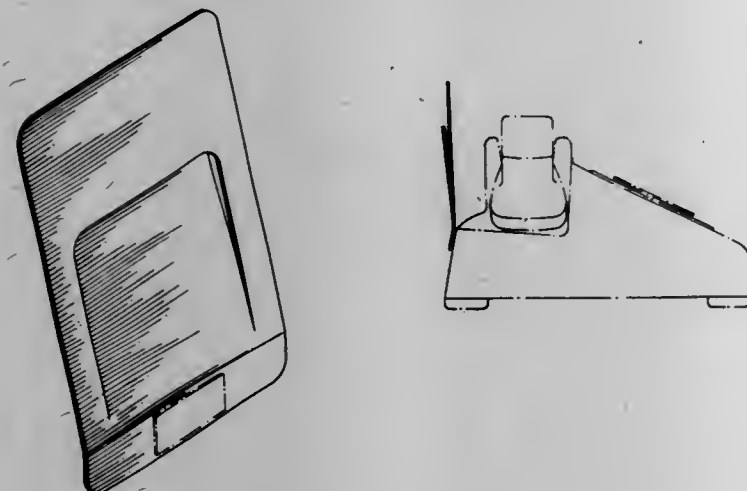
**215,053**  
**AIR CLEANER FOR ENGINES OR THE LIKE**  
 Donald F. Haskin, 11416 Miranda St., North Hollywood,  
 Calif. 91601, and Max Becker, 14058 Valley Heart  
 Drive, Apt. 3, Sherman Oaks, Calif. 91403  
 Filed Apr. 22, 1968, Ser. No. 11,548  
 Term of patent 14 years  
 Int. Cl. D15—01

U.S. Cl. D23—149



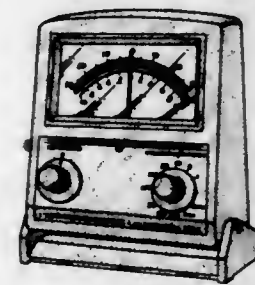
**215,054**  
**COMBINED TELEPHONE MESSAGE HOLDER AND  
 ADVERTISING DISPLAY CARD OR SIMILAR  
 ARTICLE**  
 Edward P. Swertz, 1395 Amherst St., Apt. 11,  
 Buffalo, N.Y. 14216  
 Filed Apr. 23, 1968, Ser. No. 11,603  
 Term of patent 14 years  
 Int. Cl. D6—01; D20—03

U.S. Cl. D26—14



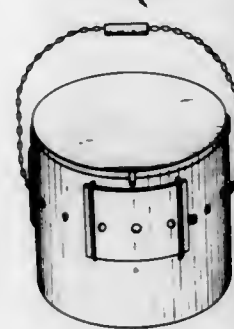
**215,055**  
**ELECTRONIC GAUGE**  
 James R. Schiller, Grosse Point Woods, Mich., assignor  
 to Speedring Corporation, Warren, Mich., a corpora-  
 tion of Michigan  
 Filed Apr. 5, 1968, Ser. No. 11,315  
 Term of patent 14 years  
 Int. Cl. D10—11

U.S. Cl. D26—1



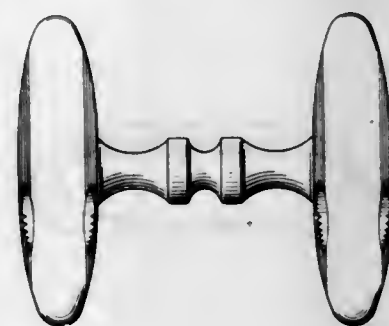
**215,056**  
**PET ANIMAL CARRIER**  
 Suzanne Schwertley, 610 W. 110th St.,  
 New York, N.Y. 10025  
 Filed July 1, 1968, Ser. No. 12,565  
 Term of patent 14 years  
 Int. Cl. D30—01

U.S. Cl. D30—1



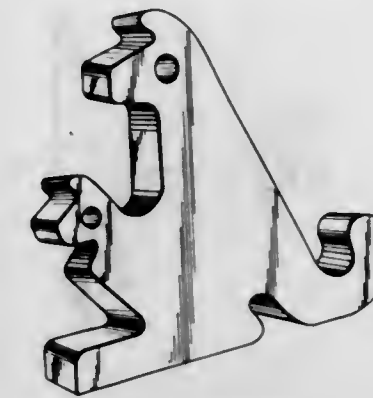
**215,057**  
**EXERCISE DEVICE**  
 George C. Sun, 881 Cooper Landing Road,  
 Cherry Hill, N.J. 08034  
 Filed Mar. 5, 1968, Ser. No. 10,858  
 Term of patent 14 years  
 Int. Cl. D21—03

U.S. Cl. D34—5



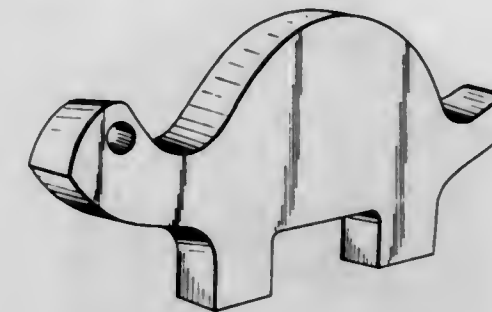
**215,058**  
**KANGAROO FIGURE FOR PLAYGROUND  
 APPARATUS**  
 John E. Hill, 21 Sheraton Park, Arlington, Mass. 02172,  
 and Joseph E. Hill, 221 Mt. Auburn St., Cambridge,  
 Mass. 02139  
 Filed July 24, 1968, Ser. No. 12,877  
 Term of patent 14 years  
 Int. Cl. D21—03

U.S. Cl. D34—5



**215,059**  
**TURTLE FIGURE FOR PLAYGROUND  
 APPARATUS**  
 John E. Hill, 21 Sheraton Park, Arlington, Mass. 02172,  
 and Joseph E. Hill, 221 Mt. Auburn St., Cambridge,  
 Mass. 02139  
 Filed July 24, 1968, Ser. No. 12,884  
 Term of patent 14 years  
 Int. Cl. D21—03

U.S. Cl. D34—5



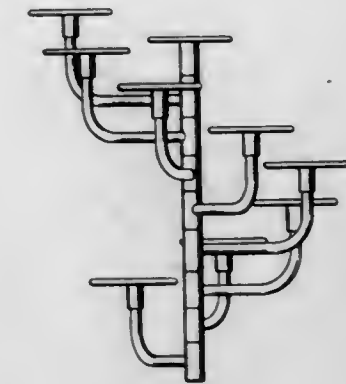
**215,060**  
**BALL TOSS GAME TARGET**  
 Robert W. Merrick and Laura Merrick, both of 14311  
 Darwin Ave., Cleveland, Ohio 44110  
 Filed Oct. 8, 1968, Ser. No. 13,883  
 Term of patent 14 years  
 Int. Cl. D21—01

U.S. Cl. D34—5



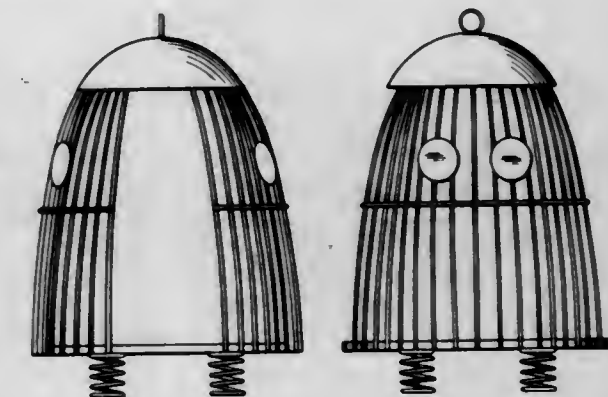
**215,061**  
**PLAYGROUND CLIMBER**  
 Robert S. Wormser, Hillsdale, Mich., assignor to Game  
 Time, Inc., Litchfield, Mich., a corporation of  
 Michigan  
 Filed Nov. 26, 1968, Ser. No. 14,682  
 Term of patent 14 years  
 Int. Cl. D21—04

U.S. Cl. D34—5



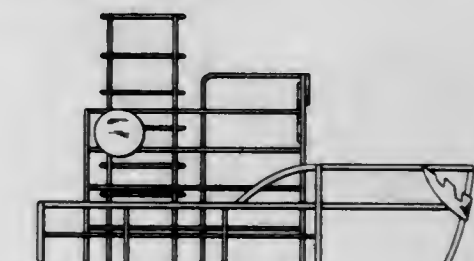
**215,062**  
**PLAYGROUND CLIMBER OR SIMILAR ARTICLE**  
 Robert S. Wormser, Hillsdale, Mich., assignor to Game  
 Time, Inc., Litchfield, Mich., a corporation of Michigan  
 Filed Dec. 30, 1968, Ser. No. 15,140  
 Term of patent 14 years  
 Int. Cl. D21—04

U.S. Cl. D34—5



**215,063**  
**BOAT-SHAPED CLIMBER UNIT**  
 Robert S. Wormser, Hillsdale, Mich., assignor to Game  
 Time, Inc., Litchfield, Mich., a corporation of Michigan  
 Filed Dec. 30, 1968, Ser. No. 15,147  
 Term of patent 14 years  
 Int. Cl. D21—04

U.S. Cl. D34—5





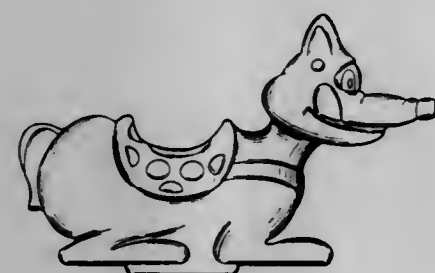
**215,064**  
**DOLPHIN-SHAPED SEAT FOR PLAYGROUND APPARATUS**  
 Robert S. Wormser, Hillsdale, Mich., assignor to Game Time, Inc., Litchfield, Mich., a corporation of Michigan  
 Filed Dec. 30, 1968, Ser. No. 15,138  
 Term of patent 14 years  
 Int. Cl. D21-04

U.S. Cl. D34-15



**215,065**  
**WOLF-SHAPED SEAT FOR PLAYGROUND APPARATUS**  
 Robert S. Wormser, Hillsdale, Mich., assignor to Game Time, Inc., Litchfield, Mich., a corporation of Michigan  
 Filed Dec. 30, 1968, Ser. No. 15,141  
 Term of patent 14 years  
 Int. Cl. D21-04

U.S. Cl. D34-15



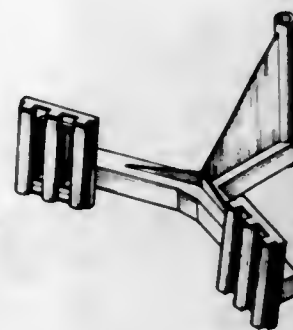
**215,066**  
**PIG-SHAPED SEAT FOR PLAYGROUND APPARATUS**  
 Robert S. Wormser, Hillsdale, Mich., assignor to Game Time, Inc., Litchfield, Mich., a corporation of Michigan  
 Filed Dec. 30, 1968, Ser. No. 15,142  
 Term of patent 14 years  
 Int. Cl. D21-04

U.S. Cl. D34-15



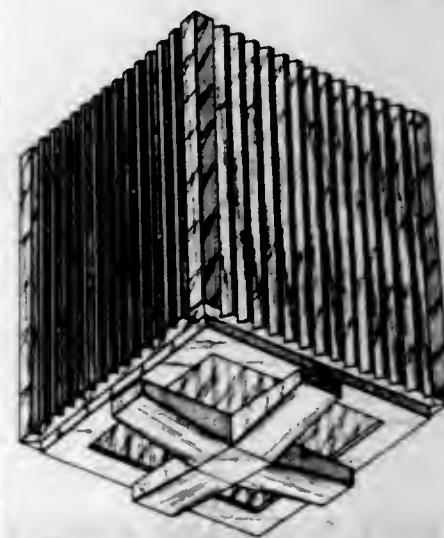
**215,067**  
**BUMPER ENGAGING UNIT FOR TRUCK ATTACHED LIFTING AND TOWING DEVICES OR THE LIKE**  
 Roland H. Goldston, Jr., 564 Glendale Drive, Wilson, N.C. 27893  
 Filed Jan. 17, 1968, Ser. No. 10,191  
 Term of patent 14 years  
 Int. Cl. D12-99

U.S. Cl. D41-1



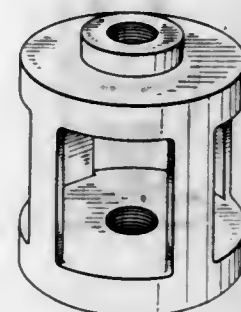
**215,068**  
**LUMINAIRE FOR A STREET LAMP**  
 George E. Kostritsky, Baltimore, Md., assignor to RTKL Inc., Baltimore, Md., a corporation of Maryland  
 Filed Oct. 22, 1968, Ser. No. 14,108  
 Term of patent 14 years  
 Int. Cl. D26-03

U.S. Cl. D48-31



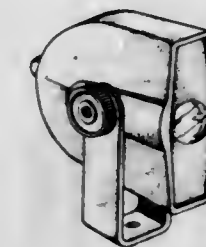
**215,069**  
**LOAD CELL FOR MEASURING LOADS ON STRUCTURAL MEMBERS**  
 Stephen Chris, 160 Jamison Ave., Toronto 3, Ontario, Canada  
 Filed Mar. 14, 1968, Ser. No. 10,980  
 Term of patent 7 years  
 Int. Cl. D10-08

U.S. Cl. D52-6



**215,070**  
**VEHICLE ACCELEROMETER**  
 Leonard M. Snyder, 745 Linda Vista Ave., Pasadena, Calif. 91103  
 Filed Oct. 28, 1968, Ser. No. 14,210  
 Term of patent 14 years  
 Int. Cl. D10-11

U.S. Cl. D52-6



**215,071**  
**ANEMOMETER INTEGRAL CUP AND ARM**  
 David M. Davis, 625 Main St., Harwich Port, Mass. 02646  
 Filed Nov. 12, 1968, Ser. No. 14,387  
 Term of patent 14 years  
 Int. Cl. D10-07

U.S. Cl. D52-6



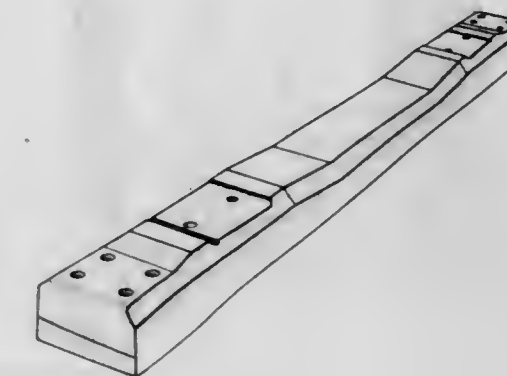
**215,072**  
**FONT OF TYPE**  
 Donald R. Kracke, 5620 Whitecliff Drive, Palos Verdes Peninsula, Calif. 90274  
 Filed June 28, 1968, Ser. No. 12,539  
 Term of patent 14 years  
 Int. Cl. D18-04

U.S. Cl. D64-12

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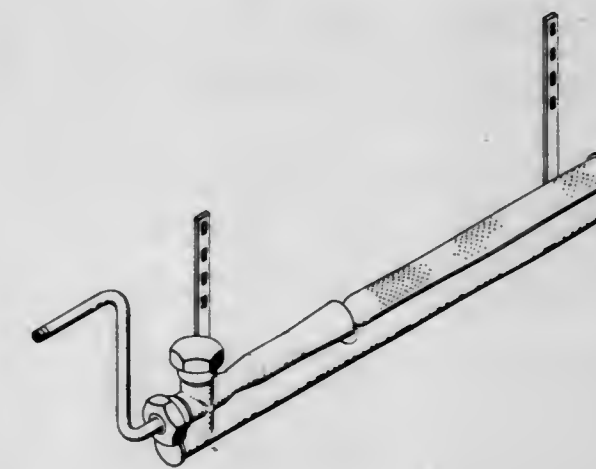
**215,073**  
**CROSSTIE**  
 Philip J. McQueen, San Rafael, Calif., assignor to J. H. Pomeroy & Co., Inc., San Francisco, Calif., a corporation of Washington  
 Filed Mar. 18, 1968, Ser. No. 11,005  
 Term of patent 14 years  
 Int. Cl. D31; D25-01

U.S. Cl. D66-3



**215,074**  
**STEAM GUN FOR USE IN FOOD PREPARATION EQUIPMENT**  
 Horace Hinds, Jr., Mountain View, Calif., assignor to Grace Machinery Corporation, Oakland, Calif., a corporation of California  
 Filed Mar. 4, 1968, Ser. No. 10,837  
 Term of patent 14 years  
 Int. Cl. D15-12

U.S. Cl. D81-10





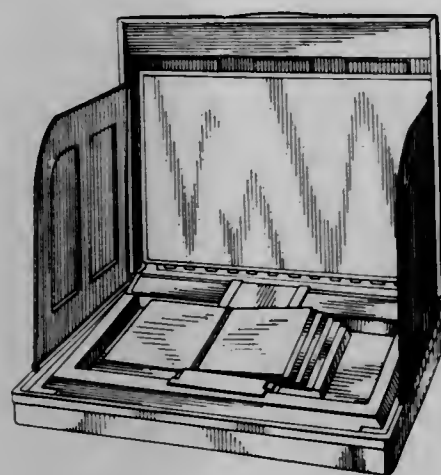
215,075

## PORTABLE VOTING BOOTH

Edward J. Crossland, Frank L. Walters, and Don Randall, Tulsa, Okla., assignors to Seismograph Service Corporation, Tulsa, Okla., a corporation of Delaware  
Continuation of design applications Ser. Nos. 58 and 59, Dec. 3, 1965. This application Apr. 23, 1968, Ser. No. 11,746

Term of patent 14 years  
Int. Cl. D3—99

U.S. Cl. D87—1

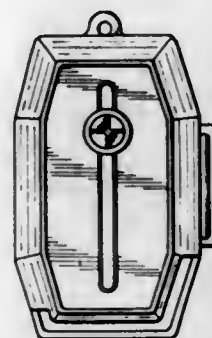


215,076

## KEY CASE

John T. Hinkle and Charles E. Hinkle, both of P.O. Box 2402, Roswell, N. Mex. 88201  
Filed Aug. 28, 1968, Ser. No. 13,301  
Term of patent 14 years  
Int. Cl. D3—99

U.S. Cl. D87—8



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PATENTS WERE ISSUED ON THE 26TH DAY OF AUGUST, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- Anderson, Clayton, & Co.: See—  
Reddick, John A. Re. 26,649.  
Blackburn, Alan B., to Hobart Bros. Co. Electronic frequency error detector. Re. 26,651, 8-26-69, Cl. 317—27.  
Coe Mfg. Co., The: See—  
Skoog, Per O. Re. 26,653.  
Crumley, Richard L.: See—  
Lee, Winston F. Z., Fisher, and Crumley. Re. 26,654.  
Finger, Joseph S., to Johns-Manville Corp. Process of forming a reinforced resin panel. Re. 26,652, 8-26-69, Cl. 264—261.  
Fisher, Harry W.: See—  
Lee, Winston F. Z., Fisher, and Crumley. Re. 26,654.  
Hobart Bros. Co.: See—  
Blackburn, Alan B. Re. 26,651.  
Johns-Manville Corp.: See—  
Finger, Joseph S. Re. 26,652.  
Lee, Winston F. Z., H. W. Fisher, and R. L. Crumley, to Rockwell Mfg. Co. Fluid meters. Re. 26,654, 8-26-69, Cl. 73—229.  
Loveland, Winton, and S. Warshaw, to The Loveshaw Corp. Carton clamping and guiding means in an automatic carton closing machine. Re. 26,650, 8-26-69, Cl. 53—75.  
Loveshaw Corp., The: See—  
Loveland, Winton, and Warshaw. Re. 26,650.  
Reddick, John A., to Clayton Anderson & Co. Linter cleaner. Re. 26,649, 8-26-69, Cl. 19—202.  
Rockwell Mfg. Co.: See—  
Lee, Winston F. Z., Fisher, and Crumley. Re. 26,654.  
Schering Corp.: See—  
Sherlock, Margaret H., and Sperber. Re. 26,655.  
Sherlock, Margaret H., and N. Sperber, to Schering Corp. Certain anilino nicotinic acid derivatives. Re. 26,655, 8-26-69, Cl. 260—295.5.  
Skoog, Per O., to The Coe Mfg. Co. Method and means for patching assembled plywood panels. Re. 26,653, 8-19-69, Cl. 144—310.  
Sperber, Nathan: See—  
Sherlock, Margaret H., and Sperber. Re. 26,655.  
Warshaw, Saul: See—  
Loveland, Winton, and Warshaw. Re. 26,650.

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- Becker, Max: See—  
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Benefeld, Peter, to Peter's Bag Corp. Combined luggage handle and attachment bar therefor. 215,048, 8-26-69, Cl. D8—154.  
Chriss, Stephen. Load cell for measuring loads on structural members. 215,069, 8-26-69, Cl. D52—6.  
Crossland, Edward J., F. L. Walters, and D. Randall, to Seismograph Service Corp. Portable voting booth. 215,075, 8-26-69, Cl. D87—1.  
Davis, David M. Anemometer integral cup and arm. 215,071, 8-26-69, Cl. D52—6.  
Evans, Robert W. Equalizing valve manifold. 215,052, 8-26-69, Cl. D23—21.  
Feth, Karl G. Security partition for police vehicles. 215,051, 8-26-69, Cl. D14—8.  
Game Time, Inc.: See—  
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Hill, John E. and Joseph E. Turtle figure for playground apparatus. 215,059, 8-26-69, Cl. D34—5.  
Hill, Joseph E.: See—  
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Hill, John E. and Joseph E. 215,059.  
Hinds, Horace, Jr., to Grace Machinery Corp. Steam gun for use in food preparation equipment. 215,074, 8-26-69, Cl. D81—10.  
Hinkle, Charles E.: See—  
Hinkle, John T. and C. E. 215,076.  
Hinkle, John T. and C. E. Key case. 215,076, 8-26-69, Cl. D87—8.  
Johnson, S. C., & Son, Inc.: See—  
Luedtke, Warren J. 215,049.  
Kirman, James S.: See—  
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Kostritsky, George E., to RTKL Inc. Luminaire for a street lamp. 215,068, 8-26-69, Cl. D48—31.  
Kracke, Donald R. Font of type. 215,072, 8-26-69, Cl. D64—12.  
Luedtke, Warren J., to S. C. Johnson & Son, Inc. Bottle. 215,049, 8-26-69, Cl. D9—40.  
McQueen, Philip J., to J. H. Pomeroy & Co., Inc. Crosstie. 215,073, 8-26-69, Cl. D66—3.  
Merrick, Laura: See—  
Merrick, Robert W. and L. 215,060.  
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Mikiya, Toshio, to Nitto Kohki Co., Ltd. Grinding tool. 215,047, 8-26-69, Cl. D8—62.  
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Pearl's, Minnie, Chicken System, Inc.: See—  
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Pomeroy, J. H., & Co., Inc.: See—  
McQueen, Philip J. 215,073.  
RTKL Inc.: See—  
Kostritsky, George E. 215,068.  
Randall, Don: See—  
Crossland, Edward J., Walters, and Randall. 215,075.  
Schiller, James R., to Speedring Corp. Electronic gauge. 215,055, 8-26-69, Cl. D26—1.  
Schwertley, Suzanne, Pet animal carrier. 215,056, 8-26-69, Cl. D30—1.  
Seismograph Service Corp.: See—  
Crossland, Edward J., Walters, and Randall. 215,075.  
Singer Co., The: See—  
Zilg, George L., and Kirman. 215,046.  
Snyder, Leonard M. Vehicle accelerometer. 215,070, 8-26-69, Cl. D52—6.  
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Schiller, James R. 215,055.  
Sun, George C. Exercise device. 215,057, 8-26-69, Cl. D34—5.  
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Swertz, Edward P. Combined telephone message holder and advertising display card or similar article. 215,054, 8-26-69, Cl. D26—14.  
Walters, Frank L.: See—  
Crossland, Edward J., Walters, and Randall. 215,075.  
Wormser, Robert S., to Game Time, Inc. Playground climber. 215,061, 8-26-69, Cl. D34—5.  
Wormser, Robert S., to Game Time, Inc. Playground climber or similar article. 215,062, 8-26-69, Cl. D34—5.  
Wormser, Robert S., to Game Time, Inc. Boat-shaped climber unit. 215,063, 8-26-69, Cl. D34—5.  
Wormser, Robert S., to Game Time, Inc. Dolphin-shaped seat for playground apparatus. 215,064, 8-26-69, Cl. D34—15.  
Wormser, Robert S., to Game Time, Inc. Wolf-shaped seat for playground apparatus. 215,065, 8-26-69, Cl. D34—15.  
Wormser, Robert S., to Game Time, Inc. Pig-shaped seat for playground apparatus. 215,066, 8-26-69, Cl. D34—15.  
Zilg, George L., and J. S. Kirman, to The Singer Co. Pin cushion or similar article. 215,046, 8-26-69, Cl. D3—19.



# LIST OF PATENTEEES

TO WHOM

PATENTS WERE ISSUED ON THE 26TH DAY OF AUGUST, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Abbott Laboratories: See—  
Cox, Alvon R., 3,462,776.  
Abbott, Tom L. Mop wringer. 3,462,788, Cl. 015-119.  
Abella, James E.: See—  
Hoffman, George J., and Abella, James E. 3,463,280.  
ACF Industries, Incorporated: See—  
Natho, Paul J., 3,463,446.  
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Helenberg, John, 3,463,449.  
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Achenbach, Karl, to FMC Corporation. Process for etching printed cir-  
cuits. 3,463,733, Cl. 252-079.4  
Adams, Victor J., Jr., Goldberg, Lloyd W., and Wolf, Herbert S., to  
Thiokol Chemical Corporation. Rocket thrust chamber. 3,462,954,  
Cl. 060-228.  
Addison, Harry. Liquid control valve. 3,463,191, Cl. 137-625.29  
Addressograph-Multigraph Corporation: See—  
Baltazzi, Evan S., 3,463,639.  
Adem, Abdulahat, to General Electric Company. Sequential load ener-  
gizing circuit. 3,463,936, Cl. 307-223.  
Admiral Corporation: See—  
Kowalewski, Edward C., 3,464,053.  
Admiral Equipment Corporation: See—  
Hermanns, Alfred Hans, 3,462,795.  
Advance Process Supply Company: See—  
Oltra, Claude H., and De Luca, John, 3,463,587.  
Acrocoat S.A.: See—  
Wallis, Neil Rudolph, 3,463,120.  
Acrospace Corporation, The: See—  
Birnbaum, Milton, 3,464,023.  
Acrovox Corporation: See—  
Wershey, Edward J., 3,463,969.  
Ager, John W., Jr., Heying, Theodore L., and Mangold, Donald J., to  
Olin Mathieson Chemical Corporation. Reaction products of  
decaborane and acetylenes and their preparation. 3,463,820, Cl.  
260-606.5  
Agfa Aktiengesellschaft: See—  
Geyken, Erwin, 3,463,711.  
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Hackenberg, Hubert, 3,463,068.  
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Kremp, Rudolf, Wagner, Karl, Engelsmann, Dieter, and Winkler,  
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3,463,071.  
Agricultural Aviation Engineering Company: See—  
Pickell, Phillip R., 3,463,424.  
Ahrens, Erhard, to Shure Brothers, Incorporated. Moving magnet  
stereophonic pickup. 3,463,889, Cl. 179-100.41  
Aichenege, Paul C., to Chemagro Corporation. Polyhaloethyl and  
polyhalovinyl sulfinate and thiosulfinate esters. 3,463,803, Cl. 260-  
453.  
Aichenege, Paul C., to Chemagro Corporation. S,S-hydrocarbyl-S-  
chloroethyl or chlorovinyl phosphates. 3,463,836, Cl. 260-937.  
Ainsworth, Ira V. Dental matrix equipment. 3,462,841, Cl. 032-063.  
Air Preheater Company, Inc.: See—  
Carpenter, Peter William, 3,463,410.  
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Paddock, David A., and Hardy, Robert G., 3,463,006.  
Air Products and Chemicals, Inc.: See—  
Cooley, Gerald J., Cormier, Thomas E., and Sipple, Peter A.,  
3,463,869.  
Aisin Seiki Company Limited: See—  
Fujita, Saburo, and Kobashi, Uichiro, 3,463,282.  
Aitken, James B.: See—  
Cannon, Ernest W., and Byrnes, David W., 3,463,218.  
Ajax Magnethermic Corporation: See—  
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Ajinomoto Co., Inc.: See—  
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3,463,704.  
Akerman, Karl Aron Lennart. Shifting beam microspectrophotometer  
with means for selectively varying paths of reference and sample  
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Alaska Elevator Corporation: See—  
St. Louis, Donald L., 3,463,271.  
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Miller, Robert W., 3,463,254.  
Albany Felt Company: See—  
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Albrecht, Raymond E., Curran, Bernard E., and Lindner, Robert G., to  
Robertson, H. H., Company. Composite floor construction.  
3,462,902, Cl. 052-336.  
Albu, Theodor. Nose air filter. 3,463,149, Cl. 128-140.  
Alcock, Derrick N.: See—  
Smith, Forest D., and Alcock, Derrick N. 3,463,998.  
Alderman, Orba O., to Melpar, Inc. Multiple frequency tuning fork  
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3,462,969.  
Alexander, John F. Extendible hand railing. 3,463,457, Cl. 256-059.  
Alfieri, Giuseppe, to Fabbrica Italiana Magneti Marelli S.p.A. Plunger  
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3,463,557, Cl. 303-052.  
Alfred Electronics: See—  
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All Tech Industries, Inc.: See—  
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Allais, Andre, to Roussel Uclaf. 4 (2'-beta-pyridyl methoxy)carbonyl  
phenylamino chloro quinolines. 3,463,780, Cl. 260-287.  
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Kubert, Ervin A., and Alday, Reece 3,463,167.  
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Bush, Richard W., and Marrero, Tomas R., 3,463,767.  
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3,463,955.  
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pany. Brake released differential lock. 3,463,277, Cl. 192-004.  
Alnor Instrument Company: See—  
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pensation. 3,463,999, Cl. 323-069.  
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Flajole, Henry J., Andersen, Fred R., and Thompson, Dale A.,  
3,463,236.  
Anderson, Andrew W., to Scandia Packaging Machinery Company.  
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Chemical Industries Limited. Process for the reductive dimerization  
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3,463,408, Cl. 242-055.19  
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## CLASSIFICATION OF PATENTS

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NOTE.—First number, class; second number, subclass; third number, patent number

2-3	3,462,763	29-592	3,462,830	53-375	3,462,916	73-170	3,463,002	99-104	3,463,643	126-39	3,463,139
252	3,462,764	605	3,462,831	386	3,462,917	189	3,463,003	9	3,463,644	246	3,463,140
3-1	3,462,765	625	3,462,832	55-67	3,462,918	229	3,463,004	282	3,463,645	127-32	3,463,141
4-7	3,462,766	30-43.92	3,462,833	256	3,462,919	232	3,463,005	349	3,463,646	128-1	3,463,142
57	3,462,767	137	3,462,834	413	3,462,920	341	3,463,006	403	3,463,647	2	3,463,143
67	3,462,768	164.95	3,462,835	56-17	3,462,921	355	3,463,007		3,463,648	.06	3,463,144
100	3,462,769	331	3,462,836	23	3,462,922		3,463,008	100-215	3,463,649	20	3,463,145
113	3,462,770	32-5	3,462,837	25	3,462,923	363.5	3,463,009	257	3,463,650	24	3,463,146
146	3,462,771	12	3,462,838	4	3,462,924	384	3,463,010	101-93	3,463,651	25	3,463,147
5-63	3,462,772	15	3,462,839		3,462,925	396	3,463,011	144	3,463,652	80	3,463,148
111	3,462,773	60	3,462,840		3,462,926	418	3,463,012	232	3,463,653	92	3,463,149
260	3,462,774	63	3,462,841	56	3,462,927	422	3,463,013	279	3,463,654	140	3,463,150
327	3,462,775	67	3,462,842	104	3,462,928	425.6	3,463,014	102-24	3,463,655	142.5	3,463,151
337	3,462,776	33-1	3,462,843	328	3,462,929	432	3,463,015	38	3,463,656	188	3,463,152
345	3,462,777	18	3,462,844		3,462,930		3,463,016	103-38	3,463,657	214.4	3,463,153
347	3,462,778	46	3,462,845	329	3,462,931	74-5.4	3,463,017	103	3,463,658	227	3,463,154
353	3,462,779	109	3,462,846		3,462,932	10.33	3,463,018	126	3,463,659	287	3,463,155
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9-1	3,462,781	169	3,462,848	52	3,462,934	89.15	3,463,020	131	3,463,661	325	3,463,157
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	3,462,783	57	3,462,850	80	3,462,936		3,463,022	188	3,463,663	334	3,463,159
13-20	3,463,863	160	3,462,851	130	3,462,937	227	3,463,023	195	3,463,664	350	3,463,160
33	3,463,864	35-8	3,462,852	157	3,462,938	241	3,463,024	104-8	3,463,665	368	3,463,161
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	3,462,786	60	3,462,855	28	3,462,942	365	3,463,028		3,463,669		3,463,165
	3,462,787	74	3,462,856	57.5	3,462,943	366	3,463,029	65	3,463,670		3,463,166
15-119	3,462,788	77	3,462,857	59-7	3,462,944	385	3,463,030	67	3,463,671	131-178	3,463,167
166	3,462,789	37-55	3,462,858	86	3,462,945	409	3,463,031	69	3,463,672	202	3,463,168
247	3,462,790	126	3,462,859	60-30	3,462,946	410	3,463,032	107-14	3,463,673	262	3,463,169
16-55	3,462,791	129	3,462,860	32	3,462,947	495	3,463,033	54	3,463,674	132-34	3,463,170
88	3,462,792	142	3,462,861	39.02	3,462,948	688	3,463,034		3,463,675	113	3,463,171
17-32	3,462,793	40-1.5	3,462,862	31	3,462,949	733	3,463,035	108-111	3,463,676	133-1	3,463,172
42	3,462,794		3,462,863	74	3,462,950	75-11	3,463,639	111-91	3,463,677	134-145	3,463,173
18-4	3,462,795	2	3,462,864	64	3,462,951	23	3,463,640	112-121.15	3,463,678	146	3,463,174
9	3,462,796	21	3,462,865	219	3,462,952	60	3,463,641	164	3,463,679	135-1	3,463,175
34	3,462,797	33	3,462,866	226	3,462,953	83	3,463,642	219	3,463,680	136-6	3,463,176
19-25	3,462,798	85	3,462,867	228	3,462,954		3,463,643	235	3,463,681	83	3,463,177
98	3,462,799	114	3,462,868	249	3,462,955	84	3,463,644	252	3,463,682	160	3,463,178
159	3,462,800	42-70	3,462,869	258	3,462,956	121	3,463,645	113-32	3,463,683	166	3,463,179
202	3,462,801	43-4	3,462,870	61-5	3,462,957	165	3,463,646	121	3,463,684	182	3,463,180
23-2	3,463,603	42.47	3,462,871	1	3,462,958	167	3,463,647	114-16	3,463,685	233	3,463,181
22	3,463,604	97	3,462,872	45	3,462,959	76-107	3,463,648	65.5	3,463,686		3,463,182
50	3,463,605	44-51	3,463,622	48	3,462,960	77-32.3	3,463,649	75	3,463,687	36	3,463,176
89	3,463,606	46-13	3,462,873	69	3,462,961	81-54	3,463,650	202	3,463,688	81.5	3,463,177
110	3,463,607	40	3,462,874	72.1	3,462,962	58.1	3,463,651	208	3,463,689		3,463,178
112	3,463,608	120	3,462,875	4	3,462,963	83-139	3,463,652	221	3,463,690	154	3,463,179
165	3,463,609	135	3,462,876	62-133	3,462,964	137	3,463,653	230	3,463,691	269	3,463,180
202	3,463,610	159	3,462,877	180	3,462,965	564	3,463,654	115-35	3,463,692	382	3,463,181
209.4	3,463,612	201	3,462,878	248	3,462,966	627	3,463,655	70	3,463,693	494	3,463,182
225	3,463,611	214	3,462,879	264	3,462,967	84-1.21	3,463,656	116-114	3,463,694	505.41	3,463,183
230	3,463,613	247	3,462,880	348	3,462,968	24	3,463,657	129	3,463,695	512.15	3,463,184
	3,463,614	48-202	3,463,623	373	3,462,969	470	3,463,658	117-3.3	3,463,696	516.29	3,463,185
	3,463,615	49-111	3,462,881	392	3,462,970	85-9	3,463,659	7	3,463,697	596	3,463,186
263	3,463,616	181	3,462,882	64-9	3,462,971	41	3,463,660	8.5	3,463,698	16	3,463,187
284	3,463,617	360	3,462,883	12	3,462,972	70	3,463,661	21	3,463,699	599	3,463,188
315	3,463,618	404	3,462,884	17	3,462,973	86-23	3,463,662	36.2	3,463,700	614.2	3,463,189
341	3,463,619	488	3,462,885	30	3,462,974	90-11	3,463,663	44	3,463,701	625.17	3,463,190
24-3	3,462,801	51-54	3,462,886	32	3,462,975	62	3,463,664	65.2	3,463,702	29	3,463,191
16	3,462,802	206	3,462,887	65-71	3,463,624	13	3,463,665	69	3,463,703	42	3,463,192
150	3,462,803	336	3,462,888	90	3,463,625	91-36	3,463,651	71	3,463,699	64	3,463,192
204	3,462,805	380	3,462,889	134	3,463,626	138	3,463,652	72	3,463,660		3,463,194
205.12	3,462,806	52-1	3,462,890		3,463,627	240	3,463,653	76	3,463,661	94	3,463,195
230	3,462,807	18	3,462,891	66-9	3,462,976	369	3,463,654	118	3,463,662	96	3,463,196
248	3,462,808	28	3,462,892	68-5	3,462,977	260	3,463,655	124	3,463,664	125	3,463,197
255	3,462,809	80	3,462,893		3,462,978	63	3,463,656	138	3,463,665	139-25	3,463,198
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72	3,462,813	308	3,462,898	310	3,462,983	79	3,463,660	626	3,463,120	141-39	3,463,203
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29-33	3,462,816	316	3,462,901	72-22	3,462,985	50	3,463,663	15	3,463,123	151	3,463,206
116	3,462,817	336	3,462,902	97	3,462,987	95-1.1	3,463,664	52	3,463,124	144-288	3,463,207
155	3,462,818	400	3,462,903	114	3,462,988	10	3,463,665		3,463,125		3,463,208
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182.7	3,463,621	404	3,462,905	186	3,462,990	5	3,463,667	123-8	3,463,127	310	3,463,210
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3,463,271	3,463,183	3,463,636	3,462,900	3,463,289	3,462,975
4 : 3,463,540	3,463,208	3,463,693	3,462,935	3,463,525	3,462,980
3,463,547	3,463,218	3,463,694	3,462,981	3,463,930	3,462,985
3,463,551	3,463,224	3,463,715	3,462,984	3,464,012	3,463,003
5 : 3,462,945	3,463,226	3,463,724	3,463,015	3,464,051	3,462,837
3,463,127	3,463,231	3,463,761	3,463,046	3,462,766	3,463,045
3,463,299	3,463,251	3,463,762	3,463,086	3,462,784	3,462,865
6 : 3,462,781	3,463,266	3,463,770	3,463,103	3,462,785	3,462,961
3,462,789	3,463,267	3,463,809	3,463,119	3,462,787	3,463,196
3,462,817	3,463,287	3,463,829	3,463,132	3,462,820	3,463,225
3,462,822	3,463,312	3,463,873	3,463,158	3,462,925	3,463,609
3,462,832	3,463,320	3,463,874	3,463,210	3,462,921	3,463,075
3,462,870	3,463,330	3,463,876	3,463,216	3,462,930	3,463,076
3,462,846	3,463,339	3,463,877	3,463,232	3,462,960	3,463,084
3,462,856	3,463,343	3,463,878	3,463,237	3,463,109	3,463,121
3,462,873	3,463,347	3,463,882	3,463,269	3,463,144	3,463,122
3,462,875	3,463,361	3,463,897	3,463,313	3,463,174	3,463,131
3,462,890	3,463,366	3,463,897	3,463,346	3,463,341	3,463,181
3,462,892	3,463,366	3,463,906	3,463,346	3,463,341	3,463,181
3,462,916	3,463,404	3,463,909	3,463,390	3,463,402	3,463,213
3,462,929	3,463,408	3,463,915	3,463,452	3,463,452	3,463,242
3,462,946	3,463,419	3,463,916	3,463,488	3,463,488	3,463,243
3,462,955	3,463,420	3,463,924	3,463,564	3,463,628	3,463,273
3,462,998	3,463,428	3,463,926	3,463,572	3,463,653	3,463,277
3,462,999	3,463,438	3,463,928	3,463,573	3,463,769	3,463,278
3,463,007	3,463,447	3,463,935	3,463,574	3,463,942	3,463,284
3,463,009	3,463,448	3,463,937	3,463,588	3,462,852	3,463,298
3,463,012	3,463,451	3,463,946	3,463,596	3,463,140	3,463,304
3,463,016	3,463,455	3,463,953	3,463,620	3,463,276	3,463,305
3,463,020	3,463,462	3,463,959	3,463,709	3,463,532	3,463,309
3,463,021	3,463,463	3,463,971	3,463,710	3,462,907	3,463,324
3,463,027	3,463,463	3,463,974	3,463,730	3,463,295	3,463,325
3,463,037	3,463,495	3,463,977	3,463,745	3,463,635	3,463,335
3,463,038	3,463,509	3,463,984	3,463,768	3,462,794	3,463,350
3,463,043	3,463,512	3,463,985	3,463,789	3,462,826	3,463,357
3,463,061	3,463,514	3,463,986	3,463,801	3,462,857	3,463,359
3,463,063	3,463,527	3,463,990	3,463,819	3,462,859	3,463,379
3,463,080	3,463,530	3,463,993	3,463,824	3,462,861	3,463,389
3,463,108	3,463,538	3,464,016	3,463,844	3,462,866	3,463,400
3,463,115	3,463,541	3,464,023	3,463,859	3,462,868	3,463,427
	3,463,543	3,464,024	3,463,901	3,462,881	3,463,431

XXXVIII

## GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

XXXIX

17 : 3,463,491	25 : 3,463,017	29 : 3,463,556	36 : 3,463,029	39 : 3,463,363	42 : 3,463,738
3,463,521	3,463,042	3,463,665	3,463,036	3,463,432	3,463,782
3,463,522	3,463,070	3,463,734	3,463,041	3,463,458	3,463,869
3,463,533	3,463,112	3,463,822	3,463,049	3,463,467	3,463,902
3,463,535	3,463,113	3,463,840	3,463,064	3,463,493	3,463,976
3,463,542	3,463,143	3,463,983	3,463,104	3,463,500	3,464,031
3,463,544	3,463,206	31 : 3,462,855	3,463,107	3,463,517	3,464,043
3,463,555	3,463,297	3,463,337	3,463,136	3,463,536	3,464,054
3,463,559	3,463,380	3,463,772	3,463,141	3,463,537	44 : 3,462,807
3,463,560	3,463,382	3,463,927	3,463,153	3,463,545	3,462,808
3,463,587	3,463,423	32 : 3,463,424	3,463,156	3,463,624	3,462,908
3,463,613	3,463,457	3,463,707	3,463,159	3,463,644	3,463,200
3,463,639	3,463,478	33 : 3,463,249	3,463,163	3,463,649	3,463,201
3,463,676	3,463,479	3,463,683	3,463,164	3,463,675	3,463,407
3,463,699	3,463,548	3,463,812	3,463,166	3,463,679	3,463,476
3,463,713	3,463,575	34 : RE.26.655	3,463,168	3,463,735	3,463,886
3,463,744	3,463,663	3,462,770	3,463,170	3,463,743	3,463,931
3,463,765	3,463,667	3,462,823	3,463,173	3,463,748	45 : 3,462,794
3,463,854	3,463,670	3,462,835	3,463,193	3,463,754	3,462,966
3,463,868	3,463,674	3,462,851	3,463,214	3,463,758	3,463,199
3,463,904	3,463,680	3,462,880	3,463,222	3,463,802	3,463,690
3,463,963	3,463,687	3,462,914	3,463,223	3,463,834	3,463,752
3,463,994	3,463,708	3,462,950	3,463,296	3,463,837	3,463,969
18 : 3,464,053	3,463,783	3,462,954	3,463,301	3,463,848	46 : 3,462,788
3,462,790	3,463,810	3,462,994	3,463,303	3,463,864	3,463,314
3,462,952	3,463,849	3,463,090	3,463,306	3,463,865	47 : 3,462,777
3,463,138	3,463,892	3,463,099	3,463,307	3,463,870	3,462,797
3,463,261	3,463,944	3,463,101	3,463,321	3,463,884	3,462,813
3,463,367	3,463,965	3,463,125	3,463,342	3,463,890	3,463,078
3,463,371	3,464,021	3,463,126	3,463,360	3,463,896	3,463,148
3,463,435	3,464,057	3,463,161	3,463,372	3,463,917	3,463,212
3,463,539	26 : 3,462,763	3,463,182	3,463,373	3,463,939	3,463,358
3,463,714	3,462,765	3,463,233	3,463,386	3,463,943	3,463,397
3,463,777	3,462,839	3,463,245	3,463,409	3,463,955	3,463,439
3,463,807	3,462,850	3,463,265	3,463,410	3,463,960	3,463,607
3,463,857	3,462,887	3,463,268	3,463,411	3,463,981	3,463,688
19 : 3,462,872	3,462,895	3,463,291	3,463,433	40 : 3,463,189	3,463,742
3,462,928	3,462,903	3,463,322	3,463,470	3,463,228	3,463,785
3,463,241	3,463,032	3,463,332	3,463,492	3,463,417	3,463,814
3,463,510	3,463,033	3,463,352	3,463,496	3,463,464	3,464,013
3,463,511	3,463,048	3,463,369	3,463,520	3,463,605	48 : RE.26.649
3,463,634	3,463,088	3,463,443	3,463,523	3,463,630	RE.26.652
3,463,858	3,463,094	3,463,444	3,463,529	3,463,746	3,462,821
20 : 3,463,034	3,463,149	3,463,445	3,463,552	3,463,827	3,462,825
3,463,157	3,463,181	3,463,481	3,463,561	3,463,828	3,462,841
3,463,803	3,463,186	3,463,487	3,463,565	41 : 3,462,764	3,462,871
3,463,836	3,463,187	3,463,577	3,463,566	3,462,773	3,462,951
3,463,838	3,463,235	3,463,599	3,463,568	3,463,317	3,462,962
3,463,839	3,463,236	3,463,651	3,463,571	3,463,398	3,462,964
21 : 3,462,882	3,463,262	3,463,662	3,463,585	3,463,513	3,463,055
3,463,100	3,463,275	3,463,672	3,463,589	42 : RE.26.654	3,463,074
3,463,230	3,463,316	3,463,692	3,463,595	3,462,801	3,463,167
3,463,285	3,463,344	3,463,705	3,463,614	3,462,814	3,463,172
3,463,691	3,463,399	3,463,774	3,463,638	3,462,815	3,463,173
3,463,697	3,463,415	3,463,778	3,463,642	3,462,819	3,463,185
3,463,726	3,463,430	3,463,786	3,463,646	3,462,854	3,463,227
3,463,728	3,463,434	3,463,791	3,463,678	3,462,885	3,463,248
3,463,888	3,463,459	3,463,792	3,463,725	3,462,888	3,463,250
3,463,905	3,463,471	3,463,793	3,463,753	3,462,902	3,463,252
22 : 3,464,048	3,463,477	3,463,800	3,463,760	3,462,911	3,463,256
3,462,782	3,463,490	3,463,817	3,463,773	3,462,926	3,463,302
3,462,837	3,463,499	3,463,818	3,463,787	3,462,967	3,463,319
3,462,845	3,463,531	3,463,835	3,463,820	3,462,976	3,463,328
3,462,865	3,463,546	3,463,841	3,463,866	3,463,881	3,463,446
3,462,961	3,463,591	3,463,845	3,463,881	3,463,883	3,462,978
3,463,196	3,463,637	3,463,850	3,463,883	3,462,983	3,463,450
3,463,225	3,463,666	3,463,852	3,463,900	3,462,989	3,463,460
3,463,609	3,463,686	3,463,860	3,463,910	3,462,996	3,463,518
3,463,641	3,463,731	3,463,861	3,463,913	3,463,005	3,463,570
23 : 3,463,485	3,463,813	3,463,867	3,463,918	3,463,018	3,463,601
3,463,659	3,463,895	3,463,871	3,463,919	3,463,024	3,463,612
3,463,661	3,463,949	3,463,880	3,463,925	3,463,026	3,463,721
3,462,862	3,463,954	3,463,912	3,463,936	3,463,030	3,463,741
3,463,013	27 : 3,463,920	3,463,920	3,463,947	3,463,133	3,463,755
3,463,081	3,462,836	3,463,962	3,463,952	3,463,137	3,463,763
3,463,083	3,462,849	3,463,966	3,463,961	3,463,169	3,463,816
3,463,118	3,462,874	3,463,982	3,463,970	3,463,197	3,463,843
3,463,146	3,462,879	3,464,011	3,463,980	3,463,205	3,463,885
3,463,311	3,462,884	3,464,014	3,463,992	3,463,215	3,463,938
3,463,353	3,462,896	3,464,036	3,463,996	3,463,240	3,463,941
3,463,412	3,462,912	3,464,003	3,464,003	3,463,288	3,463,975
3,463,436	3,462,988	35 : 3,463,717	3,464,006	3,463,310	3,464,019
3,463,437	3,463,014	36 : RE.26.650	3,464,009	3,463,327	3,464,022
3,463,440	3,463,098	3,462,778	3,464,010	3,463,329	3,464,030
3,463,504	3,463,117	3,462,783	3,464,034	3,463,375	3,464,058
3,463,524	3,463,176	3,462,792	3,464,037	3,463,377	49 : 3,463,152
3,463,608	3,463,177	3,462,798	37 : 3,462,779	3,463,403	3,463,255
3,463,656	3,463,191	3,462,803	3,462,794	3,463,413	3,463,502
3,463,668	3,463,429	3,462,809	3,463,198	3,463,418	3,463,581
3,463,740	3,463,494	3,462,834	38 : 3,462,767	3,463,466	3,463,719
3,463,767	3,463,586	3,462,840	39 : RE.26.651	3,463,475	3,463,729
3,463,805	3,463,593	3,462,842	3,462,776	3,463,482	3,463,793
3,463,811	3,463,600	3,462,876	3,462,780	3,463,501	50 : 3,463,028
3,463,842	3,463,712	3,462,889	3,462,795	3,463,550	51 : 3,462,793
3,463,851	3,463,749	3,462,891	3,462,986	3,463,602	3,462,848
3,463,862	3,463,794	3,462,897	3,463,044	3,463,604	3,462,901
3,463,872	3,463,933	3,462,899	3,463,087	3,463,623	3,462,904
3,463,922	3,463,987	3,462,909	3,463,123	3,463,626	3,462,990
3,464,017	3,463,998	3,462,915	3,463,145	3,463,627	3,463,073
28 : 3,462,847	3,462,919	3,462,919	3,463,238	3,463,647	3,463,114
3,462,802	3,463,162	3,462,970	3,463,254	3,463,647	3,463,244
29 : 3,463,188	3,462,971	3,462,971	3,463,279	3,463,648	3,463,362
3,462,864	3,463,348	3,463,000	3,463,280	3,463,650	3,463,376
3,462,913	3,463,351	3,463,004	3,463,315	3,463,695	3,463,456
3,462,918	3,463,505	3,463,006	3,463,345	3,463,696	3,463,598
3,462,982	3,463,554	3,463,023	3,463,354	3,463,736	3,463,652



XL

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

51 : 3,463,673	53 : 3,462,867	53 : 3,463,558	55 : 3,462,805	55 : 3,463,096	55 : 3,463,374
3,463,682	3,462,894	3,463,619	3,462,806	3,463,124	3,463,384
3,463,700	3,463,239	3,463,703	3,462,818	3,463,272	3,463,534
3,463,908	3,463,247	3,463,739	3,462,924	3,463,274	3,463,701
3,464,032	3,463,334	3,463,972	3,462,965	3,463,281	3,463,855
52 : 3,463,019	3,463,406	3,464,044	3,462,968	3,463,300	3,463,932
53 : R. 26,653	3,463,480	54 : 3,463,194	3,462,987	3,463,336	3,464,041
3,462,831	3,463,483	3,463,229	3,463,008	3,463,338	3,464,061
3,462,858	3,463,516	3,463,355	3,463,053	3,463,368	

Design Patents

6 : 215,053	24 : 215,068	26 : 215,055	26 : 215,065	36 : 215,048	40 : 215,075
215,070	25 : 215,058	215,061	215,066	215,054	41 : 215,052
215,072	215,059	215,062	29 : 215,051	215,056	47 : 215,050
215,073	215,071	215,063	34 : 215,057	37 : 215,067	55 : 215,049
215,074	26 : 215,046	215,064	35 : 215,076	39 : 215,060	



TRADEMARKS  
NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 133,143 (KITCHENAID), The Hobart Manufacturing Company, Electrically driven beating and mixing machines; Reg. No. 167,175, same, Brushes designed for household use, including brushes for washing dishes, glassware, bottles, percolators, and like utensils; Reg. No. 234,968, same, Oil droppers, food choppers, coffee mills and cereal grinders, fruit-juice extractors, and vegetable slicers; Reg. No. 235,307, same, Ice cream freezers; Reg. No. 549,810, same, Electric dishwashers; Reg. No. 610,242, same, Dishwashers and dishwasher sink, metal mixing bowls, bowl covers, pouring chutes, colanders and sieves, and parts therefor; Reg. No. 610,772, same, Aprons; Reg. No. 611,638, same, Buffing wheels and grinding and knife-sharpening wheels; Reg. No. 614,411, same, Glass culinary equipment—namely, bowls, mixing bowls, and containers for receiving ground coffee; Reg. No. 615,734, same, Graduated measures for ground coffee and devices for feeding fluids to foodstuffs at a controlled rate—namely, droppers for oils, fruit juices, flavoring extracts, and the like; Reg. No. 672,776, same, Serving scrapers with blades of rubber-like material; Reg. No. 841,987, same, Food waste disposers, filed Sept. 4, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68-1484-IH, *The Hobart Manufacturing Company v. Kitchen Maid Mfg., Inc.* Judgment enjoining defendants; plaintiff dismisses counterclaim, June 4, 1969.

Reg. No. 167,175. (See Reg. No. 133,143.)

Reg. No. 234,968. (See Reg. No. 133,143.)

Reg. No. 235,307. (See Reg. No. 133,143.)

Reg. No. 518,072 (COSCO), Hamilton Manufacturing Corporation, Stools—namely, bar stools, step stools, and bathroom stools; Reg. No. 542,790, same, Kitchen stools, posture-back chairs, highchairs, youth chairs, and metal utility tables; Reg. No. 544,369, same, Step ladders; Reg. No. 594,478, same, Office chairs, baby jumper chairs, and child's playing and feeding tables with seat attached; Reg. No. 623,481, same, Sofas, settees, chairs, ottomans, utility stools, kitchen chairs, ironer chairs, utility carts, tray-carts, drop-leaf tables and carts, tables embodying electrical outlets, collapsible card tables, and collapsible card table chairs; Reg. No. 703,536, same, Folding play pens for children; Reg. No. 705,489, same, Baby strollers; Reg. No. 722,569, same, Infants' cribs, filed Apr. 14, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69-704-IH, *Hamilton Cosco, Inc. v. Cosco Products, Inc.* Consent judgment, plaintiff owner of trademarks; defendant has infringed and is permanently enjoined; defendant's counterclaim dismissed, June 19, 1969.

Reg. No. 542,790. (See Reg. No. 518,072.)

Reg. No. 544,369. (See Reg. No. 518,072.)

Reg. No. 549,810. (See Reg. No. 133,143.)

Reg. No. 594,478. (See Reg. No. 518,072.)

Reg. No. 605,905 (BEER NUTS), Beer Nuts, Inc., Shelled and salted peanuts, filed Apr. 1, 1969, D.C., N.D. Ohio (Cleveland), Doc. C69-247, *Beer Nuts, Inc. v. King Nut Company.*

CONDITION OF TRADEMARK APPLICATIONS AS OF JUNE 30, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]----- 13,377  
Date of oldest new application----- August 7, 1968  
Date of oldest amended application (filing date)----- November 13, 1964

C. M. WENDT, Director, Trademark Examining Operation		Oldest Application	
TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION		New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B-----		1-29-60	11-13-64
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200-----		10-17-68	2-28-68
(III) F. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36-----		12-17-68	2-21-68
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107-----		8-7-68	11-27-64
Renewals (All Classes)-----		5-5-69	
Sec. 12(c) Publications (All Classes)-----		5-12-69	

Applications filed during the month of June 1969—2,872

Registrations Issued -----449—No. 875,413 to No. 875,861  
Renewals Issued -----120

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, \$20.50 per annum, foreign mailing \$5.75 additional; single copies, 40 cents each.  
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Reg. No. 610,242. (See Reg. No. 133,143.)  
 Reg. No. 610,772. (See Reg. No. 133,143.)  
 Reg. No. 611,638. (See Reg. No. 133,143.)  
 Reg. No. 614,411. (See Reg. No. 133,143.)  
 Reg. No. 615,734. (See Reg. No. 133,143.)  
 Reg. No. 623,481. (See Reg. No. 518,072.)

Reg. No. 652,217 (CRISTAL), Nueva Fabrica de Hielo, S.A., doing business as Cerveceria la Tropical, Beer and cereal malt beverages, filed May 15, 1969, D.C., S.D. Fla. (Miami), Doc. 69-588-C-CF, *Maltina Corp., and Julio Blanco-Herreara v. Cerveceria la Tropical, Inc.*

Reg. No. 672,776. (See Reg. No. 133,143.)

Reg. No. 699,119 (DUNCAN MACGREGOR), John Gross & Co., doing business as Duncan MacGregor & Co., Scotch whisky, filed June 16, 1969, D.C.N.J. (Newark), Doc. C-685-69, *John Gross & Co. v. Popper Morson Corp.*

Reg. No. 703,536. (See Reg. No. 518,072.)

Reg. No. 705,489. (See Reg. No. 578,072.)

Reg. No. 722,569. (See Reg. No. 518,072.)

Reg. No. 734,218 (LOEHMANN'S), Charles C. Loehmann Corporation, Dresses, coats, suits, sweaters, skirts, slacks, blouses, scarves, robes, bathing suits, and fur pieces, filed Apr. 22, 1969, D.C., S.D. Fla. (Miami), Doc. 69-483-C-CA, *Loehmann's, Inc. v. Lomans, Inc., Jeffrey P. Stern and Charles E. Fuentes*. Defendants permanently enjoined. Plaintiff is the owner of trademark "Loehmann's," June 10, 1969.

Reg. No. 805,344 (CIM), Armiger Louis Jagoe, doing business as Corporate Insurance Management, Insurance management services in the areas of public liability and workmen's compensation, physical damage, bonds, life insurance, pension planning, group insurance, safety engineering, and insurance auditing, filed June 23, 1969, D.C., Dist. of Col. (Washington), Doc. 1731-69, *Corporate Insurance Management v. CIM Insurance Corporation*.

Reg. No. 819,323 (HOT OR KOLD), Alex C. Gunter, Chocolate flavored soft drink, filed June 9, 1969, D.C., Dist. of Col. (Washington), Doc. C.A. 1534-69, *Alex C. Gunter v. Howard D. Johnson Company*.

Reg. No. 841,987. (See Reg. No. 133,143.)

## MARKS PUBLISHED FOR OPPOSITION

### SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105. A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 263,980. Eddie Bauer, Inc., Seattle, Wash., assignee of Eddie Bauer, Seattle, Wash. Filed Feb. 6, 1967.

### EDDIE BAUER

Owner of Reg. Nos. 403,693, 579,398, and 804,590.

**Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks**

For Gun-Carrying Cases, Duffel Bags, Pack Sacks and Hand Luggage, and Shell-Carrying cases (Int. Cl. 18).

**Class 22—Games, Toys, and Sporting Goods**

For Lifesaving Jackets, Duck and Goose Calls, Tents and Sleeping Bags (Int. Cls. 9, 20, 22, and 28).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Cutlery—Namely, Table Knives, Kitchen Knives, Pocket Knives, Axes, and Saws (Int. Cl. 8).

**Class 26—Measuring and Scientific Appliances**

For Binoculars and Compasses (Int. Cl. 9).

**Class 27—Horological Instruments**

For Watches (Int. Cl. 14).

**Class 32—Furniture and Upholstery**

For Mattresses, Cots, Feather Pillows, and Seat Sticks (Int. Cls. 18 and 20).

**Class 39—Clothing**

For Rainwear, Hats and Caps; Men's and Women's Jackets and Slacks, Belts, Underwear, Gloves, Socks, Boots, and Shoes of Leather and Rubber and Combinations Thereof, Slippers, Fur Coats and Parkas, Sweaters, and Buoyant Thermal Jackets (Int. Cl. 25).

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For Wool Blankets and Quilts (Int. Cl. 24).

First use about 1922.

SN 263,981. Eddie Bauer, Inc., Seattle, Wash., assignee of Eddie Bauer, Seattle, Wash. Filed Feb. 6, 1967.

*Eddie Bauer*

Owner of Reg. Nos. 403,693, 579,398, and 804,590.

**Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks**

For Gun-Carrying Cases, Duffel Bags, Pack Sacks and Hand Luggage, and Shell-Carrying cases (Int. Cl. 18).

**Class 22—Games, Toys, and Sporting Goods**

For Lifesaving Jackets, Duck and Goose Calls, Tents and Sleeping Bags (Int. Cls. 9, 20, 22, and 28).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Cutlery—Namely, Table Knives, Kitchen Knives, Pocket Knives, Axes, and Saws (Int. Cl. 8).

**Class 26—Measuring and Scientific Appliances**

For Binoculars and Compasses (Int. Cl. 9).

**Class 27—Horological Instruments**

For Watches (Int. Cl. 14).

**Class 32—Furniture and Upholstery**

For Mattresses, Cots, Feather Pillows, and Seat Sticks (Int. Cls. 18 and 20).

**Class 39—Clothing**

For Rainwear, Hats and Caps; Men's and Women's Jackets and Slacks, Belts, Underwear, Gloves, Socks, Boots, and Shoes of Leather and Rubber and Combinations Thereof, Slippers, Fur Coats and Parkas, Sweaters, and Buoyant Thermal Jackets (Int. Cl. 25).

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For Wool Blankets and Quilts (Int. Cl. 24).

First use about 1922.

SN 266,177. Steuben Association of the Police Department of the City of New York, Inc., Brooklyn, N.Y. Filed Mar. 7, 1967.



**Class 100—Miscellaneous**

For Association Services—Namely, Promoting the Interest of Metropolitan Police Officers and Their Families, the Administration of Social and Fraternal Activities, and the Maintenance of High Standards of Police Work Through the Granting of Awards and Citations to Various Police Officers and Organizations Throughout the Country (Int. Cl. 42).

**Class 200**

For Indicating Membership in Applicant.

First use at least as early as June 1964.

SN 274,449. Nelson Sales Company, Kansas City, Mo. Filed June 21, 1967.

**NESCO**



**Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks**

For Camping and Hiking Packs, Knapsacks, and Pack Frames (Int. Cl. 18).

**Class 9—Explosives, Firearms, Equipments, and Projectiles**

For Gun Racks, Recoil Pads, Cartridge and Shell Belts, Rifle Slings, and Pistol Belts (Int. Cl. 13).

**Class 22—Games, Toys, and Sporting Goods**

For Table Tennis, Badminton and Croquet Sets, Tennis Rackets, Tennis Racket Covers, Baseball Gloves and Mitts, Baseballs, Baseball Shoes, Bowling Balls, Golf Balls, Indoor Putting Devices, Golf Gloves, Fishing Bait Boxes, Fish Stringers, Trout Lines, Fishing Rod Holders, Fish Hooks, Fishing Reels, Lures, Fishing Rods, Creels, Crash Helmets, Game Bags, Brass Whistles, Clay Target Thrower, Air Mattresses, and Badminton Shuttle Cocks (Int. Cl. 28).

First use on or about June 1, 1965.

SN 275,979. Industrial Reproductions, Inc., Nashua, N.H. Filed July 14, 1967.

**IRI****Class 26—Measuring and Scientific Appliances**

For Photographic Printing Screens (Int. Cl. 9).

**Class 100—Miscellaneous**

For Photographic Reproduction Services (Int. Cl. 42).

First use September 1963.

SN 278,022. Mercantile Trust Company National Association, St. Louis, Mo. Filed Aug. 10, 1967.

**NICCI****Class 101—Advertising and Business**

For Credit Checking Services (Int. Cl. 36).  
First use July 13, 1967.

**Class 102—Insurance and Financial**

For Check Cashing Services (Int. Cl. 36).  
First use Nov. 15, 1966.

SN 279,046. Bauglindustrie A.G., Smeltz, Saar, Germany. Filed Aug. 25, 1967.

**REGLIT**

Priority claimed under Sec. 44(d) on German application filed on Feb. 27, 1967; Reg. No. 834,741, dated July 5, 1967.

**Class 12—Construction Materials**

For Finished Construction Parts—Namely, Blocks, Sheets and Plates for the Production of Glass Walls (Int. Cl. 19).

**Class 33—Glassware**

For Glass for Windows (Int. Cl. 19).

SN 289,741. Clairol Incorporated, New York, N.Y. Filed Jan. 29, 1968.

**THE QUIET RINSE**

Applicant disclaims "Rinse" apart from the mark as shown. Owner of Reg. Nos. 791,227 and 862,491.

**Class 51—Cosmetics and Toilet Preparations**

For Hair Color Rinse, Liquid Hair Conditioner, and Hair Lightener (Int. Cl. 3).

**Class 52—Detergents and Soaps**

For Hair Shampoo (Int. Cl. 3).

First use Dec. 6, 1967.

SN 290,852. H. J. Heinz Company, Pittsburgh, Pa. Filed Feb. 12, 1968.



Owner of Reg. No. 831,551.

**Class 45—Soft Drinks and Carbonated Waters**

For Mixture for a Non-Carbonated Soft Drink (Int. Cl. 32).  
First use Feb. 9, 1968.

**Class 46—Foods and Ingredients of Foods**

For Canned Beans, Chili Sauce, Omelet Mixes, Pudding Dessert Powder for Chocolate Pudding, Mustard, Olives, Ham Spreads, Mushroom Sauce, Caramel Corn, Pancake Syrup, Rice, Fruit Preserves, Mushrooms, Spaghetti Sauce, Ketchup, Tomato Juice, Lemon Flavored Pudding Pie Filling, Barbecue Sauce, Pickle Relish, Beef Stew, Pickles, Vinegar, Salad Dressing, Canned Creamed Peas, Frozen Chicken Dinners, Flavored Syrup Ice Cream Toppings (Int. Cls. 29, 30, 31, and 32).  
First use May 18, 1967.

SN 294,199. Kamplex A/S, Assens, Denmark. Filed Mar. 26, 1968.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Amplifiers, Pre-Amplifiers, Power Supply Units, Headsets, Earphones, Microphones and Stands Therefor, and Couplers, Cables, Plugs, Tapeheads, Loudspeakers, Earphones and Transposers Used in Speech and Hearing Measuring and Teaching Units (Int. Cl. 9).

**Class 26—Measuring and Scientific Appliances**

For Speech and Hearing Measuring and Teaching Units Comprising: Audiometers, Visual Display Units for Optical Illustration of Voice Patterns, Artificial Ears and Artificial Mastoids, Speech Reproducing Devices, and Sound Level Meters (Int. Cl. 9).

**Class 44—Dental, Medical, and Surgical Appliances**

For Diagnostic and Clinical Audiometers for Diagnosing and Measuring Hearing Defects and for Visually Illustrating Hearing and Speech Patterns, Bone Conductors, Artificial Mastoids and Artificial Ears, Skin Resistance Devices Used as Diagnostic Aids to Ascertain Hearing Response of the Mute and Infants, Acoustic Impedance Devices for Ascertaining Reflex of the Middle Ear to Sound, Pneumometers Used in the Diagnosis of Hearing Defects by Changing and Measuring the Pressure of the Ear Channel (Int. Cl. 10).

First use at least as early as September 1964; in commerce at least as early as Sept. 9, 1964.

SN 294,867. Spaulding Company, Inc., Natick, Mass. Filed Apr. 3, 1968. SN 300,566. Jack Gasnick, d.b.a. Cross at the Green Enterprises, New York, N.Y. Filed June 17, 1968.



Owner of Reg. Nos. 791,196, 802,483, and 868,307.

**Class 100—Miscellaneous**

For Commercial Art Work (Int. Cl. 42).

**Class 101—Advertising and Business**

For Plate Making, Office Copying, Diazo Printing, Offset Printing, Reproducing Tracings, Drawings, and Other Documents on Film, Cloth and Paper, Composition and Copy Preparation (Int. Cl. 35).

**Class 103—Construction and Repair**

For Servicing and Repairing of White Print Machines, Office Copy Machines, Collating Equipment and Engineering Drafting Equipment (Int. Cl. 37).

First use November 1961.

SN 294,986. Leon J. Wirth, d.b.a. Wirth Co. Inc., Oakland, Calif. Filed Apr. 4, 1968.

**Class 6—Chemicals and Chemical Compositions**

For Correction Fluid and Fingertip Moistener (Int. Cl. 16).

**Class 37—Paper and Stationery**

For Correction Paper (Int. Cl. 16).

First use Jan. 2, 1963.

SN 299,717. Oy Suomen Vanutehdas-Finnwad Ltd., Helsinki, Finland. Filed June 5, 1968.



Owner of Finnish Reg. No. 46,467, dated Mar. 21, 1966.

**Class 39—Clothing**

For Disposable Articles of Clothing—Namely, Caps, Frocks, Gowns, Capes, Aprons, and Overalls, for Use by Hospitals, Doctors, Beauty Salons, and Bakeries (Int. Cl. 25).

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For Non-Woven Fabric Sheets, Pillow Cases, Table Linens, Napkins, and Covering Sheets for Use in Railway, Aeroplane and Bus Seatbacks as Protective Covering (Int. Cl. 24).

**THE LOOK IS YOU****Class 26—Measuring and Scientific Appliances**

For All-Purpose Goggles (Int. Cl. 9).

**Class 39—Clothing**

For Hats, Overalls, and Coveralls, Dress Belts and Helmets (Int. Cls. 9 and 25).

First use Mar. 25, 1960.

SN 301,330. Blendax-Werke R. Schneider & Co., Mainz, Germany. Filed June 25, 1968.

**KAMILL****Class 51—Cosmetics and Toilet Preparations**

For Preparations for Body and Beauty Treatments—Namely, Hand and Skin Creams and Body Lotions (Int. Cl. 3).

**Class 52—Detergents and Soaps**

For Toilet Soaps (Int. Cl. 3).

First use in 1959; in commerce in 1959.

SN 301,802. Triangle Conduit & Cable Co. Inc., New Brunswick, N.J. Filed July 2, 1968.



Owner of Reg. Nos. 546,283, 618,867, and others.

**Class 11—Inks and Inking Materials**

For Marking Inks (Int. Cl. 16).  
First use on or before Sept. 14, 1967.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Copper Tubing, Valves, Automotive and General Service Tubing, Threaded Pipe, Refrigeration Tubing, Fittings, Plastic Pipe and Tubing, Plastic Pipe Fittings, Commercial Tubing, Submersible Pump Cable; Preinsulated Pipe and Fittings (Int. Cls. 6 and 17).

First use on or before Aug. 21, 1967.

**Class 14—Metals and Metal Castings and Forgings**

For Alloy Wire and Rods; Copper, Bronze and Brass Wire and Rods (Int. Cl. 6).

First use on or before Apr. 10, 1968.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Electric Wire of All Types, Including Thermoplastic and Thermosetting; Insulated Building Wire, Non-Metallic Sheathed Cable, Feeder Cable, Service Entrance Cable, Thermoplastic and Thermosetting Insulated Power Cable, Interlocked Armor Cable, Cableduct, Varnished Cambric Cable, Control Cable, Asbestos Insulated Power Cable, Armor Cable, Galvanized Steel Strip, Rigid and Flexible Steel Conduit, Steel and Plastic Conduit Fittings, Ducts and Special Purpose Cable (Int. Cls. 9 and 17).

First use on or before Aug. 1, 1967.



SN 302,854. Maruwa Denshi Kagaku Kabushiki Kaisha, d.b.a. Maruwa Electronic and Chemical Co., Ltd., Higashi-ku, Nagoya-shi, Aichi-ken, Japan. Filed July 16, 1968.



### Class 21—Electrical Apparatus, Machines, and Supplies

For Video Tape Recorders, Microphones, Speakers, and Parts Thereof, and Amplifiers (Int. Cl. 9).

### Class 36—Musical Instruments and Supplies

For Tape Recorders of the Cartridge and Spool Types and Magnetic Tape Players, and Parts Thereof; Pre-recorded and Non-Pre-recorded Magnetic Tape for Use With Tape Recorders of All Types (Int. Cl. 9).

First use February 1966; in commerce March 1966.

SN 303,865. The Ironees Company, Philadelphia, Pa. Filed July 30, 1968.

**IRONEES**

Owner of Reg. Nos. 554,252, 828,799, and others.

### Class 21—Electrical Apparatus, Machines, and Supplies

For Iron Cord Holder With Extension Cord (Int. Cl. 9).  
First use Aug. 6, 1968.

### Class 24—Laundry Appliances and Machines

For Ironing Board Holder, Sprinkler Heads, Trouser Creaser-Dryer, Indoor Dryer, Home/Travel Ironing Board, Sweater Dryer, Iron Rest, Laundry Sprayer, and Ironing Board Pads and Covers (Int. Cl. 21).  
First use Nov. 27, 1950.

SN 304,223. Houstonaire, Inc., Houston, Tex. Filed Aug. 2, 1968.



### Class 100—Miscellaneous

For Restaurant, Hotel, and Private Club Cocktail Lounge Services (Int. Cl. 42).

### Class 107—Education and Entertainment

For Variety Show Entertainment and Dancing Services (Int. Cl. 41).

First use Jan. 27, 1965.

SN 305,147. Lowndes Products, Inc. (Delaware corporation), Philadelphia, Pa., assignee of Lowndes Products, Inc. (South Carolina corporation), Philadelphia, Pa. Filed Aug. 14, 1968.

**LOWNDINETTE**

Owner of Reg. No. 729,791.

### Class 37—Paper and Stationery

For Paper and Fabric-Like Paper for Making Into Dresses, Blouses, Pants, Shirts, Operating Gowns, Sheets, Tablecloths, and the Like (Int. Cl. 16).

### Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Textile Fabrics for Making Into Dresses, Blouses, Pants, Shirts, Operating Gowns, Sheets, Tablecloths, and the Like (Int. Cl. 24).

First use May 1, 1968.

SN 306,606. The Mead Corporation, Dayton, Ohio. Filed Sept. 5, 1968.

**NR 660**

### Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Core Caps (Int. Cl. 6).  
First use Feb. 1, 1968.

### Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Core Capping Machines (Int. Cl. 7).  
First use Feb. 28, 1968.

### Class 37—Paper and Stationery

For Fiber Cores (Int. Cl. 16).  
First use Mar. 7, 1968.

SN 311,639. Ultramatic Equipment Co., Addison, Ill. Filed Nov. 8, 1968.

**UltraMATIC**

Owner of Reg. No. 861,942.

### Class 4—Abrasives and Polishing Materials

For Finishing Media for Use in Rotary Finishing Machines and in Vibratory Finishing Machines and the Like (Int. Cl. 3).  
First use February 1966.

### Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Rotary Finishing Machines for Finishing Ferrous and Non-Ferrous Metal Castings, Extrusions, and Stampings, Other Metal Parts, Glassware, Ceramic Ware, Plastic Ware, Leather Ware, and the Like (Int. Cl. 7).  
First use January 1968.

SN 312,369. Miles Laboratories, Inc., Elkhart, Ind. Filed Nov. 18, 1968.



Owner of Reg. Nos. 390,138 and 426,333.

### Class 6—Chemicals and Chemical Compositions

For Reagent Strips for Analysis of Blood and Urine; and Citric Acid (Int. Cl. 1).  
First use at least as early as May 31, 1968.

### Class 18—Medicines and Pharmaceutical Preparations

For Pharmaceutical Preparations—Namely, Analgesics, Calmatives, Antiseptic and Dermatological Preparations, and Vitamin Preparations (Int. Cl. 5).  
First use at least as early as Feb. 20, 1968.

SN 312,537. Glanzstoff AG, Wuppertal-Elberfeld, Germany. Filed Nov. 19, 1968.

**DIOLEN** *Star* QUALITY   
WITH THE BLACK ROSE

No claim is made to the exclusive right to use the word "Quality" apart from the mark. Owner of German Reg. No. 829,394, dated Feb. 2, 1967; and U.S. Reg. Nos. 816,427 and 821,168.

### Class 1—Raw or Partly Prepared Materials

For Fibers, Including Synthetic Spun Fibers (Int. Cl. 22).

### Class 39—Clothing

For Dresses, Shirts, Jackets, Coats, Suits, Trousers, Pull-overs, Blouses, Underwear, Stockings, and Neckties (Int. Cl. 25).

### Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Table and Bed Linens (Int. Cl. 24).

### Class 43—Thread and Yarn

For Artificial Threads (Int. Cl. 23).

SN 314,127. Lemppo Industries, Inc., Cleveland, Ohio. Filed Dec. 11, 1968.



Owner of Reg. No. 860,026.

### Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Replacement Parts for Automotive Vehicles—Namely, Cushion-Type Mounting Pads for Automatic Transmissions; Clutch Plates for Automatic Transmissions (Int. Cl. 12).  
First use June 13, 1968.

### Class 31—Filters and Refrigerators

For Oil Filters for Automatic Transmissions (Int. Cl. 12).  
First use Oct. 20, 1967.

### Class 35—Belted, Hose, Machinery Packing, and Non-metallic Tires

For Sealing Rings, Gaskets, and Diaphragm-Type Modulators for Automatic Transmissions (Int. Cl. 12).  
First use July 24, 1967.

## SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

### Class 1—Raw or Partly Prepared Materials

SN 269,580. Stull Brothers, Incorporated, Seabee, Ky. Filed Apr. 19, 1967.



Representation of the ears of corn is disclaimed apart from the mark. Representation of the man is fanciful.  
For Hybrid Seed Corn (Int. Cl. 31).  
First use Mar. 1, 1946.

SN 316,042. Olson Electronics, Inc., Akron, Ohio. Filed Jan. 8, 1969.



Owner of Reg. Nos. 755,897 and 844,915.

### Class 21—Electrical Apparatus, Machines, and Supplies

For Amplifiers, Audio Cables, Audio Head Demagnetizers, Audio Mixers, Audio Transformers, Automobile Radios, Automobile Headlight Dimmers, Batteries, Battery Chargers, Beacon Flasher Bulbs, Binding Post Kits, Bottle Lights, Bus Wire, Capacitors, Car Map Lights, Chassis Sockets, Citizen Band Antennas, Citizen Band Transceivers, Citizen Band Walkie Talkies, Condensers, Contact Plugs and Sockets, Coaxial Wire, Electrical Connectors, Electrical Tape, Electronic Kits, Electronic Modules, Earphones, Flash Bulbs, Fluorescent Starters, Fuse Holders, Grille Cloth, Ground Wire, Headphone Adaptors, Hi-Fi Jumper Cables, Intercom Systems, Insulators, Immersion Heaters, Jumper Cables, Knobs, Knob Kits, Lantern Bulbs, Loopsticks, Lug Terminals, Magnet Wires, Microphones, Microphone Cable Wire, Microphone Cartridges, Microphone Connectors, Microphone Stands, Microphone Wire, Motors, Multimeters, Neon Panel Lamps, PA Amplifiers, Phonograph Arms, Phonograph Plugs and Jacks, Photo-Electric Light Switches, Plug Adaptors, Power Mega-phones, Power Transformers, Pre-Amplifiers, Radios, Radio Intercoms, Radio Headphones, Radio Tuners, Rectifiers, Receivers, RF Signal Generators, Resistors, Signal Injectors, Solderless Test Lead Kits, Speakers, Speaker Cable, Speaker Selectors, Speaker Switches, Speaker Systems, Speaker Wall Jacks, Speaker Wire, Stereo Cartridges, Stereo Headphones, Stereo L Pads, Stereo Remote Controls, Switches, Tape Erasers, Telegraph Keys, Telephone Pickups, Television Antennas, Television Antenna Kits, Television Tuners, Television Cameras, Television Camera Lens, Television Monitors, Test Lead Kits, Transformers, Transistors, Transistor Ignition Systems, Transistor Sockets, Travel Flat Irons, Tubes, Tube Kits, Tube Shield Kits, Vacuum Brushes, and Voltage Regulators (Int. Cls. 7, 9, 11, and 17).

### Class 26—Measuring and Scientific Appliances

For Automobile Compasses, Capacitance Analyzers, Citizen Band Field Strength Meters, Marine Compasses, Needle Microscopes, Panel Meters, Slide Rules, Transistor Testors, and Vacuum Tube Volt-Meters (Int. Cl. 9).

### Class 36—Musical Instruments and Supplies

For Phonograph Needles, Recording Tape, Tape Recorders, Tape Recorder Heads and Tape Splicers (Int. Cl. 9).  
First use Feb. 1, 1959.

**GOLD MEDALLION**

For Rose Bushes (Int. Cl. 31).  
First use Sept. 1, 1963.

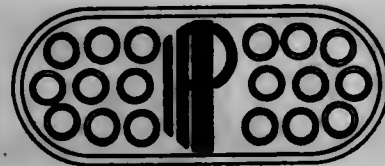
SN 289,121. Rexall Drug and Chemical Company, d.b.a. Fiberfil, Los Angeles, Calif. Filed Jan. 18, 1968.

**OLECON**

Owner of Reg. Nos. 851,672, 866,682, and others.  
For Resin Coated and Impregnated Glass Fibers (Int. Cl. 22).  
First use Dec. 29, 1967.



SN 292,103. Isocyanate Products, Inc., New Castle, Del. Filed Feb. 28, 1968.



The monogram which forms a part of the mark is comprised of the letters "IPI."  
For Polyurethane Resins (Int. Cl. 1).  
First use on or about Feb. 15, 1968.

SN 292,229. R. T. Vanderbilt Company, Inc., New York, N.Y. Filed Feb. 29, 1968.

## PAR

Owner of Reg. No. 437,791.  
For Clay Used as a Filler in the Manufacture of Paper, Paint, and Rubber Products (Int. Cl. 1).  
First use June 8, 1954.

SN 298,303. American Colloid Company, Skokie, Ill. Filed May 16, 1968.

## PANTHER CREEK

Owner of Reg. No. 578,532.  
For Clays, Particularly Bentonite (Int. Cl. 1).  
First use Aug. 1, 1939.

SN 299,348. Halle-Dean Seed Company, Inc., Orlando, Fla. Filed May 29, 1968.

## Lawn Pride

No claim is made to the term "Lawn" apart from the mark as shown.  
For Grass Seeds (Int. Cl. 31).  
First use Aug. 1, 1966.

SN 305,574. Sweetheart Plastics, Inc., Wilmington, Mass. Filed Aug. 20, 1968.

## PORSILENE

For Plastic Material Used in the Manufacture of Disposable Plastic Cups, Plates, Bowls, and Cutlery (Int. Cl. 17).  
First use Aug. 1, 1968.

SN 309,976. Lowe's Inc., Cassopolis, Mich. Filed Oct. 18, 1968.

## TIDY

For Sanitary Cat Box Filler (Int. Cl. 31).  
First use Apr. 1, 1953.

SN 310,072. Dermatan Leather Company, Inc., Newark, N.J. Filed Oct. 21, 1968.

**TIMBER-TANNED**  
by **DERMATAN**

For Processed Hides (Int. Cl. 18).  
First use May 23, 1968.

SN 310,353. Nichols & Company, Inc., Boston, Mass. Filed Oct. 23, 1968.

## BULKSPIN

For Wool Top (Int. Cl. 22).  
First use Aug. 9, 1968.

SN 321,792. General Electric Company, Schenectady, N.Y. Filed Mar. 14, 1969.



Owner of Reg. Nos. 366,727, 824,265, and others.  
For Synthetic Plastics in the Form of Powder, Liquid, Rods, Sheets, Tubing and Extruded Sections for General Use in the Industrial Arts; Synthetic Resins; Synthetic Rubber and Silicone Gum in the Form of Raw Material; Moulding Compounds; Manufactured Diamonds; Fused Quartz in Various Shapes Such as Discs, Ingots, Rods and Tubes for General Use in the Industrial Arts; Potting Compounds; Ceramic, Metallic and Vitreous Materials for General Use in the Industrial Arts (Int. Cls. 1, 14, 17, and 19).  
First use at least as early as 1932.

## Class 2—Receptacles

SN 314,526. Capitol Ideas, Inc., Manitowoc, Wis. Filed Dec. 16, 1968.



For Plastic Drinking Mug (Int. Cl. 21).  
First use July 1968.

SN 316,302. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Jan. 10, 1969.

## CHALLENGER

For Stainless Steel Beverage Dispensing Containers (Int. Cl. 6).  
First use Nov. 5, 1968.

## Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 311,534. Travel Products, Inc., West Pittsburg, Pa. Filed Nov. 6, 1968.

## EUROPA

For Suitcases, Valises, and Travelling Bags (Int. Cl. 18).  
First use Aug. 8, 1968.

## Class 4—Abrasives and Polishing Materials

SN 316,633. F.A.M. Corporation, Atlanta, Ga. Filed Jan. 15, 1968.

## RAPID SHINE

For Aerosol Liquid Compound Dressing for Polishing and Protecting Leather (Int. Cl. 3).  
First use on or about Feb. 2, 1966.

## Class 5—Adhesives

SN 319,185. Owens-Corning Fiberglas Corporation, Toledo, Ohio. Filed Feb. 14, 1969.

## PERMSTOP

For Cement for Asphalt Coated Sheets (Int. Cl. 1).  
First use May 2, 1967.

SN 319,894. Hudson Pulp & Paper Corp., New York, N.Y. Filed Feb. 24, 1969.

## ORANGE CORE

Owner of Reg. No. 508,607.  
For Gummed Tape (Int. Cl. 16).  
First use 1927.

## Class 6—Chemicals and Chemical Compositions

SN 273,398. Hitachi Chemical Company, Ltd., Chiyoda-ku, Tokyo, Japan. Filed June 8, 1967.

## CYDECANOL

Priority claimed under Sec. 44(d) on Japanese application filed Apr. 14, 1967; Reg. No. 807,842, dated Feb. 10, 1969.  
For Hydroxy Cyclopentadiene (Int. Cl. 1).

SN 277,074. Silco Incorporated, New York, N.Y. Filed July 28, 1967.



The word "Enginkool" is disclaimed apart from the mark as shown without relinquishment of any common law rights in the same. Owner of Reg. Nos. 315,634, 802,118, and others.  
For Preparation To Be Added to Automobile Radiators To Prevent Overheating and Rust and Corrosion (Int. Cl. 1).  
First use June 19, 1967.

SN 281,124. Schering Aktiengesellschaft, Berlin Germany. Filed Jan. 15, 1969.

## CARZOL

For Acaricides (Int. Cl. 5).  
First use Feb. 23, 1967; in commerce Feb. 23, 1967.

SN 282,146. Technicon Corporation, Ardsley, N.Y. Filed Oct. 19, 1967.



Owner of Reg. Nos. 671,686, 684,765, and 798,790.  
For Reagents for Use in the Analysis of Various Fluids (Int. Cl. 1).  
First use July 17, 1967.

SN 286,002. Crown Chemical Corporation, Providence, R.I. Filed Dec. 1, 1967.

## KROMYL

For Chemical Composition of a Chromium Organic Complex Used as a Water Repellent for Textile Fabrics, Leather, and Glass (Int. Cl. 1).  
First use Sept. 29, 1964.

SN 296,020. Harbor Chemical & Engineering Corporation, Chicago, Ill. Filed Apr. 19, 1968.

## C.T. 86

For Chemical Compositions for Clarifying Cooling Water (Int. Cl. 1).  
First use Aug. 6, 1964.

SN 298,659. W. C. Copeland, Jr., Madison, Fla. Filed May 16, 1968.



For Liquefied Petroleum Gas (Int. Cl. 4).  
First use Apr. 1, 1968.

SN 301,214. Enzyme Development Corporation, New York, N.Y. Filed June 24, 1968.

## ADJUZYME

For Enzyme Preparation for Use in the Brewing of Beer (Int. Cl. 1).  
First use June 10, 1968.

SN 301,634. Metalphoto Corporation, Cleveland, Ohio. Filed June 28, 1968.

## INSTACOLOR

For Chemical Preparation for Coloring Photosensitive Anodized Aluminum (Int. Cl. 2).  
First use Apr. 5, 1967.

SN 304,099. Lester Laboratories, Inc., Atlanta, Ga. Filed Aug. 1, 1968.

## HYDROFENE

For Chemical for Preventing Scale and Corrosion in Recirculating Evaporative Cooling Tower Systems (Int. Cl. 1).  
First use Jan. 28, 1966.



SN 307,571. W. R. Grace & Co., New York, N.Y. Filed Sept. 17, 1968.

**VESTA-FOAM**

Owner of Reg. Nos. 721,707, 831,980, and 836,517.  
For Biodegradable Foam Additive for Use With Detergents (Int. Cl. 1).  
First use Dec. 18, 1967.

SN 308,104. Gomei Kaisha Kokando, Fukushima-ku, Osaka, Japan. Filed Sept. 24, 1968.

**RAN-GETSU**

The mark "Ran-Getsu" in English means "orchid moon."  
For Incense (Int. Cl. 3).  
First use in May 1925; in commerce in or about April 1948.

SN 308,105. Gomei Kaisha Kokando, Fukushima-ku, Osaka, Japan. Filed Sept. 24, 1968.

蘭

月

The translation of the Japanese characters are the Japanese words "Ran-Getsu" which in English mean "orchid moon."  
For Incense (Int. Cl. 3).  
First use in May 1925; in commerce in or about April 1948.

SN 308,789. Walter Kidde & Company, Inc., Belleville, N.J. Filed Oct. 3, 1968.

**CRYOCEPS**

For Cryogenic Gas, Sold in Cartridge Form, for Use With Cryosurgical Instruments (Int. Cl. 1).  
First use on or about Mar. 22, 1968.

**Class 7—Cordage**

SN 318,731. American Cotton Yarns, Inc., Chicago, Ill. Filed Feb. 10, 1969.

**MERIT**

For Braided Cord (Int. Cl. 22).  
First use in 1954.

SN 318,733. American Cotton Yarns, Inc., Chicago, Ill. Filed Feb. 10, 1969.

**SAXON**

For Braided Cord (Int. Cl. 22).  
First use in 1954.

SN 318,734. American Cotton Yarns, Inc., Chicago, Ill. Filed Feb. 10, 1969.

**SEA ISLE**

For Braided Cord (Int. Cl. 22).  
First use in 1954.

**Class 9—Explosives, Firearms, Equipments, and Projectiles**

SN 246,931. Oceanic Properties, Inc., Honolulu, Hawaii. Filed May 31, 1966.

**The Sea Ranch**

For Matches (Int. Cl. 34).  
First use April 1965.

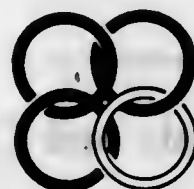
**Class 12—Construction Materials**

SN 306,784. R. L. Kuss & Co., Inc., Findlay, Ohio. Filed Sept. 6, 1968.

**K-90**

For Inflatable Swimming Pool Covers (Int. Cl. 22).  
First use Aug. 19, 1968.

SN 312,714. Wilson Research Corp., Erie, Pa. Filed Nov. 20, 1968.



For Light Transmitting and Diffusing Panels for Luminous Ceilings and Lighting Fixture Components (Int. Cls. 11 and 19).  
First use Oct. 14, 1968.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

SN 288,292. Dryad Metal Works Limited, Leicester, England. Filed Jan. 8, 1968.

**DRYAD**

Owner of British Reg. No. 338,465, dated Dec. 11, 1911.  
For Builders' Hardware (Int. Cl. 6).  
First use 1911; in commerce November 1958.

SN 291,787. Superior Concrete Accessories, Inc., Franklin Park, Ill. Filed Feb. 23, 1968.

**Twist-Up**

For Assemblies for Use in Concrete Construction and of the Type That Comprises an Anchor Insert for Embedment in a Tilt-Up Type Concrete Slab, and a Cooperating Pick-Up Unit Adapted Releasably To Connect the Insert to a Crane for Slab Hoisting and Tilting Purposes (Int. Cl. 6).  
First use Feb. 9, 1968.

SN 296,158. The Hobart Manufacturing Company, Troy, Ohio. Filed Apr. 22, 1968.

**AQUATRONIC**

For Electronic Water Control System for Plumbing Equipment (Int. Cl. 11).  
First use on or about July 1, 1965.

SN 297,067. Keely, Gardner, Swasey, Inc., Miami, Fla. Filed May 1, 1968.



For Marine Hardware (Int. Cl. 6).  
First use on or about July 1, 1966.

SN 305,138. Irrigation Motor & Pump Co., Longmont, Colo. Filed Aug. 14, 1968.

**ROTO SQUIRT**

For Crop Irrigation Systems (Int. Cl. 11).  
First use June 1, 1967.

SN 305,753. Novo Industrial Corporation, New York, N.Y. Filed Aug. 22, 1968.

**NOVO**

For Hinges for Electric or Gas Ranges (Int. Cl. 6).  
First use June 27, 1968.

SN 305,856. RCV Corporation, d.b.a. Valcon, El Monte, Calif. Filed Aug. 23, 1968.

**VALCON**

For Irrigation Valves, Irrigation Sprinkler Heads and Irrigation-System Controls and Accessories (Int. Cls. 6 and 11).  
First use at least as early as July 22, 1968.

SN 311,052. Murdock Webbing Company, Inc., Central Falls, R.I. Filed Oct. 31, 1968.

**WOVACON**

For Woven Fabric of Insulated Wires (Int. Cl. 6).  
First use Mar. 1, 1968.

SN 311,118. Die Mesh Corporation, Pelham, N.Y. Filed Nov. 1, 1968.

**WINTER GRIP**

For Expanded Aluminum Mat Employed as a Useful Adjunct Enabling Vehicles To Achieve Better Traction Under Adverse Weather Conditions (Int. Cl. 6).  
First use Sept. 2, 1968.



Owner of Spanish Reg. No. 72,673, dated May 9, 1950.  
For Pipe Nozzles, Cocks, Valves and Fittings for Fluid Elevation and Fluid Piping (Int. Cl. 6).

**Class 14—Metals and Metal Castings and Forgings**

SN 303,259. Union Siderurgique du Nord et de l'Est de la France "Usinor," Paris, France. Filed July 10, 1968.

**USINOR**

For Iron and Steel Products—Namely, Hot and Cold Rolled Steels in Plate, Sheet and Coil Form, Galvanized Sheets, Wire Rod, Special Steels in Unfinished Shapes, Rods, Bars, Angle Irons, and Castings (Int. Cl. 6).  
First use at least as early as 1951; in commerce at least as early as 1951.

SN 304,016. Republic Steel Corporation, Cleveland, Ohio. Filed July 31, 1968.

**CENTURY SERIES**

Without prejudice to its common law rights, applicant disclaims the word "Series" apart from the mark as shown.  
For Cold Finished Steel Bars (Int. Cl. 6).  
First use Oct. 13, 1959.

SN 310,729. American Home Products Corporation, New York, N.Y. Filed Oct. 29, 1968.

**EKCO WRAP**

Applicant disclaims the term "Wrap" apart from the mark as shown. Owner of Reg. Nos. 109,742, 761,296, and others.  
For Metallic Foil Wrapping (Int. Cl. 6).  
First use June 15, 1967.

**Class 15—Oils and Greases**

SN 301,096. Standard Oil Company, Flemington, N.J. Filed June 21, 1968.

**LECTOR**

For Industrial Oils and Greases (Int. Cl. 4).  
First use May 17, 1968.



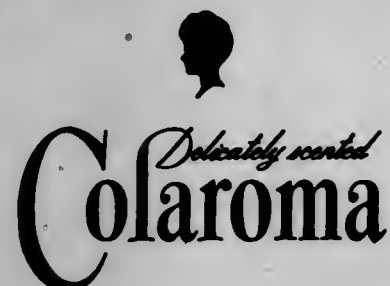
**Class 16—Protective and Decorative Coatings**

SN 274,559. Tuff-Kote, Inc., Warren, Mich. Filed June 22, 1967.



The word "Protected" is disclaimed apart from the mark as shown. Owner of Reg. No. 711,100.  
For Corrosion Resistant and Protective Coating Material for Undercoating Vehicles To Prevent Rust, and Other Uses (Int. Cl. 2).  
First use on or about Apr. 1, 1967.

SN 289,714. Precision Paint Corporation, Atlanta, Ga. Filed Jan. 26, 1968.



The words "Delicately Scented" are disclaimed apart from the mark as shown.  
For Interior Latex Paints (Int. Cl. 2).  
First use Nov. 17, 1967.

SN 298,816. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed May 22, 1968.



Owner of Reg. Nos. 199,516, 833,206, and others.  
For Abrasion Resistant Plastic Coating Composition for Use in the Industrial Arts (Int. Cl. 2).  
First use Apr. 17, 1968.

SN 306,590. Pratt & Lambert-Inc., Erie, N.Y. Filed Sept. 4, 1968.

**VITRALON**

For Enamels, Primers and Texture Coatings for Metal Surfaces and Coatings and Linings for Metal Containers (Int. Cl. 2).  
First use July 26, 1968.

SN 309,466. Morchaj Brochsztejn, d.b.a. Michel Brochetain, Paris, France. Filed Oct. 11, 1968.

**STOBEN**

Priority claimed under Sec. 44(d) on French Reg. No. 739,186, dated Apr. 11, 1968. The mark "Stoben" is a coined word.  
For Preservative Coatings Against Rust and Against Deterioration of Wood, in Particular Deterioration by Humidity, Water, Insects, Fungus, and Micro-Organisms (Int. Cl. 2).

SN 310,883. General Electric Company, Schenectady, N.Y. Filed Oct. 30, 1968.

**DUROMID**

For Polyamide Protective and Decorative Coating for Metal Surfaces (Int. Cl. 2).  
First use Oct. 11, 1968.

SN 318,463. Sentry Hardware Corporation, Cleveland, Ohio. Filed Feb. 5, 1969.

**SENTRY**

For Interior and Exterior Household Paints, Lacquers, and Enamels (Int. Cl. 2).  
First use Oct. 17, 1962.

**Class 17—Tobacco Products**

SN 306,688. Phillip Morris Incorporated, New York, N.Y. Filed Sept. 5, 1968.

**MARLBORO COUNTRY**

Owner of Reg. Nos. 68,502 and 632,881.  
For Filtered Cigarettes (Int. Cl. 34).  
First use Aug. 19, 1968.

SN 307,164. Camacho Cigars, Inc., Miami, Fla. Filed Sept. 12, 1968.

**MONTE CARLO**

For Cigars (Int. Cl. 34).  
First use Feb. 3, 1965.

SN 308,945. The American Tobacco Company, New York, N.Y. Filed Oct. 7, 1968.



Without waiver of its common law rights, applicant makes no claim herein of exclusive right to use the words "American Brands" apart from the mark shown in the drawing.  
For Cigarettes (Int. Cl. 34).  
First use Oct. 2, 1968.

**Class 18—Medicines and Pharmaceutical Preparations**

SN 261,607. Otsuka Chemical Co., Ltd., Higashi-ku, Osaka, Japan. Filed Dec. 29, 1966.

**UNIFINE**

Priority claimed under Sec. 44(d) on Japanese application filed Oct. 17, 1966; Reg. No. 791,569, dated Aug. 23, 1968.  
For Vesicatory (Int. Cl. 5).

SN 299,878. Shell Oil Company, New York, N.Y. Filed June 6, 1968.

**EQUIGARD**

For Anthelmintic (Int. Cl. 5).  
First use at least as early as Mar. 26, 1968.

SN 301,221. Fleming and Company, Pharmaceuticals, St. Louis, Mo. Filed June 24, 1968.

**EKKO**

For Sustained Release Capsule for the Treatment of Epilepsy, Cardiac Arrhythmias, and Abnormal Behavioral Patterns (Int. Cl. 5).  
First use December 1962.

SN 306,992. Parke, Davis & Company, Detroit, Mich. Filed Sept. 10, 1968.

**AMCILL**

For Anti-Infective Preparations (Int. Cl. 5).  
First use Aug. 26, 1968.

**Class 19—Vehicles**

SN 252,362. Donald L. Wollard, d.b.a. Don's Marine Center, Islamorada, Fla. Filed Aug. 15, 1966.

**LAPLIFT**

For Boats (Int. Cl. 12).  
First use Jan. 1, 1961.

SN 290,154. Bauer Ordnance Company, Warren, Mich. Filed Feb. 2, 1968.



The word "Ordnance" is disclaimed apart from the mark as a whole.

For Armored Land Vehicles and Watercraft—Namely, Military Armored Cars and Tanks, Police Armored Cars, Armored Money and Valuable Carriers, Small Armored Motor Boats, Army Battle Tanks, Gun Turret and Cupolas for Armored Vehicles, Turret, Cupola and Gun Control Mechanisms (Int. Cl. 13).  
First use Nov. 3, 1967.

SN 292,104. The John-Wilmer Company, Inc., Atlanta, Ga. Filed Feb. 28, 1968.

**AL-RITE**

For Automotive Brake Shoes (Int. Cl. 12).  
First use Jan. 16, 1967.

SN 292,191. Docutel Corporation, Dallas, Tex. Filed Feb. 29, 1968.

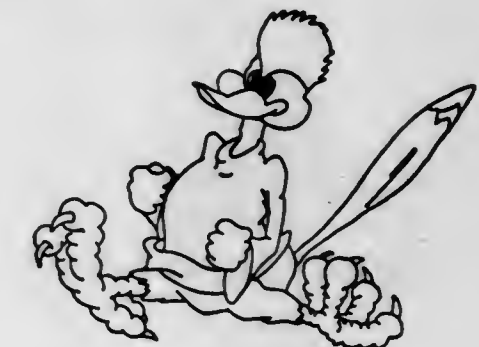


For Baggage Handling Vehicle Designed To Operate on Tracks or Rails, in Airplanes, Bus and Railroad Terminals (Int. Cl. 12).  
First use May 15, 1967.

**Security Is...**

No claim is made to the words "Trailer Hitch." Owner of Reg. Nos. 663,715 and 669,247.  
For Automobile Trailer Hitches (Int. Cl. 12).  
First use Feb. 15, 1968.

SN 302,509. Peerless Trailer and Truck Service, Inc., Tualatin, Ore. Filed July 11, 1968.



Owner of Reg. No. 633,892.  
For Logging Trailers, Flatbed Trailers, Lowbed Machinery Trailers, Chip Trailers, Bottom Dump Trailers, Tilt Bed Trailers, Tank Trucks, Tank Trailers, and Tank Transports, and Parts Therefor (Int. Cl. 12).  
First use January 1961.

SN 302,809. Transocean Air Systems Corporation, Santa Barbara, Calif. Filed July 12, 1968.



For Compliant Air Bearing Systems for Supporting and Moving Articles and Objects (Int. Cl. 12).  
First use May 14, 1968.

SN 302,976. Schwinn Bicycle Company, Chicago, Ill. Filed July 17, 1968.

**"ORANGE KRATE"**

Owner of Reg. No. 851,338.  
For Bicycles (Int. Cl. 12).  
First use June 12, 1967.

SN 307,211. K-Boose, Inc., St. Paul, Minn. Filed Sept. 12, 1968.



For Travel Trailers (Int. Cl. 12).  
First use Aug. 14, 1968.



SN 307,364. Tube Investments of India Limited, d.b.a. T.I. Cycles of India (Ambattur-Madras), Madras, India. Filed Sept. 13, 1968.

SN 286,851. Staff & Schwarz GmbH Leuchtenwerke, Lemgo, Lippe, Germany. Filed Dec. 13, 1967.



For Bicycles and Parts Thereof (Int. Cl. 12).  
First use Feb. 2, 1967; in commerce Feb. 3, 1967.  
Subj. to Intf. with SN 310,805.

SN 312,258. AAA Enterprises, Inc., Atlanta, Ga. Filed Nov. 15, 1968.



Applicant disclaims any exclusive rights in the words "Mobile Homes" apart from the mark as used.  
For House Trailers and Mobile Homes (Int. Cl. 12).  
First use May 6, 1968.

SN 315,214. Couparral Incorporated, St. Paul, Minn. Filed Dec. 26, 1968.

## WOLVERINE

For Motor Driven Snow Vehicles (Int. Cl. 12).  
First use July 19, 1968.

SN 316,695. Textron Inc., Providence, R.I. Filed Jan. 15, 1969.

## HOMELITE

For Snowmobiles and Parts Thereof (Int. Cl. 12).  
First use Aug. 10, 1968.

SN 316,773. DPD Manufacturing Company, Inc., San Antonio, Tex. Filed Jan. 16, 1969.

## DPD

For Automobile Air Conditioners and Parts Thereof (Int. Cl. 11).  
First use March 1963.

## Class 21—Electrical Apparatus, Machines, and Supplies

SN 253,391. Winegard Company, Burlington, Iowa. Filed Aug. 29, 1966.

## PLANAR-GRID

For Television Antennas (Int. Cl. 9).  
First use Mar. 29, 1965.

## STAFF

For Lighting Fixtures—Namely, Ceiling Fixtures, Recessed Fixtures, Reflector Lamp Fixtures, Pendants and Wall Brackets, Floor Lamps and Table Lamps (Int. Cl. 11).  
First use Sept. 1, 1959; in commerce June 30, 1961.

SN 287,200. Vitramon, Incorporated, Monroe, Conn. Filed Dec. 18, 1967.



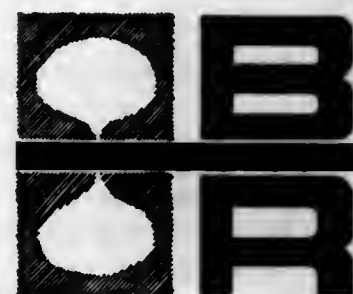
Owner of Reg. Nos. 560,517, 762,240, and 839,907.  
For Capacitors (Int. Cl. 9).  
First use on or about Jan. 15, 1967.

SN 287,357. General Instrument Corporation, Newark, N.J. Filed Dec. 21, 1967.



Applicant disclaims the word "Instrument" apart from the mark as shown.  
For Semiconductors; Integrated Circuits; Tuners for Communication Sets; Underwater Sonar Equipment; and Thermoelectric Generators (Int. Cls. 7 and 9).  
First use Feb. 1, 1967.

SN 287,414. Babcock Electronics Corporation, Costa Mesa, Calif. Filed Dec. 22, 1967.



The crosshatching shown on the drawing is not for the purpose of indicating a particular color, but is an integral part of the mark.  
For Electromagnetic Relays (Int. Cl. 9).  
First use January 1963.

SN 289,355. Technitron, Inc., Carol Stream, Ill. Filed Jan. 22, 1968.

## TECHNITRON

For Electronic Controls for Welding Equipment—Namely, Synchronous Sequence Timers and Similar Control Items (Int. Cl. 9).  
First use Sept. 1, 1967.

SN 293,068. Emanuel Modell, Bronx, N.Y. Filed Feb. 28, 1968.



Owner of Reg. No. 439,654.  
For Radio Receiving Sets and Parts Thereof, Radio Antenna and Transmission Lines, Dry-Cell Batteries and Parts Thereof, Electrical Condensers, Contact Points, Thermionic Detectors, Amplifier and Oscillator Tubes, Electric Motors, Generators, Electrical Connectors, Electrical Radio-Phonograph Sets, Electrical Fuses, Audio Frequency Amplifiers, Electrical Public Address Systems and Telephone Interoffice Communication Apparatus, Radio Transmitters, Variable Resistance Units, Electro-Magnetic Relays, Insulated Electrical Cables and Wires, Electric Vacuum Cleaners for Household Use, Electric Pressure Cookers, Electric Dishwashers, Electric Irons, and Electric Ventilating Fans for Household Use (Int. Cls. 7, 9, and 11).  
First use 1915.

SN 293,241. Dazor Manufacturing Corp., St. Louis, Mo. Filed Mar. 14, 1968.

## ADJUSTA-POISE

For Electric Lamps for Industrial Use (Int. Cl. 11).  
First use July 31, 1967.

SN 301,292. Yardney Electric Corporation, New York, N.Y. Filed June 24, 1968.

## SPIRACEL

For Electrochemical Cells and Batteries (Int. Cl. 9).  
First use May 1, 1966.

SN 304,945. Metro-Tel Corp., Westbury, N.Y. Filed Aug. 12, 1968.



Owner of Reg. Nos. 740,535 and 765,395.  
For Telephone, Telegraph and Teletype Apparatus; Transformers; Audio Amplifiers; Inductors; Electronic Communication Systems for Audio and Video Signals, Multiplexing Equipment, and Automatic Typing Equipment (Int. Cl. 9).  
First use during the fall of 1964.

SN 316,150. Union Carbide Corporation, New York, N.Y. Filed Jan. 8, 1969.



Owner of Reg. Nos. 666,250, 742,276, and others.  
For Capacitors, Semi-Conductors, Operational Amplifiers, Integrated Circuits, and Getters for Use in Electronic Devices (Int. Cl. 9).  
First use on or about Nov. 22, 1961.

## Class 22—Games, Toys, and Sporting Goods

SN 293,705. Joseph Elesh, Skokie, Ill. Filed Mar. 20, 1968.

## PAR TWO CHIP-N-PUTT

Applicant disclaims the words "Chip-N-Putt" apart from the mark as a whole. Owner of Reg. No. 643,742.  
For Indoor-Outdoor Golf Game Including a Golf Tee and a Golf Green (Int. Cl. 28).  
First use Jan. 3, 1968.

SN 300,130. J. W. Spear & Sons Limited, Enfield, Middlesex, England. Filed June 10, 1968.

## POM-POM-PETS

For Toy Kit for Making Bobbles, Balls, Animals, Birds, and Similar Type Decorations and Pet Figures (Int. Cl. 28).  
First use Jan. 1, 1961; in commerce May 1962.

SN 302,102. Michigan Ladder Company, Ypsilanti, Mich. Filed July 5, 1968.

## THE DETROITER

For Table Tennis Tables (Int. Cl. 28).  
First use June 10, 1966.

SN 302,547. Vogt Appliance Corporation, Kalamazoo, Mich., assignee of Vogt Appliance Company, Kalamazoo, Mich. Filed July 11, 1968.

## SLIM-TWIST

For Swivel Exercising Boards (Int. Cl. 28).  
First use November 1963.

SN 308,820. Sea/Shore Products, Inc., Hinsdale, Ill. Filed Oct. 3, 1968.

## SAND CASTLE

No claim is made to the exclusive right to the use of the word "Castle" apart from the mark.  
For Toy Plastic Building Forms for Use on Sandy Beaches, Sand Boxes, and the Like (Int. Cl. 28).  
First use Aug. 7, 1968.

SN 310,396. Mattel, Inc., Hawthorne, Calif. Filed Oct. 24, 1968.

## MR. CIRCUS SAYS

For Educational Toy Comprising a Phonograph and Pictures With Indexing Means To Cause Sound Reproduction Relevant to a Picture Indexed (Int. Cl. 28).  
First use Sept. 24, 1968.

SN 310,745. Berkley & Company, Inc., Spirit Lake, Iowa. Filed Oct. 29, 1968.

## THUNDERBIRD

For Monofilament Nylon Fishing Line (Int. Cl. 28).  
First use Oct. 7, 1968.



**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

SN 278,878. Crane Co., New York, N.Y. Filed Aug. 23, 1967.

**HYDRO-AIRE**

For Fluid, Semi-Fluid and Gas Handling Pumps, Hydraulic Motors, Hydraulic Power Packs, Linear Hydraulic Actuators, and Parts, Controls and Components of the Foregoing for Use in the Aerospace Industry (Excepting Holsts or Parts Therefor) (Int. Cl. 7).

First use June 22, 1967.

SN 283,984. Covema S.R.L., Milan, Italy, Filed Nov. 2, 1967.

**Covema**

For Machines for the Working of Plastics—Namely, Plastic Molding Machines, Plastic Extrusion Machines, Plastic Vacuum Forming Machines, Mixers for Plastic Materials, and Calenders (Int. Cl. 7).

First use in 1953; in commerce in 1953.

SN 284,617. Coan Manufacturing Company, Inc., Madison, Wis. Filed Nov. 13, 1967.



Owner of Reg. Nos. 357,362 and 596,699.  
For Coin-Operated Vending Machines (Int. Cl. 9).  
First use on or about Feb. 1, 1965.

SN 284,947. Roland J. Hawes, Jr., Boise, Idaho, assignee of Supplements, Incorporated, Boise, Idaho. Filed Nov. 15, 1967.

**HYDRO FEED**

For Apparatus for Adding Feed Supplements to the Drinking Water and Feed Ration of Livestock and Poultry (Int. Cl. 7).

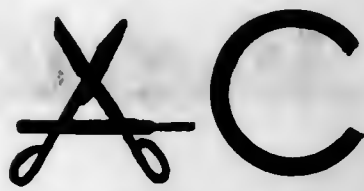
First use July 1965.

SN 285,425. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Nov. 22, 1967.

**BRIGHT MEADOW**

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).  
First use Nov. 13, 1967.

SN 286,311. A-C Industrial Cutlery Corporation, New York, N.Y. Filed Dec. 6, 1967.



The representation of scissors and file are disclaimed apart from the mark as shown.

For Hand Tools—Namely, Knives for Domestic and Industrial Uses, Heavy-Duty Knives, Rotary Knives, Rubber Knives, Safety Knives, Butcher Knives, Calendar Knives, Trimming Knives, Machine Knives, Machetes, Leather Knives, Scraper Knives, Putty Knives, Spatula Knives, Ink Knives, Ring Knives, Electricians' Knives, Pruner Knives, Boning Knives; Scoops for Chemical Uses, Industrial and Professional Shears, Left-Hand Shears, Dressmaker Shears; Upholstery, Carpet, Canvas and Drapery Shears; Tailors' Shears, Belt and Leather Cutting Shears, Plastics and Fabrics Shears, Florist and Dental Shears, Stationery and Paper Shears, Professional Scissors, Embroidery Scissors, Trimming Scissors, Sewing Scissors, Pocket Scissors, Folding Scissors, Rug Sculpturing Scissors, Pinking Scissors, Machine Files, Bent Tweezers, Cutting Snips, Tinner Snips, Pattern Snips, Front Cutters, Side Cutters, and Blades for These Tools (Int. Cl. 8).

First use January 1967.

SN 286,705. Morbark Debarker Company, Winn, Mich. Filed Dec. 11, 1967.



For Machinery and in Line Systems for Removing the Bark From Logs and Reducing the Logs to Chips (Int. Cl. 7).  
First use Nov. 13, 1967.

SN 287,387. Eichi Sugiyama, Shizuoka, Shizuoka Prefecture, Japan. Filed Dec. 21, 1967.



The Japanese characters shown in the drawing are translated into English as "good-ice." Owner of Japanese Reg. No. 749,846, dated July 31, 1967.

For Kitchen Cutlery—Namely, Knives, Forks, Spoons and Scoops; Paring, Carving and Butcher Knives; Ice Picks, and Hand Operated Machines for Chipping and/or Slicing Ice and Vegetables, and Structural Parts for Such Machines (Int. Cls. 7 and 8).

SN 288,388. Turbo Machine Company, Lansdale, Pa. Filed Jan. 8, 1968.

**TABOR**

Owner of Reg. No. 100,911.

For Foundry Machinery—Namely, Molding Machines, Jarring Machines, Vibrators, Cutoff Machines, Core Shooters, Core Making Machines, Core Stripping Machines, Squeezing Machines, Jar-Squeezing Machines, Rollover Machines, and Flask-Lift Machines (Int. Cl. 7).

First use since 1884.

SN 288,729. Virginia International Equipment Corporation, Gainesville, Va. Filed Jan. 12, 1968.

**TWINPACTOR**

For Earth-Working Equipment, Particularly Vibrating Roller Machines (Int. Cl. 7).  
First use Sept. 12, 1967.

SN 289,098. Kennedy Van Saun Corporation, Danville, Va. Filed Jan. 18, 1968.

**VARI-MESH**

For Machines for Classifying or Sorting Finely Divided Solid Materials Comprised of a Mixture of Relatively Fine and Coarse Portions, by the Action of a Gaseous Stream or Streams Wherein the Fine Portion or Portions of the Finely Divided Solid Materials Is Selectively Collected in a Gaseous Stream or Streams Separate From the Relatively Coarse Portion or Portions (Int. Cl. 7).

First use Dec. 6, 1966.

SN 289,363. Weyerhaeuser Company, Tacoma, Wash. Filed Jan. 22, 1968.

**WEY WRAP**

The word "Wrap" is disclaimed apart from the mark as a whole.

For Packaging Machines (Int. Cl. 7).

First use Sept. 30, 1967.

SN 289,567. Astro Products, Ogden, Utah. Filed Jan. 25, 1968.

**ASTRO**

For Hand-Operated Liquid Sprayer (Int. Cl. 7).

First use January 1967.

SN 289,684. Jacobsen Manufacturing Company, Racine, Wis. Filed Jan. 26, 1968.

**JAVELIN**

For Riding Lawn Mowers; Attachments Therefor—Namely, Carts, Scraper Blades, and Spiker-Aerators; and Parts Therefor (Int. Cl. 7).

First use as early as 1958.

SN 289,706. Lily-Tulip Corporation, New York, N.Y. Filed Jan. 26, 1968.

**F 20/20**

For Food Packaging Machinery—Namely, Dispensers, Filling Machines and Cappers, All of the Above Items Sold in Combination With Each Other or as Separate Items (Int. Cl. 7).

First use on or about July 22, 1966.

SN 290,106. Peterson Machine Tool, Inc., Merriam, Kans. Filed Feb. 1, 1968.

**NO-MAG**

For Vacuum Mounting Cells for Holding Work Pieces During Machinery Operations (Int. Cl. 7).

First use Jan. 24, 1968.

SN 290,192. Royal Industries, Inc., Pasadena, Calif., assignee of Royal Industries, Pasadena, Calif. Filed Feb. 2, 1968.

**PLAS-TIE-MATIC**

Owner of Reg. Nos. 569,982 and 794,767.

For Automatic Tying Machines for Closing Packages Such as Bags (Int. Cl. 7).

First use during the summer of 1955.

SN 292,105. The John-Wilmer Company, Inc., Atlanta, Ga. Filed Feb. 28, 1968.

**AL-RITE**

For Automotive Starter Drives, Clutch Pressure Plate Assemblies, Clutch Discs, and Carburetors (Int. Cl. 12).

First use Jan. 16, 1967.

SN 292,707. Fruehauf Corporation, Detroit, Mich., assignee of Paceco Inc., Alameda, Calif. Filed Mar. 7, 1968.

**PACECO PACER**

Owner of Reg. No. 560,765.

For Marine Equipment—Namely, Floating Dredges; and Accessories and Parts Therefor, Namely, Jet Pumps and Cutter Heads (Int. Cl. 12).

First use Dec. 9, 1966.

SN 300,821. Hydrotrole Limited, Heaton Chapel, Stockport, England. Filed June 19, 1968.



For Hydro-Pneumatic Accumulators for Pulsation Damping, Pressure and Leakage Compensation in Fluid Systems, Shock Allevation and Liquid Power Storage; and Parts and Fittings Therefor (Int. Cl. 7).  
First use in or about October 1963; in commerce June 2, 1967.

SN 301,986. Washington Scientific Industries, Inc., Minnetonka, Minn. Filed July 3, 1968.

**WSI**

For Hydraulic Motors, Speed Reducers, Gearheads, Combined Hydraulic Motor and Gearhead Packages, Differentials, Electro-Mechanical and Electro-Magnetic Brakes and Clutches for Machinery, Tools, Gear Trains and Differentials (Int. Cl. 7).

First use Apr. 21, 1961.

SN 303,177. MPB Corporation, Keene, N.H. Filed July 19, 1968.



Owner of Reg. Nos. 555,474 and 680,389.

For Ball Bearings, Roller Bearings, Spherical Bearings, Rod End Bearings, Tape Guides, Capstans, Pinch Rollers, Integral Bearing and Shaft Assemblies, and Gyro Gimbal Supports and Motion Control Devices of Which Anti-Friction Bearings Are an Integral Part (Int. Cl. 7).

First use June 10, 1968.

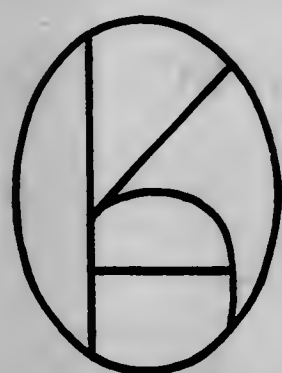


SN 308,372. Welles Products Corporation, Roscoe, Ill. Filed July 22, 1968.

## RECLAM-ATOR

For Oil Retrieval Apparatus, Comprising a Rotating Cylinder and a Pumping Unit for Reclaiming Oil From a Surface of a Body of Water (Int. Cl. 7).  
First use May 15, 1968.

SN 304,472. Kahr Bearing Corporation, Burbank, Calif. Filed Aug. 6, 1968.



Owner of Reg. No. 594,204.  
For Ball and Journal Bearings (Int. Cl. 7).  
First use April 1960.

SN 304,814. Rapistan Incorporated, Grand Rapids, Mich. Filed Aug. 9, 1968.

## CLEANLINE

For Roller Conveyors (Int. Cl. 7).  
First use on or about June 22, 1967.

SN 305,709. American Holst & Derrick Company, St. Paul, Minn. Filed Aug. 22, 1968.

## SKY HORSE

For Cranes and Counterbalancing Attachments for Cranes (Int. Cl. 7).  
First use July 1, 1968.

SN 319,922. Majestic Lock Co., Inc., New York, N.Y. Filed Feb. 24, 1969.

## LOCKAID

For Lock Picks (Int. Cl. 8).  
First use on or about Jan. 15, 1935.

SN 321,178. Deering Milliken, Inc., New York, N.Y. Filed Mar. 10, 1969.

## CREEL-PAK

For Power Creels for Knitting (Int. Cl. 7).  
First use Feb. 10, 1969.

SN 321,612. World Tableware Corporation, Meriden, Conn. Filed Mar. 13, 1969.

## CLOISONNE

For Flatware Made of Non-Precious Metal (Int. Cl. 8).  
First use at least as early as Jan. 30, 1969.

## Class 24 — Laundry Appliances and Machines

SN 307,023. Grantham Industries, Inc., Los Angeles, Calif. Filed Sept. 10, 1968.

## THE IRON WOMAN

For Laundry Folders of the Type Generally Known as Small Piece Folders, and Used for Folding Handkerchiefs, Napkins, Washcloths, Hand Towels, Bath Towels, Bath Mats, and Other Small Flat Pieces (Int. Cl. 7).  
First use on or about Apr. 15, 1966.

SN 318,655. Jensen Machinery, Inc., Fort Lauderdale, Fla. Filed Feb. 7, 1969.

## JENFLOW

For Flatwork Folding Machines (Int. Cl. 7).  
First use Mar. 1, 1968.

## Class 25 — Locks and Safes

SN 295,746. LeFebure Corporation, Cedar Rapids, Iowa. Filed Apr. 16, 1968.

## TEL-AIR

For Remote Controlled, Drive-Up Teller Units for Banks (Int. Cl. 6).  
First use in or about December 1967.

SN 313,430. Marolf Hygienic Equipment, Inc., Clearwater, Fla. Filed Dec. 2, 1968.

## STRESS-KEY

For Panel Holding Locks (Int. Cl. 6).  
First use July 27, 1966.

SN 319,956. Reven Industries, Inc., Sioux Falls, S. Dak. Filed Feb. 24, 1969.



Owner of Reg. No. 815,264.  
For Locks and Lock Mechanisms (Int. Cl. 6).  
First use Oct. 1, 1968.

## Class 26 — Measuring and Scientific Appliances

SN 262,644. Tridea Electronics Company, d.b.a. Tridea Electronics, El Monte, Calif. Filed May 28, 1969.



For Drafting and Digitizing Systems, Consisting of a General-Purpose Digital Computer Interfaced With a Drafting Machine and Automatic Line Tracers for Computerized Programmers (Int. Cl. 9).  
First use June 26, 1967.

SN 289,261. Bausch & Lomb Incorporated, Rochester, N.Y. Filed Jan. 22, 1968.

## FIBERICON

For Coherent Fiber Optical Bundles Manufactured in Standard Lengths and Provided With End Adaptors for Coupling Two or More Lengths Together (Int. Cl. 9).  
First use May 22, 1967.

SN 290,229. Trans-Lux Corporation, New York, N.Y. Filed Feb. 5, 1968.

## JET

For Electronic Data Display (Int. Cl. 9).  
First use Feb. 23, 1967.

SN 292,314. Norman L. Chalfin, d.b.a. The Cue-Slide Company, Pasadena, Calif. Filed Mar. 4, 1968.



For Automatic Slide Projector Programmers (Int. Cl. 9).  
First use on or about Aug. 15, 1959.

SN 292,686. Flow Technology, Inc., Tempe, Ariz. Filed Mar. 7, 1968.

## TURBO-PROBE

For Velocity Sensing Flow Transducers (Int. Cl. 9).  
First use Feb. 22, 1968.

SN 294,958. National Design Center Delaware Inc., New York, N.Y. Filed Apr. 4, 1968.

## SPECTRASCAN

For Mounted Multiple Microfilm Transparencies for Projection Viewing (Int. Cl. 9).  
First use on or about Dec. 4, 1967.

SN 295,341. Emil E. Jensen, Monrovia, Calif. Filed Apr. 10, 1968.

## GARDEN MASTER

For Automatic Electric Timing Control for Automatic Sprinkler Systems (Int. Cl. 9).  
First use July 31, 1967.

SN 296,128. George W. Dahl Company, Inc., Bristol, R.I. Filed Apr. 22, 1968.

## OMNILECTRIC

For Electrical Proportioning Actuators for Valves, and Process Control Means in the Form of, or Used With, an Analog Computer (Int. Cl. 9).  
First use in or about January 1963.

SN 297,041. Dairy Equipment Company, Madison, Wis. Filed May 1, 1968.

## VACUUM SENTINEL

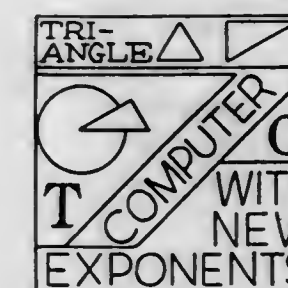
The term "Vacuum" is disclaimed apart from the mark as shown.  
For Air Reserve Indicator for Milking System (Int. Cl. 9).  
First use Apr. 9, 1968.

SN 297,706. Regiscope Corporation of America, New York, N.Y. Filed May 8, 1968.



For Microfilm Cameras and Cameras Used in Photographic Identification, Security, and Library Book-Charging Systems (Int. Cl. 9).  
First use Mar. 3, 1967.

SN 298,766. Trigonometrical Computers Co., New York, N.Y. Filed May 21, 1968.



The words "Computer With New Exponents" are disclaimed separate and apart from the mark as shown.  
For Disc Hand Wheel Dial Trigonometrical Computers (Int. Cl. 9).  
First use Feb. 5, 1968.

SN 299,009. Electronic Associates, Inc., West Long Branch, N.J. Filed May 24, 1968.

## QUAD

For Variable Electric Field Residual Gas Analyzers, Variable Electric Field Mass Spectrometers, and Parts Therefor (Int. Cl. 9).  
First use September 1964.

SN 299,682. La Belle Industries, Inc., Oconomowoc, Wis. Filed June 4, 1968.

## PLA-MATIC

For Tape Player for Synchronizing Sound With Slides or Filmstrip (Int. Cl. 9).  
First use Dec. 20, 1957.

SN 301,094. E. R. Squibb & Sons, Inc., New York, N.Y. Filed June 21, 1968.

## CONOMETRY

For Device for Standardizing Counting Geometry When Used With Well Counter for Measuring Radioactivity of Pharmaceuticals (Int. Cl. 9).  
First use Oct. 12, 1967.



SN 302,101. Metrawatt Aktiengesellschaft, Nurnberg, Germany, Filed July 5, 1968.

## METRAWATT

For Ammeter, Measuring Transformer, Precision Resistor for Measuring Purposes, Voltmeter, Frequency Meter, Wattmeter, Power Factor Meter, Multi-Meter, Ohmmeter, Bridge Insulation and Earth Tester, Cable Tracer, Line Recorder, Chopper Bar Recorder, Potentiometric Recorder, Controller, Compensator, Telemetering Converter, D.C. to D.C. Converter, Illumination Meter, and Photo-Electric Exposure Meter (Int. Cl. 9).

First use before Dec. 21, 1951; in commerce July 31, 1954.

SN 302,572. Security Electronics, Inc., Omaha, Nebr. Filed July 12, 1968.



For Surveillance Equipment—Namely, an Oscillating Camera Unit (Int. Cl. 9).

First use in or about October 1967.

SN 302,573. Security Electronics, Inc., Omaha, Nebr. Filed July 12, 1968.



For Surveillance Equipment—Namely, an Oscillating Camera Unit (Int. Cl. 9).

First use June 28, 1968.

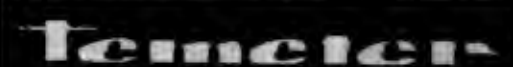
SN 302,610. Fluorware, Inc., Chaska, Minn. Filed July 12, 1968.



For Scientific and Laboratory Ware—Namely, Semi-Conductor Processing Equipment, Consisting of Substrate Carriers; Spin-Dryers, Spin-Dry and Honeycomb Baskets; Stock Handles; and Trays (Int. Cl. 9).

First use May 6, 1968.

SN 302,834. Fritz Bracht Company, Ludenscheid, Germany. Filed July 16, 1968.



Owner of German Reg. No. 795,131, dated Oct. 13, 1964. For Linear Measuring Machines for Wire and Cable (Int. Cl. 9).

SN 303,587. Armour and Company, Chicago, Ill. Filed July 25, 1968.

## TENDEROMETER

For Instruments for Testing Raw Meat To Determine the Tenderness of the Meat Upon Cooking (Int. Cl. 9).

First use on or prior to July 18, 1968.

SN 306,489. Honeywell Inc., Minneapolis, Minn. Filed Sept. 3, 1968.

## KEYTAPE

For Data Processing Equipment for Placing Data on Magnetic Tape, Communicator Units for Transferring Data Over Voice-Grade Lines, Pooler Units for Recording Data on a Number of Individual Tapes to a Single Tape and Card Reader Units for Transcribing, Off-Line, Punched Card Records Directly to Magnetic Tape (Int. Cl. 9).

First use at least as early as January 1968.

SN 306,816. Stockpole Components Company, Raleigh, N.C. Filed Sept. 6, 1968.

## SLIDE-TROL

For Potentiometers (Int. Cl. 9).

First use May 1, 1968.

SN 309,388. Impulsphysik G.m.b.H., Hamburg-Rissen, Germany. Filed Oct. 10, 1968.

## FUMOSENS

Owner of German Reg. No. 734,199, dated Feb. 25, 1960. For Smoke and Fog Detectors (Int. Cl. 9).

SN 310,117. Milton Bradley Company, East Longmeadow, Mass. Filed Oct. 21, 1968.

## POLARTRON

For Accessory to an Overhead Viewer Comprising a Motorized Disc of Polarized Material To Simulate Motion in Transparencies Imprinted With Specific Polarized Patterns (Int. Cl. 9).

First use Sept. 16, 1968.

SN 310,636. Calbiochem, Los Angeles, Calif. Filed Oct. 28, 1968.

## CALBIOMETER

For Photometer (Int. Cl. 9).

First use Oct. 2, 1961.

SN 315,435. News Electronics Corp., Chatsworth, Calif. Filed Dec. 30, 1968.

## WATSLINE MONITOR

Applicant disclaims the term "Monitor," per se, when displayed as separate and apart from the mark.

For Electrical Instrument Used by Telephone Customers To Measure and Register the Time Duration of Outgoing Telephone Calls (Int. Cl. 9).

First use Oct. 4, 1968.

SN 315,457. Will Scientific, Inc., Rochester, N.Y. Filed Dec. 30, 1968.

## DYLASTIR

For Magnetic Stirrer for Mixing Chemicals for Laboratory Use (Int. Cl. 9).

First use Dec. 5, 1968.

SN 317,995. GAF Corporation, New York, N.Y. Filed Jan. 31, 1969.

## GAF

Owner of Reg. Nos. 509,124, 837,005, and others. For Photographic Cameras, Parts and Accessories Therefor; Photographic Projectors, Parts and Accessories Therefor; Projector Screens, Stereoscopes, Viewers and Holders for Photographic Transparencies; Light-Sensitive Photographic and Cinematographic Film and Color Film; Light-Sensitive Copying and Photographic Paper and Color Paper; Sensitized Electrophotographic Paper; Photographic Printing and Developing Equipment; Electrophotographic and Photocopying Machines, Printing and Developing Machines, Parts and Accessories Therefor, for the Printing and Development of Diazo-type Light-Sensitive Photocopy Materials, Light-Sensitive Diazo-type Papers, Cloths and Films (Int. Cls. 1 and 9).

First use January 1965.

SN 318,076. Measurex, Inc., Avon by the Sea, N.J. Filed Jan. 31, 1969.

## MEASUREX

For Measuring Spoons (Int. Cl. 9).

First use Jan. 22, 1969.

SN 322,523. I-T-E Imperial Corporation, Philadelphia, Pa. Filed Mar. 24, 1969.

## KWIK-CHECK

For Antifreeze Testers (Int. Cl. 9).

First use Nov. 13, 1968.

## Class 27 — Horological Instruments

SN 309,779. Mondaine Watch Ltd., Zurich, Switzerland. Filed Oct. 16, 1968.



Applicant disclaims the representation of the watch apart from the mark as shown.

For Watches and Parts of Watches (Int. Cl. 14).

First use September 1954; in commerce Oct. 1, 1968.

SN 312,021. Bulova Watch Company, Inc., Flushing, N.Y. Filed Nov. 13, 1968.

## TF.

For Watches and Parts Thereof (Int. Cl. 14).

First use Oct. 21, 1968.

SN 312,087. Wyler Watch Corporation, New York, N.Y. Filed Nov. 13, 1968.

## SIGNAL

For Watches and Parts Thereof (Int. Cl. 14).

First use Aug. 28, 1968.

SN 312,883. Fabrique d'Horlogerie de Fontainemelon S.A., Fontainemelon, Neuchatel, Switzerland. Filed Nov. 22, 1968.

## FONTRONIC

Owner of Swiss Reg. No. 231,521, dated Apr. 8, 1968; and U.S. Reg. Nos. 566,273, 601,323, and others.

For Watches (Int. Cl. 14).

SN 313,487. Belair Watch Corporation, New York, N.Y. Filed Dec. 3, 1968.

## BELAIR

For Watches and Watch Movements (Int. Cl. 14).

First use May 22, 1962.

## Class 28 — Jewelry and Precious-Metal Ware

SN 313,943. Les Bernard, Inc., New York, N.Y. Filed Dec. 9, 1968.

## DIAMOND POINT

Applicant disclaims the term "Diamond." For Pins, Rings, Earrings, and Bracelets (Int. Cl. 14).

First use Dec. 6, 1968.

SN 314,953. Mates A. Bruner, d.b.a. MAB Jewelers, Aldan, Pa. Filed Dec. 20, 1968.

## CLEAN-FLEX

For Men's and Women's Watchbands (Int. Cl. 14).

First use Nov. 27, 1968.

SN 316,733. Buccellati Silver, Ltd., New York, N.Y. Filed Jan. 16, 1969.

## LAURA

For Sterling Silver Flatware (Int. Cl. 8).

First use Jan. 7, 1969.

## Class 29 — Brooms, Brushes, and Dusters

SN 304,219. Groomaid International Ltd., Merrick, N.Y. Filed Aug. 2, 1968.



Applicant disclaims the word "Fluoride" apart from the mark as shown.

For Toothbrushes (Int. Cl. 21).

First use June 17, 1968.



SN 315,230. Industrial Brush Company, Pomona, Calif. Filed Dec. 26, 1968.

### CIRCULEEN

For Vehicle Washing Brushes With Configured Plastic Filaments (Int. Cl. 21).  
First use March 1967.

SN 315,490. Kolor Koter Corp., Amsterdam, N.Y. Filed Dec. 31, 1968.

### RUFF-KOTER

For Paint Rollers (Int. Cl. 16).  
First use Oct. 8, 1968.

SN 317,933. Chemway Corporation, Wayne, N.J. Filed Jan. 30, 1969.

### DUO-TEX

For Toothbrushes (Int. Cl. 21).  
First use Jan. 10, 1969.

SN 317,954. Ideal Brushes, Inc., North Hollywood, Calif. Filed Jan. 30, 1969.

### JOURNEYMAN

For Paint Brushes and Paint Rollers (Int. Cl. 16).  
First use on or about June 27, 1968.

## Class 30—Crockery, Earthenware, and Porcelain

SN 312,215. Nikko Ceramics, Inc. New York, N.Y. Filed Nov. 14, 1968.

### Starstone

For China Dinnerware (Int. Cl. 21).  
First use Oct. 7, 1968.

SN 315,337. Royal China, Inc., Sebring, Ohio. Filed Dec. 27, 1968.



The word "China" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 542,715 and 649,702.  
For Semi-Vitrified China and Pottery—Namely, Saucers, Dishes, Plates, Casseroles, Platters, Cups, Sugars, Creamers and Sets Thereof (Int. Cl. 21).  
First use during July 1934.

## Class 31—Filters and Refrigerators

SN 292,491. Metaframe Corporation, Maywood, N.J. Filed Mar. 5, 1968.



For Polyester Filter Floss for Aquarium Filtration (Int. Cl. 11).  
First use Feb. 26, 1968.

SN 302,657. Tropical Fish Patterns, Inc., Jersey City, N.J. Filed July 12, 1968.



For Purifying Medium for Fresh Water Aquariums; Purifying Medium for Marine Aquariums; Filter Mat; and Long Lasting Activated Heavy Carbon for Use as a Purifying Medium for Aquariums (Int. Cl. 9).  
First use Apr. 10, 1968.

SN 304,797. The K-Way Dispensing Equipment Company, Cleveland, Ohio. Filed Aug. 9, 1968.



Owner of Reg. No. 797,426.  
For Refrigerated Beverage Dispensing Apparatus and Components Thereof, and Parts Therefor (Int. Cl. 11).  
First use April 1960.

SN 305,696. Triple R Manufacturing, Inc., Philadelphia, Pa. Filed Aug. 21, 1968.



For Oil Filters for Internal Combustion Engines (Int. Cl. 7).  
First use Dec. 1, 1964.

## Class 32—Furniture and Upholstery

SN 289,671. Tenneco Chemicals, Inc., New York, N.Y. by merger from General Foam Corporation, New York, N.Y. Filed Jan. 26, 1968.

### DENSITE

For Polyurethane Foam Cushions (Int. Cl. 20).  
First use on or about May 12, 1967.

SN 295,411. Sprague & Carleton, Inc., Houston, Tex. Filed Apr. 11, 1968.

### PINE-SHIELD

For Special Finish Incorporated in Living Room, Dining Room and Bedroom Furniture To Render It Highly Resistant to Scratches and Stains (Int. Cl. 20).  
First use Apr. 8, 1968.

SN 308,116. Oscar Mayer & Co. Inc., Madison, Wis. Filed Sept. 24, 1968.

## "GOLDEN MERCHANDISER"

For Cases and Stands for Displaying Merchandise Including Peg Bars, Peg Racks, and Wire Baskets and Shelves Sold as a Unit and Used in Association With Said Cases and Stands (Int. Cl. 20).  
First use Aug. 28, 1968.

SN 312,495. Portland Furniture Manufacturing Company, Portland, Ore. Filed Nov. 18, 1968.



For Furniture, Particularly Sofas, Davenports, Upholstered Over-Stuffed Chairs, Settees and Couches (Int. Cl. 20).  
First use on or about Mar. 1, 1925.

SN 319,902. Invincible Metal Furniture Co., Manitowoc, Wis. Filed Feb. 24, 1969.



For Office Furniture—Namely, Desks, Filing Cabinets, Tables, Chests, Telephone Stands, Credenzas, Bookcases, Cabinets, Desk Trays, Letter Trays and Files, Continuous Tops for Multiple Units, and Parts Thereof (Int. Cl. 20).  
First use 1931.

SN 320,641. National Mattress Company, Huntington, W. Va. Filed Mar. 3, 1969.

### RESTLUX

For Mattresses and Box Springs (Int. Cl. 20).  
First use Jan. 24, 1969.

SN 320,746. Sleepmaster Products Company, Inc., Newark, N.J. Filed Mar. 4, 1969.

### CRAFTMASTER

For Mattresses and Beds (Int. Cl. 20).  
First use Jan. 16, 1936.

## Class 33—Glassware

SN 311,036. Hobco Marine Systems, Inc., Greenwich, Conn. Filed Oct. 31, 1968.

### FRIJI-TINI

For Beverage Glass With Associated Ice Container To Maintain the Beverage Cold Until Used (Int. Cl. 21).  
First use Oct. 22, 1968.

## Class 34—Heating, Lighting, and Ventilating Apparatus

SN 217,516. Aeroll Products Company, Inc., South Hackensack, N.J. Filed Apr. 28, 1965.

### HEET-MASTER

For Oil Burning Tanks and Kettles for Melting Bituminous Products and the Like, Space Heaters for Supplying Temporary Heat to Out-of-Doors Places and Unfinished Structures, Salamanders and Industrial Cleaning Tanks for Cleaning Metallic and Non-Metallic Devices and Parts Thereof (Int. Cl. 11).  
First use November 1937.

SN 292,929. Har-Wil Corporation, Warminster, Pa. Filed Mar. 11, 1968.

### THERMO-BREW

For Commercial Coffee Brewer (Int. Cl. 11).  
First use on or about Jan. 26, 1968.

SN 296,288. American Standard Inc., New York, N.Y. Filed Apr. 23, 1968.

### BCF

For Tube and Shell Heat Exchangers (Int. Cl. 11).  
First use at least as early as December 1941.

SN 300,171. Con-Rad Corporation, Tulsa, Okla. Filed June 11, 1968.

### CON-RAD

For Industrial Heaters, Industrial Heat Exchangers, Fin Tubing and Silencers (Int. Cl. 11).  
First use Aug. 15, 1963.

SN 302,345. J. A. Sexauer Mfg. Co., Inc., White Plains, N.Y. Filed July 9, 1968.

### SEXAUER

Owner of Reg. Nos. 558,236, 859,524, and 861,261.  
For Soldering Compound—Namely, Flux (Int. Cl. 1).  
First use During 1921.

SN 304,581. Blaw-Knox Company, Pittsburgh, Pa. Filed Aug. 7, 1968.

### TOMATO-CON

For Food Processing Equipment—Namely Evaporative Units for the Production of Tomato Paste (Int. Cl. 11).  
First use July 1968.

SN 310,460. Houdaille Industries, Inc., Buffalo, N.Y. Filed Oct. 24, 1968.



Owner of Reg. Nos. 644,702 and 674,142.  
For Electric Butt Welders for Saw Blades (Int. Cl. 9).  
First use at least as early as Nov. 14, 1966; 1929 as to "Powermatic"; January 1964 as to the "P" and oval.



SN 316,389. Ray Products Company, Inc., Alhambra, Calif. Filed Jan. 13, 1969.

**RDP**

For Desiccator Units of the Gas Type for Providing Dry, Clean Storage of Articles (Int. Cl. 11).  
First use Oct. 29, 1968.

SN 316,867. International Telephone and Telegraph Corporation, New York, N.Y. Filed Jan. 17, 1969.

**ROOMMATE**

For Air Conditioners (Int. Cl. 11).  
First use Dec. 8, 1958.

**Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires**

SN 311,485. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Nov. 6, 1968.

**SPORT STUD**

The word "Stud" is disclaimed apart from the mark as shown.  
For Motorcycle Tires (Int. Cl. 12).  
First use Aug. 22, 1968.

**Class 36 — Musical Instruments and Supplies**

SN 265,929. Superscope, Inc., Sun Valley, Calif. Filed Mar. 3, 1967.

**EASY-MATIC**

For Tape Recorders (Int. Cl. 9).  
First use Feb. 15, 1967.  
Subj. to Intf. with SN 304,366.

SN 278,138. Thomas Organ Company, Sepulveda, Calif. Filed Aug. 11, 1967.

**CRY BABY**

For Musical Auxiliary Amplification and Attenuation Tone Devices, Consisting of a Pedal and an Electronic Circuitry Housing for Use With Electronic Musical Instruments—Namely, Guitars, Organs, Horns and Violins (Int. Cl. 15).  
First use June 27, 1967.

SN 287,723. Martin Cohen, d.b.a. Latin Percussion Company, Maywood, N.J. Filed Dec. 28, 1967.

LATIN  
PERCUSSION  
**LP**

Applicant disclaims the word "Percussion" apart from the mark as shown.  
For Percussion Musical Instruments (Int. Cl. 15).  
First use Sept. 1, 1967.

SN 291,444. Tapecon Incorporated, Rochester, N.Y. Filed Feb. 19, 1968.

**MEMO TRACK**

For Message Cards Having a Magnetic Tape Recording Strip (Int. Cl. 9).  
First use Dec. 22, 1967.

SN 304,366. Matsushita Electric Industrial Co., Ltd., Kadoma-shi, Osaka, Japan. Filed Aug. 5, 1968.

**EASY-MATIC**

For Tape Recorders Featuring a Switch Thereon for Automatic Regulation of Recording Input Level and Other Parts Thereof (Int. Cl. 9).  
First use March 1966; in commerce March 1966.  
Subj. to Intf. with SN 265,929.

SN 308,888. James W. Gower, Bobby Max Gower, Finis Harold Gower, and Alma Gower Moore (joint owners), d.b.a. Gower Guitars, Nashville, Tenn. Filed Oct. 4, 1968.

Gower  
Guitar  
EST. 1955



Applicants disclaim "Guitar" and "Est. 1955" apart from the mark as shown.  
For Guitars (Int. Cl. 15).  
First use November 1955.

SN 309,920. Transcontinental Music Corporation, New York, N.Y. Filed Oct. 17, 1968.

**TMC**

The drawing is lined for the color blue. Applicant disclaims the representation of a phonograph record apart from the mark as shown.  
For Phonograph Records, Magnetic Tapes and/or Pre-Recorded Magnetic Tapes, Magnetic Tape Cartridges, Magnetic Tape Cassettes, Guitars, and Parts Thereof (Int. Cl. 9).  
First use Sept. 16, 1968.

SN 317,181. GAF Corporation, New York, N.Y. Filed Jan. 22, 1969.

**GAF**

Owner of Reg. Nos. 509,124, 837,005, and others.  
For Office Equipment, Particularly, Office Recording and Transcribing Machines, and Magnetic Recording Tapes (Int. Cl. 9).  
First use Aug. 29, 1968.

SN 317,183. GAF Corporation, New York, N.Y. Filed Jan. 22, 1969.



Owner of Reg. Nos. 509,124, 837,005, and others.  
For Office Equipment, Particularly, Office Recording and Transcribing Machines, and Magnetic Recording Tapes (Int. Cl. 9).  
First use Aug. 29, 1968.

**Class 37 — Paper and Stationery**

SN 277,718. Smutz Systems, Inc., Denver, Colo. Filed Aug. 7, 1967.

**COST-AC**

For Accounting Forms (Int. Cl. 16).  
First use Mar. 14, 1967.

SN 300,280. Kimberly-Clark Corporation, Neenah, Wis. Filed June 12, 1968.

**KIMARK**

Owner of Reg. No. 735,686.  
For Paper for Use in Multiple Copy Form Sets, Chemically Coated To Provide Legible Imaged Copies When Pressure Is Applied to Top Sheet (Int. Cl. 16).  
First use May 3, 1968.

SN 300,784. Mattel, Inc., Hawthorne, Calif. Filed June 19, 1968.

**ETCETERAS**

For Desk Blotters, Scrapbooks, and Pencils (Int. Cl. 16).  
First use Jan. 17, 1968.

SN 304,602. W. R. Grace & Co., New York, N.Y. Filed Aug. 7, 1968.

**SLIDE-SHO**

For Binders for Photographic Slides (Int. Cl. 16).  
First use Sept. 17, 1959.

SN 304,736. Keith Clark, Inc., New York, N.Y. Filed Aug. 9, 1968.

*Patrician Leather Crafters, Ltd.*

For Address Books, Weekly Calendar Memos, Address and Engagement Books, Diaries, and Scrap Books (Int. Cl. 16).  
First use in 1951.

SN 305,799. Bourges Color Corporation, New York, N.Y. Filed Aug. 23, 1968.

**100% PLUS**

For Color Matte Film (Int. Cl. 16).  
First use Sept. 15, 1966.

**FORTUNE GLOSS**

Without waiver of any common law rights, applicant does not claim exclusive right to the word "Gloss" apart from the mark as shown.  
For Coated Printing Paper (Int. Cl. 16).  
First use Aug. 1, 1957.

SN 312,867. Addressograph-Multigraph Corporation, Cleveland, Ohio. Filed Nov. 22, 1968.



Owner of Reg. No. 612,564, and others.  
For Printing and Duplication Paper (Int. Cl. 16).  
First use June 17, 1968.

SN 314,801. Liso Pencil Corporation, Alameda, Calif. Filed Dec. 18, 1968.

**CHALK GUARD**

Applicant disclaims the word "Chalk."  
For Chalk Holder (Blackboard Chalk) (Int. Cl. 16).  
First use July 17, 1968.

**Class 38 — Prints and Publications**

SN 222,939. Hollmann K.G., Bundesrepublik, Germany. Filed July 8, 1965.

**Flexstabil**

Owner of German Reg. No. 774,474, dated June 12, 1963.  
For Special Binding Used in Books, Brochures, Catalogs, Calendars, Leaflets, and Periodicals (Int. Cl. 16).

SN 271,935. The Golf Course Superintendents Association of America, Des Plaines, Ill. Filed May 19, 1967.



For Official Association Magazine Published Monthly, Association Newsletter Published Quarterly, Reprints of Articles Which Have Appeared in the Association Magazine and Miscellaneous Printed Leaflets and Brochures (Int. Cl. 16).  
First use Oct. 15, 1965.



SN 301,082. Richard H. Mahoney, d.b.a. Industrial Ad-Reply Co., Norwood, Pa. Filed June 21, 1968.

## INDUSTRIAL AD-REPLY

For Booklet Containing Advertisements and Reply Cards (Int. Cl. 16).  
First use Apr. 1, 1968.

SN 313,799. ASSIMIL, Société à Responsabilité Limitée, Paris, France. Filed Dec. 6, 1968.

## ASSIMIL

For Books, Leaflets and Booklets for Teaching Languages (Int. Cl. 16).  
First use 1946; in commerce Dec. 15, 1948.

## Class 39—Clothing

SN 255,026. Standard Garments, Inc., Baltimore, Md. Filed Sept. 23, 1966.

*El Valiente*

For Men's and Boys' Sport Shirts (Int. Cl. 25).  
First use Aug. 30, 1966.

SN 277,713. Schulte & Dieckhoff, Westphalia, Germany. Filed Aug. 7, 1967.



Owner of German Reg. No. 818,305, dated Apr. 15, 1966.  
For Stockings and Shirts (Int. Cl. 25).

SN 295,749. Mandarin Textiles Limited, Kowloon, Hong Kong. Filed Apr. 16, 1968.

**MANDARIN**  
*Collection*  
**of DYNASTY**

No claim is made to the term "Mandarin" as applied to women's coats, jackets and suits. Owner of U.S. Reg. Nos. 578,869, 833,727, and others.

For Articles of Apparel for Women—Namely, Bathing Suits, Beachwear, Blouses, Coats, Dresses, Dressing Gowns, Evening and Cocktail Jackets, Foundation Garments, Including Brasieres, Panties, and the Like; Hosiery, House Coats, Pajamas, Petticoats, Rainwear, Shirts, Slacks, Sleepwear, Sweaters, Walking Shorts and Play Shorts; and Articles of Apparel for Men—Namely, Beachwear, Dressing Gowns, Fancy Vests, Pajamas, Raincoats, Shirts, Slacks, Smoking Jackets, Sport Coats, Suits, Sweaters, Underwear, Under Shorts, Walking and Play Shorts (Int. Cl. 25).

First use in or about February 1960; in commerce in or about September 1967.

SN 300,959. Pendleton Woolen Mills, Portland, Ore. Filed June 20, 1968.

## PENWEST

Owner of Reg. Nos. 722,007, 761,000, and others.  
For Men's and Boys' Cotton Shirts (Int. Cl. 25).  
First use Apr. 23, 1968.

SN 300,977. Slazengers Limited, Croydon, Surrey, England. Filed June 20, 1968.



Owner of U.S. Reg. Nos. 202,555 and 840,521.  
For Men's and Ladies' Tennis Shirts, Tennis Shoes, Tennis Cardigans, Tennis Hose and Tennis Sweaters; Ladies' Tennis Shirts and Tennis Dresses; Men's and Ladies' Golf Shirts, Golf Hose, Golf Pullovers, Golf Gloves; Sweatlets and Wristlets (Int. Cls. 25 and 28).  
First use Oct. 1, 1963; in commerce Mar. 1, 1964.

SN 301,313. Janet Stewart, d.b.a. Ladycraft, Memphis, Tenn. Filed June 25, 1968.



For Ladies' Blouses, Skirts, Dresses, Suits, and Coats (Int. Cl. 25).  
First use November 1962.

SN 312,451. Gelles Neckwear Ltd., Inc., Boston, Mass. Filed Nov. 18, 1968.

## DI MARO

For Neckties and Bow Ties (Int. Cl. 25).  
First use January 1956.

SN 312,756. Doe Spun Inc., York, Pa. Filed Nov. 21, 1968.

## TICKLED PINK

For Dresses, Pants Dresses, Blouses, Skirt and Blouse Sets, Sets Comprising Pants or Slacks in Conjunction With Polo Shirts, Blouses, Halters, Sweaters and Jackets, Dress and Coat Sets, Pants, Slacks, Sunsets, Polo Shirts, Halters, Sweaters, Jackets, Bathing Suits and Bathing Suit Sets for Infants, Children and Teen-Agers (Int. Cl. 25).  
First use Nov. 8, 1968.

SN 314,284. Cluett, Peabody & Co., Inc., New York, N.Y. Filed Dec. 12, 1968.



CLUETT PEABODY

For Shirts, Pajamas, Underwear, Handkerchiefs, Neckties, and Ladies' Blouses (Int. Cl. 25).  
First use Nov. 11, 1968.

SN 318,151. Belk Stores Services, Inc., Charlotte, N.C. Filed Feb. 3, 1969.

## ANDHURST

For Men's Suits, Sport Coats, Over Coats, Top Coats, All-Weather Coats, Trousers, Robes, Casual Slacks, Walk Shorts, Dress and Sport Shirts, Sweaters, Ties, Pajamas, Belts, Handkerchiefs, Shoes and Hosiery (Int. Cl. 25).  
First use Dec. 27, 1968 on shirts.

SN 318,303. Carlo Gruber, Graz-Gösting, Austria. Filed Feb. 4, 1969.

*carlo* **G** *Gruber*

For Knitted Garments, Pullovers, Vests (Int. Cl. 25).  
First use 1964; in commerce 1964.

SN 318,625. Frank Bodzin, d.b.a. Imsco, and Fransil Hosiery Co., Dallas, Tex. Filed Feb. 7, 1969.

## FRANSIL

For Hosiery (Int. Cl. 25).  
First use September 1967.

SN 318,715. Higgins Company, Lineville, Ala. Filed Feb. 10, 1969.

## CINCTURA

For Men's Slacks and Trousers (Int. Cl. 25).  
First use July 1968.

SN 318,737. Anita Shops, Inc., Los Angeles, Calif. Filed Feb. 10, 1969.

## MISS ANITA

Owner of Reg. No. 636,000.  
For Women's Apparel—Namely, Coats, Suits, Hosiery, Lingerie, Brassieres, Sweaters, Dresses, Robes, Blouses, Slacks, Skirts, and Bathing Suits (Int. Cl. 25).  
First use November 1950.

SN 318,882. Nan-Flower Lingerie, Inc., New York, N.Y. Filed Feb. 11, 1969.

## PERIPHERY

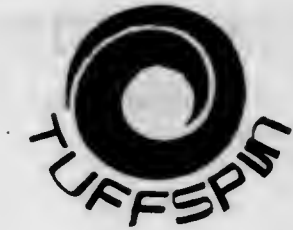
For Loungewear, Robes, and Leisure Wear—Namely, Pajamas, Pignoir Sets, Nightgowns, Bed Jackets, Negligees, and Lingerie (Int. Cl. 25).  
First use Jan. 3, 1969.

SN 321,350. Uniroyal, Inc., New York, N.Y. Filed Jan. 27, 1969.

## SNEAKER SHIRT

For Sportswear Jackets (Int. Cl. 25).  
First use Nov. 1, 1968.

SN 321,783. Richard T. Derthick, Birmingham, Mich. Filed Mar. 14, 1969.



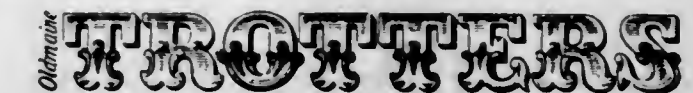
For (Socks) Stockings (Int. Cl. 25).  
First use Dec. 1, 1968.

SN 321,784. Richard T. Derthick, Birmingham, Mich. Filed Mar. 14, 1969.



For (Socks) Stockings (Int. Cl. 25).  
First use Dec. 1, 1968.

SN 321,973. Old Town Shoe Company, Boston, Mass. Filed Mar. 17, 1969.



Owner of Reg. Nos. 593,923 and 604,281.  
For Shoes (Int. Cl. 25).  
First use Feb. 1, 1956; Dec. 20, 1948, in a different form.

SN 322,197. Tail's End, Inc., New York, N.Y. Filed Mar. 19, 1969.



For Women's, Teens', and Children's Sportswear—Namely, Shorts, Slacks, Pants, Pants-Tops, Dresses, Skirts, Suits and Vests, Blouses and Shirts (Int. Cl. 25).  
First use Feb. 7, 1969.

SN 322,306. Lucien Piccard Sportswear, Ltd., New York, N.Y. Filed Mar. 20, 1969.

## LUSHEEN

For Men's Knit Shirts (Int. Cl. 25).  
First use Feb. 3, 1969.

SN 322,559. Glamorise Foundations, Inc., New York, N.Y. Filed Mar. 26, 1969.

## GLAMOR-FLEX

For Foundation Garments (Int. Cl. 25).  
First use Mar. 7, 1969.



SN 323,183. Berkley Shirt Co., Inc., New York, N.Y. Filed Apr. 1, 1969.

**POSE'N PRETTY**

For Ladies' and Girls' Sportswear, Skirts, Pants, Shifts, and Jumper Dresses (Int. Cl. 25).  
First use February 1969.

SN 323,184. Frederick Brown, Brooklyn, N.Y. Filed Apr. 1, 1969.

*Florence Frederick*  
ORIGINALS

The name "Florence Frederick" is fictitious. The word "Originals" is disclaimed apart from the mark as shown. For Dresses (Int. Cl. 25).  
First use about May 1950.

SN 323,514. Interco Incorporated, d.b.a. The Florsheim Shoe Company, Chicago, Ill. Filed Apr. 3, 1969.



Owner of Reg. Nos. 700,231, 804,333, and others.  
For Men's Shoes (Int. Cl. 25).  
First use Jan. 21, 1969.

SN 323,911. Eagle Shoe Mfg. Company, Inc., Everett, Mass. Filed Apr. 8, 1969.

**ALAD**

For Men's and Boys' Shoes (Int. Cl. 25).  
First use October 1968.

SN 324,004. General Mills, Inc., Minneapolis, Minn. Filed Apr. 9, 1969.

**CLACKERGRAM**

For T-Shirts (Int. Cl. 25).  
First use on or prior to Feb. 18, 1969.

SN 324,005. General Mills, Inc., Minneapolis, Minn. Filed Apr. 9, 1969.

**WISE CLACKS**

For T-Shirts (Int. Cl. 25).  
First use on or prior to Feb. 18, 1969.

SN 324,006. General Mills, Inc., Minneapolis, Minn. Filed Apr. 9, 1969.

**CLACKERS**

For T-Shirts and Caps (Int. Cl. 25).  
First use on or prior to Feb. 18, 1969.

SN 324,264. The Lovable Company, Atlanta, Ga. Filed Apr. 11, 1969.

**FLATTERPANTS**

For Women's Foundation Garments (Int. Cl. 25).  
First use Apr. 2, 1969.

SN 324,266. The Lovable Company, Atlanta, Ga. Filed Apr. 11, 1969.

**YOUNG YUMS**

For Women's Foundation Garments (Int. Cl. 25).  
First use Apr. 2, 1969.

**Class 40—Fancy Goods, Furnishings, and Notions**

SN 312,545. K & C Wig Creations, Inc., Philadelphia, Pa. Filed Nov. 19, 1968.

**CRAMLON**

For Wigs Having Synthetic Fibers Which Simulate Human Hair (Int. Cl. 26).  
First use June 1968.

SN 314,149. Finesse Products, Inc., Mount Kisco, N.Y. Filed Dec. 11, 1968.

**colormate**

For Ornaments—Namely, Buckles, Bows and Clips, for Women's Shoes, the Ornaments To Be Dyed Various Colors Pursuant to a Special Procedure Developed by Applicant (Int. Cl. 26).  
First use on or about Apr. 6, 1967.

SN 319,351. Paragon Hair Goods, Ltd., New York, N.Y. Filed Feb. 17, 1969.

**CURL-DOWN**

For Wigs (Int. Cl. 26).  
First use Feb. 1, 1968.

SN 319,739. Temptress Wigs, Inc., Philadelphia, Pa. Filed Feb. 20, 1969.

**VENDOME**

For Wigs (Int. Cl. 26).  
First use Jan. 17, 1969.

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

SN 298,598. Hampton Mills, Inc., d.b.a. House of Cameo of Cherrylog, Georgia, Ellijay, Ga. Filed May 20, 1968.



For Bathroom Mats and Commode Lid Covers (Int. Cls. 24 and 27).  
First use at least as early as Oct. 1, 1962.

SN 298,599. Hampton Mills, Inc., d.b.a. House of Cameo of Cherrylog, Georgia, Ellijay, Ga. Filed May 20, 1968.

**HOUSE OF CAMEO**

For Bathroom Mats and Commode Lid Covers (Int. Cls. 24 and 27).  
First use at least as early as Oct. 1, 1962.

SN 299,637. Abracadabra Creations Inc., New York, N.Y. Filed June 4, 1968.



For Fabrics for Making Into Slacks, Coats, Suits, Blouses and the Like and for Making Into Draperies (Int. Cl. 24).  
First use prior to May 1, 1968.

SN 312,129. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

**Nice 'n' Easy**

For Carpets (Int. Cl. 27).  
First use Nov. 20, 1967.

SN 320,882. United Merchants and Manufacturers, Inc., New York, N.Y. Filed Mar. 5, 1969.

**WHITE HOUSE COLLECTION**

Applicant disclaims exclusive right to use of the word "Collection" except in association with and as part of the mark as shown.

For Woven Fabrics Adapted To Be Made Up Into Draperies, Slipcovers, Upholstery, Pillow Covers, Bedspreads, and Ready-Made Bedspreads and Draperies (Int. Cl. 24).  
First use on or about Nov. 4, 1968.

SN 321,657. Johnson & Johnson, d.b.a. Cel-Fibe, New Brunswick, N.J. Filed Mar. 13, 1969.

**SOFTCEL**

For Disposable Fabrics (Int. Cl. 24).  
First use Feb. 5, 1969.

SN 322,400. Beacon Manufacturing Company, New York, N.Y. Filed Mar. 21, 1969.



Owner of Reg. Nos. 62,895, 99,536, and others.  
For Blankets, Crib Blankets, and Blanket Goods in the Piece, Made Wholly of Cotton, of Cotton and Rayon, of Cotton, Rayon, and Wool, or of Synthetic Fibers or Combinations Thereof; Electric Blankets; Bed Spreads and Bed Comfortables, Including Jacquard; Elderdown Piece Goods; Upholstery Fabrics; Rugs and Traveling Rugs (Int. Cls. 24 and 27).  
First use Oct. 1, 1968; April 1905, as to "Beacon."

SN 323,297. Indian Head Inc., New York, N.Y. Filed Apr. 1, 1969.

**SHEER MIST**

For Fabrics Sold in the Piece Composed of Polyester, Cotton, and Combinations Thereof (Int. Cl. 24).  
First use Apr. 24, 1968.

**Class 44—Dental, Medical, and Surgical Appliances**

SN 305,072. Sarns, Inc., Ann Arbor, Mich. Filed Aug. 13, 1968.

**SARNS**

For Pump Oxygenator Consoles, Pumping Heads for Heart Supplement, Arterial Bubble Traps, Venous Collection Reservoirs, Coronary Sinus Return Chambers, Coronary Perfusion, Pressure Monitors, Rotating Disc Oxygenators, Heat Exchangers for Heart Operation Equipment, Portable Pump Consoles for Coronary Perfusion, Arterial Perfusion, Sternal Saws, Femoral Perfusion Cannulae, Pressure Perfusion Cannulae, Intercardiac Suckers, and Valvuloplasty Instruments (Int. Cl. 10).  
First use Nov. 7, 1960.

**Class 45—Soft Drinks and Carbonated Waters**

SN 322,904. The Pillsbury Company, Minneapolis, Minn. Filed Mar. 26, 1969.



For Powders for Preparing Soft Drinks (Int. Cl. 32).  
First use Feb. 25, 1969.

SN 322,905. The Pillsbury Company, Minneapolis, Minn. Filed Mar. 26, 1969.



For Powders for Preparing Soft Drinks (Int. Cl. 32).  
First use Feb. 25, 1969.



SN 322,906. The Pillsbury Company, Minneapolis, Minn. Filed Mar. 26, 1969.



For Powders for Preparing Soft Drinks (Int. Cl. 32).  
First use Feb. 25, 1969.

### Class 46—Foods and Ingredients of Foods

SN 271,460. Fruen Milling Company, Minneapolis, Minn. Filed May 15, 1967.

### SLEEK

For Food Supplement Including Vitamins and Minerals for the Conditioning of Horses (Int. Cl. 31).  
First use May 9, 1967.

SN 286,846. SCM Corporation, d.b.a. Durkee Famous Foods, Cleveland, Ohio. Filed Dec. 13, 1967.



Owner of Reg. Nos. 547,098, 798,144, and 835,570.  
For Spices, Pepper, Salt, Salad Seasonings Consisting of Various Spices, Freeze Dried Chives, Imitation Butter Flavored Salt, Parslled Garlic Salt, Chopped Onions, Cocktail Onions, Garlic Powder, Maraschino Cherries, Olives, and Edible Olive Oil (Int. Cls. 29 and 30).  
First use Apr. 24, 1967.

SN 289,902. Kelm-Diat G.m.b.H., Augsburg, Germany. Filed Jan. 30, 1968.

### MOLAT

Owner of German Reg. No. 603,610, dated Dec. 22, 1950.  
For Dietetic Food Preparations Made of Plant Seeds and Seedlings for Nutritional and Dietetic Purposes (Int. Cl. 5).

SN 292,804. Performance Systems, Inc., Nashville, Tenn., by change of name from Minnie Pearl's Chicken System, Inc., Nashville, Tenn. Filed Mar. 8, 1968.

### HOW-DEE-LICIOUS!

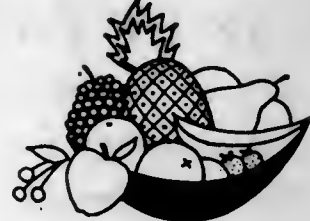
For Fried Chicken and Fried Chicken Dinners Including Potatoes, Gravy, Slaw, Salads, and/or Barbeque Beans (Int. Cl. 29).  
First use Dec. 19, 1967.

SN 297,520. Borden, Inc., New York, N.Y. Filed May 7, 1968.

### DOZY OAT CAKES

The words "Oat Cakes" are disclaimed apart from the mark as shown.  
For Baked Cake-Type Confection (Int. Cl. 30).  
First use on or before Apr. 9, 1968.

SN 300,487. William A. Shade Co., Inc., Belmont, Calif. Filed June 14, 1968.



For Food Flavor Concentrates and Extracts, Stabilizers and Chocolate in Solid and Liquid Form, Sold Exclusively to Food Manufacturers for Inclusion by the Food Manufacturers in Manufactured Products (Int. Cls. 3 and 30).  
First use July 1965.

SN 301,095. Staff Supermarket Associates, Inc., Jericho, N.Y. Filed June 21, 1968.

### KREM

For Non-Dairy Liquid for Use as Coffee Lightener and With Other Foods, and Also in Whipped Form for Topping Other Foods, Both Forms Being Sold Frozen as Well as Non-Frozen (Int. Cl. 29).  
First use June 6, 1968.

SN 301,183. London Bridge Fish & Chips, Inc., Beverly Hills, Calif., assignee of Joseph R. Battelger, Pico Rivera, Calif. Filed June 24, 1968.

### LONDON BRIDGE

For Prepared Foods—Namely, Fish and Chips (French Fries) (Int. Cl. 29).  
First use May 29, 1968.

SN 301,244. Old Home Foods, Inc., St. Paul, Minn. Filed June 24, 1968.



Owner of Reg. No. 256,411.  
For Cottage Cheese, Flavored Milk and Vegetable Oil-Based Snack Dips, Ice Cream, Sour Cream, Puddings, Gelatin Salads, Potato Salad, Three Bean Salad, and Egg Nog Mix (Int. Cl. 29).  
First use September 1966.

SN 303,700. Perugina S.p.A. Cioccolato & Confetture, Perugia, Italy. Filed July 26, 1968.

### SIMPATICO

Priority claimed under Sec. 44(d) on Italian application, filed Feb. 1, 1968; Reg. No. 224,608, dated Apr. 3, 1968. "Simpatico" is an Italian word meaning "likeable," "agreeable" or "pleasant."  
For Chocolates (Int. Cl. 30).

SN 304,003. David Lavery & Son Proprietary Limited, Melbourne, Victoria, Australia. Filed July 31, 1968.

### TASMAN

Owner of Australian Reg. Nos. B171,061 and B171,062, dated Dec. 7, 1961.  
For Butter, Cheese, Milk Powder, and Rolled Oats (Int. Cls. 29 and 30).

SN 304,243. Pevely Dairy Company, St. Louis, Mo. Filed Aug. 2, 1968. SN 309,694. Procino-Rossi Corporation, Auburn, N.Y. Filed Oct. 15, 1968.

### DELITEFULLY LITE

For Liquid Milk (Int. Cl. 29).  
First use July 12, 1968.

SN 305,461. Kelly and Weinhan, Inc., New York, N.Y. Filed Aug. 19, 1968.

### NEW TRICKS

For Dog Food (Int. Cl. 31).  
First use June 17, 1968.

SN 306,945. Regal Fruit Cooperative, Tonasket, Wash. Filed Sept. 9, 1968.

### EVERDAY

For Fresh Apples (Int. Cl. 31).  
First use 1945.

SN 308,121. Montana Flour Mills Company, Great Falls, Mont. Filed Sept. 24, 1968.

### CEREIANA

### BIG SKY 20's

Owner of Reg. Nos. 26,186, 75,499, and 552,263.  
For Cattle Feed, Sheep Feed, Poultry Feeds, Hog Feed and Dog Food (Int. Cl. 31).  
First use July 10, 1968.

SN 308,458. H. C. Brill Company, Inc., Cedar Grove, N.J. Filed Sept. 30, 1968.

### HEARTH-MASTER

For Base for Making Sour Dough Bakery Products (Int. Cl. 30).  
First use Aug. 16, 1968.

SN 308,459. H. C. Brill Company, Inc., Cedar Grove, N.J. Filed Sept. 30, 1968.

### RY-MASTER

For Rye Sour Base for Making Breads (Int. Cl. 30).  
First use June 28, 1968.

SN 308,490. ITT Continental Baking Company, Rye, N.Y. Filed Sept. 30, 1968.

### FRUIT'N CREME DELIGHT

Applicant disclaims exclusive right to the words "Fruit" and "Crema" apart from the mark as shown.  
For Frozen Pies (Int. Cl. 30).  
First use Sept. 17, 1968.

SN 309,296. A. H. Robins Company, Incorporated, Richmond, Va. Filed Oct. 9, 1968.

### CORN PONIES

Applicant disclaims the word "Corn" apart from the mark as shown.  
For Snack Foods—Namely, Corn Chips (Int. Cl. 29).  
First use Aug. 23, 1968.

### WHEEL-MACS

The representation of the goods is disclaimed apart from the mark shown.  
For Macaroni (Int. Cl. 30).  
First use Jan. 1, 1968.

SN 310,152. Totinos Finer Foods, Inc., Minneapolis, Minn. Filed Oct. 21, 1968.



The mark represents a particular living individual whose consent is of record.  
For Frozen Pizza (Int. Cl. 30).  
First use Jan. 2, 1963.

SN 310,235. Keystone Cooperative Grape Association, North East, Pa. Filed Oct. 22, 1968.



Owner of Reg. No. 522,325.  
For Fruit and Vegetable Juices and Concentrates (Int. Cl. 32).  
First use 1921; 1901, as to the "Keystone Design."

SN 310,260. Totinos Finer Foods, Inc., Minneapolis, Minn. Filed Oct. 22, 1968.

### TOTINO'S

For Pizzas (Int. Cl. 30).  
First use Jan. 2, 1963.

SN 310,488. North Star Dairy, St. Paul, Minn. Filed Oct. 24, 1968.

### ZUMBRO VALLEY

For Cheese (Int. Cl. 29).  
First use on or about Sept. 23, 1968.

SN 310,565. Hurley Company, Jeffersonville, Ind. Filed Oct. 25, 1968.

### BONANZA

For Snack Food Products Made From Corn (Int. Cl. 30).  
First use Aug. 22, 1968.



SN 310,858. Campbell Soup Company, Camden, N.J. Filed Oct. 30, 1968. SN 313,080. Dainty Cookies, Inc., Palisades Park, N.J. Filed Nov. 26, 1968.

# Pizzo Pies

The word "Pies" is disclaimed apart from the mark as a whole. The word "Pizzo" is translated from the Italian as a "pointed beard," "goatee" or "mountain peak." For Canned Macaroni Product in Spiced Tomato Sauce (Int. Cl. 30).  
First use Oct. 30, 1967.

SN 310,921. A. H. Robins Company, Incorporated, Richmond, Va. Filed Oct. 30, 1968.

## MISH MASH

For Cheese-Flavored Snack Food of a Cornmeal Nature (Int. Cl. 30).  
First use Oct. 1, 1968.

SN 312,049. Leader Candies, Inc., Brooklyn, N.Y. Filed Nov. 13, 1968.



For Candy (Int. Cl. 30).  
First use January 1958.

SN 312,324. Philadelphia Chewing Gum Corporation, Haver-town, Pa. Filed Nov. 15, 1968.

## BOSS BUBBLE

Applicant disclaims the word "Bubble" apart from the mark as shown.  
For Chewing Gum (Int. Cl. 30).  
First use Nov. 5, 1968.

SN 312,588. Hinton & Co., Inc., d.b.a. Pov Products, Brooklyn, N.Y. Filed Nov. 19, 1968.

## CHIP SNACKERS

The word "Chip" is disclaimed apart from the mark as shown.  
For Dog Food (Int. Cl. 31).  
First use July 30, 1968.

# Honey Hooker

Applicant disclaims the word "Honey" apart from the mark as shown.  
For Cookies (Int. Cl. 30).  
First use May 1, 1968.

SN 313,085. Drew Chemical Corporation, New York, N.Y. Filed Nov. 26, 1968.

## CHOCOBEE

Owner of Reg. Nos. 128,532 and 723,173.  
For Edible Vegetable Fat (Int. Cl. 29).  
First use at least as early as June 1968.

SN 313,087. Drew Chemical Corporation, New York, N.Y. Filed Nov. 26, 1968.

## WECOTEX

Owner of Reg. Nos. 128,532 and 723,173.  
For Edible Vegetable Fat (Int. Cl. 29).  
First use at least as early as November 1966.

SN 313,194. B. A. Patterson, d.b.a. Albulac Company, Chicago, Ill. Filed Nov. 27, 1968.

## ZIP-WHIP

For Vegetable Derived Products Used as Toppings for Foods, Such as Meringues, Icings, Whipped Creams, Chiffons, and Cream Fillings (Int. Cl. 29).  
First use Jan. 31, 1950.

SN 313,561. Eggway Foods, Inc., Jacksonville, Fla. Filed Dec. 4, 1968.

## QUIK WAY

For Frozen Foods—Namely Frozen Eggs and Omelets (Int. Cl. 29).  
First use Nov. 20, 1968.

SN 313,787. Mainline Foods, Inc., Salem, Ore. Filed Dec. 6, 1968.

## Brooklake

For Frozen and Canned Vegetables (Int. Cl. 29).  
First use Nov. 14, 1968.

SN 314,087. William R. Koretz, New York, N.Y. Filed Dec. 10, 1968.

# SHRIMP WALK



Applicant disclaims the word "Shrimp" apart from the mark as a whole, while reserving all common law rights therein.  
For Cocktail Sauce (Int. Cl. 30).  
First use Nov. 27, 1968.

SN 314,612. Universal Foods Corporation, Milwaukee, Wis. Filed Jan. 21, 1969. SN 323,192. Fredlo Farms, Arvin, Calif. Filed Apr. 1, 1969.

## GRANFONTENE

For Cheese (Int. Cl. 29).  
First use on or about Oct. 17, 1968.

SN 317,664. Long Island Macaroni Co., Inc., Deer Park, N.Y. Filed Jan. 22, 1969.

## TIC TAC TOE

For Combination of Macaroni and Spaghetti (Int. Cl. 30).  
First use Aug. 6, 1968.

SN 317,707. Barnes Grocer Company, Poplar Bluff, Mo. Filed Jan. 28, 1969.

## BONNIE BEE



For Flour (Int. Cl. 30).  
First use Nov. 6, 1968.

SN 318,275. The Quaker Oats Company, d.b.a. Burry's or Burry Biscuit Division, Chicago, Ill. Filed Feb. 4, 1969.

## CHOC II

For Frozen Confections (Int. Cl. 30).  
First use Jan. 3, 1969.

SN 319,124. Wilbur-Ellis Company, San Francisco, Calif. Filed Feb. 14, 1969.

## RED LANTERN



For Mushrooms Packed in Cans and Jars (Int. Cl. 29).  
First use Jan. 29, 1969.

SN 319,771. Kal Kan Foods, Inc., Los Angeles, Calif. Filed Feb. 24, 1969.



No claim is made to the wording "Kitty Stew" apart from the association shown, without disclaimer of applicant's common law rights. Owner of Reg. Nos. 430,306, 763,629, and others.

For Canned Cat Food (Int. Cl. 31).  
First use in or about January 1968.

SN 322,233. Ralston Purina Company, St. Louis, Mo. Filed Mar. 20, 1969.

## PURA-LASSES

For Cattle Feed Supplement (Int. Cl. 31).  
First use Jan. 17, 1969.

TM 865 O.G.—10

# Fredlo Farms

For Fresh Vegetables (Int. Cl. 31).  
First use Oct. 13, 1968.

SN 324,007. General Mills, Inc., Minneapolis, Minn. Filed Apr. 9, 1969.

## CLACKERS

For Cereal Derived Ready-To-Eat Snack (Int. Cl. 30).  
First use on or prior to Feb. 18, 1969.

### Class 47—Wines

SN 291,847. Thomas E. Dunlap, d.b.a. Swiss Hotel Cellars, Sonoma, Calif. Filed Feb. 26, 1968.

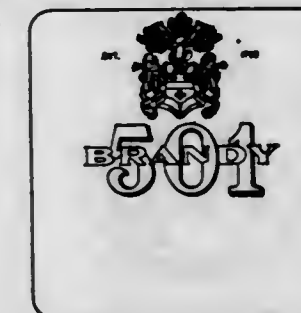


The words "Dry Sherry" and the representation of the container for the goods is disclaimed apart from the mark as shown.

For Dry Sherry (Int. Cl. 33).  
First use May 1958.

### Class 49—Distilled Alcoholic Liquors

SN 300,885. Carlos y Javier de Terry, S.L., Puerto de Santa Maria, Cadiz, Spain. Filed June 18, 1968.



The words "Est." "1783," "and "Brandy" are disclaimed. In the heraldic design the word "Cruce" means "cross" in English. Owner of Spanish Reg. No. 403,631, dated Oct. 9, 1964; and U.S. Reg. No. 787,901.  
For Brandy (Int. Cl. 33).

### Class 50—Merchandise Not Otherwise Classified

SN 271,003. Zenith Radio Corporation, Chicago, Ill. Filed May 8, 1967.

## ZENITH

Owner of Reg. Nos. 161,341, 828,809, and others.  
For Decorative Trim Pieces for Electronic Apparatus (Int. Cl. 20).  
First use at least as early as 1946.



SN 313,396. Bethurem Machinist Center, Inc., Rock Island, Ill. Filed Dec. 2, 1968. SN 305,443. Geri Creme, Inc., New York, N.Y. Filed Aug. 19, 1968.

**DOMINO DOCKS**

No claim is made to the word "Docks" apart from the mark as shown.

For Concrete Floating Docks for Mooring Boats (Int. Cl. 19).

First use Aug. 1, 1968.

SN 314,457. Quiet Worlds, Inc., Winter Park, Fla. Filed Dec. 13, 1968.

**QUIET WORLD**

For Aquariums (Int. Cl. 16).

First use June 1967.

SN 316,602. R. D. Bussard & Son, Inc., Albany, Ore. Filed Jan. 15, 1969.



For Anti-Bacterial Fabric Fabricated Into Liners and Covers for Carts and Baskets Used in the Drycleaning and Laundry Industries and Other Similar Applications (Int. Cl. 22).

First use Nov. 14, 1968.

SN 317,343. International Rubber Corporation, Avon, Mass. Filed Jan. 23, 1969.

**INTERNATIONAL RUBBER**

The word "Rubber" is disclaimed apart from the mark as shown.

For Rubber Mats, Mattings, Stair Treads, and Runners (Int. Cl. 27).

First use Feb. 8, 1967.

**Class 51 — Cosmetics and Toilet Preparations**

SN 304,621. Richter Research Products Corp., Woodside, N.Y. Filed Aug. 7, 1968.



For Nail Conditioner, Skin Cream, Bath Oil and Facial Lotion (Int. Cl. 3).

First use Sept. 24, 1963.

SN 304,950. New York Pencil Co., Inc., New York, N.Y. Filed Aug. 12, 1968.

**EYE SHADOW THEATRE**

Applicant disclaims the words "Eye Shadow" apart from the mark as shown.

For Eye Shadow (Int. Cl. 3).

First use Mar. 5, 1965.

SN 304,952. New York Pencil Co., Inc., New York, N.Y. Filed Aug. 12, 1968.

**QUICK-GLOW**

For Rouge or Blusher (Int. Cl. 3).

First use July 2, 1968.

*Geri Lotion*

The word "Lotion" is disclaimed apart from the mark as shown.

For Body Cream (Int. Cl. 3).

First use May 14, 1968.

SN 309,785. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 16, 1968.



The trademark consists of parallel diagonal red, white and blue stripes in conjunction with a blue panel. Applicant makes no exclusive claim to the outline of the carton separately and apart from the mark as shown. Owner of Reg. No. 344,122.

For Shave Cream (Int. Cl. 3).

First use Mar. 1, 1966.

SN 311,330. Elizabeth Arden Sales Corporation, New York, N.Y. Filed Nov. 5, 1968.

**DIRECTIONALE**

For Face and Body Creams and Lotions (Int. Cl. 3).

First use Oct. 15, 1968.

SN 320,239. John H. Breck, Inc., Wayne, N.J. Filed Feb. 27, 1969.

**I FEEL PRETTY**

Owner of Reg. No. 839,268.

For Creme Rinse (Int. Cl. 3).

First use Feb. 12, 1969.

SN 322,216. Colgate-Palmolive Company, New York, N.Y. Filed Mar. 20, 1969.

**VIGIL**

For Hairdressing (Int. Cl. 3).

First use Feb. 26, 1969.

**Class 52 — Detergents and Soaps**

SN 297,118. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed May 1, 1968.

**RESOURCE**

For Liquid Alkali Cleaning Preparation Particularly Useful in the Food Industry (Int. Cl. 3).

First use Mar. 13, 1968.

SN 304,622. Richter Research Products Corp., Woodside, N.Y. Filed Aug. 7, 1968. SN 319,730. Professional Chemicals Corporation, Phoenix, Ariz. Filed Feb. 20, 1969.



For Hair Shampoo (Int. Cl. 3).

First use Sept. 24, 1963.

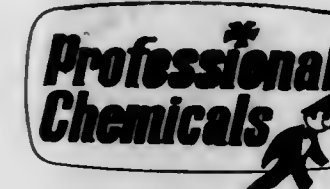
SN 308,232. Remwood Chemical Company, Tulsa, Okla. Filed Sept. 25, 1968.



Owner of Reg. No. 770,512.

For Spray Type Cleaner for Use on Windows and Automobiles (Int. Cl. 3).

First use Aug. 27, 1968.



Applicant disclaims the term "Professional Chemicals" apart from the mark as shown.

For Chemical Compounds Incorporating Synthetic Detergents for Use as Carpet Cleaners, Spot Removers, Floor Cleaners, and General Purpose Household Cleaners (Int. Cl. 3).

First use June 15, 1968.

SN 320,240. John H. Breck, Inc., Wayne, N.J. Filed Feb. 27, 1969.

**I FEEL PRETTY**

Owner of Reg. No. 839,268.

For Hair Shampoo (Int. Cl. 3).

First use Feb. 12, 1969.

**SERVICE MARKS****Class 100 — Miscellaneous**

SN 298,621. Osborne Photographic Laboratories, Inc., Cincinnati, Ohio. Filed May 20, 1968.

SN 257,583. Buchanan Hearing Aid Co., Inc., d.b.a. Pano-  
phonic Hearing Devices, Washington, D.C. Filed Oct. 31,  
1966.



The word "Hearing" is disclaimed apart from the mark as shown.

For Fitting, Testing, Maintenance, and Service of Hearing Aids (Int. Cl. 42).

First use August 1966.

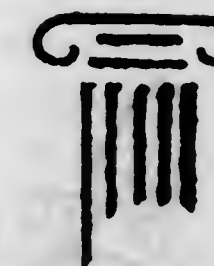
SN 285,642. Allstate Enterprises, Inc., Northbrook, Ill. Filed Nov. 27, 1967.



Applicant disclaims the words "Motor Club" apart from the mark as shown. Owner of Reg. Nos. 758,559, 787,650, and others.

For Motor Club Services (Int. Cl. 42).

First use July 19, 1967.



Owner of Reg. No. 814,182.  
For Photographic Studio Services—Namely, Taking Portrait and Commercial Photographs (Int. Cl. 42).  
First use May 5, 1965.

SN 298,622. Osborne Photographic Laboratories, Inc., Cincinnati, Ohio. Filed May 20, 1968.

**GEORGIAN**

Owner of Reg. No. 814,182.  
For Photographic Studio Services—Namely, Taking Portrait and Commercial Photographs (Int. Cl. 42).  
First use Apr. 17, 1968.

SN 298,745. Michael James, Inc., Washington, D.C. Filed May 21, 1968.

**THE GENTLEMEN II**

For Restaurant and Banquet Services (Int. Cl. 42).  
First use June 27, 1967.

SN 302,623. Kentucky Fried Chicken Corporation, Nashville, Tenn. Filed July 12, 1968.

**KENTUCKY ROAST BEEF**

Applicant disclaims the term "Roast Beef" apart from the mark as shown. Owner of Reg. Nos. 637,305, 807,000, and others.

For Restaurant Services (Int. Cl. 42).

First use Feb. 17, 1968.



SN 304,274. Your Pizza Shop, Inc., Canton, Ohio. Filed Aug. 2, 1968.



No claim is made to the wording "Your Pizza Shop Inc." or the slogan "Your Pizza Shop Sincerely Believes That There Is No Substitute For Quality" from the mark as shown. For Restaurant Services (Int. Cl. 42). First use in 1953.

SN 304,306. Chicasea, Inc., d.b.a. ChicASea Take Home Shop, Richmond, Va. Filed Aug. 5, 1968.



For Take-Home Restaurant Food Service (Int. Cl. 42). First use July 26, 1968.

SN 305,694. Taco Bell, Torrance, Calif. Filed Aug. 21, 1968.



The word "Taco" is disclaimed apart from the mark as shown. Reg. Nos. 820,073, 846,432, and 856,207. For Restaurant Services (Int. Cl. 42). First use on or about Oct. 21, 1966.

SN 318,271. Linky's Incorporated, Savannah, Ga. Filed Feb. 4, 1969.

### LINKY'S

For Restaurant Services (Int. Cl. 42). First use June 14, 1968.

SN 320,651. Seven Kings, Inc., Lexington, Ky. Filed Mar. 3, 1969.



For Restaurant Services (Int. Cl. 42). First use May 20, 1968.

SN 322,793. Donna Mare, Inc., d.b.a. Julius Caesar's Restaurant, Hialeah, Fla. Filed Mar. 26, 1969.

### JULIUS CAESAR'S "HOME OF THE ROMAN STEAK"

For Restaurant Services (Int. Cl. 42). First use on or about Feb. 2, 1963.

### Class 101 — Advertising and Business

SN 296,986. Betty Cook Rottmann, Columbia, Mo. Filed Apr. 30, 1968.



The word "Ideas" is disclaimed apart from the mark as shown. For Publicity Consulting Services (Int. Cl. 35). First use Feb. 26, 1968.

SN 300,620. Recognition Equipment Incorporated, Dallas, Tex. Filed June 17, 1968.

### ACUNET

For Automatic Passenger Checkin and Boarding, Baggage Handling, Reservations, and Accounting Services to Airlines (Int. Cl. 35). First use Mar. 13, 1968.

SN 302,231. The Grand Union Company, East Paterson, N.J. Filed July 8, 1968.

### GRAND UNION MAKES SHOPPING MORE REWARDING

Owner of Reg. Nos. 46,832, 848,308, and others. For Retail Grocery and Supermarket Services (Int. Cl. 35). First use May 1968.

SN 302,356. Roth Young Personnel Service, Inc., New York, N.Y. Filed July 9, 1968.

### ROTH YOUNG

"Roth Young" is not the name of any known person. For Employment Agency Services (Int. Cl. 35). First use Sept. 8, 1966.

SN 303,889. Campus Chefs, Incorporated, Elizabeth, N.J. Filed July 30, 1968.

### CAMPUS CHEFS

For Operating and Managing Cafeterias for Schools, Colleges, and Universities (Int. Cl. 35). First use 1953.

SN 303,972. Add-A-Man, Inc., Chicago, Ill. Filed July 31, 1968. SN 316,073. Mathew D. Artson, d.b.a. A-A Answering Service, San Francisco, Calif. Filed Jan. 8, 1969.

### ADD + A + GIRL

Owner of Reg. No. 852,468. For Providing All Types of Secretarial and Office Temporary Assistants (Int. Cl. 35). First use on or about Feb. 7, 1966.

SN 312,259. Alfie's Fish & Chips, Inc., Houston, Tex. Filed Nov. 15, 1968.



Without relinquishing any of its common law rights, applicant disclaims the words "Authentic English" and "Fish & Chips" apart from the mark as shown.

For Advising, Instructing and Assisting in the Establishment and Operation of Restaurants for Others (Int. Cl. 35). First use at least as early as Aug. 8, 1968.

SN 313,415. Glendinning Companies, Inc., Westport, Conn. Filed Dec. 2, 1968.

### LUCKY MONEY

For Promoting the Sale of Goods and/or Services of Others Through the Distribution of Printed Material and Advertising Designs for Promotional Contests (Int. Cl. 35). First use Aug. 1, 1968.

SN 313,416. Glendinning Companies, Inc., Westport, Conn. Filed Dec. 2, 1968.

### LUCKY PARTNERS

For Promoting the Sale of Goods and/or Services of Others Through the Distribution of Printed Material and Advertising Designs for Promotional Contests (Int. Cl. 35). First use Aug. 1, 1968.

SN 313,417. Glendinning Companies, Inc., Westport, Conn. Filed Dec. 2, 1968.

### WORDS & MUSIC LIBRARY

For Promoting the Sale of Goods and/or Services of Others Through the Distribution of Printed Materials and Advertising Designs (Int. Cl. 35). First use Aug. 20, 1968.

SN 314,024. Map In Motion, Inc., Chicago, Ill. Filed Dec. 10, 1968.

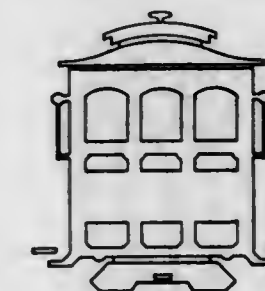
### MAN IN MOTION

For Promotion of Hotels Through Arrangements for Conventions, Sales Meetings and Individual Hotel Reservations and Presentations to Travel Agents (Int. Cl. 35). First use at least as early as June 6, 1963.

SN 315,314. Glendinning Companies, Inc., Westport, Conn. Filed Dec. 27, 1968.

### NATIONAL HERITAGE

For Promoting the Sale of Goods and Services of Others Through the Distribution of Printed Materials and Advertising Designs for Promotional Games (Int. Cl. 35). First use Oct. 2, 1968.



For Telephone Answering Service (Int. Cl. 35). First use September 1966.

### Class 102 — Insurance and Financial

SN 278,182. James R. Baker, d.b.a. James R. Baker & Associates, Wichita, Kans. Filed Aug. 14, 1967.



For Insurance Brokerage Services (Int. Cl. 36). First use on or about June 1, 1965.

SN 278,183. James R. Baker, d.b.a. James R. Baker & Associates, Wichita, Kans. Filed Aug. 14, 1967.

### "GREETINGS FROM TIGATOR LAND"

For Insurance Brokerage Services (Int. Cl. 36). First use on or about June 1, 1965.

SN 278,184. James R. Baker, d.b.a. James R. Baker & Associates, Wichita, Kans. Filed Aug. 14, 1967.



"Our Symbol That Typifies Our Ambition To Always Be On The Move and Exceedingly Aggressive"

For Insurance Brokerage Services (Int. Cl. 36). First use on or about June 1, 1965.

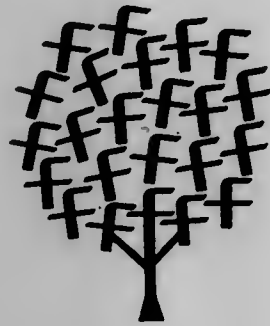
SN 296,292. Armed Services Mutual Benefit Association, Nashville, Tenn. Filed Apr. 23, 1968.



For Administering a Death Benefit's Group Insurance Program (Int. Cl. 36). First use April 1966.



SN 296,953. The Fidelity Mutual Life Insurance Company, Philadelphia, Pa. Filed Apr. 30, 1968.



Owner of Reg. No. 808,978.  
For Underwriting of Life and Health Insurance (Int. Cl. 36).  
First use Nov. 1, 1967.

SN 302,724. The Detroit Bank and Trust Company, Detroit, Mich. Filed July 15, 1968.

## ULTRA/CHEK

The word "Chek" comprising a part of the mark is disclaimed.  
For Combined Checking Account and Personal Loan Services (Int. Cl. 36).  
First use June 4, 1968.

SN 305,715. Chargette, Inc., Akron, Ohio. Filed Aug. 22, 1968.

## CHARGETTE

For Extending Credit to Customers of Subscribing Merchants Through Use of Credit Cards and the Making of Collections From Such Customers Through a Central Billing System (Int. Cl. 36).  
First use Apr. 11, 1959.

SN 307,618. Palmetto State Life Insurance Company, Columbia, S.C. Filed Sept. 18, 1968.

## PSL

For Underwriting of Life, Accident, Health and Hospital Insurance, and Making Loans (Int. Cl. 36).  
First use on or before Dec. 31, 1955.

SN 310,932. Suffolk County Federal Savings & Loan Association, Babylon, N.Y. Filed Oct. 30, 1968.



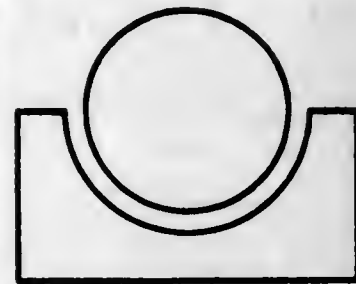
For Savings and Loan Services (Int. Cl. 36).  
First use June 19, 1968.

SN 313,499. Exemplar Service, Inc., Teaneck, N.J. Filed Dec. 3, 1968.

## EXEMPLAR

For Insurance Brokerage and Consulting Services (Int. Cl. 36).  
First use during July of 1963.

SN 315,167. Union National Bank, Kansas City, Mo. Filed Dec. 24, 1968.



For Banking Services (Int. Cl. 36).  
First use Dec. 10, 1968.

SN 315,859. United California Bank, Los Angeles, Calif. Filed Jan. 6, 1969.

## PORTVIEW

For Supplying Banks, at Regular Intervals, With an Up-To-Date Appraisal of Its Securities (Int. Cl. 36).  
First use Feb. 5, 1968.

SN 317,283. Physicians Mutual Insurance Company, Omaha, Nebr. Filed Jan. 23, 1969.



The close simulation of a caduceus is disclaimed.  
For Insurance Underwriting Services (Int. Cl. 36).  
First use May 1, 1962.

## Class 103—Construction and Repair

SN 295,268. Volvo Distributing, Inc., Rockleigh, N.J. Filed Apr. 9, 1968.



The drawing is lined for the color blue. The words "Svensk Testad" translated into English mean "Swedish tested." No claim is made to the words "Svensk Tested" apart from the mark as shown.

For Inspecting and Reconditioning Used Cars (Int. Cl. 37).  
First use July 1, 1967.

SN 308,065. Madallion Pool Corporation, Lindenhurst, N.Y. Filed Sept. 18, 1968.



For Construction, Maintenance, Repair and Servicing of Swimming Pools (Int. Cl. 37).  
First use Mar. 10, 1964.

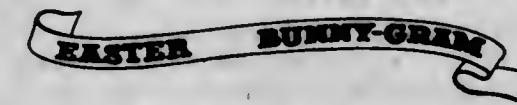
SN 316,728. The Anchorage, Inc., Warren, R.I. Filed Jan. 16, 1969.



For Custom Manufacturing of Boats (Int. Cl. 37).  
First use in 1944.

## Class 104—Communication

SN 315,455. The Western Union Telegraph Company, New York, N.Y. Filed Dec. 30, 1968.



The word "Easter" is disclaimed apart from the mark as shown.

For Providing a Public Message Service for Forwarding Easter Greeting Messages to Others, Including Messages of Fanciful Nature (Int. Cl. 38).  
First use 1939.

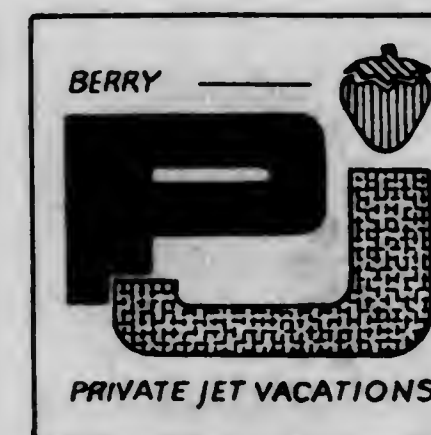
SN 315,456. The Western Union Telegraph Company, New York, N.Y. Filed Dec. 30, 1968.

## BUNNYGRAM

For Providing the Public Service of Forwarding Greeting Messages to Others, Including Messages of a Fanciful Nature (Int. Cl. 38).  
First use 1939.

## Class 105—Transportation and Storage

SN 295,907. Berry World Travel, Inc., Kansas City, Mo. Filed Apr. 18, 1968.



The drawing is lined for the colors red, gold and green. Applicant claims the exclusive right to the use of the words "Private Jet Vacations" as a part of the mark, but not otherwise. Owner of Reg. Nos. 782,586 and 809,057.  
For Travel Agency Services (Int. Cl. 39).  
First use Jan. 7, 1968.

## PIER 66

For Storage, Anchorage, Loading and Berthing of Watercraft (Int. Cl. 39).  
First use Jan. 28, 1957.

SN 310,562. The Greyhound Corporation, Chicago, Ill. Filed Oct. 25, 1968.

## ELECTRONICRUISER

Owner of Reg. No. 676,464.  
For Packing and Truck Transportation of the Goods of Others (Int. Cl. 39).  
First use July 1966.

SN 311,423. Vacations West, Inc., New York, N.Y. Filed Nov. 5, 1968.

## PARTY JET

No claim is made for the word "Jet" apart from the mark as shown.

For Travel Services—Namely, Operating Inclusive Tours and Providing Related Services (Int. Cl. 39).  
First use February 1968.

SN 311,772. Cargill, Incorporated, Minneapolis, Minn. Filed Nov. 12, 1968.

## CARGILL

For Storage of Goods of Others and Transportation of Goods of Others by Rail, Water and Truck (Int. Cl. 39).  
First use 1865.

SN 315,114. Stemmons, Inc., Tulsa, Okla. Filed Dec. 23, 1968.

## THRIFTY

Owner of Reg. Nos. 774,228, 816,350, and 840,196.  
For Public Automobile Parking Service (Int. Cl. 39).  
First use Aug. 22, 1968.

SN 316,043. Associated Container Transportation Limited, London, England. Filed Jan. 8, 1969.



The drawing of the mark is lined for the color blue.  
For Transportation of Freight by Truck, Rail and Vessel (Int. Cl. 39).  
First use on or about Mar. 14, 1968; in commerce on or about Mar. 14, 1968.



SN 316,939. Olson's Royal Coach Tours, Inc., Chicago, Ill. Filed Jan. 21, 1969.

## OLSON'S ROYAL COACH TOURS

Applicant disclaims the term "Tours" apart from the mark as shown.  
For Organizing and Conducting Travel Tours (Int. Cl. 39).  
First use Dec. 27, 1967.

SN 317,794. Crown Peters Travel Services, Inc., New York, N.Y. Filed Jan. 29, 1969.



For Travel Agency Services (Int. Cl. 39).  
First use January 1961.

SN 317,795. Crown Peters Travel Service, Inc., New York, N.Y. Filed Jan. 29, 1969.



For Travel Agency Services (Int. Cl. 39).  
First use May 1, 1968.

### Class 106 — Material Treatment

SN 283,615. James P. Bettio, Jr., d.b.a. Artography, Studio City, Calif. Filed Oct. 30, 1967.



For Protective and Decorative Treatment of Photographs of Others (Int. Cl. 40).  
First use July 15, 1966.

SN 314,776. Cushing and Company, Chicago, Ill. Filed Dec. 18, 1968.

# miniMax

For Photo Reproduction Services (Int. Cl. 40).  
First use on or about Sept. 1, 1968.

SN 318,868. Progressive Industries Corporation, Dayton, Ohio, by merger from Tru-Foto, Inc., Dayton, Ohio. Filed Dec. 16, 1968.



Without abandonment of any common law rights, applicant disclaims the words "Handled With Care" and the picture, apart from the mark as shown.  
For Photograph Processing Services (Int. Cl. 40).  
First use June 9, 1966.

### Class 107 — Education and Entertainment

SN 281,349. Dora Grube Antrim, Dayton, Ohio. Filed Sept. 28, 1967.

## CHILDREN'S ALLEY GARDENS ENDEAVOR

For Educational Services Comprised of Advising and Counseling Children as to Beautifying Their Neighborhoods, and Developing and Furthering Their Interest in Beauty and Nature by Encouraging Them Through Personal Instruction, Informal Classes, Distributing Free Seeds, and Correspondence To Plan, Plant and Grow Neighborhood Gardens (Int. Cl. 41).  
First use 1952; at least as early as 1947, as to the term "Children's Alley Gardens."

SN 294,023. Peter Anthony Disarro, Johnston, R.I. Filed Mar. 25, 1968.

## SOCIETY'S CHILDREN

For Entertainment Services in the Form of Rock and Roll Music Performed by a Group (Int. Cl. 41).  
First use September 1967.

SN 295,426. The Diet Workshop, Inc., d.b.a. The Diet Workshop, Newton Corner, Mass. Filed Apr. 11, 1968.

## IT'S IN TO BE THIN

For Planning, Executing, and Supervising Diet Programs by Means of Group Meetings, Courses Relating to Diet and Nutrition, and the Distribution of Literature Relating Thereto (Int. Cl. 41).  
First use Mar. 6, 1968.

SN 296,526. The Diet Workshop, Inc., d.b.a. The Diet Workshop, Newton Corner, Mass. Filed Apr. 25, 1968.



"The Diet Workshop Way" is disclaimed apart from the mark as shown.

For Planning, Executing and Supervising Diet Programs by Means of Group Meetings, Courses Relating to Diet and Nutrition, and the Distribution of Literature Relating Thereto (Int. Cl. 41).

First use Mar. 6, 1968.

SN 299,634. Madison Square Garden Corporation, New York, N.Y., assignee of Madison Square Garden Center, Inc., New York, N.Y. Filed June 4, 1968.



For Offering Integrated Entertainment, Exhibition and Restaurant Services for Touring and for Convention, Exposition, Meeting and Public Use (Int. Cl. 41).  
First use not later than Jan. 31, 1967.

SN 300,837. Miss Texas Pageant Corporation, Fort Worth, Texas. Filed June 19, 1968.

## MISS TEXAS

Applicant disclaims the term "Texas" apart from the mark as shown, but applicant waives none of its common law rights in the mark or any feature thereof.

For Conducting Beauty, Talent and Personality Contests in Which the Winners Are Granted Scholarships for Education (Int. Cl. 41).  
First use at least as early as 1937.

SN 300,887. Animal Behavior Enterprises, Inc., Hot Springs, Ark. Filed June 20, 1968.

## I. Q. ZOO

Applicant disclaims the word "Zoo" apart from the mark as shown.  
For Providing Trained Animals for Special Purposes and for Entertaining and Educational Exhibits (Int. Cl. 41).  
First use Jan. 1, 1955.

SN 306,383. Information & Systems Institute, Inc., Cambridge, Mass. Filed Aug. 30, 1968.



For Educational Services Rendered Through Seminars Otherwise in the Field of Computer, Management and Systems Sciences (Int. Cl. 41).  
First use on or about May 1, 1967.

SN 309,488. Show Biz, Inc., Nashville, Tenn. Filed Oct. 11, 1968.

## YOUNG COUNTRY

For Television Program Featuring Country and Popular Music (Int. Cl. 41).  
First use Aug. 31, 1968.

## COLLECTIVE MEMBERSHIP MARKS

### Class 200

SN 307,289. Tau Kappa Epsilon Fraternity, Indianapolis, Ind. Filed Sept. 13, 1968.

## TEKE

For Indicating Membership in Applicant.  
First use at least as early as Oct. 19, 1907.

## CERTIFICATION MARKS

### Class A — Goods

SN 307,721. The Wool Bureau, Incorporated, New York, N.Y. Filed Sept. 19, 1968.



The mark certifies that the nature and quality of material, and other characteristics of the goods, namely, fiber content, colorfastness to light, colorfastness to water, colorfastness to washing and resistance of felting. The mark consists of the stylized letters "IWS."

For Products Made Wholly or Predominantly of Wool—Namely, Industrial Yarns.  
First use Aug. 13, 1968.



# TRADEMARK REGISTRATIONS ISSUED PRINCIPAL REGISTER

## Class 1—Raw or Partly Prepared Materials Class 4—Abrasives and Polishing Materials

875,413. HAND HOLDING A FLAME (DESIGN). Polaris Enterprises, Inc. SN 257,078. Pub. 6-10-69. Filed 10-24-66.  
875,414. ASTRACAL. Standard Industrial Minerals, Inc. SN 288,550. Pub. 6-10-69. Filed 1-10-68.  
875,415. K-RAMIC. Kaman Corporation. SN 295,034. Pub. 6-10-69. Filed 4-5-68.  
875,416. RUCON. Hooker Chemical Corporation. SN 298,005. Pub. 6-10-69. Filed 5-13-68.  
875,417. CYGLAS. American Cyanamid Company. SN 298,394. Pub. 6-10-69. Filed 5-17-68.  
875,418. X-SPAN. Crown Rubber Company. SN 302,395. Pub. 6-10-69. Filed 7-10-68.  
875,419. PANCOVE. Polyplastex United, Inc. SN 302,964. Pub. 6-10-69. Filed 7-17-68.  
875,420. ARYLON. Uniroyal, Inc. SN 302,992. Pub. 6-10-69. Filed 7-17-68.  
875,421. AMALGON. Universal Oil Products Company, assignee of Bostrom-Amalga Corporation. SN 303,011. Pub. 6-10-69. Filed 7-15-68.

## Class 2—Receptacles

875,422. AMERICAN AUTOMATIC VENDING AND DESIGN. American Automatic Vending Corporation. SN 168,896. Pub. 9-22-64. Filed 5-15-63.  
875,423. BANAVAC. United Fruit Company. SN 297,458. Pub. 6-10-69. Filed 5-6-68.  
875,424. WUNDERWATE. Suburban Plastics, Inc. SN 307,763. Pub. 6-10-69. Filed 9-19-68.  
875,425. FOAM-GLAZE. Gulf States Paper Corporation. SN 308,002. Pub. 6-10-69. Filed 9-23-68.  
875,426. PORTA-FEED. Nalco Chemical Company. SN 312,316. Pub. 6-10-69. Filed 11-15-68.  
875,427. MEDISPENSER. George Vollm, d.b.a. Stat Products. SN 315,345. Pub. 6-10-69. Filed 12-27-68.  
875,428. HI-PAK. Comet Packaging Corporation. SN 316,413. Pub. 6-10-69. Filed 1-13-69.  
875,429. ROCED. Rocéd Manufacturers Inc. SN 316,909. Pub. 6-10-69. Filed 1-17-69.

## Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

875,430. "AMERICAN" ETC. AND DESIGN. American Leather Specialties Corp. SN 298,785. Pub. 6-10-69. Filed 5-22-68.  
875,431. SHERBROOKE. Samsonite Corporation. SN 305,681. Pub. 6-10-69. Filed 8-21-68.  
875,432. IMPERIAL BRAND AND DESIGN. Tandy Corporation, d.b.a. Tex Tan Western Leather Co. SN 313,664. Pub. 6-10-69. Filed 12-5-68.  
875,433. BRAHMA BRAND AND DESIGN. Tandy Corporation, d.b.a. Tex Tan Western Leather Co. SN 313,665. Pub. 6-10-69. Filed 12-5-68.

875,434. KENTILE. Kentile Floors, Inc. MULTIPLE CLASS (Classes 4, 5, 12, 16, 20, and 52). SN 265,673. Pub. 6-10-69. Filed 3-1-67.  
875,435. SOLITAIRE. Alec Thornfield, d.b.a. Furmoto Chemical Company. SN 300,634. Pub. 6-10-69. Filed 6-17-68.  
875,436. SWINGER. Turtle Wax, Inc. SN 313,621. Pub. 6-10-69. Filed 12-4-68.

## Class 5—Adhesives

875,434. (See Class 4 for this trademark.)  
875,437. WHITMAN. Whitman Publishing Company. SN 278,330. Pub. 6-10-69. Filed 8-15-67.  
875,438. STERNCO AND DESIGN. Sternco Industries, Inc. SN 301,649. Pub. 6-10-69. Filed 6-28-68.  
875,439. SCOTCH BRAND MAGIC TRANSPARENT TAPE. Minnesota Mining and Manufacturing Company. SN 311,446. Pub. 6-10-69. Filed 11-6-68.

## Class 6—Chemicals and Chemical Compositions

875,440. PFISTER AND DESIGN. Pfister Chemical Inc. SN 286,839. Pub. 6-10-69. Filed 12-13-67.  
875,441. SUPER-LUX. Harris Paint Company. MULTIPLE CLASS (Classes 6 and 16). SN 289,373. Pub. 6-10-69. Filed 1-23-68.  
875,442. ROOM FRESH. Whink Products Company. SN 291,929. Pub. 6-10-69. Filed 2-26-68.  
875,443. FANCIFUL LETTER A. Airwick Industries, Inc. SN 293,892. Pub. 6-10-69. Filed 3-22-68.  
875,444. GOMODOR. Universal Oil Products Company. SN 294,331. Pub. 6-10-69. Filed 3-27-68.  
875,445. ENCO. Standard Oil Company. SN 296,270. Pub. 6-10-69. Filed 4-23-68.  
875,446. VINYLCHLOR. Cascade Industries, Inc. SN 298,107. Pub. 6-10-69. Filed 5-14-68.  
875,447. CARMEN. Clairol Incorporated. SN 299,402. Pub. 6-10-69. Filed 5-31-68.  
875,448. MI-PHOS. The Mitchell-Bradford Chemical Co. SN 300,473. Pub. 6-10-69. Filed 6-14-68.

## Class 7—Cordage

875,449. DUOFLEX. Martin, Black & Company (Wire Ropes) Limited. SN 304,481. Pub. 6-10-69. Filed 8-6-68.

## Class 8—Smokers' Articles, Not Including Tobacco Products

875,450. VALIANT. Morris Struhl, Inc. MULTIPLE CLASS (Classes 8 and 30). SN 294,325. Pub. 6-10-69. Filed 3-27-68.  
875,451. BURGUNDY. Lorillard Corporation. SN 318,059. Pub. 6-10-69. Filed 1-31-69.

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875,452. UNION LEADER. Lorillard Corporation. SN 318,061. Pub. 6-10-69. Filed 1-31-69.  
875,453. OLD GOLD. Lorillard Corporation. SN 318,065. Pub. 6-10-69. Filed 1-31-69.  
875,454. SPRING. Lorillard Corporation. SN 318,066. Pub. 6-10-69. Filed 1-31-69.  
875,455. OMEGA. Lorillard Corporation. SN 318,069. Pub. 6-10-69. Filed 1-31-69.  
875,456. BETWEEN THE ACTS. Lorillard Corporation. SN 318,071. Pub. 6-10-69. Filed 1-31-69.  
875,457. CENTURY. Lorillard Corporation. SN 318,072. Pub. 6-10-69. Filed 1-31-69.

## Class 9—Explosives, Firearms, Equipments, and Projectiles

875,458. PEPPER FOG. General Ordnance Equipment Corporation. SN 310,456. Pub. 6-10-69. Filed 10-24-68.  
875,459. AQUARAM. Atlas Chemical Industries, Inc. SN 312,418. Pub. 6-10-69. Filed 11-18-68.

## Class 10—Fertilizers

875,460. GOLDEN T. T.G. & Y. Stores Company. SN 300,021. Pub. 6-10-69. Filed 6-7-68.  
875,461. PLANT SAVER. Ludlow Corporation. SN 300,283. Pub. 6-10-69. Filed 6-12-68.  
875,462. ROYSTER AND DESIGN. Royster Company. SN 308,533. Pub. 6-10-69. Filed 9-30-68.

## Class 12—Construction Materials

875,434. (See Class 4 for this trademark.)  
875,463. HI-R-BORD. De Soto, Inc. SN 300,340. Pub. 6-10-69. Filed 6-13-68.  
875,464. HI-R-FORM. De Soto, Inc. SN 300,341. Pub. 6-10-69. Filed 6-13-68.  
875,465. STANDARD STAMAG. Martin Marietta Corporation. SN 300,601. Pub. 6-10-69. Filed 6-17-68.  
875,466. 3M. Minnesota Mining and Manufacturing Company. SN 303,694. Pub. 6-10-69. Filed 7-26-68.  
875,467. CERAMIC CARPETING. Resin Systems Inc. SN 304,620. Pub. 6-10-69. Filed 8-7-68.  
875,468. STRESS-PLUS AND DESIGN. Stress-Plus, Inc. SN 307,142. Pub. 6-10-69. Filed 9-11-68.  
875,469. PRIME-O-SASH. Prime-O-Sash Corporation. SN 309,093. Pub. 6-10-69. Filed 10-7-68.  
875,470. TRUTH. Truth Incorporated. MULTIPLE CLASS (Classes 12 and 13). SN 309,926. Pub. 6-10-69. Filed 10-18-68.  
875,471. MISCELLANEOUS DESIGN. American Cyanamid Company. SN 310,294. Pub. 6-10-69. Filed 10-23-68.  
875,472. TUFF ROOF. Western Insulfoam Corporation, by change of name from Marine Commuter Corporation, d.b.a. Western Insulfoam. SN 311,049. Pub. 6-10-69. Filed 10-31-68.  
875,473. TRI-DAR. Darling & Company. SN 312,183. Pub. 6-10-69. Filed 11-14-68.  
875,474. MALTESE CROSS (DESIGN). Martin Marietta Corporation. SN 312,597. Pub. 6-10-69. Filed 11-19-68.  
875,475. WILK-STONE. Wilkinson & Son, Inc. SN 313,216. Pub. 6-10-69. Filed 11-27-68.  
875,476. ROOFLATE. Globe Linings, Inc. SN 313,286. Pub. 6-10-69. Filed 11-29-68.  
875,477. V-SASH AND DESIGN. Joe Edmonston & Associates, Inc. SN 313,497. Pub. 6-10-69. Filed 12-3-68.  
875,478. AQUASTEP. Nawn Enterprises, Inc. SN 313,961. Pub. 6-10-69. Filed 12-9-68.

875,479. WINTER WONDER. Griffolyn Co., Inc. SN 314,069. Pub. 6-10-69. Filed 12-10-68.  
875,480. FABRIDAM. The Firestone Tire & Rubber Company. SN 315,546. Pub. 6-10-69. Filed 1-2-69.  
875,481. PETROMAT. Phillips Petroleum Company. SN 315,590. Pub. 6-10-69. Filed 1-2-69.

## Class 13—Hardware and Plumbing and Steam-Fitting Supplies

875,470. (See Class 12 for this trademark.)  
875,482. DIAL-A-FLOW. Allied Chemical Corporation. SN 276,623. Pub. 6-10-69. Filed 7-24-67.  
875,483. DELTA-PRIME. Delta Prime Water Conditioner Co. SN 289,173. Pub. 6-10-69. Filed 1-19-68.  
875,484. SWISH FURNI-GLYDE. Swish Products Limited. SN 293,600. Pub. 6-10-69. Filed 3-18-68.  
875,485. IRVINWARE. Irvinware. SN 296,170. Pub. 6-10-69. Filed 4-22-68.  
875,486. MISCELLANEOUS DESIGN. Standard Manufacturing Company, Inc. SN 304,405. Pub. 6-10-69. Filed 8-5-68.  
875,487. COVERMASTR. Towlsaver, Inc. MULTIPLE CLASS (Classes 13 and 37). SN 308,248. Pub. 6-10-69. Filed 9-26-68.  
875,488. JACOBUS. Sunroc Corporation. SN 311,312. Pub. 6-10-69. Filed 11-4-68.  
875,489. KING. The King Valve Co. SN 311,333. Pub. 6-10-69. Filed 11-5-68.

## Class 16—Protective and Decorative Coatings

875,434. (See Class 4 for this trademark.)  
875,441. (See Class 6 for this trademark.)  
875,490. MAGNA-GRIP. Turco Paint & Varnish Co. SN 285,960. Pub. 2-11-69. Filed 11-30-67.  
875,491. C INDURALL PAINTS AND DESIGN. Indurall Coatings, Inc. SN 314,972. Pub. 6-10-69. Filed 12-20-68.

## Class 17—Tobacco Products

875,492. DANBY. Danby Imported Cigar Corp., d.b.a. Danby Imported Cigars Corp. SN 266,308. Pub. 6-11-68. Filed 3-9-67.  
875,493. AUGUSTE RODIN. Rembrandt Tobacco Corporation (Overseas) Limited. SN 302,520. Pub. 6-10-69. Filed 7-11-68.  
875,494. COUNT PUSHKIN. St. Regis Tobacco Corporation Limited. SN 305,078. Pub. 6-10-69. Filed 8-13-68.  
875,495. VERVE. The American Tobacco Company. SN 314,487. Pub. 6-10-69. Filed 12-16-68.  
875,496. TARA. The American Tobacco Company. SN 316,925. Pub. 6-10-69. Filed 1-21-69.

## Class 18—Medicines and Pharmaceutical Preparations

875,497. FASPIRIN. Churchill Laboratories, Ltd. SN 283,871. Pub. 6-10-69. Filed 11-1-67.  
875,498. ROHTO. Rohto Pharmaceutical Co., Ltd. SN 284,038. Pub. 6-10-69. Filed 11-2-67.  
875,499. EXPEED. Warner-Lambert Pharmaceutical Company. SN 284,410. Pub. 6-10-69. Filed 11-8-67.



- 875,500. PERBULLIN. Immuno (Canada) Ltd. SN 286,529. Pub. 6-10-69. Filed 12-8-67.
- 875,501. HISTASPAN. USV Pharmaceutical Corporation. SN 286,736. Pub. 9-17-68. Filed 12-11-67.
- 875,502. EDCO. Standard Oil Company. SN 296,260. Pub. 6-10-69. Filed 4-23-68.
- 875,503. SPARKA-LAX. C. B. Fleet Company, Inc. SN 297,065. Pub. 6-10-69. Filed 5-8-68.
- 875,504. CARPEN. Beecham Inc. SN 297,838. Pub. 6-10-69. Filed 5-10-68.
- 875,505. HETACIL. Bristol-Myers Company. SN 297,958. Pub. 6-10-69. Filed 5-13-68.
- 875,506. HETACIN. Bristol-Myers Company. SN 297,959. Pub. 6-10-69. Filed 5-13-68.
- 875,507. MEDI-GUARD AND DESIGN. Lucky Stores, Inc. SN 298,945. Pub. 6-10-69. Filed 5-23-68.
- 875,508. AMBITROPE. Merck & Co., Inc. SN 303,179. Pub. 6-10-69. Filed 7-19-68.
- 875,509. VIVAPAM. Merck & Co., Inc. SN 303,180. Pub. 6-10-69. Filed 7-19-68.
- 875,510. MISCELLANEOUS DESIGN. E. R. Squibb & Sons, Inc. SN 303,451. Pub. 6-10-69. Filed 7-23-68.
- 875,511. ION. The Ion Company. MULTIPLE CLASS (Classes 18, 29, and 44). SN 310,385. Pub. 6-10-69. Filed 10-24-68.
- 875,512. OSTOCLOR. Osto Pharmaceutical Company. SN 315,780. Pub. 6-10-69. Filed 1-3-69.
- 875,513. OSTOMIN. Osto Pharmaceutical Company. SN 315,783. Pub. 6-10-69. Filed 1-3-69.
- 875,514. VITAMINERALS. Vitamins, Inc. SN 315,979. Pub. 6-10-69. Filed 1-7-69.

### Class 19—Vehicles

- 875,515. TETRAMATIC. Fichtel & Sachs Aktiengesellschaft. MULTIPLE CLASS (Classes 19 and 23). SN 256,277. Pub. 6-10-69. Filed 10-12-66.
- 875,516. FIBERFORM AND DESIGN. D. K. Barnes, Inc. SN 273,024. Pub. 4-9-68. Filed 6-5-67.
- 875,517. STEBRO AND DESIGN. Stebro Automotive Mfg. Ltd. MULTIPLE CLASS (Classes 19 and 23). SN 290,547. Pub. 6-10-69. Filed 2-7-68.
- 875,518. EAGLE DESIGN (LEFT HAND DIRECTION). North American Rockwell Corporation. SN 292,413. Pub. 6-10-69. Filed 3-4-68.

### Class 20—Linoleum and Oiled Cloth

- 875,519. (See Class 4 for this trademark.)
- 875,519. KROMMENIE. N.V. Nederlandsche Linoleum-fabriek. MULTIPLE CLASS (Classes 20 and 50). SN 306,935. Pub. 6-10-69. Filed 9-9-68.
- 875,520. HEUGA. Van Heugten Western Hemisphere A.G. SN 307,365. Pub. 6-10-69. Filed 9-13-68.

### Class 21—Electrical Apparatus, Machines, and Supplies

- 875,521. BBC BROWN BOVERI. Brown, Boveri & Company Limited. MULTIPLE CLASS (Classes 21, 23, 31, and 34). SN 227,552. Pub. 6-10-69. Filed 9-10-65.
- 875,522. TELE-RACK. Dracon Industries. SN 271,046. Pub. 6-25-68. Filed 5-9-67.
- 875,523. ECC (DESIGN). Electronic Control Corporation. MULTIPLE CLASS (Classes 21 and 34). SN 279,130. Pub. 6-10-69. Filed 8-28-67.

- 875,524. BIONIX. John Y. Pun, d.b.a. Biological Electronics. MULTIPLE CLASS (Classes 21 and 26). SN 283,358. Pub. 6-10-69. Filed 10-25-67.
- 875,525. PAMCO. Power Application & Mfg. Co. MULTIPLE CLASS (Classes 21 and 23). SN 284,102. Pub. 6-10-69. Filed 11-3-67.
- 875,526. AUDIO DYNAMICS. Audio Dynamics Corporation. SN 287,872. Pub. 6-10-69. Filed 1-2-68.
- 875,527. GR (DESIGN). The Poly-Choke Company, Incorporated. MULTIPLE CLASS (Classes 21 and 36). SN 288,047. Pub. 6-10-69. Filed 1-4-68.
- 875,528. VISUTROL. Bridgeland Wholesale Parts & Appliances Limited. SN 288,276. Pub. 6-10-69. Filed 1-8-68.
- 875,529. SA AND DESIGN. Sanders Associates, Inc. SN 288,450. Pub. 6-10-69. Filed 1-9-68.
- 875,530. VU-BREAK. General Electric Company. SN 290,279. Pub. 8-27-68. Filed 2-5-68.
- 875,531. CENTENNIAL. Western Imports Inc. MULTIPLE CLASS (Classes 21 and 36). SN 292,646. Pub. 6-10-69. Filed 3-6-68.
- 875,532. MISCELLANEOUS DESIGN. Belden Corporation. SN 300,246. Pub. 6-10-69. Filed 6-12-68.
- 875,533. MARGIN FOR SAFETY. The Chase-Shawmut Company. SN 306,753. Pub. 6-10-69. Filed 9-6-68.
- 875,534. RADARSON. Radio Llamada, Sociedad Anonima Comercial e Industrial. SN 308,315. Pub. 6-10-69. Filed 9-26-68.
- 875,535. JULIETTE J AND DESIGN. Topp Import & Export, Inc. MULTIPLE CLASS (Classes 21, 31, 34, and 36). SN 308,840. Pub. 6-10-69. Filed 10-4-68.
- 875,536. SOLIDSCAN. Optonetics, Inc. SN 309,180. Pub. 6-10-69. Filed 10-8-68.
- 875,537. SILIT. Sigril Elektrographit G.m.b.H. SN 309,188. Pub. 6-10-69. Filed 10-8-68.
- 875,538. PUROGEN. Chromalloy American Corporation. SN 309,235. Pub. 6-10-69. Filed 10-9-68.
- 875,539. FANCIFUL P. Chromalloy American Corporation. SN 309,236. Pub. 6-10-69. Filed 10-9-68.
- 875,540. CHO-WELT. Chomerics, Inc. SN 310,863. Pub. 6-10-69. Filed 10-30-68.
- 875,541. INTER-OCEANIC. Zenith Radio Corporation. SN 311,545. Pub. 6-10-69. Filed 11-6-68.
- 875,542. CHEATER-TWEETER. Vesely Company. SN 312,081. Pub. 6-10-69. Filed 11-13-68.
- 875,543. FEDTRO. THE PROVEN SOUND OF CHAMPIONS' AND DESIGN. Fedtro, Inc. SN 317,495. Pub. 6-10-69. Filed 1-27-69.

### Class 22—Games, Toys, and Sporting Goods

- 875,544. SPORT KING. Holmar International Corporation. SN 259,117. Pub. 4-23-68. Filed 11-21-66.
- 875,545. GIGGLE-WHIRL. Jad Tool Company. SN 288,827. Pub. 6-10-69. Filed 1-15-68.
- 875,546. VIGOR-WHIRL. Jad Tool Company. SN 288,828. Pub. 6-10-69. Filed 1-15-68.
- 875,547. PSYCHEDELIC SPECKS. C & F Products of San Francisco Inc. SN 293,470. Pub. 6-10-69. Filed 3-18-68.
- 875,548. TOURING PRO. Spring Bloc Corporation of America. SN 295,563. Pub. 6-10-69. Filed 4-12-68.
- 875,549. POLYSTRIPE. Empire Plastic Corp. SN 296,131. Pub. 6-10-69. Filed 4-22-68.
- 875,550. BUCKET OF FUN. Milton Bradley Company. SN 296,517. Pub. 6-10-69. Filed 4-25-68.
- 875,551. TORQUE MASTER. West Town Archery, Inc., assignee of West Town Archery. SN 297,299. Pub. 6-10-69. Filed 5-3-68.
- 875,552. COMMANDER 150 AND DESIGN. Denison-Johnson, Inc. SN 303,598. Pub. 6-10-69. Filed 7-25-68.
- 875,553. ACCU-CAST. Denison-Johnson, Inc. SN 303,599. Pub. 6-10-69. Filed 7-25-68.

- 875,554. PET-T-FOURS. Uneeda Doll Co., Inc. SN 303,941. Pub. 6-10-69. Filed 7-30-68.
- 875,555. POINTMAKER. Wilson Sporting Goods Co. SN 304,726. Pub. 6-10-69. Filed 8-5-68.
- 875,556. RUBBERCOR. Water Gremlin Company. SN 305,010. Pub. 6-10-69. Filed 8-12-68.
- 875,557. DYNA-SLATE. Diversified Products Corporation. SN 310,212. Pub. 6-10-69. Filed 10-22-68.
- 875,558. GREYHOUND. The Greyhound Corporation. SN 311,029. Pub. 6-10-69. Filed 10-31-68.
- 875,559. GUARDIAN. Shield Mfg., Inc. SN 314,117. Pub. 6-10-69. Filed 12-10-68.
- 875,560. STAR QUEST. Continental Promotions, Inc. SN 316,370. Pub. 6-10-69. Filed 1-13-69.

### Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

- 875,515. (See Class 19 for this trademark.)
- 875,517. (See Class 19 for this trademark.)
- 875,521. (See Class 21 for this trademark.)
- 875,525. (See Class 21 for this trademark.)
- 875,561. DATATYPER. Dasher Business Machines, Inc. SN 189,155. Pub. 9-15-64. Filed 3-20-64.
- 875,562. HASSIA CART FORM AND DESIGN. Hassia-Verpackungsmaschinen G.m.b.H. MULTIPLE CLASS (Classes 23, 37, and 105). SN 241,894. Pub. 6-10-69. Filed 3-25-66.
- 875,563. G-R GORMAN-RUPP. The Gorman-Rupp Company. SN 248,130. Pub. 6-10-69. Filed 6-15-66.
- 875,564. M AND DESIGN. Midland Manufacturing Company, Inc. SN 260,755. Pub. 6-11-68. Filed 12-14-66.
- 875,565. CHLOROMATIC. David C. Gray. SN 263,178. Pub. 6-10-69. Filed 1-24-67.
- 875,566. HARGRAVE AND DESIGN. Warren Tool Corporation. SN 269,588. Pub. 6-10-69. Filed 4-19-67.
- 875,567. BAUERVAC. The Bauer Bros. Co. SN 274,487. Pub. 6-10-69. Filed 6-22-67.
- 875,568. TAURO. Dowty Hydraulic Units Limited. SN 279,463. Pub. 3-25-69. Filed 8-31-67.
- 875,569. ROTIX. Hermann Kronseder, d.b.a. Hermann Kronseder Maschinenfabrik. SN 279,946. Pub. 10-22-68. Filed 9-8-67.
- 875,570. GRIT-BIT. Vernon Devices, Inc. SN 280,494. Pub. 6-10-69. Filed 9-15-67.
- 875,571. LINE BLENDER. Mixing Equipment Company, Inc. SN 281,211. Pub. 6-10-69. Filed 9-26-67.
- 875,572. GUDE-SNIPS. Gudebrod Bros. Silk Co., Inc. SN 285,130. Pub. 6-10-69. Filed 11-17-67.
- 875,573. MUELLER MATIC. Paul Mueller Company. SN 285,141. Pub. 6-10-69. Filed 11-17-67.
- 875,574. MELROE. Melroe Company. SN 285,244. Pub. 2-18-69. Filed 11-20-67.
- 875,575. POLYQUIP. Borg-Warner Corporation, assignee of Polyquip, Inc. SN 286,446. Pub. 6-10-69. Filed 12-7-67.
- 875,576. TYPHOON. Brunswick Corporation. SN 289,270. Pub. 6-10-69. Filed 1-22-68.
- 875,577. THERMOTEC. Thermotech Industries, Inc. MULTIPLE CLASS (Classes 23 and 106). SN 290,797. Pub. 6-10-69. Filed 2-12-68.
- 875,578. THERM-O-CLEANER. Sherman Car Wash Equipment Co. SN 292,514. Pub. 6-10-69. Filed 3-5-68.
- 875,579. MOR-LON. The Moreland Corporation. SN 293,044. Pub. 6-10-69. Filed 3-12-68.
- 875,580. UNICOM. The E. W. Buschman Company. SN 294,914. Pub. 6-10-69. Filed 4-4-68.
- 875,581. OMNI-SYNC. R. G. Letourneau, Inc. SN 299,239. Pub. 6-10-69. Filed 5-28-68.
- 875,582. AUTOSHAPE. The Cincinnati Shaper Company. SN 299,431. Pub. 4-8-69. Filed 5-31-68.

- 875,583. AFA AND DESIGN. The AFA Corporation of Florida. SN 303,971. Pub. 6-10-69. Filed 7-31-68.
- 875,584. VIBRA-TROWEL. Kalman Floor Company Inc. SN 306,781. Pub. 6-10-69. Filed 9-6-68.
- 875,585. BIN-U-VEYOR. White Machine Co. SN 307,776. Pub. 6-10-69. Filed 9-19-68.
- 875,586. ROOF RUNNER. Butler Manufacturing Company. SN 308,186. Pub. 6-10-69. Filed 9-25-68.
- 875,587. FORT WAYNE. Fort Wayne Tool & Die, Inc. SN 308,479. Pub. 6-10-69. Filed 9-30-68.
- 875,588. EVERLASTING. Philip Morris Incorporated, d.b.a. American Safety Razor Company. SN 308,576. Pub. 6-10-69. Filed 10-1-68.
- 875,589. APOLLO. Dade-Glaser, Inc. SN 309,029. Pub. 6-10-69. Filed 10-7-68.
- 875,590. BELOIT CONVERFLO HEADBOX. Beloit Corporation. SN 309,156. Pub. 6-10-69. Filed 10-8-68.
- 875,591. MIXMATIC. Super Mold Corporation. SN 309,491. Pub. 6-10-69. Filed 10-11-68.
- 875,592. VISU-LITE. Stop-Motion Devices Corporation. SN 310,618. Pub. 6-10-69. Filed 10-28-68.
- 875,593. TROUGH-VEYOR. The Salvajor Company. SN 310,698. Pub. 6-10-69. Filed 10-28-68.
- 875,594. DISC-O-FEED. Bethlehem Corporation. SN 311,231. Pub. 6-10-69. Filed 11-4-68.
- 875,595. HYDREIN. Kverneldens Fabrik A/S. SN 312,893. Pub. 6-10-69. Filed 11-22-68.
- 875,596. STRIPWRIGHT. Utica Tool Company, Inc. SN 313,039. Pub. 6-10-69. Filed 11-25-68.
- 875,597. BASIC AND DESIGN. Philip Morris Incorporated, d.b.a. American Safety Razor Company. MULTIPLE CLASS (Classes 23 and 51). SN 313,476. Pub. 6-10-69. Filed 12-3-68.
- 875,598. THE FLOATER. Eversharp, Inc. SN 316,371. Pub. 6-10-69. Filed 1-13-69.

### Class 26—Measuring and Scientific Appliances

- 875,524. (See Class 21 for this trademark.)
- 875,599. TERMACOBB. Cobble Laboratory Co., Ltd. MULTIPLE CLASS (Classes 26 and 34). SN 279,971. Pub. 6-10-69. Filed 4-20-67.
- 875,600. AUTOMELT. Leeds & Northrup Company. SN 281,902. Pub. 4-8-69. Filed 10-5-67.
- 875,601. CENTROMATIC. Societe des Lunetiers Temkine & Cie. SN 286,560. Pub. 10-15-68. Filed 12-8-67.
- 875,602. RE AND DESIGN. Richard E. Oswald, d.b.a. Reo-temp Instrument Company. SN 287,313. Pub. 9-3-68. Filed 12-20-67.
- 875,603. VITAMATIC. Diamond Shamrock Corporation, d.b.a. Nopco Chemical Company. SN 290,798. Pub. 6-11-68. Filed 2-12-68.
- 875,604. CLORO-DOSER. Cloroben Chemical Corporation. SN 292,260. Pub. 6-10-69. Filed 3-1-68.
- 875,605. HI-FI GREEN. J. Ulano & Company, Inc. SN 303,113. Pub. 6-10-69. Filed 7-19-68.
- 875,606. ATHANA. Athana Corporation. SN 303,761. Pub. 6-10-69. Filed 7-29-68.
- 875,607. STEWART FILMSCREEN AND DESIGN. Stewart FilmScreen Corp. SN 304,262. Pub. 6-10-69. Filed 8-2-68.
- 875,608. ISOTEMP AND DESIGN. Neotek Associates. SN 306,310. Pub. 6-10-69. Filed 8-30-68.
- 875,609. MAGIK STIMULATOR. John M. McGoldrick, d.b.a. J. M. McGoldrick Co. SN 307,341. Pub. 6-10-69. Filed 9-13-68.
- 875,610. NEPHELOSTAT. William J. Elsler, Jr., d.b.a. Elsler Engineering Company. SN 312,664. Pub. 6-10-69. Filed 11-20-68.
- 875,611. VCS AND DESIGN. Visual Control Systems, Inc. SN 312,826. Pub. 6-10-69. Filed 11-21-68.



- 875,612. P.C.L. Chieftain-Uniworld Corp. SN 312,982. Pub. 6-10-69. Filed 11-25-68.
- 875,613. VIBRASWITCH. Robertshaw Controls Company. SN 313,522. Pub. 6-10-69. Filed 12-3-68.
- 875,614. WAGNER ELECTRONIC PRODUCTS AND DESIGN. Delmer W. Wagner, d.b.a. Wagner Electronic Products. SN 270,019. Pub. 11-12-68. Filed 4-25-67.
- 875,615. LANCER. Eugene Dietzgen Co. SN 315,065. Pub. 6-10-69. Filed 12-23-68.

### Class 27 — Horological Instruments

- 875,616. MILGAUSS. Montres Rolex S.A. SN 293,557. Pub. 6-10-69. Filed 3-18-68.

### Class 28 — Jewelry and Precious-Metal Ware

- 875,617. BLACK VELVET. Sunderland's Inc. SN 313,842. Pub. 6-10-69. Filed 12-6-68.
- 875,618. REPOSE. Onelda Ltd. SN 314,600. Pub. 6-10-69. Filed 12-16-68.
- 875,619. STARDOM. Onelda Ltd. SN 314,601. Pub. 6-10-69. Filed 12-16-68.
- 875,620. KINSMAN. Kinsman Ring Co., Inc. SN 314,892. Pub. 6-10-69. Filed 12-19-68.

### Class 29 — Brooms, Brushes, and Dusters

- 875,511. (See Class 18 for this trademark.)

### Class 30 — Crockery, Earthenware, and Porcelain

- 875,450. (See Class 8 for this trademark.)
- 875,621. NOUVELLE. Interpace Corporation, assignee of Castleton China, Inc. SN 293,693. Pub. 6-10-69. Filed 3-20-68.
- 875,622. BAROQUE SCROLL. Interpace Corporation, assignee of Castleton China, Inc. SN 293,695. Pub. 6-10-69. Filed 3-20-68.
- 875,623. PRUDENCE. American Home Products Corporation. SN 314,402. Pub. 6-10-69. Filed 12-13-68.

### Class 31 — Filters and Refrigerators

- 875,521. (See Class 21 for this trademark.)
- 875,535. (See Class 21 for this trademark.)

### Class 32 — Furniture and Upholstery

- 875,624. FREDERICK. Canterbury House, Inc. SN 288,279. Pub. 6-10-69. Filed 1-8-68.
- 875,625. K MART AND DESIGN. S. S. Kresge Company. SN 308,383. Pub. 6-10-69. Filed 9-27-68.
- 875,626. RAACO. A/S Raaco Storage Systems. SN 312,645. Pub. 6-10-69. Filed 11-20-68.
- 875,627. GAZELLE. Aurora Corporation. SN 312,649. Pub. 6-10-69. Filed 11-20-68.
- 875,628. OVERMAN AND DESIGN. Overman AB. SN 313,193. Pub. 6-10-69. Filed 11-27-68.

- 875,629. POWER-LOCK. Seiz Corporation, d.b.a. Warehouse Storage Systems Co. SN 313,337. Pub. 6-10-69. Filed 11-29-68.
- 875,630. CASA ROYALE. Kroehler Mfg. Co. SN 313,942. Pub. 6-10-69. Filed 12-9-68.
- 875,631. AMER-RACK. American Steel Building Company, Inc. SN 314,486. Pub. 6-10-69. Filed 12-16-68.
- 875,632. TOBY RACK. Argo Products Corp. SN 315,726. Pub. 6-10-69. Filed 1-3-69.
- 875,633. OXFORD HOUSE. George Oksman, d.b.a. Oxford House. SN 317,256. Pub. 6-10-69. Filed 1-22-69.

### Class 33 — Glassware

- 875,634. TRU-TEMP. American Saint Gobain Corporation. SN 319,107. Pub. 6-10-69. Filed 2-14-69.
- 875,635. FIRE-QUEEN. Anchor Hocking Glass Corporation. SN 307,961. Pub. 6-10-69. Filed 9-23-68.

### Class 34 — Heating, Lighting, and Ventilating Apparatus

- 875,521. (See Class 21 for this trademark.)
- 875,523. (See Class 21 for this trademark.)
- 875,535. (See Class 21 for this trademark.)
- 875,599. (See Class 26 for this trademark.)
- 875,636. DRY-PAK. Sola Basic Industries, Inc., assignee of Dielectric Products Engineering Company, Inc. SN 262,927. Pub. 9-3-68. Filed 1-20-67.
- 875,637. CRES-COR. Crescent Metal Products, Inc. SN 300,335. Pub. 6-10-69. Filed 6-13-68.
- 875,638. FOSTER WHEELER AND DESIGN. Foster Wheeler Corporation. SN 301,737. Pub. 6-10-69. Filed 7-1-68.
- 875,639. FLO THRU. C. Cretons & Co. SN 308,172. Pub. 6-10-69. Filed 9-25-68.
- 875,640. UNI-BASE. Hydronic Industries, Inc. SN 312,043. Pub. 6-10-69. Filed 11-13-68.
- 875,641. THERM'X. Societe Lyonnaise des Applications Catalytiques S.L.A.C. SN 312,704. Pub. 6-10-69. Filed 11-20-68.

### Class 36 — Musical Instruments and Supplies

- 875,527. (See Class 21 for this trademark.)
- 875,531. (See Class 21 for this trademark.)
- 875,535. (See Class 21 for this trademark.)
- 875,642. MRB. Thomas Organ Company. SN 287,203. Pub. 6-10-69. Filed 3-20-67.
- 875,643. CART-A-TAPE. Belle Wood, Inc., assignee of Borg-Warner Corporation. SN 297,376. Pub. 12-10-68. Filed 5-6-68.
- 875,644. MICA-MATIC. Musical Instrument Corporation of America. SN 319,719. Pub. 6-10-69. Filed 2-20-69.
- 875,645. MICA-SONIC. Musical Instrument Corporation of America. SN 319,720. Pub. 6-10-69. Filed 2-20-69.

### Class 37 — Paper and Stationery

- 875,487. (See Class 13 for this trademark.)
- 875,562. (See Class 23 for this trademark.)
- 875,646. INDIAN HEAD DESIGN. Mohawk Paper Mills, Inc. SN 303,330. Pub. 6-10-68. Filed 7-22-68.
- 875,647. ASTRO. Avery Products Corporation, d.b.a. Astro Products. SN 305,600. Pub. 6-10-69. Filed 8-21-68.

- 875,648. MARKSMAN. Riveto Manufacturing Company. SN 310,804. Pub. 6-10-69. Filed 10-29-68.
- 875,649. MENDOTA. Kimberly-Clark Corporation. SN 312,205. Pub. 6-10-69. Filed 11-14-68.
- 875,650. COUNTESS COLLECTION. Gibson Greeting Cards, Inc. SN 312,454. Pub. 6-10-69. Filed 11-18-68.
- 875,651. LITHONEWS. The Price Company Limited. SN 312,602. Pub. 6-10-69. Filed 11-19-68.
- 875,652. AMCD AND DESIGN. Addressograph-Multigraph Corporation. SN 312,730. Pub. 6-10-69. Filed 11-21-68.
- 875,653. CASCAY. Kimberly-Clark Corporation. SN 313,308. Pub. 6-10-69. Filed 11-29-68.
- 875,654. GAF. GAF Corporation. SN 317,182. Pub. 6-10-69. Filed 1-22-69.
- 875,655. GAF AND DESIGN. GAF Corporation. SN 317,184. Pub. 6-10-69. Filed 1-22-69.
- 875,656. GAF. GAF Corporation. SN 317,797. Pub. 6-10-69. Filed 1-29-69.

### Class 38 — Prints and Publications

- 875,657. UNICEPT AND DESIGN. Cameron John Yerlan, d.b.a. Unicept Film Libraries. SN 284,123. Pub. 6-10-69. Filed 11-3-67.
- 875,658. MULTIBOM. Societe Anonyme Delpire. SN 288,453. Pub. 6-10-69. Filed 1-9-68.
- 875,659. PHP. PHP Institute, Inc. SN 290,008. Pub. 6-10-69. Filed 1-31-68.
- 875,660. TOP PEDDLER. Dispensers, Inc., d.b.a. Dripout Starline Corporation. SN 303,512. Pub. 6-10-69. Filed 7-24-68.
- 875,661. SMART SHOES AND DESIGN. Southern Railway Company. SN 307,759. Pub. 6-10-69. Filed 9-19-68.
- 875,662. HUNTING WORLD. Hunting World, Incorporated. SN 311,489. Pub. 6-10-69. Filed 11-6-68.
- 875,663. PRIDE. Pride Publications. SN 315,637. Pub. 6-10-69. Filed 12-26-68.
- 875,664. FILLERS FOR PUBLICATIONS. George Dubow, d.b.a. Fillers For Publications. SN 315,894. Pub. 6-10-69. Filed 1-6-69.
- 875,665. TULIP TIME. Norcross, Inc. SN 316,023. Pub. 6-10-69. Filed 1-7-69.
- 875,666. CURLY TOP. Norcross, Inc. SN 316,025. Pub. 6-10-69. Filed 1-7-69.
- 875,667. MARBURY ART. Plasticchrome Greetings, Inc., d.b.a. Marbury Art. SN 318,135. Pub. 6-10-69. Filed 2-3-69.

### Class 39 — Clothing

- 875,668. E.K. PREMIER AND DESIGN. E.K. Helmet Mfg. Co. SN 299,909. Pub. 6-10-69. Filed 6-6-68.
- 875,669. TOMMY TUCKER. J. E. Morgan Knitting Mills, Inc. SN 303,812. Pub. 6-10-69. Filed 7-29-68.
- 875,670. MAJOR MATT MASON. Mattel, Inc. SN 305,895. Pub. 6-10-69. Filed 8-26-68.
- 875,671. PELICAN HARBOR. Pelican Harbor, Inc. SN 306,507. Pub. 6-10-69. Filed 9-3-68.
- 875,672. PELICAN AND DESIGN. Pelican Harbor, Inc. SN 306,508. Pub. 6-10-69. Filed 9-3-68.
- 875,673. DOWN-PAT. Draper Products, Inc. SN 308,100. Pub. 6-10-69. Filed 9-24-68.
- 875,674. SWINGLES AND DESIGN. Character Suburbanwear, Inc. SN 310,064. Pub. 6-10-69. Filed 10-21-68.
- 875,675. H DESIGN. Hammond Corporation. SN 310,893. Pub. 6-10-69. Filed 10-30-68.
- 875,676. THE FLEA. SCOA Industries Inc., assignee of Shoe Corporation of America. SN 312,231. Pub. 6-10-69. Filed 11-14-68.
- 875,677. BENHAM BANTAMS. Benham Corporation. SN 312,655. Pub. 6-10-69. Filed 11-20-68.

- 875,678. GOLDEN BOY. Sullcraft Manufacturing Company, Inc. SN 312,821. Pub. 6-10-69. Filed 11-21-68.
- 875,679. WORSTED-TEX VIBRA. House of Worsted-Tex, Inc. SN 313,934. Pub. 6-10-69. Filed 12-9-68.
- 875,680. LITTLE LEVI'S. Levi Strauss & Co. SN 313,992. Pub. 6-10-69. Filed 12-9-68.
- 875,681. THE ELEGANT LADY. Miss Pennsylvania, Inc. SN 315,245. Pub. 6-10-69. Filed 12-26-68.
- 875,682. NEW 'N EASY. Topaz Hosiery Mills, Inc. SN 315,609. Pub. 6-10-69. Filed 1-2-69.
- 875,683. DINOSAURS. The Stuart McGuire Company, Inc. SN 316,116. Pub. 6-10-69. Filed 1-8-69.
- 875,684. STRONGAIRE. Sheffield Industries, Inc. SN 316,477. Pub. 6-10-69. Filed 1-13-69.

### Class 40 — Fancy Goods, Furnishings, and Notions

- 875,685. COMFORT. Jerome Alexander, Inc. SN 309,007. Pub. 6-10-69. Filed 10-7-68.
- 875,686. NATURLON. Helene Curtis Industries, Inc. SN 309,382. Pub. 6-10-69. Filed 10-10-68.
- 875,687. LADY ROMA AND DESIGN. Lloyds Import & Export Co., d.b.a. Lloyds International Co. SN 309,593. Pub. 6-10-69. Filed 10-14-68.

### Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

- 875,688. A BOW DESIGN. Novel Ideas, Inc. SN 281,095. Pub. 6-10-69. Filed 9-25-67.
- 875,689. SHEARLITE. Dyersburg Cotton Products, Inc. SN 300,915. Pub. 6-10-69. Filed 6-20-68.
- 875,690. ICEBOUND. Reliable Textile Company, Inc. SN 301,766. Pub. 6-10-69. Filed 7-1-68.
- 875,691. SILVA-SLIP "CREATED FOR COMFORT." Bingham F. Burner, d.b.a. B. F. Burner & Co. SN 302,386. Pub. 6-10-69. Filed 7-10-68.
- 875,692. SILVA-SLEEPER "CREATED FOR COMFORT." Bingham F. Burner, d.b.a. B. F. Burner & Co. SN 302,387. Pub. 6-10-69. Filed 7-10-68.
- 875,693. ANGLOBURN. Anglo Fabrics Company, Inc. SN 307,821. Pub. 6-10-69. Filed 9-20-68.
- 875,694. DIGOLOOM. Dick & Goldschmidt, Inc. SN 307,829. Pub. 6-10-69. Filed 9-20-68.
- 875,695. FOXIMILIE. Henry Pollak Inc. SN 309,092. Pub. 6-10-69. Filed 10-7-68.
- 875,696. BEAUTI-DAMASK. J. P. Stevens & Co., Inc. SN 309,308. Pub. 6-10-69. Filed 10-9-68.
- 875,697. ARROWS (DESIGN). Sponge-Cushion, Inc. SN 309,998. Pub. 6-10-69. Filed 10-18-68.
- 875,698. GO FREE. Cone Mills Corporation, assignee of Cone Mills Inc. SN 310,020. Pub. 6-10-69. Filed 10-21-68.
- 875,699. ROYAL SHAROG. William Cherkezian & Son. SN 310,065. Pub. 6-10-69. Filed 10-21-68.
- 875,700. ROYAL HOUSEHOLD. Cannon Mills Company. SN 310,638. Pub. 6-10-69. Filed 10-28-68.
- 875,701. MERITEAU. Fieldcrest Mills, Inc. SN 311,027. Pub. 6-10-69. Filed 10-31-68.

### Class 44 — Dental, Medical, and Surgical Appliances

- 875,511. (See Class 18 for this trademark.)
- 875,702. SILVA-SHIELD "CREATED FOR COMFORT." Bingham F. Burner, d.b.a. B. F. Burner & Co. SN 302,388. Pub. 6-10-69. Filed 7-10-68.



- 875,703. DECUBEX. Graham B. Ely, d.b.a. Barns-Ely Company. SN 313,280. Pub. 6-10-69. Filed 11-29-68.
- 875,704. R RICHARDS AND DESIGN. Richards Manufacturing Company. SN 318,100. Pub. 6-10-69. Filed 1-31-69.
- 875,705. DELIGHTFUL. The Songrand Corporation. SN 318,989. Pub. 6-10-69. Filed 2-12-69.

### Class 45—Soft Drinks and Carbonated Waters

- 875,706. JUPINA. Branaco-Op International Inc., d.b.a. Branaco-Op Int. Inc. SN 271,119. Pub. 6-4-68. Filed 5-10-67.
- 875,707. BROWNIE AND BOTTLE DESIGN. The Brownie Company. SN 298,921. Pub. 6-10-69. Filed 5-23-68.
- 875,708. SANTIBA. The Coca-Cola Company. SN 312,150. Pub. 6-10-69. Filed 11-14-68.
- 875,709. SHASTA AND DESIGN. Consolidated Foods Corporation, d.b.a. Shasta Beverages. SN 314,135. Pub. 6-10-69. Filed 12-11-68.

### Class 46—Foods and Ingredients of Foods

- 875,710. HUTTENBAUER STEAK HOUSE MEATS AND DESIGN. E. Huttenbauer & Sons, Inc. SN 235,982. Pub. 6-10-69. Filed 1-7-66.
- 875,711. WITHDRAWN.
- 875,712. MELLO-GOLD. Beatrice Foods Co., assignee of The Mar-Gold Corporation. SN 268,206. Pub. 12-19-67. Filed 4-3-67.
- 875,713. SPREAD-AWAY. Gerald G. Balch, d.b.a. Balch Flavor Products, International. SN 282,040. Pub. 6-10-69. Filed 10-9-67.
- 875,714. JUNE. Shibli S. Damus, d.b.a. United Citrus Growers. SN 284,996. Pub. 6-10-69. Filed 11-16-67.
- 875,715. BOX CAR. Austin E. Myers. SN 286,707. Pub. 6-10-69. Filed 12-11-67.
- 875,716. T TENDERBEST AND DESIGN. Tenderbest Corporation. SN 287,769. Pub. 6-10-69. Filed 12-28-67.
- 875,717. INSTANT PLUS. National Starch and Chemical Corporation. SN 288,112. Pub. 6-10-69. Filed 1-4-68.
- 875,718. FRESHBAKE. The Grand Union Company. SN 291,067. Pub. 6-10-69. Filed 2-14-68.
- 875,719. DISCUS. Koninklijke Fabrieken C. J. Van Houten & Zoon N.V. SN 292,445. Pub. 6-10-69. Filed 2-16-68.
- 875,720. MADERIA. Henry H. Ottens Mfg. Co., Inc. SN 294,203. Pub. 6-10-69. Filed 3-26-68.
- 875,721. PARMA BRAND AND EAGLE DESIGN. Parma Sausage Products, Inc. SN 294,653. Pub. 6-10-69. Filed 4-1-68.
- 875,722. SUNSQUASH. Matlow Bros., Inc. SN 295,448. Pub. 6-10-69. Filed 4-11-68.
- 875,723. CHERRY COBBLER DELIGHT. Chicken Delight, Inc. SN 296,809. Pub. 6-10-69. Filed 4-29-68.
- 875,724. MICROTRACER. Micro Tracers, Inc. SN 297,630. Pub. 6-10-69. Filed 5-8-68.
- 875,725. TELEFRUIT. Harry and David, assignee of Dial-A-Gift Inc. SN 298,320. Pub. 6-10-69. Filed 5-16-68.
- 875,726. CARSON PIRIE SCOTT & CO AND DESIGN. Carson Pirie Scott & Co. SN 299,048. Pub. 6-10-69. Filed 6-4-68.
- 875,727. BISCREATS. Meyer's Bakeries. SN 299,992. Pub. 6-10-69. Filed 6-7-68.
- 875,728. CASERA. Compania de Conservas Casera, Inc. SN 300,638. Pub. 6-10-69. Filed 6-13-68.
- 875,729. FTI. Food Technology, Inc. SN 303,153. Pub. 6-10-69. Filed 7-19-68.
- 875,730. TWELVE-BITE-BREAKFAST. General Mills, Inc. SN 303,475. Pub. 6-10-69. Filed 7-24-68.
- 875,731. SIMCHA. Levin Bros. Poultry Co., Inc. SN 305,835. Pub. 6-10-69. Filed 8-23-68.

- 875,732. CHEESONING. Reese Finer Foods, Inc. SN 306,512. Pub. 6-10-69. Filed 9-3-68.
- 875,733. KAMPONG. South Florida Growers Association, Inc. SN 307,594. Pub. 6-10-69. Filed 9-17-68.
- 875,734. JAMESTOWN. The Smithfield Packing Company, Incorporated. SN 308,040. Pub. 6-10-69. Filed 9-23-68.
- 875,735. NESTEA. The Nestle Company, Inc. SN 308,505. Pub. 6-10-69. Filed 9-30-68.
- 875,736. FLITE. Mead Johnson & Company. SN 308,659. Pub. 6-10-69. Filed 10-2-68.
- 875,737. AMBERDEX. Corn Products Company, by merger from Refined Syrups & Sugars, Inc. SN 308,810. Pub. 5-27-69. Filed 10-3-68.
- 875,738. TOASTERRIFICS. General Foods Corporation. SN 309,034. Pub. 6-10-69. Filed 10-7-68.
- 875,739. TEND-R-KAY. National Dairy Products Corporation. SN 309,780. Pub. 6-10-69. Filed 10-16-68.
- 875,740. THRIFT-KAY. National Dairy Products Corporation. SN 309,781. Pub. 6-10-69. Filed 10-16-68.
- 875,741. DIVINITY. Lawrence Foods, Inc. SN 310,791. Pub. 6-10-69. Filed 10-29-68.
- 875,742. IMAGE OF RUNNING DOG. The Greyhound Corporation. SN 311,138. Pub. 6-10-69. Filed 11-1-68.
- 875,743. TRI VALLEY GROWERS AND DESIGN. Tri-Valley Growers. SN 312,408. Pub. 6-10-69. Filed 11-18-68.
- 875,744. DOBOY. Doughboy Industries, Inc. SN 315,715. Pub. 6-10-69. Filed 1-3-69.
- 875,745. VIGOR. Lever Brothers Company. SN 316,566. Pub. 6-10-69. Filed 1-15-69.
- 875,746. LEVER KITCHEN. Lever Brothers Company. SN 316,750. Pub. 6-10-69. Filed 1-16-69.
- 875,747. LEVER FARMS. Lever Brothers Company. SN 316,751. Pub. 6-10-69. Filed 1-16-69.
- 875,748. M AND CHOPPING BLOCK DESIGN. Martin Meat Company, Inc. SN 317,674. Pub. 6-10-69. Filed 10-28-68.
- 875,749. FANCIFUL DESIGN OF A MALE'S HEAD. The Procter & Gamble Company. SN 318,138. Pub. 6-10-69. Filed 2-3-69.
- 875,750. TOP FORM AND DESIGN. Castroville Artichoke Association, d.b.a. Castroville Artichoke Assn. SN 318,359. Pub. 6-10-69. Filed 2-5-69.

### Class 47—Wines

- 875,751. SCMO ETC. AND DESIGN. Etablissements Vinicoles de Gironde. SN 289,494. Pub. 6-10-69. Filed 1-24-68.
- 875,752. G.M. ETC. AND DESIGN. Goncalves Monteiro & Filhos, Limitada. SN 295,641. Pub. 6-10-69. Filed 4-15-68.
- 875,753. BEAMEISTER. James B. Beam Import Corp. SN 314,750. Pub. 6-10-69. Filed 12-18-68.
- 875,754. FLAMENCO DANCER. E. & J. Gallo Winery. SN 316,051. Pub. 6-10-69. Filed 1-8-69.

### Class 48—Malt Beverages and Liquors

- 875,755. BUSCH BAVARIAN. Anheuser-Busch, Incorporated. SN 168,666. Pub. 6-10-69. Filed 5-13-63.
- 875,756. SHOCHIKUBAI AND DESIGN. Takara Shuzo Co., Ltd. SN 307,875. Pub. 6-10-69. Filed 9-20-68.

### Class 49—Distilled Alcoholic Liquors

- 875,757. NED KELLY AUSTRALIAN OUTLAW WHISKY AND DESIGN. Gilbeys Australia Proprietary Limited. SN 280,586. Pub. 6-10-69. Filed 9-18-67.
- 875,758. ARANDAS. Jules Berman & Associates, Inc. SN 309,358. Pub. 6-10-69. Filed 10-10-68.

### Class 50—Merchandise Not Otherwise Classified

- 875,519. (See Class 20 for this trademark.)
- 875,759. WOOD SUPER FLONG ROP. Wood Flong Corporation. SN 302,804. Pub. 6-10-69. Filed 7-9-68.
- 875,760. VANATHANE. Vanguard Studios, Inc. SN 304,720. Pub. 6-10-69. Filed 8-8-68.
- 875,761. TRIMBRITE AND DESIGN. Spartan Plastics, Inc. SN 306,815. Pub. 6-10-69. Filed 9-6-68.
- 875,762. KLEEN-KAN. The Colonial Plastic Mfg. Co. SN 311,831. Pub. 6-10-69. Filed 11-12-68.
- 875,763. VERI-SEAL. Continental Can Company, Inc. SN 311,841. Pub. 6-10-69. Filed 11-12-68.
- 875,764. REPRESENTATION OF A FIRE FLY. Pictorial Productions, Inc. SN 311,919. Pub. 6-10-69. Filed 11-12-68.
- 875,765. BURFREE. The Navarre Corporation. SN 313,188. Pub. 6-10-69. Filed 11-27-68.

### Class 51—Cosmetics and Toilet Preparations

- 875,597. (See Class 23 for this trademark.)
- 875,766. LADY BRONZE. Lady Bronze Cosmetics, Inc. SN 270,584. Pub. 6-10-69. Filed 5-3-67.
- 875,767. MAGISTRALE. Guerlain, Inc. SN 285,542. Pub. 6-10-69. Filed 11-24-67.
- 875,768. INNOCENT BREATH. Clairol Incorporated. SN 287,633. Pub. 6-10-69. Filed 12-27-67.
- 875,769. POETRY COLLECTION. Yardley of London, Inc. SN 287,981. Pub. 6-10-69. Filed 1-2-68.
- 875,770. BOUQUET ROUGE. Houbigant, Inc. SN 291,159. Pub. 6-10-69. Filed 2-15-68.
- 875,771. BOUQUET NOIR. Houbigant, Inc. SN 291,160. Pub. 6-10-69. Filed 2-15-68.
- 875,772. BOUQUET BLEU. Houbigant, Inc. SN 291,161. Pub. 6-10-69. Filed 2-15-68.
- 875,773. RITE AID AND DESIGN. Rack Rite Distributors, Inc. SN 296,715. Pub. 6-10-69. Filed 4-26-68.
- 875,774. SENSODYNE. Block Drug Company, Inc. SN 297,957. Pub. 6-10-69. Filed 5-14-68.
- 875,775. MAN-O-VATION. Ovation Cosmetics, Inc. SN 298,346. Pub. 6-10-69. Filed 5-16-68.
- 875,776. POUF OF COLLAGE. Adele Simpson, Inc. SN 301,861. Pub. 6-10-69. Filed 7-2-68.
- 875,777. SKIN SENSE. Golden Door Cosmetics, Inc. SN 302,936. Pub. 6-10-69. Filed 7-17-68.
- 875,778. MIST 'N GO AND DESIGN. Merle Norman Cosmetics, Inc. SN 305,342. Pub. 6-10-69. Filed 8-16-68.
- 875,779. XANADU AND DESIGN. Faberge, Inc. SN 308,193. Pub. 6-10-69. Filed 9-25-68.
- 875,780. MISCELLANEOUS DESIGN. Faberge, Inc. SN 308,194. Pub. 6-10-69. Filed 9-25-68.
- 875,781. EBONIQUE. Posner Laboratories, Inc. SN 311,336. Pub. 6-10-69. Filed 11-5-68.
- 875,782. MFP. Colgate-Palmolive Company. SN 312,151. Pub. 6-10-69. Filed 11-14-68.
- 875,783. LONG LOVELY SUMMER. Helene Curtis Industries, Inc. SN 313,931. Pub. 6-10-69. Filed 12-9-68.
- 875,784. GAMETyme. United Chemical Company. SN 314,000. Pub. 6-10-69. Filed 12-9-68.
- 875,785. BIG SURF. Clairol Incorporated. SN 315,808. Pub. 6-10-69. Filed 12-31-68.
- 875,786. BARBARELLA. Barberini, Ltd. SN 315,971. Pub. 6-10-69. Filed 1-7-69.
- 875,787. LIKE DRY. The Gillette Company. SN 317,500. Pub. 6-10-69. Filed 1-27-69.
- 875,788. COLLAGE. Adele Simpson, Inc. SN 318,835. Pub. 6-10-69. Filed 2-10-69.

- 875,434. (See Class 4 for this trademark.)
- 875,789. HOME-CARE KNOW-HOW . . . AT YOUR DOOR-STEP. Amway Corporation. SN 293,101. Pub. 6-10-69. Filed 3-13-68.
- 875,790. CLEVE-TEK. Cleveland Technical Center, Inc. SN 295,311. Pub. 6-10-69. Filed 4-10-68.
- 875,791. BAG-RAG. Harlan J. Mulkern, d.b.a. Putting Pal. SN 296,556. Pub. 6-10-69. Filed 4-25-68.
- 875,792. UMP. Coastal Chemical Company, Incorporated. SN 302,048. Pub. 6-10-69. Filed 7-5-68.
- 875,793. TUMULT. Wyandotte Chemicals Corporation. SN 302,166. Pub. 6-10-69. Filed 7-5-68.
- 875,794. XSEB. Cummins Pharmaceutical Company, Inc. SN 303,659. Pub. 6-10-69. Filed 7-26-68.
- 875,795. SHAMPLUS. Helene Curtis Industries, Inc. SN 309,381. Pub. 6-10-69. Filed 10-10-68.
- 875,796. CARPETERG. Walter G. Legge Company, Inc. SN 309,464. Pub. 6-10-69. Filed 10-11-68.
- 875,797. RIX. Eltar Laboratories, Inc. SN 309,670. Pub. 6-10-69. Filed 10-15-68.
- 875,798. SUDDEN POWER. American Home Products Corporation. SN 318,500. Pub. 6-10-69. Filed 2-6-69.

### Service Marks

### Class 100—Miscellaneous

- 875,799. TELEFLORIST. Teleflora Delivery Service, Inc. SN 244,631. Pub. 6-27-67. Filed 4-29-66.
- 875,800. MISCELLANEOUS DESIGN. Garlock Inc. SN 270,914. Pub. 6-10-69. Filed 5-8-67.
- 875,801. MISCELLANEOUS DESIGN. Kenneth R. Anderson Company, Inc. SN 280,537. Pub. 6-10-69. Filed 9-18-67.
- 875,802. LA QUINTA. Barshop Motel Enterprises, Inc. SN 297,369. Pub. 6-10-69. Filed 5-6-68.
- 875,803. VAQUERO INN. Vaquero Enterprises. SN 299,388. Pub. 6-10-69. Filed 5-29-68.
- 875,804. WOLFIE'S. Sadie Schwartz and Mercantile National Bank of Miami Beach, co-executors of the estate of Sam Schwartz, d.b.a. Wolfie's. SN 301,969. Pub. 6-10-69. Filed 7-3-68.
- 875,805. DIN-DIN'S. Joseph S. Kanter. SN 306,917. Pub. 6-10-69. Filed 9-9-68.
- 875,806. MR. DREAM MERCHANT. Ronald L. Downing, d.b.a. Mr. Dream Merchant. SN 308,278. Pub. 6-10-69. Filed 9-26-68.
- 875,807. GINGISS AND DESIGN. Gingiss Formalwear, Inc. SN 308,847. Pub. 6-10-69. Filed 10-4-68.
- 875,808. GINGISS. Gingiss Formalwear, Inc. SN 308,848. Pub. 6-10-69. Filed 10-4-68.

### Class 101—Advertising and Business

- 875,809. MISCELLANEOUS DESIGN. Credit Clearing Corp. of America, Inc. SN 280,212. Pub. 6-10-69. Filed 9-13-67.
- 875,810. POSTAL INSTANT PRESS AND DESIGN. Postal Press. SN 290,521. Pub. 6-10-69. Filed 2-7-68.
- 875,811. ABSTRACT DESIGN. Dayton Corporation. SN 295,622. Pub. 6-10-69. Filed 4-15-68.

### Class 102—Insurance and Financial

- 875,812. INTERLOCKING DOUBLE C (DESIGN). Competitive Capital Corporation. SN 293,114. Pub. 6-10-69. Filed 3-13-68.



875,813. FIRE HAT (DESIGN). Amex Holding Corporation, assignee of The Fund American Companies. SN 293,118. Pub. 6-10-69. Filed 3-13-68.

875,814. LIVING INSURANCE. The Equitable Life Assurance Society of the United States. SN 297,394. Pub. 6-10-69. Filed 5-6-68.

875,815. FOUNDERS. Founders Mutual Depositor Corporation. SN 305,435. Pub. 6-10-69. Filed 8-19-68.

875,816. MISCELLANEOUS DESIGN. Holland-America Insurance Company. SN 306,775. Pub. 6-10-69. Filed 9-6-68.

875,817. MISCELLANEOUS DESIGN. Aid Association for Lutherans. SN 307,179. Pub. 6-10-69. Filed 9-12-68.

875,818. FRATERNAL LIFE. Aid Association for Lutherans. SN 307,180. Pub. 6-10-69. Filed 9-12-68.

875,819. EXPORTECT. United States National Bank of Oregon. SN 309,801. Pub. 6-10-69. Filed 10-16-68.

### Class 103—Construction and Repair

875,820. NINE SQUARE (DESIGN). The Displayers, Inc. SN 294,826. Pub. 6-10-69. Filed 4-3-68.

### Class 104—Communication

875,821. TINT. TNT Communications, Inc. MULTIPLE CLASS (Classes 104 and 107). SN 297,930. Pub. 6-10-69. Filed 5-13-68.

### Class 105—Transportation and Storage

875,822. (See Class 23 for this trademark.)

875,822. REALCO SERVING THE NATIONAL RAILROAD TRAILER POOL AND DESIGN. REA Leasing Corporation. SN 299,249. Pub. 6-10-69. Filed 5-28-68.

## SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

### Class 21—Electrical Apparatus, Machines, and Supplies

875,833. Avnet, Inc., New York, N.Y., assignee of Carol Wire & Cable Corp., Pawtucket, R.I. SN 273,743. Filed P.R. 6-13-67; Am. S.R. 4-18-69.

### VIEW PACK

For Carded Skin-Packed Coils of Electrical Wire and Television Wire (Int. Cl. 9).

First use in or about June 1960.

875,834. Thomas & Betts Corporation, Elizabeth, N.J., by change of name from The Thomas & Betts Co., Elizabeth, N.J. SN 275,563. Filed P.R. 7-7-67; Am. S.R. 9-10-68.

### SHIELD-KON

For Electrical Connectors, Electrical Grounding Connectors, Electrical Connectors and Grounding Connectors for Shielded and Coaxial Cable, Electrical Coaxial Adapters for Coaxial Cable, Electrical Connector Insulators and Ferrules, and Electrical Connector Sleeves (Int. Cls. 9 and 17).

First use in or about January 1964.

### Class 106—Material Treatment

875,577. (See Class 23 for this trademark.)

875,823. PBS. American Bindery, Inc. SN 303,881. Pub. 6-10-69. Filed 7-30-68.

875,824. FOTO FAIR. Progressive Industries Corporation, by merger from Tru-Foto, Inc. SN 318,867. Pub. 6-10-69. Filed 12-14-68.

875,825. WHITE GLOVE. Progressive Industries Corporation, by merger from Tru-Foto, Inc. SN 318,869. Pub. 6-10-69. Filed 12-16-68.

### Class 107—Education and Entertainment

875,821. (See Class 104 for this trademark.)

875,826. AMERICA'S BEST ATTRACTIONS AND DESIGN. Allan H. Bell, d.b.a. America's Best Attractions. SN 284,985. Pub. 6-10-69. Filed 11-16-67.

875,827. PLAYBOY. HMH Publishing Co. Inc. SN 291,386. Pub. 6-10-69. Filed 2-19-68.

875,828. SPA. Spa International, Inc. SN 308,636. Pub. 6-10-69. Filed 10-1-68.

875,829. PENGUINS. Hockey Club of Pittsburgh. SN 315,522. Pub. 6-10-69. Filed 1-2-69.

875,830. DESIGN OF HOCKEY-PLAYING PENGUIN. Hockey Club of Pittsburgh. SN 316,864. Pub. 6-10-69. Filed 1-17-69.

875,831. UNIVERSAL SYSTEMS INSTITUTE. Universal Systems Institute, Inc. SN 317,800. Pub. 6-10-69. Filed 1-29-69.

### Certification Mark

### Class B—Services

875,832. NATIONAL AIR RACES. National Aeronautic Association. SN 282,293. Pub. 6-10-69. Filed 10-11-67.

875,835. Fedtro, Inc., Rockville Centre, N.Y. SN 300,868. Filed P.R. 6-20-68; Am. S.R. 4-23-69.

**LISTEN-IN!**

For Device for Removable Attachment to the Hearing Portion of a Telephone for the Transmission of Sound to the Other End Thereof (Int. Cl. 9).

First use Apr. 16, 1968.

## Class 23—Cutlery, Machinery, and Tools, Class 46—Foods and Ingredients of Foods and Parts Thereof

875,836. Monarch Road Machinery Company, Grand Rapids, Mich. SN 275,680. Filed P.R. 7-10-67; Am. S.R. 5-21-69.

**BACK BLADE**

For Hydraulically Operated Road Scrapers for Attachment to Motor Vehicles (Int. Cl. 7).

First use on or about May 24, 1967.

875,837. Air Rake Manufacturing Corporation, Chicopee, Mass., by change of name from Air Rake Mfg. Co., Inc., Chicopee, Mass. SN 295,798. Filed P.R. 4-17-68; Am. S.R. 4-28-69.

**WHIRLY RAKE**

For Motorized Side Delivery Rakes for Raking Leaves, Twigs, Acorns, Pine Needles, Fallen Fruit and Other Debris (Int. Cl. 7).

First use May 31, 1967.

875,838. Mather & Platt Limited, Manchester, England. SN 316,800. Filed 1-16-69.

### VAPORLOC

For Reaction Chambers for Textile Processing (Int. Cl. 7).

First use July 11, 1966; in commerce July 17, 1967.

### Class 26—Measuring and Scientific Appliances

875,839. Burleigh Brooks Inc., Hackensack, N.J. SN 280,930. Filed P.R. 9-22-67; Am. S.R. 4-24-69.

### WASHEROD

For Reel Holding and Lifting Accessory for Photographic Processing Tanks (Int. Cl. 9).

First use on or about Aug. 31, 1967.

875,840. De Vere (Kensington) Limited, Beckenham, Kent, England. SN 292,356. Filed P.R. 3-4-68; Am. S.R. 5-16-69.

### DE VERE

Owner of British Reg. No. B667,317, B667,318, and B677,339, dated Feb. 27, 1948, Feb. 27, 1948, and Feb. 24, 1949, respectively.

For Cameras, Camera Stands and Photographic Enlargers; Glazing Machine; and Photographic Developing and Washing Tanks, Photographic Developing Cabinets, and Racks and Shelves for Photographic Plates, Prints and Films; and Photographic Mounts and Photographic Prints; and Photographic Lighting Apparatus and Installations; Cabinets for Drying Photographic Plates, Films and Prints; and Drying Cabinet (Int. Cls. 9, 11, and 16).

875,841. Salada Foods Ltd., Don Mills, Ontario, Canada. SN 258,411. Filed P.R. 11-10-66; Am. S.R. 5-19-69.

### QUICK BREW

For Filled Tea Bags (Int. Cl. 30).

First use Sept. 30, 1966.

875,842. Chefco Corporation, d.b.a. Chefmaster Products Co., Chicago, Ill. SN 273,943. Filed P.R. 6-15-67; Am. S.R. 6-3-69.

### LIQUID PASTE

For Food Coloring (Int. Cl. 2).

First use May 29, 1967.

875,843. Costa Ice Cream Company, Woodbridge, N.J. SN 282,272. Filed P.R. 10-11-67; Am. S.R. 6-17-69.

### CREAM-MAID

For Ice Cream (Int. Cl. 30).

First use 1952.

875,844. Gladstone Food Products Company, Inc., Kansas City, Mo. SN 285,415. Filed P.R. 11-22-67; Am. S.R. 4-7-69.

### EL MEJOR

An English translation of the word "El Mejor" is "better." For Mexican Foods—Namely, Taco Shells, Taco Sauce and Beef Taco Filling (Int. Cl. 30).

First use Sept. 1, 1967.

875,845. General Foods Corporation, White Plains, N.Y. SN 289,749. Filed P.R. 1-29-68; Am. S.R. 5-29-69.

### THE CANNED DOG FOOD WITHOUT THE CAN

For Dog Food (Int. Cl. 31).

First use Oct. 10, 1962.

875,846. Drive-In Management Corp., Syracuse, N.Y. SN 290,592. Filed P.R. 2-8-68; Am. S.R. 5-19-69.

### CLUB BURGER

For Sandwich (Int. Cl. 29).

First use May 1, 1967.

875,847. Ice Cream Specialties, Inc., St. Louis, Mo. SN 295,029. Filed P.R. 4-5-68; Am. S.R. 5-22-69.

**POP'N FUDGE**

For Quiescently Frozen Confection on a Stick (Int. Cl. 30).

First use Mar. 1, 1968.

875,848. Lehigh Valley Cooperative Farmers, d.b.a. Lehigh Valley Dairy, Allentown, Pa. SN 296,846. Filed P.R. 4-29-68; Am. S.R. 6-5-69.

### LO-COUNT

For Pasteurized, Homogenized, Low-Fat, Fortified Milk Derivative (Int. Cl. 29).

First use Mar. 30, 1968.



S75,849. Sweetheart Bakers Ltd., Brooklyn, N.Y. SN 298,876. Filed P.R. 5-22-68; Am. S.R. 5-28-69.

## MINI-LOGS

For Pastry (Int. Cl. 30).  
First use at least as early as Feb. 19, 1968.

S75,850. A.F. Investment Corporation, d.b.a. American Rainbow Sales Co., Los Angeles, Calif. SN 305,371. Filed P.R. 8-19-68; Am. S.R. 6-2-69.

## CHOICE OF THE FRUIT

For Frozen Fruits (Int. Cl. 29).  
First use Jan. 16, 1968.

S75,851. Orrell's Food Products, Inc., San Francisco, Calif. SN 311,447. Filed P.R. 11-6-68; Am. S.R. 5-5-69.

**Fresh  
Maid**

For Pancake Syrup, Imitation Maple Syrup, Mayonnaise Salad Dressing and Salad Oil (Int. Cls. 29 and 30).  
First use Oct. 1, 1958.

## Class 47—Wines

S75,852. G. & L. F.lli Cora S.p.A., Turin, Italy. SN 287,905. Filed 1-2-68.



Owner of Italian Reg. No. 214,224, dated Sept. 11, 1967; and U.S. Reg. Nos. 290,132, 319,779, and others.  
For Wines (Int. Cl. 33).

## SCARLET ROSE

For Wines (Int. Cl. 33).  
First use Apr. 9, 1968.

S75,854. Emilio Lustau Ortega, Jerez de la Frontera, Cadiz, Spain. SN 310,383. Filed 9-24-68.

## LUSTAU



The words appearing over the shield design are "Vinos de Jerez," which can be translated to mean "wines of Jerez." The linings on the drawing do not represent color. Owner of Spanish Reg. No. 156,566, dated Feb. 7, 1947.  
For Wines (Int. Cl. 33).

## Class 51—Cosmetics and Toilet Preparations

S75,855. The Realistic Company, Cincinnati, Ohio. SN 275,308. Filed P.R. 7-3-67; Am. S.R. 5-15-69.

## STAY NATURAL

For Hair Coloring (Int. Cl. 3).  
First use on or about June 9, 1967.

S75,856. Yardley of London, Inc., Totowa, N.J. SN 282,855. Filed P.R. 10-18-67; Am. S.R. 5-16-69.

## BLUE-A-LITTLE

For Lip Polish (Int. Cl. 3).  
First use June 27, 1967.

S75,857. Arthur Matney, Brooklyn, N.Y. SN 292,801. Filed P.R. 3-8-68; Am. S.R. 4-30-69.

## KLEEN MINT

For Mouth Spray (Int. Cl. 3).  
First use Jan. 15, 1968.

S75,858. Robert Matalon Limited, London, England. SN 294,662. Filed P.R. 4-1-68; Am. S.R. 6-3-69.

## MATALON

Owner of British Reg. No. B892,072, dated Mar. 18, 1966.  
For Hair Setting Lotions, Hair Spray and Hair Conditioning Cream (Int. Cl. 3).

## Class 52—Detergents and Soaps

S75,859. Robert A. Gilmour, d.b.a. Gilmour Manufacturing Co., Somerset, Pa. SN 273,760. Filed P.R. 6-13-67; Am. S.R. 5-28-69.

## GILMOUR

For Detergent Concentrates for Washing Cars, Boats, Trailers, Windows and Aluminum Sidings (Int. Cl. 3).  
First use Jan. 29, 1965.

## Service Marks

S75,861. Hayloft, Inc., Jackson, Miss. SN 298,173. Filed P.R. 5-15-68; Am. S.R. 5-21-69.

## Class 100—Miscellaneous

S75,860. Hayloft, Inc., Jackson, Miss. SN 298,172. Filed P.R. 5-15-68; Am. S.R. 5-21-69.

## BIG'UN

For Restaurant Services—Namely, the Preparation of Hamburger Sandwiches (Int. Cl. 42).  
First use May 10, 1968.

## LITTLE'UN

For Restaurant Services—Namely, the Preparation of Hamburger Sandwiches (Int. Cl. 42).  
First use May 10, 1968.

## TRADEMARK REGISTRATIONS RENEWED

- |   |   |
|---|---|
| 32,973. "THE SAVORY CIGARETTES." Cl. 17 (Int. Cl. 34). 5-30-1899.                   | 510,503. WILSON. Cl. 6 (Int. Cl. 1). 6-7-49.  |
| 72,937. CHUMS. Cl. 46 (Int. Cl. 30). 3-2-09.  | 510,504. CHURCH & DWIGHT CO. INC. Cl. 52 (Int. Cls. 1, 3, and 30). 6-7-49.          |
| 75,365. ALLIGATOR BRAND AND DESIGN. Cl. 39 (Int. Cl. 25). 9-28-09.                  | 510,540. RADIANT. Cl. 52 (Int. Cl. 3). 6-7-49.                                      |
| 254,198. LENTHERIC. Cl. 18 (Int. Cl. 3). 3-12-29.                                   | 510,569. HUBER AND DESIGN. Cl. 11 (Int. Cl. 2). 6-7-49.                             |
| 255,051. YORK HOUSE. Cl. 46 (Int. Cl. 29). 4-9-29.                                  | 510,617. ETTICO FLEX. Cl. 21 (Int. Cl. 9). 6-7-49.                                  |
| 255,084. EYEMO. Cl. 26 (Int. Cl. 9). 4-16-29.                                       | 510,621. CHANCE. Cl. 21 (Int. Cl. 9). 6-7-49.                                       |
| 255,970. NORGE. Cl. 31 (Int. Cl. 11). 4-30-29.                                      | 510,640. CHEMIA AND DESIGN. Cl. 51 (Int. Cl. 3). 6-7-49.                            |
| 257,198. "INTERNATIONAL PAPER COMPANY" AND DESIGN. Cl. 37 (Int. Cl. 16). 6-4-29.    | 510,708. CONTINENTAL. Cl. 35 (Int. Cl. 17). 6-7-49.                                 |
| 257,768. LA VACA. Cl. 46 (Int. Cls. 1, 3, and 30). 6-18-29.                         | 510,709. SK INSULROCK. Cl. 12 (Int. Cl. 19). 6-7-49.                                |
| 257,877. FITRITE. Cl. 13 (Int. Cl. 6). 6-18-29.                                     | 511,198. BRADMORE. Cl. 39 (Int. Cl. 25). 6-21-49.                                   |
| 258,034. SCHO KNIT. Cl. 39 (Int. Cl. 25). 6-25-29.                                  | 511,288. FIFTY-FIFTY. Cl. 37 (Int. Cl. 16). 6-21-49.                                |
| 258,321. "MO TURBO" ETC. AND DESIGN. Cl. 23 (Int. Cl. 7). 7-2-29.                   | 511,338. TROMMER'S. Cl. 48 (Int. Cl. 32). 6-21-49.                                  |
| 260,265. SPEEDGLOW. Cl. 16 (Int. Cl. 2). 8-20-29.                                   | 511,373. LOWFORM. Cl. 37 (Int. Cl. 16). 6-21-49.                                    |
| 260,837. CEL-U-TONE. Cl. 22 (Int. Cl. 16). 8-27-29.                                 | 511,468. TYRIAN. Cl. 42 (Int. Cl. 24). 6-21-49.                                     |
| 261,595. VALUXSEA. Cl. 32 (Int. Cl. 20). 9-17-29.                                   | 511,585. ALBA-LITE. Cl. 34 (Int. Cl. 11). 6-28-49.                                  |
| 262,165. "LA FLAMINGO" AND DESIGN. Cl. 17 (Int. Cl. 34). 10-1-29.                   | 511,618. O. T. OZARK AND DESIGN. Cl. 46 (Int. Cl. 29). 6-28-49.                     |
| 262,745. IVO. Cl. 16 (Int. Cl. 2). 10-22-29.  | 511,718. FOMOCO AND DESIGN. Cl. 31 (Int. Cl. 12). 6-28-49.                          |
| 263,109. "SPEED KING" BIASECTED BY ARROW. Cl. 23 (Int. Cl. 7). 10-29-29.            | 511,751. VALCO. Cl. 13 (Int. Cl. 11). 7-5-49.                                       |
| 263,121. FLORALBA. Cl. 51 (Int. Cl. 3). 10-29-29.                                   | 511,921. B AND DESIGN. Cl. 28 (Int. Cl. 14). 7-5-49.                                |
| 263,131. RAM. Cl. 23 (Int. Cl. 7). 10-29-29.  | 511,924. BRISTOL RING. Cl. 28 (Int. Cl. 14). 7-5-49.                                |
| 264,059. VELVET. Cl. 10 (Int. Cl. 1). 11-19-29.                                     | 511,946. DITTO. Cl. 38 (Int. Cl. 16). 7-5-49.                                       |
| 264,117. AIRCRAFT. Cl. 27 (Int. Cl. 14). 11-19-29.                                  | 511,947. DITTO MARKS IN A CIRCLE (DESIGN). Cl. 38 (Int. Cl. 16). 7-5-49.            |
| 264,237. THE NATIONAL CASH REGISTER COMPANY. Cl. 26 (Int. Cls. 9 and 16). 11-12-29. | 512,070. BERKSHIRE. Cl. 14 (Int. Cl. 6). 7-12-49.                                   |
| 264,446. GARDEN PATCH. Cl. 46 (Int. Cl. 29). 11-26-69.                              | 512,071. 481 COLLET STEEL. Cl. 14 (Int. Cl. 6). 7-12-49.                            |
| 442,838. ROTOPTIC. Cl. 23 (Int. Cl. 7). 6-7-49.                                     | 512,179. SOLAR. Cl. 14 (Int. Cl. 6). 7-12-49.                                       |
| 442,844. GOLD STAR AND DESIGN. Cl. 36 (Int. Cl. 9). 6-7-49.                         | 512,180. NITRO. Cl. 14 (Int. Cl. 6). 7-12-49.                                       |
| 442,975. STRAVEN. Cl. 39 (Int. Cl. 25). 6-28-49.                                    | 512,195. CARPENTER. Cl. 14 (Int. Cl. 6). 7-12-49.                                   |
| 443,054. PROTEX. Cl. 39 (Int. Cl. 25). 7-12-49.                                     | 512,580. TENLOW. Cl. 6 (Int. Cl. 1). 7-19-49.                                       |
| 443,087. K & E. Cl. 26 (Int. Cls. 1, 9, and 16). 7-12-49.                           | 512,583. JEWEL. Cl. 4 (Int. Cls. 2, 3, and 21). 7-19-49.                            |
| 443,127. DAMASCUS. Cl. 37 (Int. Cl. 16). 7-19-49.                                   | 512,810. WINTER. Cl. 23 (Int. Cl. 8). 7-26-49.                                      |
| 508,155. FLEXTRA. Cl. 39 (Int. Cl. 25). 4-5-49.                                     | 512,893. KAMATT. Cl. 12 (Int. Cl. 17). 7-26-49.                                     |
| 508,568. MOLENCO. Cl. 12 (Int. Cl. 6). 4-12-49.                                     | 513,065. BISMOLINE. Cl. 51 (Int. Cl. 3). 8-2-49.                                    |
| 508,596. A ATLAS AND DESIGN. Cl. 35 (Int. Cl. 12). 4-12-49.                         | 513,158. GUNK MOTORCYCLE CLEANER. Cl. 52 (Int. Cl. 3). 8-2-49.                      |
| 509,290. THE KELTER. Cl. 39 (Int. Cl. 25). 5-3-49.                                  | 513,404. TRIBUNE. Cl. 35 (Int. Cl. 17). 8-9-49.                                     |
| 509,440. PANCHO ARANGO AND DESIGN. Cl. 17 (Int. Cl. 34). 5-3-49.                    | 513,443. SEVILLA. Cl. 49 (Int. Cl. 33). 8-9-49.                                     |
| 509,443. ATLAS GRIF-SAFE CUSHIONAIRE. Cl. 35 (Int. Cl. 12). 5-3-49.                 | 513,453. ALPINA AND DESIGN. Cl. 27 (Int. Cl. 14). 8-9-49.                           |
| 509,566. INDIAN BLOTTINGS AND DESIGN. Cl. 37 (Int. Cl. 16). 5-10-49.                | 513,505. COMPECO. Cl. 103 (Int. Cl. 37). 8-9-49.                                    |
| 509,586. DESIGN (PICTURE). Cl. 46 (Int. Cl. 29). 5-10-49.                           | 513,595. MERCHANTS. Cl. 37 (Int. Cl. 16). 8-16-49.                                  |
| 509,592. CARD-O-GUIDE. Cl. 37 (Int. Cl. 16). 5-10-49.                               | 513,758. ICY-FLO. Cl. 31 (Int. Cl. 11). 8-16-49.                                    |
| 509,632. FARMALL CUB. Cl. 23 (Int. Cl. 12). 5-10-49.                                | 513,838. MONDIA. Cl. 27 (Int. Cl. 14). 8-16-49.                                     |
| 510,169. E-Z LOK AND DESIGN. Cl. 8 (Int. Cl. 34). 5-31-49.                          | 514,110. GALE. Cl. 44 (Int. Cl. 10). 8-23-49.                                       |
| 510,287. MISCELLANEOUS DESIGN. Cl. 12 (Int. Cl. 19). 5-31-49.                       | 514,684. VAUGHN. Cl. 23 (Int. Cl. 7). 9-6-49.                                       |
| 510,294. KLEEN-URN. Cl. 52 (Int. Cl. 3). 5-31-49.                                   | 514,728. HAARLEM OIL AND DESIGN. Cl. 18 (Int. Cl. 5). 9-6-49.                       |
| 510,318. VICTOR. Cl. 22 (Int. Cl. 28). 5-31-49.                                     | 514,798. CARTER. Cyl. 23 (Int. Cl. 7). 9-6-49.                                      |
| 510,326. FAST-LITE AND DESIGN. Cl. 22 (Int. Cl. 28). 5-31-49.                       | 514,897. S.T. Cl. 27 (Int. Cl. 14). 9-6-49.   |
| 510,333. CHEMIA AND DESIGN. Cl. 52 (Int. Cl. 3). 5-31-49.                           | 514,958. MULTI-MILLER AND DESIGN. Cl. 23 (Int. Cl. 7). 9-6-49.                      |
| 510,360. BARBARA LEE. Cl. 28 (Int. Cl. 14). 5-31-49.                                | 515,009. DUSTDOWN THERE'S ONLY ONE AND DESIGN. Cl. 52 (Int. Cls. 3 and 4). 9-13-49. |
| 510,425. PHOTACT. Cl. 6 (Int. Cl. 1). 5-31-49.                                      | 515,084. REPRESENTATION OF A WOMAN. Cl. 17 (Int. Cl. 34). 9-13-49.                  |
|   | 515,096. SANTE FE AND DESIGN. Cl. 17 (Int. Cl. 34). 9-13-49.                        |
|   | 515,364. KRU-KUT. Cl. 23 (Int. Cl. 8). 9-20-49.                                     |
|   | 515,394. HYDROPEL. Cl. 38 (Int. Cl. 16). 9-20-49.                                   |
|   | 515,526. LEWYT. Cl. 21 (Int. Cl. 9). 9-27-49.                                       |
|   | 515,663. YOKOHL. Cl. 46 (Int. Cl. 31). 9-27-49.                                     |



- 516,077. OCTOFEN. Cl. 6. 10-4-49.  
 516,282. ONE I MOR. Cl. 45 (Int. Cl. 32). 10-11-49.  
 516,275. HOLLAND. Cl. 27 (Int. Cl. 14). 10-11-49.  
 516,345. CHEK-CHART AND DESIGN. Cl. 38 (Int. Cl. 16). 10-18-49.  
 516,870. ELOXAN. Cl. 6 (Int. Cl. 2). 10-25-49.  
 516,968. TOSSIT. Cl. 6 (Int. Cl. 5). 10-25-49.  
 516,987. CUB HUNTER. Cl. 23 (Int. Cls. 8 and 16). 10-25-49.  
 517,333. BLUE SKY. Cl. 38 (Int. Cl. 16). 11-8-49.  
 517,458. SURFACINE. Cl. 18 (Int. Cl. 5). 11-8-49.  
 517,569. WE PUT THE WORLD TO SLEEP. Cl. 32 (Int. Cls. 6 and 20). 11-8-49.  
 517,837. MA'S. Cl. 45 (Int. Cl. 32). 11-15-49.  
 517,851. PORTRAIT OF A WOMAN. Cl. 45 (Int. Cl. 32). 11-15-49.  
 517,694. LAN-O-SHEEN. Cl. 52 (Int. Cl. 3). 11-22-49.  
 517,737. TOURNEAU. Cl. 27 (Int. Cl. 14). 11-22-49.  
 517,786. WALLACE. Cl. 39 (Int. Cl. 3). 11-22-49.  
 517,885. KLEEN FLOOR. Cl. 52 (Int. Cl. 3). 11-22-49.  
 517,936. SAGO AND DESIGN. Cl. 39 (Int. Cl. 25). 11-22-49.  
 517,939. SAGO. Cl. 39 (Int. Cl. 25). 11-22-49.  
 518,019. RICHMADE. Cl. 46 (Int. Cl. 29). 11-22-49.

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- 752,277. WAVERLY. Cl. 1.  
 752,281. WESKID. Cl. 1.  
 752,293. ELECTROPLY. Cl. 1.  
 752,307. PERTAINER. Cl. 2.  
 752,308. BOBBI SOX (FANCIFUL). Cl. 3.  
 752,309. BERK-LOOM. Cl. 3.  
 752,310. E111. Cl. 4.  
 752,311. E268. Cl. 4.  
 752,312. E87. Cl. 4.  
 752,313. STAT-SKAT. Cl. 4.  
 752,315. TYKOR AND DESIGN. Cl. 4.  
 752,318. EXTRA SPARE. Cl. 5.  
 752,326. TEVER. Cl. 6.  
 752,332. DIE HARD. Cl. 6.  
 752,333. NOR DEL AND DESIGN. Cl. 6.  
 752,336. G-7 SUPER-WEIGHT. Cl. 6.  
 752,338. 12. Cl. 6.  
 752,340. OVEN-GARD. Cl. 6.  
 752,342. CWC ETC. AND SHIELD DESIGN. Cl. 6.  
 752,346. WISE AND DESIGN. Cl. 6.  
 752,350. SMOKE-RINGS. Cl. 8.  
 752,352. THIOLASTIC. Cl. 12.  
 752,355. LUMOFLEX. Cl. 12.  
 752,357. ALUMAROCK. Cl. 12.  
 752,358. ARCH-COR. Cl. 12.  
 752,370. PLAM. Cl. 16.  
 752,374. FILMFLEX. Cl. 16.  
 752,375. LIN-OXYN. Cl. 16.  
 752,381. SOLVOLIPID. Cl. 18.  
 752,385. LANTISTAPH. Cl. 18.  
 752,389. ADINEX. Cl. 18.  
 752,392. EQUIBOLE. Cl. 18.  
 752,395. CITROGEN. Cl. 18.  
 752,396. CAPTAGON. Cl. 18.  
 752,399. NOPGROSOL. Cl. 18.  
 752,402. RADIOPLEX. Cl. 18.  
 752,404. MYAVAN. Cl. 18.  
 752,407. ROADRUNNER. Cl. 19.  
 752,412. POLYSTEEL. Cl. 19.  
 752,415. ANATROL. Cl. 21.  
 752,421. SMITHFIELD. Cl. 21.  
 752,432. TELETRON. Cl. 21.  
 752,435. LITTLE BIG BROTHER KIT. Cl. 22.  
 752,436. LITTLE BIG SISTER KIT. Cl. 22.  
 752,437. TALKING MOVIE-WHEELS AND DESIGN. Cl. 22.  
 752,439. MASCHUCA. Cl. 22.  
 752,440. BITE-O-LITE. Cl. 22.  
 752,441. PITTIE PAT. Cl. 22.  
 752,442. BABIE BABBLES. Cl. 22.  
 752,445. SHIFTY GEAR. Cl. 22.  
 752,446. LITTLE MISS ECHO. Cl. 22.  
 752,447. CHA CHA CHECKERS. Cl. 22.  
 752,450. FUN-ALYSIS. Cl. 22.  
 752,451. STRUCT-A-FOAM. Cl. 22.  
 752,453. CO-ORDINATION. Cl. 22.  
 752,454. DESIGN OF A LADY BOWLER. Cl. 22.  
 752,455. ROUTE 66. Cl. 22.  
 752,458. HOBBYLAND U.S.A. Cl. 22.  
 752,459. RACE-TIME. Cl. 22.  
 752,460. WATERLOO. Cl. 22.  
 752,464. DOLL-EZE. Cl. 22.  
 752,465. SILLY STICKERS. Cl. 22.  
 752,471. FILOMATIC. Cl. 23.  
 752,472. LOW BOY. Cl. 23.  
 752,474. AQUA JET AND DESIGN. Cl. 23.  
 752,478. VIM. Cl. 23.  
 752,482. MIRACLE. Cl. 23.  
 752,487. KWIK-GRIP. Cl. 23.  
 752,503. EUROPTIMA. Cl. 26.  
 752,504. RAIR. Cl. 26.  
 752,510. ISLE. Cl. 27.  
 752,515. IR AND DESIGN. Cl. 28.  
 752,518. KL AND DESIGN. Cl. 28.  
 752,520. FI-BRO. Cl. 29.  
 752,521. SOCIETY. Cl. 30.  
 752,523. CHIPFORM. Cl. 32.  
 752,527. PERMAFOLD. Cl. 32.  
 752,535. EVERFLEX. Cl. 35.  
 752,537. BOBBI SOX (FANCIFUL). Cl. 37.  
 752,541. KLEENEX. Cl. 37.  
 752,545. MW WITHIN AN OVAL. Cl. 38.  
 752,550. WORD WESTERN OFFICE REPRODUCTION DIGEST. Cl. 38.  
 752,555. ELECTRONIC SYMBOL (DESIGN). Cl. 38.  
 752,556. SAM'S STRIP. Cl. 38.  
 752,558. PROFIT MEMO. Cl. 38.  
 752,560. 80 SPUN. Cl. 38.  
 752,562. THE STAGLINE YOUNG CAVALIER FORMAL FASHION BY AFTER SIX. Cl. 39.  
 752,563. YOUNG CAVALIER FORMAL FASHION. Cl. 39.  
 752,564. YOUNG CAVALIER FORMAL FASHION BY AFTER SIX. Cl. 39.  
 752,565. KENNINGTON LTD AND DESIGN. Cl. 39.  
 752,568. LOVELAND MAGICA. Cl. 40.  
 752,573. VERVE. Cl. 43.  
 752,577. CANTRELL & COCHRANE. Cl. 45.  
 752,580. BETINA'S BEST. Cl. 46.  
 752,581. REPRESENTATION OF A MICROSCOPE ABOVE A COLORED RECTANGLE. Cl. 46.  
 752,582. LAKE ENTIAT AND DESIGN. Cl. 46.  
 752,583. AGED-CREAM. Cl. 46.  
 752,598. PERSIAN SHERBET. Cl. 46.  
 752,602. SPA. Cl. 46.  
 752,603. AZTEC. Cl. 46.  
 752,605. YOURS BY REQUEST. Cl. 46.  
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 752,617. NORCAP. Cl. 50.  
 752,618. EXTRUDKOTE. Cl. 50.  
 752,619. WARMOLD. Cl. 50.  
 752,622. PITCH-BOARD. Cl. 50.  
 752,623. COSMO-FRUIT. Cl. 51.  
 752,625. LITTLE GAD-ABOUT AND DESIGN. Cl. 51.  
 752,626. NAKID. Cl. 51.  
 752,627. VOTRE AMI. Cl. 51.  
 752,630. X SPOT. Cl. 52.  
 752,631. MIRACLE OIL-GO AND DESIGN. Cl. 52.  
 752,635. WEE GEE. Cl. 52.  
 752,637. MASTER TOUCH AND DESIGN. Cl. 52.  
 752,640. ISS. Cl. 100.  
 752,647. IBA AND DESIGN. Cl. 101.  
 752,648. TW. Cl. 101.  
 752,654. COSMO AND DESIGN. Cl. 102.  
 752,657. AMERICAN CAPITAL LIFE INSURANCE CO. Cl. 102.  
 752,658. A.R.D. AND DESIGN. Cl. 102.  
 752,659. EMBLEM AUTO POLICY ETC. AND DESIGN. Cl. 102.

- 752,665. PATHE AND DESIGN. Cl. 106.  
 752,666. MAILMASTER. Cl. 106.  
 752,667. NATIONAL BABY CARE COUNCIL. Cl. 107.  
 752,668. APA ETC. AND DESIGN. Cl. 200.  
 752,673. GLITTER-KOTE. Cl. 16.  
 752,675. DEPAN-N-PAK. Cl. 23.  
 752,679. TEEN MAN MARKET AND DESIGN. Cl. 38.  
 752,681. RESORT BLUE BOOK. Cl. 38.  
 752,686. HAND TAILORED CASUALS ALEXANDER LIP-  
 TON INC. OF CALIF. AND DESIGN. Cl. 39.  
 752,689. DESIGN OF A BARREL. Cl. 46.  
 752,692. PLUMLET. Cl. 46.  
 752,693. BOSTON BEANS HANOVER ETC. AND DESIGN.  
 Cl. 46.  
 752,695. LAKE KEUKA. Cl. 47.  
 752,698. FULL FINISH. Cl. 51.

TRADEMARK REGISTRATIONS AMENDED,  
DISCLAIMED, CORRECTED, ETC.

- 74,056. WIGWAM. Cl. 46. 6-15-09. The Towle Maple Syrup Company. General Foods Corporation, White Plains, N.Y. Amended to appear:  
 751,625. GARRETT AND DESIGN. Cl. 47. 11-15-49. Garrett & Company, Inc., Brooklyn, N.Y. Amended to appear:

## WIGWAM

- 80,196. P & L. Cl. 16. 11-15-10. Pratt & Lambert, Inc., Buffalo, N.Y. Amended to appear:



- 252,682. WM PENN. Cl. 7. 2-12-29. The Edwin H. Fittler Co. Columbian Rope Company, Auburn, N.Y. Amended: In the statement, column 1, line 9, "no" is deleted, lines 10 through 12 are deleted and in line 13, "corporation may have therein," is deleted, and the drawing is amended to appear as follows:



- 268,283. KRAZY-IKES. Cl. 22. 3-11-30. Main Toy Company. Western Publishing Company, Inc., Racine, Wis. Amended to appear:

## KRAZY IKES

- 272,870. P & L AND DESIGN. Cls. 12, 16, and 52. 7-15-30. Pratt & Lambert, Inc., Buffalo, N.Y. Amended to appear:



- 503,979. GIBSON. Cl. 38. 11-16-48. The Gibson Art Company. Gibson Greeting Cards, Inc., Cincinnati, Ohio. Amended to appear:

## GIBSON

- 507,043. CARBOND. Cl. 34. 2-22-49. The Joseph Dixon Crucible Company, Jersey City, N.J. Corrected: In the certificate, lines 4 and 15, in the heading, signature and in the statement, column 1, line 1, before "Joseph" The should be inserted.



## GARRETT

- 738,075. GLOBE DESIGN. Cls. 2 and 6. 9-25-62. Pfaunder Permutt Inc., Rochester, N.Y. Amended to appear:



- 738,371. YOU CAN RELY ON CERTIFIED AND DESIGN. Cl. 52. 9-25-62. Certified Laboratories, Inc., Fort Worth, Tex. Amended: In the statement, column 1, lines 6 and 7, "carpet and upholstery shampoo," is deleted.

- 744,638. SEMITUNG. Cl. 14. 2-5-63. Semicon of California, Inc., Watsonville, Calif. Corrected: In the statement, column 1, line 1, "California" second occurrence should be deleted and Kentucky should be inserted.

- 761,799. VINTEX. Cl. 12. 12-24-63. Plastiwall, Inc., Fort Wayne, Ind. Amended: In the statement, column 2, lines 1 through 5, the description of goods is deleted and rigid non-metallic decorative wall panels is inserted.

- 765,885. POSTUREPEDIC IMPERIAL 200. Cl. 32. 3-3-64. Sealy, Incorporated, doing business as Sealy Mattress Company, Chicago, Ill. Amended to appear:

## POSTUREPEDIC IMPERIAL

- 867,255. HERBSAINT VERITAS BY LEGENDRE ETC. AND DESIGN. Cl. 49. 3-25-69. Sazerac Company, Inc., New Orleans, La. Corrected: In the statement, column 2, line 2, "1968" should be deleted and 1958 should be inserted.

- 870,816. FOOTSEE. Cl. 22. 6-10-69. Twinpak Ltd., Lachine, Quebec, Canada. Corrected: In the statement, column 2, line 1, "hook" should be deleted and hoop should be inserted.



871,030. LANO-CEL. Cl. 52. 6-10-69. Radiator Specialty Company, Charlotte, N.C. Amended to appear:

# Lan-o-cel

871,173. HULO. Cls. 19 and 23. 6-17-69. Gebroeders Van Huet's Laad-en Lossystemen "Hulo" NV, Pannderden, Netherlands. Corrected: In the statement, column 1, line 1, "HUOL" should be deleted and *Hulo* should be inserted.

871,989. TAMOX. Cl. 6. 7-1-69. The Murphy Chemical Company, Limited, Hertfordshire, England. Corrected: In the statement, column 1, line 1, after "Company" a comma should be inserted and in line 4, before "England" *Hertfordshire*, should be inserted.

872,135. UAF. Cl. 31. 7-1-69. United Air Filter Company, Charlotte, N.C. Corrected: In the statement, column 2, line 4 should be deleted.

872,151. FAST GRIP. Cl. 35. 7-1-69. Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan. Corrected: In the statement, column 2, line 1, "or" should be deleted and of should be inserted.

872,348. NEW JERSEY LIFE AND DESIGN. Cl. 102. 7-1-69. New Jersey Life Insurance Company, Newark, N.J. Corrected: In the statement, column 1, line 1, "New York" should be deleted and *New Jersey* should be inserted.

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AUGUST 26, 1969

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

- A.F. Investment Corp., d.b.a. American Rainbow Sales Co., Los Angeles, Calif. 875,850. Cl. 46.  
 AFA Corp. of Florida, The, Miami, Fla. 875,583, pub. 6-10-69. Cl. 23.  
 A/S Raaco Storage Systems, Nykobing Falster, Denmark. 875-626, pub. 6-10-69. Cl. 32.  
 Abrahams, S. & Co., Inc., d.b.a. Saco Uniforms, Philadelphia, Pa. 517,936, ren. 8-26-69. Cl. 39.  
 Abrahams, S. & Co., Inc., d.b.a. Saco Uniforms, Philadelphia, Pa. 517,939, ren. 8-26-69. Cl. 39.  
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 Aeroli Products Co., Inc.: See—  
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 Afta Solvents Corp., Glen Cove, N.Y. 752,340, can. Cl. 6.  
 Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 752,503, can. Cl. 26.  
 Aid Assn. for Lutherans, Appleton, Wis. 875,817-8, pub. 6-10-69. Cl. 102.  
 Almcee Wholesale Corp.: See—  
 Associated Merchandising Corp., The.  
 Air Rake Mfg. Co., Inc.: See—  
 Air Rake Mfg. Corp.  
 Air Rake Mfg. Corp., from Air Rake Mfg. Co., Inc., Chicopee, Mass. 875,837. Cl. 23.  
 Alrick Industries, Inc., Carlstadt, N.J. 875,443, pub. 6-10-69. Cl. 6.  
 Alabe Crafts, Inc., Cincinnati, Ohio. 752,450, can. Cl. 22.  
 Alexander, Jerome, Inc., New York, N.Y. 875,685, pub. 6-10-69. Cl. 40.  
 Allied Chemical Corp., New York, N.Y. 875,482, pub. 6-10-69. Cl. 13.  
 Alligator Co., Inc., The: See—  
 Ferguson Waterproof Co.  
 Alpina Union Horlogere A.G., Biel, Switzerland. 513,453, ren. 8-26-69. Cl. 27.  
 American Automatic Vending Corp., Cleveland, Ohio. 875,422, pub. 9-22-64. Cl. 2.  
 American Bindery, Inc., Topeka, Kans. 875,823, pub. 6-10-69. Cl. 106.  
 American Bitmulus Co., Wilmington, Del., to Chevron Asphalt Co., San Francisco, Calif. 515,394, ren. 8-26-69. Cl. 38.  
 American Capital Life Insurance Co., Washington, D.C. 752-657, can. Cl. 102.  
 American Cyanamid Co., Wayne, N.J. 875,417, pub. 6-10-69. Cl. 1.  
 American Cyanamid Co., Wayne, N.J. 875,471, pub. 6-10-69. Cl. 12.  
 American Distilling Co., The, d.b.a. The American Distilling Co., (Inc.), New York, N.Y. 752,615, can. Cl. 49.  
 American Distilling Co., (Inc.), The: See—  
 American Distilling Co., The.  
 American Doll & Toy Corp., Brooklyn, N.Y. 752,441-2, can. Cl. 22.  
 American Doll & Toy Corp., Brooklyn, N.Y. 752,446, can. Cl. 22.  
 American Home Products Corp., New York, N.Y. 875,623, pub. 6-10-69. Cl. 30.  
 American Home Products Corp., New York, N.Y. 875,798, pub. 6-10-69. Cl. 52.  
 American Leather Specialties Corp., New York, N.Y. 875,430, pub. 6-10-69. Cl. 3.  
 American Rainbow Sales Co.: See—  
 A.F. Investment Corp.  
 American Research & Development Corp., Boston, Mass. 752-655, can. Cl. 102.  
 American Safety Razor Co.: See—  
 Morris, Philip, Inc.  
 American Saint Gobain Corp., Kingsport, Tenn. 875,634, pub. 6-10-69. Cl. 33.  
 American Steel Building Co., Inc., Houston, Tex. 875,631, pub. 6-10-69. Cl. 32.  
 American Tobacco Co., New York, N.Y. 875,495-6, pub. 6-10-69. Cl. 17.  
 American Toy & Furniture Co., Inc., Chicago, Ill. 752,458, can. Cl. 22.  
 American Trading Co., Inc., Providence, R.I. 752,515, can. Cl. 23.  
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 Amex Holding Corp., New York, N.Y., from The Fund American Companies, San Francisco, Calif. 875,813, pub. 6-10-69. Cl. 102.  
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 Anchor Hocking Glass Corp., Lancaster, Ohio. 875,635, pub. 6-10-69. Cl. 33.  
 Anderson, Kenneth R., Co., Inc., Roseville, Calif. 875,801, pub. 6-10-69. Cl. 100.  
 Anglo Fabrics Co., Inc., New York, N.Y. 875,693, pub. 6-10-69. Cl. 42.  
 Anheuser-Busch, Inc., St. Louis, Mo. 875,755, pub. 6-10-69. Cl. 48.  
 Appliance Profession Association of California, Inc., The, Los Angeles, Calif. 752,668, can. Cl. 200.  
 Argo Products Corp., St. Louis, Mo. 875,632, pub. 6-10-69. Cl. 32.  
 Aristocrat Leather Products, Inc., New York, N.Y. 752,308, can. Cl. 3.  
 Aristocrat Leather Products, Inc., New York, N.Y. 752,537, can. Cl. 37.  
 Associated Merchandising Corp., The, to Almcee Wholesale Corp., New York, N.Y. 510,360, ren. 8-26-69. Cl. 28.  
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 Atlas Chemical Industries, Inc., Wilmington, Del. 875,459, pub. 6-10-69. Cl. 9.  
 Atlas Supply Co., Springfield, N.J. 508,596, ren. 8-26-69. Cl. 35.  
 Atlas Supply Co., Springfield, N.J. 509,443, ren. 8-26-69. Cl. 35.  
 Audio Dynamics Corp., New Milford, Conn. 875,526, pub. 6-10-69. Cl. 21.  
 Aurora Corp., Miami, Fla. 875,627, pub. 6-10-69. Cl. 32.  
 Automatic Control Co., St. Paul, Minn. 752,432, can. Cl. 21.  
 Automatic Packaging Equipment, Inc., Skokie, Ill. 752,471, can. Cl. 23.  
 Avalon Hill Co., The, Baltimore, Md. 752,460, can. Cl. 22.  
 Avery Products Corp., d.b.a. Astro Products, San Marino, Calif. 875,647, pub. 6-10-69. Cl. 37.  
 Avnet, Inc., New York, N.Y., from Carol Wire & Cable Corp., Pawtucket, R.I. 875,833. Cl. 21.  
 Balch Flavor Products International: See—  
 Balch, Gerald G.  
 Balch, Gerald G., d.b.a. Balch Flavor Products International, Pittsburgh, Pa. 875,713, pub. 6-10-69. Cl. 46.  
 Barberini, Ltd., New York, N.Y. 875,786, pub. 6-10-69. Cl. 51.  
 Barnes, D. K., Inc., Spokane, Wash. 875,516, pub. 4-9-68. Cl. 19.  
 Barns-Ely Co.: See—  
 Ely, Graham B.  
 Barshop Motel Enterprises, Inc., San Antonio, Tex. 875,802, pub. 6-10-69. Cl. 100.  
 Bauer Bros. Co., The, Springfield, Ohio. 875,567, pub. 6-10-69. Cl. 23.  
 Beacon Mutual Indemnity Co., The, Columbus, Ohio. 752,659, can. Cl. 102.  
 Beam, James B., Import Corp., New York, N.Y. 875,753, pub. 6-10-69. Cl. 47.  
 Beatrice Foods Co., Chicago, Ill., from The Mar-Gold Corp., Atlanta, Ga. 875,712, pub. 12-19-67. Cl. 46.  
 Beecham Inc., Clifton, N.J. 875,504, pub. 6-10-69. Cl. 18.  
 Belden Corp., Chicago, Ill. 875,532, pub. 6-10-69. Cl. 21.  
 Bell, Allan H., d.b.a. America's Best Attractions, North Kansas City, Mo. 875,826, pub. 6-10-69. Cl. 107.  
 Bell & Howell Co., Chicago, Ill. 255,084, ren. 8-20-69. Cl. 26.  
 Bell & Howell Co.: See—  
 Ditto, Inc.  
 Belle Wood, Inc., Bellwood, Ill., from Borg-Warner Corp., Chicago, Ill. 875,643, pub. 12-10-68. Cl. 36.  
 Beloit Corp., Beloit, Wis. 875,590, pub. 6-10-69. Cl. 23.  
 Benham Corp., New York, N.Y. 875,677, pub. 6-10-69. Cl. 39.  
 Bennett Pumps Corp., to John Wood Co., Muskegon, Mich. 263,131, ren. 8-26-69. Cl. 23.  
 Berger, Irwin, and Roberta M. Berger, New York, N.Y. 752,436-6, can. Cl. 22.  
 Berkeley Bags, Inc., Jim Thorpe, Pa. 752,309, can. Cl. 3.  
 Berman, Jules, & Associates, Inc., Los Angeles, Calif. 875,758, pub. 6-10-69. Cl. 49.  
 Best & Gee Proprietary Ltd., d.b.a. Edinburgh Laboratories (Aust.) Pty. Ltd., Sydney, New South Wales, Australia. 752,385, can. Cl. 18.  
 Best, Richard, Pencil Co., Inc., Springfield, N.J. 443,127, ren. 8-26-69. Cl. 37.  
 Bethlehem Corp., Detroit, Mich. 875,594, pub. 6-10-69. Cl. 23.  
 Betina Confectionery Co.: See—  
 Straser Candy Co., Inc.  
 Binney & Smith Co., to Columbian Carbon Co., New York, N.Y. 262,745, ren. 8-26-69. Cl. 16.  
 Biological Electronics: See—  
 Fun, John Y.  
 Bismoline Mfg. Co., Lancaster, Pa. 513,065, ren. 8-26-69. Cl. 51.  
 Bite-O-Lite, Chicago, Ill. 752,440, can. Cl. 22.  
 Block Drug Co., Inc.: See—  
 Gold Medal Haarlem Oil Corp.  
 Block Drug Co., Inc., Jersey City, N.J. 875,774, pub. 6-10-69. Cl. 51.  
 Borden Co., The, New York, N.Y. 752,315, can. Cl. 4.  
 Borden, Inc.: See—  
 Rueckheim Bros. & Eckstein.  
 Borg-Warner Corp.: See—  
 Belle Wood, Inc.  
 Borg-Warner Corp., Chicago, Ill., from Polyquip, Inc., Cincinnati, Ohio. 875,575, pub. 6-10-69. Cl. 23.  
 Bostrom-Amalga Corp.: See—  
 Universal Oil Products Co.



Bowman Dairy Co., Chicago, Ill., to Dean Foods Co., Franklin Park, Ill. 509,586, ren. 8-26-69. Cl. 46.  
 Bradley, Milton Co., East Longmeadow, Mass. 875,550, pub. 6-10-69. Cl. 22.  
 Branaco-Op Int. Inc.: See—  
 Branaco-Op International Inc., d.b.a. Branaco-Op Int. Inc., Newark, N.J. 875,706, pub. 6-4-68. Cl. 45.  
 Bridgeland Wholesale Parts & Appliances, Toronto, Ontario, Canada. 875,528, pub. 6-10-69. Cl. 21.  
 Bridgestone Tire Co., Ltd., Chuo-ku, Tokyo, Japan. 872,151, cor. Cl. 35.  
 Briseis S.A.: See—  
 Jimenez, Antonio L.  
 Bristol-Myers Co., New York, N.Y. 875,505-6, pub. 6-10-69. Cl. 18.  
 Bristol Seamless Ring Co., to Bristol Seamless Ring Corp., New York, N.Y. 511,921, ren. 8-26-69. Cl. 28.  
 Bristol Seamless Ring Co., to Bristol Seamless Ring Corp., New York, N.Y. 511,924, ren. 8-26-69. Cl. 28.  
 Bristol Seamless Ring Corp.: See—  
 Bristol Seamless Ring Co.  
 Brown, Boveri & Co., Ltd., Baden, Switzerland. 875,521, pub. 6-10-69. Multiple Class (Classes 21, 23, 31, and 34).  
 Brown, Russell F., Los Angeles, Calif. 752,550, can. Cl. 38.  
 Brownie Co., The, Richmond, Va. 875,707, pub. 6-10-69. Cl. 45.  
 Brumberger Co., Inc., Brooklyn, N.Y. 752,453, can. Cl. 22.  
 Brunswick Corp., Chicago, Ill. 752,454, can. Cl. 22.  
 Brunswick Corp., Chicago, Ill. 875,576, pub. 6-10-69. Cl. 23.  
 Bulova Watch Co., Inc., Flushing, N.Y. 264,117, ren. 8-26-69. Cl. 27.  
 Burgher, Kenneth, New York, N.Y. 752,626, can. Cl. 51.  
 Burlingame Brooks Inc., Hackensack, N.J. 875,839. Cl. 26.  
 Burner, B. F. & Co.: See—  
 Burner, Bingham F.  
 Burner, Bingham F., d.b.a. B. F. Burner & Co., Arlington, Va. 875,691-2, pub. 6-10-69. Cl. 42.  
 Burner, Bingham F., d.b.a. B. F. Burner & Co., Arlington, Va. 875,702, pub. 6-10-69. Cl. 44.  
 Buschman, E. W., Co., The, Cincinnati, Ohio. 875,580, pub. 6-10-69. Cl. 23.  
 Butler Mfg. Co., Kansas City, Mo. 875,586, pub. 6-10-69. Cl. 23.  
 C & F Products of San Francisco Inc., San Francisco, Calif. 875,547, pub. 6-10-69. Cl. 22.  
 Cannon Mills Co., Kannapolis, N.C. 875,700, pub. 6-10-69. Cl. 42.  
 Canterbury House, Inc., Peru, Ind. 875,624, pub. 6-10-69. Cl. 32.  
 Cantrell & Cochrane Ltd., Inc., New York, N.Y. 752,577, can. Cl. 45.  
 Carol Wire & Cable Corp.: See—  
 Arnet, Inc.  
 Carpenter Steel Co., The, to Carpenter Technology Corp., Reading, Pa. 512,070-1, ren. 8-26-69. Cl. 14.  
 Carpenter Steel Co., The, to Carpenter Technology Corp., Reading, Pa. 512,179-80, ren. 8-26-69. Cl. 14.  
 Carpenter Steel Co., The, to Carpenter Technology Corp., Reading, Pa. 512,185, ren. 8-26-69. Cl. 14.  
 Carpenter Technology Corp.: See—  
 Carpenter Steel Co., The  
 Carson Pirie Scott & Co., Chicago, Ill. 875,726, pub. 6-10-69. Cl. 46.  
 Carter-Day Co.: See—  
 Hart-Carter Co.  
 Cascade Industries, Inc., Edison, N.J. 875,446, pub. 6-10-69. Cl. 6.  
 Castleton China, Inc.: See—  
 Interspace Corp.  
 Castrovilla Artichoke Association, d.b.a. Castrovilla Artichoke Association, Castrovilla, Calif. 875,750, pub. 6-10-69. Cl. 46.  
 Certified Laboratories, Inc., Fort Worth, Tex. 738,371. Am. 7(d). Cl. 52.  
 Chance, A. B., Co., Centralia, Mo. 510,621, ren. 8-26-69. Cl. 21.  
 Character Suburbanwear, Inc., New York, N.Y. 875,674, pub. 6-10-69. Cl. 39.  
 Chase-Shawmut Co., The, Newburyport, Mass. 875,533, pub. 6-10-69. Cl. 21.  
 Chefco Corp., d.b.a. Chefmaster Products Co., Chicago, Ill. 875,842. Cl. 46.  
 Chefmaster Products Co.: See—  
 Chefco Corp.  
 Chek-Chart Corp., The, Chicago, Ill. 516,345, ren. 8-26-69. Cl. 38.  
 Chemiewerk Homburg, Frankfurt (Main), Germany. 752,396, can. Cl. 18.  
 Cherkezian, William & Son, New York, N.Y. 875,099, pub. 6-10-69. Cl. 42.  
 Chevron Asphalt Co.: See—  
 American Bitumuls Co.  
 Chicken Delight, Inc., Des Plaines, Ill. 875,723, pub. 6-10-69. Cl. 46.  
 Chieftain-Uniworld Corp., Corona, N.Y. 875,612, pub. 6-10-69. Cl. 26.  
 Chilton Co., Philadelphia, Pa. 752,555, can. Cl. 38.  
 Chippers, Inc., Chicago, Ill. 752,581, can. Cl. 46.  
 Chomeries, Inc., Arlington, Mass. 875,540, pub. 6-10-69. Cl. 21.  
 Chromalloy American Corp., West Nyack, N.Y. 875,538-9, pub. 6-10-69. Cl. 21.  
 Church & Dwight Co., Inc., New York, N.Y. 257,768, ren. 8-26-69. Cl. 46.  
 Church & Dwight Co., Inc., New York, N.Y. 510,504, ren. 8-26-69. Cl. 52.  
 Churchill Laboratories, Ltd., Brooklyn, N.Y. 875,497, pub. 6-10-69. Cl. 18.  
 Cincinnati Shaper Co., The, Cincinnati, Ohio. 875,582, pub. 4-8-69. Cl. 23.  
 Circle F Sales: See—  
 Fischbach Trucking Co.  
 Clairrol Inc., New York, N.Y. 875,447, pub. 6-10-69. Cl. 8.  
 Clairrol Inc., New York, N.Y. 875,768, pub. 6-10-69. Cl. 51.  
 Clairrol Inc., New York, N.Y. 875,785, pub. 6-10-69. Cl. 51.  
 Classic Jewelry Mfrs., New York, N.Y. 752,518, can. Cl. 28.  
 Cleveland Technical Center, Inc., Cleveland, Ohio. 875,790, pub. 6-10-69. Cl. 52.  
 Cloroben Chemical Corp., Kearny, N.J. 875,604, pub. 6-10-69. Cl. 26.  
 Close & Patenaude, Philadelphia, Pa. 752,622, can. Cl. 50.  
 Coastal Chemical Co., Inc., Savannah, Ga. 875,792, pub. 6-10-69. Cl. 52.  
 Cobble Laboratory Co., Ltd., Tokyo, Japan. 875,599, pub. 6-10-69. Multiple Class (Classes 26 and 34).  
 Coca-Cola Co., The, Atlanta, Ga. 875,708, pub. 6-10-69. Cl. 45.  
 Colgate-Palmolive Co., New York, N.Y. 875,782, pub. 6-10-69. Cl. 51.  
 Colonial Knife Co., Inc., Providence, R.I. 516,987, ren. 8-26-69. Cl. 23.  
 Colonial Plastic Mfg. Co., The, Cleveland, Ohio. 875,762, pub. 6-10-69. Cl. 50.  
 Columbia Wax Co.: See—  
 United States Borax & Chemical Corp.  
 Columbian Carbon Co.: See—  
 Binney & Smith Co.  
 Comet Packaging Corp., Bronx, N.Y. 875,428, pub. 6-10-69. Cl. 2.  
 Compania de Conservas Casera, Inc., Manati, Puerto Rico. 875,728, pub. 6-10-69. Cl. 46.  
 Compeco Dye Works, Inc., Norfolk, Va. 513,505, ren. 8-26-69. Cl. 103.  
 Competitive Capital Corp., San Francisco, Calif. 875,812, pub. 6-10-69. Cl. 102.  
 Cone Mills Corp., Greensboro, N.C., from Cone Mills Inc., New York, N.Y. 875,698, pub. 6-10-69. Cl. 42.  
 Cone Mills Inc.: See—  
 Cone Mills Corp.  
 Congress Playing Cards: See—  
 Standard Playing Card Co.  
 Consolidated Foods Corp., d.b.a. Shasta, Beverages, Chicago, Ill. 875,709, pub. 6-10-69. Cl. 45.  
 Continental Can Co., Inc., New York, N.Y. 875,763, pub. 6-10-69. Cl. 50.  
 Continental Distilling Corp., to Kinsey Distilling Corp., Philadelphia, Pa. 513,443, ren. 8-26-69. Cl. 49.  
 Continental Promotions, Inc., Minneapolis, Minn. 875,560, pub. 6-10-69. Cl. 22.  
 Continental Rubber Works, Erie, Pa. 510,708, ren. 8-26-69. Cl. 35.  
 Continental Rubber Works, Erie, Pa. 513,404, ren. 8-26-69. Cl. 35.  
 Cooperative Wholesale Society, Ltd., Manchester, England. 752,521, can. Cl. 30.  
 Corn Products Co., Englewood Cliffs, N.J., from Refined Syrups & Sugars, Inc., Yonkers, N.Y. 875,737, pub. 5-27-69. Cl. 46.  
 Corning Glass Works, Corning, N.Y. 511,585, ren. 8-26-69. Cl. 34.  
 Cosart Packing Co.: See—  
 Exeter Orange Growers Association.  
 Cosmopolitan Insurance Co., Chicago, Ill. 752,654, can. Cl. 102.  
 Costa Ice Cream Co., Woodbridge, N.J. 875,843. Cl. 46.  
 Credit Clearing Corp. of America, Inc., Jacksonville, Fla. 875,809, pub. 6-10-69. Cl. 101.  
 Crescent Metal Products, Inc., Cleveland, Ohio. 875,637, pub. 6-10-69. Cl. 34.  
 Crestline Products, Inc., Minneapolis, Minn. 752,487, can. Cl. 23.  
 Cretors, C. & Co., Chicago, Ill. 875,639, pub. 6-10-69. Cl. 34.  
 Crown Rubber Co., Fremont, Ohio. 875,418, pub. 6-10-69. Cl. 1.  
 Cummins Pharmaceutical Co., Inc., Beaumont, Tex. 875,794, pub. 6-10-69. Cl. 52.  
 Curran Corp., The, Lawrence, Mass., to Gunk Laboratories, Inc., River Forest, Ill. 513,158, ren. 8-26-69. Cl. 52.  
 Curtis, Helene, Industries, Inc., Chicago, Ill. 875,686, pub. 6-10-69. Cl. 40.  
 Curtis, Helene, Industries, Inc., Chicago, Ill. 875,783, pub. 6-10-69. Cl. 51.  
 Curtis, Helene, Industries, Inc., Chicago, Ill. 875,795, pub. 6-10-69. Cl. 52.  
 Curtis Products, Inc., Chicago, Ill., from Plastic Products Co., Detroit, Mich. 752,352, can. Cl. 12.  
 Dacor Corp., Evanston, Ill. 752,472, can. Cl. 23.  
 Dams, Shibil S., d.b.a. United Citrus Growers, Redlands, Calif. 875,714, pub. 6-10-69. Cl. 46.  
 Danby Imported Cigar Corp., d.b.a. Danby Imported Cigars Corp., New York, N.Y. 875,492, pub. 6-11-68. Cl. 17.  
 Danby Imported Cigars Corp.: See—  
 Danby Imported Cigar Corp.  
 Darling & Co., Chicago, Ill. 875,473, pub. 6-10-69. Cl. 12.  
 Dashew Business Machines, Inc., Los Angeles, Calif. 875,561, pub. 9-15-64. Cl. 23.  
 Dayton Corp., Minneapolis, Minn. 875,811, pub. 6-10-69. Cl. 101.  
 Dean Foods Co.: See—  
 Bowman Dairy Co.  
 De Havilland Aircraft Co. Ltd., The, Hatfield, England. 752,415, can. Cl. 21.  
 Delta Prime Water Conditioner Co., Mountain View Calif. 875,483, pub. 6-10-69. Cl. 13.

Denison-Johnson, Inc., Mankato, Minn. 875,552-3, pub. 6-10-69. Cl. 22.  
 De Soto, Inc., Des Plaines, Ill. 875,463-4, pub. 6-10-69. Cl. 12.  
 De Vere (Kensington) Ltd., Beckenham, Kent, England. 875,840. Cl. 26.  
 Dewey & Almy Chemical Co., North Cambridge, Mass., to W. R. Grace & Co., Cambridge, Mass. 510,503, ren. 8-26-69. Cl. 6.  
 Dial-A-Gift Inc.: See—  
 Harry & David.  
 Diamond Shamrock Corp.: See—  
 Griffin Chemical Co.  
 Diamond Shamrock Corp., d.b.a. Nopco Chemical Co., Cleveland, Ohio. 875,603, pub. 6-11-68. Cl. 26.  
 Dick & Goldschmidt, Inc., New York, N.Y. 875,694, pub. 6-10-69. Cl. 42.  
 Dide-Glaser, Inc., Emporia, Kans. 875,589, pub. 6-10-69. Cl. 23.  
 Diebold, Inc., Canton, Ohio. 509,592, ren. 8-26-69. Cl. 37.  
 Dielectric Products Engineering Co., Inc.: See—  
 Sola Basic Industries, Inc.  
 Dietzgen, Eugene Co., Chicago, Ill. 875,615, pub. 6-10-69. Cl. 26.  
 Dispensers, Inc., d.b.a. Dripcut Starline, Goleta, Calif. 875,660, pub. 6-10-69. Cl. 38.  
 Displayers, Inc., The, New York, N.Y. 875,820, pub. 6-10-69. Cl. 103.  
 Ditto, Inc., to Bell & Howell Co., Chicago, Ill. 511,946-7, ren. 8-26-69. Cl. 38.  
 Diversified Products Corp., Opelika, Ala. 875,557, pub. 6-10-69. Cl. 22.  
 Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 507,043, cor. Cl. 34.  
 Doll-Eze Products Co., Inc., Newark, N.J. 752,464, can. Cl. 22.  
 Doughboy Industries, Inc., New Richmond, Wis. 875,744, pub. 6-10-69. Cl. 46.  
 Downing, Ronald L., d.b.a. Mr. Dream Merchant, Raytown, Mo. 875,806, pub. 6-10-69. Cl. 100.  
 Dowty Hydraulic Units Ltd., Cheltenham, England. 875,568, pub. 8-25-69. Cl. 23.  
 Dragon Industries, Van Nuys, Calif. 875,522, pub. 6-25-68. Cl. 21.  
 Draper Products, Inc., Appleton, Wis. 875,673, pub. 6-10-69. Cl. 39.  
 Dripcut Starline: See—  
 Dispensers, Inc.  
 Drive-In Management Corp., Syracuse, N.Y. 875,846. Cl. 46.  
 Dubow, George, d.b.a. Fillers for Publications, Los Angeles, Calif. 875,664, pub. 6-10-69. Cl. 38.  
 Dyersburg Cotton Products, Inc., Dyersburg, Tenn. 875,689, pub. 6-10-69. Cl. 42.  
 E.K. Helmet Mfg. Co., Westminster, Calif. 875,668, pub. 6-10-69. Cl. 39.  
 Eastern Tube & Tool Co., Inc., Brooklyn, N.Y. 875,846. Cl. 46.  
 Eastman Kodak Co., Rochester, N.Y. 752,504, can. Cl. 26.  
 Edinburg Laboratories (Aust.) Pty. Ltd.: See—  
 Best & Gee Proprietary Ltd.  
 Edmonston, Joe, & Associates, Inc., Irwin, Pa. 875,477, pub. 6-10-69. Cl. 12.  
 Elsler Engineering Co.: See—  
 Elsler, William J., Jr.  
 Elsler, William J., Jr., d.b.a. Elsler Engineering Co., Hinsdale, Ill. 875,610, pub. 6-10-69. Cl. 26.  
 Electrofilm, Inc., North Hollywood, Calif. 752,293, can. Cl. 1.  
 Electronic Control Corp., Eulass, Tex. 875,523, pub. 6-10-69. Multiple Class (Classes 21 and 34).  
 Eltar Laboratories, Inc., Van Nuys, Calif. 875,797, pub. 6-10-69. Cl. 52.  
 Ely, Graham B., d.b.a. Barns-Ely Co., Chicago, Ill. 875,703, pub. 6-10-69. Cl. 44.  
 Empire Plastic Corp., New York, N.Y. 875,549, pub. 6-10-69. Cl. 22.  
 Equitable Life Assurance Society of the United States, The, New York, N.Y. 875,814, pub. 6-10-69. Cl. 102.  
 Erving Paper Mills, Erving, Mass. 511,373, ren. 8-26-69. Cl. 37.  
 Etablissements Vinicoles de Gironde, Gironde, France. 875,751, pub. 6-10-69. Cl. 47.  
 Etico Wire & Cable Corp.: See—  
 Eastern Tube & Tool Co., Inc.  
 Eversharp, Inc., Milford, Conn. 875,598, pub. 6-10-69. Cl. 23.  
 Exeter Orange Growers Association, to W. F. Cosart Packing Co., Exeter, Calif. 515,663, ren. 8-26-69. Cl. 46.  
 F.G.M. & Co., Copenhagen, Denmark. 752,617, can. Cl. 50.  
 FMC Corp.: See—  
 Peerless Pump Co.  
 Faber-Castell, A. W., Penell Co., Inc., Newark, N.J. 513,595, ren. 8-26-69. Cl. 37.  
 Faberge, Inc., New York, N.Y. 875,779-80, pub. 6-10-69. Cl. 51.  
 Fairchild Publications, Inc., New York, N.Y. 752,679, can. Cl. 38.  
 Farrow Mfg. Co., Elmore, Minn. 752,474, can. Cl. 23.  
 Fedders Corp.: See—  
 Norge Corp.  
 Fedtro, Inc., Rockville Centre, N.Y. 875,543, pub. 6-10-69. Cl. 21.  
 Fedtro, Inc., Rockville Centre, N.Y. 875,835. Cl. 21.  
 Ferguson Waterproof Co., to The Alligator Co., Inc., St. Louis, Mo. 875,365, ren. 8-26-69. Cl. 39.  
 Fichtel & Sachs Aktiengesellschaft, Schweinfurt, Germany. 875,515, pub. 6-10-69. Multiple Class (Classes 19 and 23).  
 Fieldcrest Mills, Inc., Spray, N.C. 752,421, can. Cl. 21.  
 Fieldcrest Mills, Inc., Eden, N.C. 875,701, pub. 6-10-69. Cl. 42.  
 Fillers for Publications: See—  
 Dubow, George.  
 Filter, Edwin H., Co., The, to Columbian Rope Co., Auburn, N.Y. 252,682. Am. 7(d). Cl. 7.  
 Firestone Tire & Rubber Co., The, Akron, Ohio. 875,480, pub. 6-10-69. Cl. 12.  
 Firminich, Inc.: See—  
 Societe Anonyme M. Naef & Cie.  
 Fischbach Trucking Co., d.b.a. Circle F Sales, Akron, Ohio. 752,482, can. Cl. 23.  
 Fitch Dustedown Co., The, Baltimore, Md. 515,069, ren. 8-26-69. Cl. 52.  
 Fleet, C. B., Co., Inc., Lynchburg, Va. 875,503, pub. 6-10-69. Cl. 18.  
 Flintkote Co., The: See—  
 Smith & Kanzler Co.  
 Food Enterprises, Inc., Rye, N.Y. 752,558, can. Cl. 38.  
 Food Technology, Inc., Chicago, Ill. 875,729, pub. 6-10-69. Cl. 46.  
 Ford Motor Co., Dearborn, Mich. 511,718, ren. 8-26-69. Cl. 31.  
 Foremost-McKesson, Inc.: See—  
 McKesson & Robbins, Inc.  
 Fort Wayne Tool & Die, Inc., Fort Wayne, Ind. 875,587, pub. 6-10-69. Cl. 23.  
 Foster, Paul D., Co., The, Blytheville, Ark. 752,333, can. Cl. 6.  
 Foster Wheeler Corp., Livingston, N.J. 875,638, pub. 6-10-69. Cl. 34.  
 Fostoria Corp., Huntingdon Valley, Pa. 752,313, can. Cl. 4.  
 Founders Mutual Depositor Corp., Denver, Colo. 875,815, pub. 6-10-69. Cl. 102.  
 Fram Refiner Sales, Inc., Pittsburgh, Pa. 752,318, can. Cl. 5.  
 Franklin, Robert A., Los Angeles, Calif. 752,623, can. Cl. 51.  
 Friedman, Abe A., Augusta, Ga. 516,275, ren. 8-26-69. Cl. 27.  
 Fund American Companies, The: See—  
 Amex Holding Corp.  
 Furmote Chemical Co.: See—  
 Thornfield, Alec.  
 GAF Corp., New York, N.Y. 875,654-6, pub. 6-10-69. Cl. 37.  
 G. & L. F.lli Cora S.p.A., Turin, Italy. 875,852. Cl. 47.  
 Gallo, E. & J., Winery, Modesto, Calif. 875,754, pub. 6-10-69. Cl. 47.  
 Garlock Inc., Palmyra, N.Y. 875,800, pub. 6-10-69. Cl. 100.  
 Garrett & Co., Inc., Brooklyn, N.Y. 517,625. Am. 7(d). Cl. 47.  
 Gebroeders Van Huet's Leaden Lossystemen "Hulo" NV, Pansterdam, Netherlands. 871,173, cor. Multiple Class (Classes 19 and 23).  
 Gelgy Chemical Corp.: See—  
 Gelgy Co., Inc.  
 Gelgy Co., Inc., New York, to Gelgy Chemical Corp., Ardsley, N.Y. 516,870, ren. 8-26-69. Cl. 6.  
 General Electric Co., Plainville, Conn. 875,530, pub. 8-27-68. Cl. 21.  
 General Foods Corp., White Plains, N.Y. 875,738, pub. 6-10-69. Cl. 46.  
 General Foods Corp., White Plains, N.Y. 875,845. Cl. 46.  
 General Mills, Inc., Minneapolis, Minn. 875,730, pub. 6-10-69. Cl. 46.  
 General Ordnance Equipment Corp., Pittsburg, Pa. 875,458, pub. 6-10-69. Cl. 9.  
 General Time Corp.: See—  
 General Time Instruments Corp.  
 General Time Instruments Corp., now by change of name General Time Corp., New York, N.Y., to General Time Corp., Stamford, Conn. 514,897, ren. 8-26-69. Cl. 27.  
 Germain's Inc., Los Angeles, Calif. 752,338, can. Cl. 6.  
 Germaine Montell Cosmetics Corp.: See—  
 Letherie, Inc.  
 Gibson Art Co., The, to Gibson Greeting Cards, Inc., Cincinnati, Ohio. 503,979. Am. 7(d). Class 38.  
 Gibson Greeting Cards, Inc., Cincinnati, Ohio. 875,650, pub. 6-10-69. Cl. 37.  
 Gibbey's Australia Proprietary Ltd., South Australia, Australia. 875,757, pub. 6-10-69. Cl. 49.  
 Gillette Co., The, Boston, Mass. 875,787, pub. 6-10-69. Cl. 51.  
 Gilmour Mfg. Co.: See—  
 Gilmour, Robert A.  
 Gilmour, Robert A., d.b.a. Gilmour Mfg. Co., Somerset, Pa. 875,859. Cl. 52.  
 Gingles Formalwear, Inc., Chicago, Ill. 875,807-8, pub. 6-10-69. Cl. 100.  
 Gisholt Machine Co., Madison, Wis. 752,523, can. Cl. 32.  
 Gladstone Food Products Co., Inc., Kansas City, Mo. 875,844. Cl. 46.  
 Glaser Bros.: See—  
 Gradiaz, Annis & Co., Inc.  
 Globe Linings, Inc., Long Beach, Calif. 875,476, pub. 6-10-69. Cl. 12.  
 Gold Medal Haarelm Oil Corp., to Block Drug Co., Inc., Jersey City, N.J. 514,728, ren. 8-26-69. Cl. 18.  
 Gold Seal Vineyards, Inc., Hammondsport, N.Y. 752,695, can. Cl. 47.  
 Goldberg, Lillian, from Votre Ami Cosmetic Co., Brooklyn, N.Y. 752,627, can. Cl. 51.  
 Golden Door Cosmetics, Inc., San Diego, Calif. 875,777, pub. 6-10-69. Cl. 51.  
 Goncalves Monteiro & Filhos, Limitada, Vila Nova De Gaia, Portugal. 875,752, pub. 6-10-69. Cl. 47.  
 Goodrich, B. F., Co., The, Akron, Ohio. 752,535, can. Cl. 35.  
 Gorman-Rupp Co., The, Mansfield, Ohio. 875,563, pub. 6-10-69. Cl. 23.



- Grace, W. R., & Co.: See—  
Dewey & Army Chemical Co.  
Gradiatz, Annis & Co., Inc., Tampa, Fla., to Glaser Bros., Los Angeles, Calif. 509,440, ren. 8-26-69. Cl. 17.  
Granco Steel Products Co.: See—  
Granite City Steel Co.  
Grand Union Co., The, East Paterson, N.J. 875,718, pub. 6-10-69. Cl. 46.  
Granite City Steel Co., d.b.a. Granco Steel Products Co., Granite City, Ill. 752,358, can. Cl. 12.  
Gray, David C., Seattle, Wash. 875,565, pub. 6-10-69. Cl. 23.  
Great Lakes Paint & Varnish Co., Chicago, Ill. 752,370, can. Cl. 16.  
Green Giant Co.: See—  
Minnesota Valley Canning Co.  
Greyhound Corp., The, Chicago, Ill. 875,558, pub. 6-10-69. Cl. 22.  
Greyhound Corp., The, Chicago, Ill. 875,742, pub. 6-10-69. Cl. 46.  
Griffin Chemical Co., San Francisco, Calif., to Diamond Shamrock Corp., Cleveland, Ohio. 512,580, ren. 8-26-69. Cl. 8.  
Griffolyn Co., Inc., Houston, Tex. 875,479, pub. 6-10-69. Cl. 12.  
Gudebrod Bros. Silk Co., Inc., Philadelphia, Pa. 875,572, pub. 6-10-69. Cl. 23.  
Guerlain, Inc., New York, N.Y. 875,767, pub. 6-10-69. Cl. 51.  
Gulf States Paint Co., Houston, Tex. 752,375, can. Cl. 18.  
Gulf States Paper Corp., Tuscaloosa, Ala. 875,425, pub. 6-10-69. Cl. 2.  
Gunk Laboratories, Inc.: See—  
Curran Corp., The.  
HMH Publishing Co., Inc., Chicago, Ill. 875,827, pub. 6-10-69. Cl. 107.  
Hach Chemical Co., Ames, Ia. 752,326, can. Cl. 6.  
Hammond Corp., Deerfield, Ill. 875,675, pub. 6-10-69. Cl. 39.  
Hanover Canning Co., Hanover, Pa. 752,693, can. Cl. 46.  
Harris Orchard Co., Inc., from Lake Entiat Growers, Entiat, Wash. 752,582, can. Cl. 46.  
Harris Paint Co., Tampa, Fla. 875,441, pub. 6-10-69. Multiple Class (Classes 6 and 16).  
Harry & David, Medford, Oreg., from Dial-A-Gift Inc., Newport Beach, Calif. 875,725, pub. 6-10-69. Cl. 46.  
Hart-Carter Co., to Carter-Day Co., Minneapolis, Minn. 514,798, ren. 8-26-69. Cl. 23.  
Hassia-Verpackungsmaschinen G.m.b.H., Ransstadt, Germany. 875,562, pub. 6-10-69. Multiple Class (Classes 23, 37, and 105).  
Hayden Publishing Co., Inc., New York, N.Y. 752,545, can. Cl. 38.  
Hayloft, Inc., Jackson, Mich. 875,860-1. Cl. 100.  
Healthguard Knitwear Ltd., Leicester, England. 442,975, ren. 8-26-69. Cl. 39.  
Hearst Corp., The, New York, N.Y. 752,556, can. Cl. 38.  
Hessenfeld Bros., Inc., Central Falls, R.I. 752,447, can. Cl. 22.  
Hockey Club of Pittsburgh, Pittsburgh, Pa. 875,829-30, pub. 6-10-69. Cl. 107.  
Holland-America Insurance Co., Kansas City, Mo. 875,816, pub. 6-10-69. Cl. 102.  
Holmar International Corp., Garfield, N.J. 875,544, pub. 4-23-68. Cl. 22.  
Hooker Chemical Corp., Niagara Falls, N.Y. 875,416, pub. 6-10-69. Cl. 1.  
Houbigant, Inc., New York, N.Y. 875,770-2, pub. 6-10-69. Cl. 51.  
House of Worst-Text, Inc.: See—  
JMS Corp.  
House of Worst-Text, Inc., Philadelphia, Pa. 875,679, pub. 6-10-69. Cl. 39.  
Huber, J. M., Corp., Borger, Tex. 510,569, ren. 8-26-69. Cl. 11.  
Hughes-Blattner Game Co., Inc., Baltimore, Md. 752,439, can. Cl. 22.  
Hunting World, Inc., New York, N.Y. 875,662, pub. 6-10-69. Cl. 38.  
Huttenbauer, E. & Sons, Inc., Cincinnati, Ohio. 875,710, pub. 6-10-69. Cl. 46.  
Hydronic Industries, Inc., Pelham Manor, N.Y. 875,640, pub. 6-10-69. Cl. 34.  
Ice Cream Specialties, Inc., St. Louis, Mo. 875,847. Cl. 46.  
Immuno (Canada) Ltd., Montreal, Quebec, Canada. 875,500, pub. 6-10-69. Cl. 18.  
Industrial Coatings, Inc., Birmingham, Ala. 875,491, pub. 6-10-69. Cl. 16.  
International Boating Association, Inc., The, Fort Lauderdale, Fla. 752,647, can. Cl. 101.  
International Harvester Co., to International Harvester Co., Chicago, Ill. 509,632, ren. 8-26-69. Cl. 23.  
International Paper Co., New York, N.Y. 257,198, ren. 8-26-69. Cl. 37.  
International Shoppers Service, S.A.R.L., Paris, France. 752-640, can. Cl. 100.  
Interpace Corp., Parsippany, N.J., from Castleton China, Inc., New Castle, Pa. 875,621-2, pub. 6-10-69. Cl. 30.  
Ion Co., The, Costa Mesa, Calif. 875,511, pub. 6-10-69. Multiple Class (Classes 18, 29, and 44).  
Irvinware, Long Island City, N.Y. 875,485, pub. 6-10-69. Cl. 13.  
Italian Swiss Colony: See—  
United Vintners, Inc.  
JMS Corp., from House of Worst-Text, Inc., Philadelphia, Pa. 752,560, can. Cl. 39.  
Jad Tool Co., Cleveland, Ohio. 875,545-6, pub. 6-10-69. Cl. 22.  
Jaeger Machine Co., The, Columbus, Ohio. 263,109, ren. 8-26-69. Cl. 23.  
Jai Chemicals & Fl-Bro Sponge Co.: See—  
Snella, Lyla H.  
James Candy Co., Atlantic City, N.J. 752,689, can. Cl. 49.  
Jewel Companies, Inc.: See—  
Jewel Tea Co., Inc.  
Jewel Tea Co., Inc., Barrington, to Jewel Companies, Inc., Melrose Park, Ill. 512,583, ren. 8-26-69. Cl. 4.  
Jimenez, Antonio L., to Briseis S.A., Almeria, Spain. 510,333, ren. 8-26-69. Cl. 52.  
Jimenez, Antonio L., to Briseis S.A., Almeria, Spain. 510,440, ren. 8-26-69. Cl. 51.  
Joanna Western Mills Co., Chicago, Ill. 752,281, can. Cl. 1.  
Johnson, Jay, Palm Beach, Fla. 752,625, can. Cl. 51.  
Johnson, S. C., & Son, Inc., Racine, Wis. 517,888, ren. 8-26-69. Cl. 52.  
K. & S. Engineering Co.: See—  
Midwest Model Supply Co.  
Kalman Floor Co., Inc., White Plains, N.Y. 875,584, pub. 6-10-69. Cl. 23.  
Kaman Corp., Bloomfield, Conn. 875,415, pub. 6-10-69. Cl. 1.  
Kanter, Joseph S., Miami, Fla. 875,805, pub. 6-10-69. Cl. 100.  
Kensbey & Mattison Co., to Nicolet Industries, Inc., Ambler, Pa. 512,893, ren. 8-26-69. Cl. 12.  
Kennington, Ltd.: See—  
Kennington, Ltd., Inc.  
Kennington, Ltd., Inc., from Kennington, Ltd., Los Angeles, Calif. 752,565, can. Cl. 39.  
Kent Products Inc., Kansas City, Mo. 518,019, ren. 8-26-69. Cl. 46.  
Kendle Floors Inc., Brooklyn, N.Y. 875,434, pub. 6-10-69. Multiple Class (Classes 4, 5, 12, 16, 20, and 52).  
Keuffel & Esser Co., Morristown, N.J. 443,087, ren. 8-26-69. Cl. 26.  
Keuffel & Esser Co., Morristown, N.J. 510,425, ren. 8-26-69. Cl. 8.  
Kimberly-Clark Corp., Neenah, Wis. 752,541, can. Cl. 37.  
Kimberly-Clark Corp., Neenah, Wis. 875,649, pub. 6-10-69. Cl. 37.  
Kimberly-Clark Corp., Neenah, Wis. 875,653, pub. 6-10-69. Cl. 37.  
King Valve Co., The, Alpena, Mich. 875,489, pub. 6-10-69. Cl. 13.  
Kinsey Distilling Corp.: See—  
Continental Distilling Corp.  
Kinsman Ring Co., Inc., New York, N.Y. 875,620, pub. 6-10-69. Cl. 28.  
Koehler Mfg. Co.: See—  
Valentine-Seaver Co.  
Koninklijke Fabrieken C. J. Van Houten & Zoon N.V., Weesp, Netherlands. 875,719, pub. 6-10-69. Cl. 46.  
Kresge, S. S., Co., Detroit, Mich. 875,625, pub. 6-10-69. Cl. 32.  
Kroehler Mfg. Co., Naperville, Ill. 875,630, pub. 6-10-69. Cl. 32.  
Kroner, Hermann, d.b.a. Hermann Kronseder Maschinenfabrik, Bavaria, Germany. 875,569, pub. 10-22-68. Cl. 23.  
Kronseder, Hermann, Maschinenfabrik: See—  
Kronseder, Hermann.  
Kvernlands Fabrik A/S, Kvernaland, Norway. 875,595, pub. 6-10-69. Cl. 23.  
Lady Bronze Cosmetics, Inc., New Orleans, La. 875,768, pub. 6-10-69. Cl. 51.  
Lake Entiat Growers: See—  
Harris Orchard Co., Inc.  
Lander Co., Inc., d.b.a. Loveland, New York, N.Y. 752,568, can. Cl. 40.  
Lan-O-Sheen, Inc., St. Paul, Minn. 517,694, ren. 8-26-69. Cl. 52.  
Lark, Charles R., Jr., d.b.a. Lark Industries, Alden, Mich. 752,527, can. Cl. 32.  
Lark Industries: See—  
Lark, Charles R., Jr.  
Lawrence Foods, Inc., Elk Grove Village, Ill. 875,741, pub. 6-10-69. Cl. 46.  
Leeds & Northrup Co., Philadelphia, Pa. 875,600, pub. 4-8-69. Cl. 26.  
Legge, Walter G., Co., Inc., New York, N.Y. 875,796, pub. 6-10-69. Cl. 52.  
Lehigh Valley Cooperative Farmers, d.b.a. Lehigh Valley Dairy, Allentown, Pa. 875,848. Cl. 46.  
Lehigh Valley Dairy: See—  
Lehigh Valley Cooperative Farmers.  
Lehman Bros. Corp.: See—  
Lehman Bros., Inc.  
Lehman Bros., Inc., to Lehman Bros. Corp., Jersey City, N.J. 260,265, ren. 8-26-69. Cl. 16.  
Lentheric, Inc., to Germaine Montell Cosmetics Corp., New York, N.Y. 254,198, ren. 8-26-69. Cl. 18.  
Letourneau, R. G., Inc., Longview, Tex. 875,581, pub. 6-10-69. Cl. 23.  
Lev-Co Developing Co.: See—  
Leventhal, Charles S.  
Leventhal, Charles S., d.b.a. Lev-Co Developing Co., Pottstown, Pa. 752,332, can. Cl. 6.  
Lever Bros. Co., New York, N.Y. 875,745-7, pub. 6-10-69. Cl. 46.  
Levi Strauss & Co., San Francisco, Calif. 875,680, pub. 6-10-69. Cl. 39.  
Levin Bros. Poultry Co., Inc., Wellston, Mo. 875,731, pub. 6-10-69. Cl. 46.  
Levow, David, New York, N.Y., to Aeroll Products Co., Inc., South Hackensack, N.J. 257,877, ren. 8-26-69. Cl. 13.  
Lewyt Corp., Brooklyn, N.Y., to Proctor-Silex Inc., Philadelphia, Pa. 515,526, ren. 8-26-69. Cl. 21.  
Liberty & Co., Ltd., to Liberty & Co., Ltd., London, England. 511,468, ren. 8-26-69. Cl. 42.

- Lilly, EH, & Co., Indianapolis, Ind. 517,458, ren. 8-26-69. Cl. 18.  
Lincept Film Libraries: See—  
Yerlan, Cameron J.  
Lipton, Alexander, Inc., Los Angeles, Calif. 752,686, can. Cl. 39.  
Lloyds Import & Export Co., d.b.a. Lloyds International Co., Santa Monica, Calif. 875,687, pub. 6-10-69. Cl. 40.  
Lloyds International Co.: See—  
Lloyds Import & Export Co.  
Lockwood Mfg. Co., The, Cincinnati, Ohio. 752,675, can. Cl. 23.  
Loomis, Ltd., Oakland, Md. 752,583, can. Cl. 46.  
Lorillard, Corp., New York, N.Y. 875,451-7, pub. 6-10-69. Cl. 8.  
Loveland: See—  
Lander Co., Inc.  
Lucky Stores, Inc., Milan, Ill. 875,507, pub. 6-10-69. Cl. 18.  
Ludlow Corp., Needham Heights, Mass. 875,461, pub. 6-10-69. Cl. 10.  
M-A Pharmaceutical Corp., Mount Vernon, N.Y. 752,389, can. Cl. 18.  
Macmillan Ring-Free Oil Co., Inc., Los Angeles, Calif. 752-374, can. Cl. 16.  
Macmillan Ring-Free Oil Co., Inc., Los Angeles, Calif. 752,635, can. Cl. 52.  
Macy, R. H., & Co., Inc., New York, N.Y. 255,051, ren. 8-26-69. Cl. 46.  
Magnet Cove Barium Corp., Houston, Tex. 752,336, can. Cl. 6.  
Mallmaster Photolabs: See—  
Mastercolor of New England, Inc.  
Main Toy Co., to Western Publishing Co., Inc., Racine, Wis. 268,283. Am. 7(d). Cl. 22.  
Mar-Gold Corp., The: See—  
Beatrice Foods Co.  
Mar-Tay, Inc., d.b.a. Mar-Tay Sales, Inc., Orlando, Fla. 752,395, can. Cl. 18.  
Mar-Tay Sales, Inc.: See—  
Mar-Tay, Inc.  
Marbury Art: See—  
Plasticrome Greetings, Inc.  
Marine Commuter Corp.: See—  
Western Insulfoam Corp.  
Martin, Black & Co. (Wire Ropes), Coatbridge, Scotland. 875,449, pub. 6-10-69. Cl. 7.  
Martin Marietta Corp., New York, N.Y. 875,465, pub. 6-10-69. Cl. 12.  
Martin Marietta Corp., New York, N.Y. 875,474, pub. 6-10-69. Cl. 12.  
Martin Meat Co., Inc., Denver, Colo. 875,748, pub. 6-10-69. Cl. 46.  
Marx, Louis, & Co., Inc., New York, N.Y. 752,459, can. Cl. 22.  
Massachusetts Mohair Plush Co., Inc., Kings Mountain, N.C. 752,573, can. Cl. 43.  
Mastercolor of New England, Inc., d.b.a. Mailmaster Photolabs, Boston, Mass. 752,666, can. Cl. 106.  
Matalon, Robert, Ltd., London, England. 875,858. Cl. 51.  
Mather & Platt Ltd., Manchester, Lancashire, England. 875,838. Cl. 28.  
Matlow Bros., Inc., Hoboken, N.J. 875,722, pub. 6-10-69. Cl. 46.  
Matney, Arthur, Brooklyn, N.Y. 875,857. Cl. 51.  
Mattel, Inc., Hawthorne, Calif. 875,670, pub. 6-10-69. Cl. 39.  
McGoldrick, J. M., Co.: See—  
McGoldrick, John M.  
McGoldrick, John M., d.b.a. J. M. McGoldrick Co., Hingham, Mass. 875,609, pub. 6-10-69. Cl. 26.  
McGuire, Stuart, Co., Inc., The, Salem, Va. 875,683, pub. 6-10-69. Cl. 39.  
McKesson & Robbins, Inc., to Foremost-McKesson, Inc., New York, N.Y. 518,077, ren. 8-26-69. Cl. 6.  
McQuay, Inc., Minneapolis, Minn. 513,758, ren. 8-26-69. Cl. 31.  
Mead Johnson & Co., Evansville, Ind. 875,736, pub. 6-10-69. Cl. 46.  
Melroe Co., Gwinner, N. Dak. 875,574, pub. 2-18-69. Cl. 23.  
Merck & Co., Inc., Rahway, N.J. 875,508-9, pub. 6-10-69. Cl. 18.  
Meyer's Bakeries, Little Rock, Ark. 875,727, pub. 6-10-69. Cl. 46.  
Micro Tracers, Inc., San Francisco, Calif. 875,724, pub. 6-10-69. Cl. 46.  
Midland Mfg. Co., Inc., Memphis, Tenn. 875,564, pub. 6-11-68. Cl. 23.  
Midwest Model Supply Co., d.b.a. K. & S. Engineering Co., Chicago, Ill. 752,407, can. Cl. 19.  
Minnesota Mining & Mfg. Co., St. Paul, Minn. 875,439, pub. 6-10-69. Cl. 5.  
Minnesota Mining & Mfg. Co., St. Paul, Minn. 875,466, pub. 6-10-69. Cl. 12.  
Minnesota Valley Canning Co., to Green Giant Co., Le Sueur, Minn. 264,446, ren. 8-26-69. Cl. 46.  
Miss Pennsylvania, Inc., Pottsville, Pa. 875,681, pub. 6-10-69. Cl. 39.  
Mr. Dream Merchant: See—  
Downing, Ronald L.  
Mitchell-Bradford Chemical Co., The, Milford, Conn. 875,448, pub. 6-10-69. Cl. 6.  
Mixing Equipment Co., Inc., Rochester, N.Y. 875,571, pub. 6-10-69. Cl. 23.  
Mohawk Paper Mills, Inc., Cohoes, N.Y. 875,646, pub. 6-10-69. Cl. 37.  
Monarch Road Machinery Co., Grand Rapids, Mich. 875,836. Cl. 28.  
Moncrief-Lenoir Mfg. Co., Houston, Tex. 508,568, ren. 8-26-69. Cl. 12.  
Mondia S.A.: See—  
Societe Anonyme Paul Vermot et Cie Fabrique d'Horlogerie Mondia.  
Montres Rolex S.A., Geneva, Switzerland. 875,616, pub. 6-10-69. Cl. 27.  
Moreland Corp., The, Willow Grove, Pa. 875,579, pub. 6-10-69. Cl. 23.  
Morgan, J. E., Knitting Mills, Inc., Tamaqua, Pa. 875,669, pub. 6-10-69. Cl. 39.  
Morris, Philip, Inc., d.b.a. American Safety Razor Co., New York, N.Y. 875,588, pub. 6-10-69. Cl. 23.  
Morris, Philip, Inc., d.b.a. American Safety Razor Co., New York, N.Y. 875,597, pub. 6-10-69. Multiple Class (Classes 23 and 51).  
Morris-Wheeler, Inc., New York, N.Y. 752,437, can. Cl. 22.  
Mueller, Paul, Co., Springfield, Mo. 875,573, pub. 6-10-69. Cl. 23.  
Mulkern, Harlan J., d.b.a. Putting Pal, St. Paul, Minn. 875-791, pub. 6-10-69. Cl. 52.  
Multiplex Concrete Co., Inc., East Orange, N.J. 510,287, ren. 8-26-69. Cl. 12.  
Murphy Chemical Co., Ltd., The, Hertfordshire, England. 871-989, cor. Cl. 6.  
Musical Instrument Corp. of America, Syosset, N.Y. 875,644-5, pub. 6-10-69. Cl. 36.  
Myers, Austin E., Denver, Colo. 875,715, pub. 6-10-69. Cl. 46.  
N.V. Nederlandsche Linoleumfabriek, Krommenle, Netherlands. 875,519, pub. 6-10-69. Multiple Class (Classes 20 and 50).  
Nalco Chemical Co., Chicago, Ill. 875,426, pub. 6-10-69. Cl. 2.  
National Aeronautic Association, Washington, D.C. 875,832, pub. 6-10-69. Cl. 8.  
National Baby Care Council, Wilmington, Del. 752,667, can. Cl. 107.  
National Cash Register Co., The, Dayton, Ohio. 264,237, ren. 8-26-69. Cl. 26.  
National Dairy Products Corp., New York, N.Y. 752,602-3, can. Cl. 46.  
National Dairy Products Corp., Chicago, Ill. 875,739-40, pub. 6-10-69. Cl. 46.  
National Starch & Chemical Corp., New York, N.Y. 875,717, pub. 6-10-69. Cl. 46.  
National Twist Drill & Tool Co.: See—  
Winter Brothers Co.  
Nattermann, A., & Cie, Cologne, Braunsfeld, Germany. 752-381, can. Cl. 18.  
Navarre Corp., The, Chattanooga, Tenn. 875,765, pub. 6-10-69. Cl. 50.  
Nawa Enterprises, Inc., Holden, Mass. 875,478, pub. 6-10-69. Cl. 12.  
Neotek Associates, Miami, Fla. 875,608, pub. 6-10-69. Cl. 26.  
Nesbit Industries, Inc., Chicago, Ill. 752,451, can. Cl. 22.  
Nestle Co., Inc., The, White Plains, N.Y. 875,735, pub. 6-10-69. Cl. 46.  
New Jersey Life Insurance Co., Newark, N.J. 872,348, cor. Cl. 102.  
Nicolet Industries, Inc.: See—  
Kensbey & Mattison Co.  
Nitchie, Clifford W., Bloomfield, Conn. 752,350, can. Cl. 8.  
Nopco Chemical Co.: See—  
Diamond Shamrock Corp.  
Nopco Chemical Co., Newark, N.J. 752,399, can. Cl. 18.  
Norcross, Inc., New York, N.Y. 875,665-6, pub. 6-10-69. Cl. 38.  
Norge Corp., Detroit, Mich., to Fedders Corp., Edison, N.J. 255,970, ren. 8-26-69. Cl. 31.  
Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 875,778, pub. 6-10-69. Cl. 51.  
North American Rockwell Corp., Pittsburgh, Pa. 875,518, pub. 6-10-69. Cl. 19.  
Norton Co., Worcester, Mass. 752,310-12, can. Cl. 4.  
Novel Ideas, Inc., Oklahoma City, Okla. 875,688, pub. 6-10-69. Cl. 42.  
Odence, Charles, Co., Boston, Mass., to Universal Cigar Corp., New York, N.Y. 262,165, ren. 8-26-69. Cl. 17.  
Okaman, George, d.b.a. Oxford House, Brooklyn, N.Y. 875-633, pub. 6-10-69. Cl. 32.  
Old Fashion, Inc.: See—  
Old Fashion Ma's Root Beer Bottling Co.  
Old Fashion Ma's Root Beer Bottling Co., to Old Fashion, Inc., Wilkes-Barre, Pa. 516,262, ren. 8-26-69. Cl. 45.  
Old Fashion Ma's Root Beer Bottling Co., to Old Fashion, Inc., Wilkes-Barre, Pa. 517,637, ren. 8-26-69. Cl. 45.  
Old Fashion Ma's Root Beer Bottling Co., to Old Fashion, Inc., Wilkes-Barre, Pa. 517,651, ren. 8-26-69. Cl. 45.  
Onelda Ltd., Onelda, N.Y. 875,618-9, pub. 6-10-69. Cl. 28.  
Optonetics, Inc., Teterboro, N.J. 875,536, pub. 6-10-69. Cl. 21.  
Orrell's Food Products, Inc., San Francisco, Calif. 875,851. Cl. 46.  
Ortega, Emilio L., Province of Cadiz, Spain. 875,854. Cl. 47.  
Oster, John Mfg. Co., Milwaukee, Wis. 515,364, ren. 8-26-69. Cl. 23.  
Osto Pharmaceutical Co., Elizabeth, N.J. 875,512-13, pub. 6-10-69. Cl. 18.  
Oswald, Richard E., d.b.a. Reotemp Instrument Co., Van Nuys, Calif. 875,602, pub. 9-3-68. Cl. 26.  
Ottens, Henry, H., Mfg. Co., Inc., Philadelphia, Pa. 875,720, pub. 6-10-69. Cl. 46.  
Outdoors, Inc.: See—  
Outdoor Vacations, Inc.  
Outdoor Vacations, Inc., d.b.a. Outdoors, Inc., Columbia, Mo. 752,681, can. Cl. 38.  
Ovation Cosmetics, Inc., Chatsworth, Calif. 875,775, pub. 6-10-69. Cl. 51.



- Overman, AB, Tranas, Sweden. 875,628, pub. 6-10-69. Cl. 32.  
Oxford House: See—  
Okaman, George.  
PHP Institute, Inc., Kyoto-Shi, Japan. 875,659, pub. 6-10-69. Cl. 38.  
Pagratia, Peter S., Chicago, Ill. 752,455, can. Cl. 22.  
Parma Sausage Products, Inc., Pittsburgh, Pa. 875,721, pub. 6-10-69. Cl. 46.  
Pathe News, Inc., New York, N.Y. 752,665, can. Cl. 106.  
Peck & Peck, New York, N.Y. 517,786, ren. 8-26-69. Cl. 39.  
Peerless Pump Co., Los Angeles, Calif., to FMC Corp., San Jose, Calif. 258,321, ren. 8-26-69. Cl. 23.  
Pelican Harbor, Inc., Hialeah, Fla. 875,671-2, pub. 6-10-69. Cl. 39.  
Pelmo Park Perennial Gardens: See—  
Whitman, Charles B.  
Pfander Permutit Inc., Rochester, N.Y. 738,075. Am. 7(d). Multiple Class (Classes 2 and 6).  
Pbster Chemical Inc., Ridgefield, N.J. 875,440, pub. 6-10-69. Cl. 6.  
Phillips Petroleum Co., Bartlesville, Okla. 675,481, pub. 6-10-69. Cl. 12.  
Pictorial Productions, Inc., Mount Vernon, N.Y. 875,764, pub. 6-10-69. Cl. 50.  
Piel Bros. Inc.: See—  
Thommer, John F., Inc.  
Plain John & Co., Chicago, Ill. 752,277, can. Cl. 1.  
Plastic Products Co.: See—  
Curtis Products, Inc.  
Plasticrome Greetings, Inc., d.b.a. Marbury Art, Jamaica Plain, Mass. 875,667, pub. 6-10-69. Cl. 38.  
Plastiwall, Inc., Fort Wayne, Ind. 761,799. Am. 7(d). Cl. 12.  
Polaris Enterprises, Inc., Chicago, Ill. 875,413, pub. 6-10-69. Cl. 1.  
Pollak, Henry, Inc., New York, N.Y. 875,695, pub. 6-10-69. Cl. 42.  
Poly-Choke Co., Inc., The, East Hartford, Conn. 875,527, pub. 6-10-69. Multiple Class (Classes 21 and 36).  
Polychrome Corp., Yonkers, N.Y. 752,618, can. Cl. 50.  
Polylastex United, Inc., Union, N.J. 875,419, pub. 6-10-69. Cl. 1.  
Polyquip, Inc.: See—  
Borg-Warner Corp.  
Posner Laboratories, Inc., Corona, N.Y. 875,781, pub. 6-10-69. Cl. 51.  
Postal Press, Los Angeles, Calif. 875,810, pub. 6-10-69. Cl. 101.  
Power Application & Mfg. Co., Denver, Colo. 875,525, pub. 6-10-69. Multiple Class (Classes 2 and 23).  
Pratt & Lambert, Inc., Buffalo, N.Y. 80,196. Am. 7(d). Cl. 16.  
Pratt & Lambert, Inc., Buffalo, N.Y. 272,870. Am. 7(d). Multiple Class (Classes 12, 16, and 52).  
Price Co. Ltd., The, Quebec, Canada. 875,651, pub. 6-10-69. Cl. 37.  
Priddy, Chas. W. & Co., Inc., Norfolk, Va. 264,059, ren. 8-26-69. Cl. 10.  
Pride Publications, Philadelphia, Pa. 875,663, pub. 6-10-69. Cl. 38.  
Prime-O-Sash Corp., Philadelphia, Pa. 875,469, pub. 6-10-69. Cl. 12.  
Procter & Gamble Co., The, Cincinnati, Ohio. 510,540, ren. 8-26-69. Cl. 52.  
Procter & Gamble Co., The, Cincinnati, Ohio. 875,749, pub. 6-10-69. Cl. 46.  
Proctor-Silex Inc.: See—  
Lewyt Corp.  
Progressive Industries Corp., from Tru-Foto, Inc. Dayton, Ohio. 875,824-5, pub. 6-10-69. Cl. 106.  
Protex Products Co., Jersey City, N.J., to Protex Products Corp., Cincinnati, Ohio. 443,054, ren. 8-26-69. Cl. 39.  
Protex Products Corp.: See—  
Protex Products Co.  
Pun, John Y., d.b.a. Biological Electronics, El Cerrito, Calif. 875,524, pub. 6-10-69. Multiple Class (Classes 21 and 26).  
Putting Pal: See—  
Mulkern, Harlan J.  
Quinn Recording Co.: See—  
Quinn, William R.  
Quinn, William R., d.b.a. Quinn Recording Co., Houston, Tex. 442,844, ren. 8-26-69. Cl. 36.  
Rack Rite Distributors, Inc., Harrisburg, Pa. 875,773, pub. 6-10-69. Cl. 51.  
Radiator Specialty Co., Charlotte, N.C. 871,030. Am. 7(d). Cl. 52.  
Radio Llamada, Sociedad Anonima Comercial e Industrial, Buenos Aires, Argentina. 875,534, pub. 6-10-69. Cl. 21.  
Rea Leasing Corp., New York, N.Y. 875,822, pub. 6-10-69. Cl. 105.  
Realistic Co., The, Cincinnati, Ohio. 875,855. Cl. 51.  
Redlum Research Corp., d.b.a. Redlum Research Corp., Redlands, Calif. 752,630, can. Cl. 52.  
Reese Finer Foods, Inc., Chicago, Ill. 875,732, pub. 6-10-69. Cl. 46.  
Refined Syrups & Sugars, Inc.: See—  
Corn Products Co.  
Reliable Textile Co., Inc., New York, N.Y. 875,690, pub. 6-10-69. Cl. 42.  
Rembrandt Tobacco Corp., (Overseas), Zurich, Switzerland. 875,493, pub. 6-10-69. Cl. 17.  
Reotemp Instrument Co.: See—  
Oswald, Richard E.  
Resin Systems Inc., Woodside, N.Y. 875,467, pub. 6-10-69. Cl. 12.  
Richards Mfg. Co., Memphis, Tenn. 875,704, pub. 6-10-69. Cl. 44.  
Ries, Max H., Chicago, Ill. 752,692, can. Cl. 46.  
Riveto Mfg. Co., Orange, Mass. 875,648, pub. 6-10-69. Cl. 37.  
Robertshaw Controls Co., Richmond, Va. 875,613, pub. 6-10-69. Cl. 26.  
Roced Manufacturers Inc., Fayetteville, N.Y. 875,429, pub. 6-10-69. Cl. 2.  
Rochester Paper Co., Rochester, Mich. 509,566, ren. 8-26-69. Cl. 37.  
Rogers Imports Inc., New York, N.Y., to Rogers, Inc., Bridgeport, Conn. 510,169, ren. 8-26-69. Cl. 8.  
Rogers, Inc.: See—  
Rogers Imports Inc.  
Rohto Pharmaceutical Co., Ltd., Osaka, Japan. 875,498, pub. 6-10-69. Cl. 18.  
Rosenfelder, H. Alex.: See—  
Straser Candy Co., Inc.  
Royster Co., Norfolk, Va. 875,462, pub. 6-10-69. Cl. 10.  
Rudofker's, S., Sons, Inc., Philadelphia, Pa. 752,562-4, can. Cl. 39.  
Rueckheim Bros. & Eckstein, Chicago, Ill., to Borden, Inc., New York, N.Y. 72,937, ren. 8-26-69. Cl. 46.  
SCOA Industries Inc., Wilmington, Del., from Shoe Corp. of America, Columbus, Ohio. 875,676, pub. 6-10-69. Cl. 39.  
S & F Mfg. & Leasing Corp., Dallas, Tex. 752,346, can. Cl. 6.  
Saco Uniforms: See—  
Abrahams, S., & Co., Inc.  
St. Regis Tobacco Corp., Ltd., Zurich, Switzerland. 875,494, pub. 6-10-69. Cl. 17.  
Salada Foods Ltd., Don Mills, Ontario, Canada. 875,841. Cl. 48.  
Salvador Co., The, Kansas City, Mo. 875,593, pub. 6-10-69. Cl. 23.  
Samsonite Corp., Denver, Colo. 875,431, pub. 6-10-69. Cl. 3.  
Sanders Associates, Inc., Nashua, N.H. 875,529, pub. 6-10-69. Cl. 21.  
Sanford-Day Corp., Knoxville, Tenn. 752,412, can. Cl. 19.  
Savory, H. L. & Co. Ltd.: See—  
Savory, Harry L.  
Savory, Harry L. to H. L. Savory & Co., Ltd., London, England. 32,973, ren. 8-26-69. Cl. 17.  
Sazerac Co., Inc., New Orleans, La. 867,255, cor. Cl. 49.  
Schaper Mfg. Co., Inc., Minneapolis, Minn. 752,445, can. Cl. 22.  
Schoeneman, J., Inc., Baltimore, to J. Schoeneman, Inc., Owings Mills, Md. 258,034, ren. 8-26-69. Cl. 39.  
Schoeneman, J., Inc., Baltimore, to J. Schoeneman, Inc., Owings Mills, Md. 509,290, ren. 8-26-69. Cl. 39.  
Schoeneman, J., Inc., Baltimore, to J. Schoeneman, Inc., Owings Mills, Md. 511,198, ren. 8-26-69. Cl. 39.  
Schwartz, Sadie, & Mercantile National Bank of Miami Beach Co-Executors of the Estate of Sam Schwartz, d.b.a. Wolfe's, Miami Beach, Fla. 875,804, pub. 6-10-69. Cl. 100.  
Sealy, Inc., d.b.a. Sealy Mattress Co., Chicago, Ill. 765,885. Am. 7(d). Cl. 32.  
Sears, Roebuck & Co., Chicago, Ill. 514,110, ren. 8-26-69. Cl. 44.  
Seitz Corp., d.b.a. Warehouse Storage Systems Co., Perkasie, Pa. 875,829, pub. 6-10-69. Cl. 32.  
Semicon of California, Inc., Watsonville, Calif. 744,638, cor. Cl. 14.  
Sensenbrenner, A., Sons, Los Angeles, Calif., to Universal International Cigar Corp., New York, N.Y. 515,084, ren. 8-26-69. Cl. 17.  
Sensenbrenner, A., Sons, Los Angeles, Calif., to Universal International Cigar Corp., New York, N.Y. 515,095, ren. 8-26-69. Cl. 17.  
Shasta Beverages: See—  
Consolidated Foods Corp.  
Sheffield Industries, Inc., Miami, Fla. 875,684, pub. 6-10-69. Cl. 39.  
Sherman Car Wash Equipment Co., Palmyra, N.J. 875,578, pub. 6-10-69. Cl. 23.  
Sherwin-Williams Co., The, Cleveland, Ohio. 752,673, can. Cl. 16.  
Shield Mfg., Inc., Buffalo, N.Y. 875,559, pub. 6-10-69. Cl. 22.  
Shoe Corp. of America: See—  
SCOA Industries Inc.  
Shully's Industries Ltd., Toronto, Ontario, Canada. 752,357, can. Cl. 12.  
Sigri Elektrophot G.m.b.H., Leitingen, Near Augsburg, Germany. 875,537, pub. 6-10-69. Cl. 21.  
Simpson, Adele, Inc., New York, N.Y. 875,776, pub. 6-10-69. Cl. 51.  
Simpson, Adele, Inc., New York, N.Y. 875,788, pub. 6-10-69. Cl. 51.  
Sleepmaster Products Co., Inc., Newark, N.J. 517,569, ren. 8-26-69. Cl. 32.  
Sloan Valve Co., Chicago, Ill. 511,751, ren. 8-26-69. Cl. 13.  
Smith & Kanzler Co., Linden, N.J., to The Flintkote Co., White Plains, N.Y. 510,709, ren. 8-26-69. Cl. 12.  
Smithfield Packing Co., Inc., The, Smithfield, Va. 875,734, pub. 6-10-69. Cl. 46.  
Snella, Lyla H., d.b.a. Jal Chemicals & Fl-Bro Sponge Co., Burbank, Calif. 752,520, can. Cl. 29.  
Societa Prodotti Antibiotici, S.p.A., Milan, Italy. 752,402, can. Cl. 18.  
Societe Anonyme Delpire, Paris, France. 875,658, pub. 6-10-69. Cl. 38.  
Societe Anonyme M. Naef & Cie, Geneva, Switzerland, to Firmenich, Inc., New York, N.Y. 263,121, ren. 8-26-69. Cl. 51.  
Societe Anonyme Paul Vermot et Cie Fabrique d'Horlogerie Mondia, to Mondia S.A., La Chaux-de-Fonds, Switzerland. 513,838, ren. 8-26-69. Cl. 27.  
Societe des Lunetiers, Temkin & Cie, Paris (Seine), France. 875,601, pub. 10-15-68. Cl. 26.

- Societe Genevoise d'Instruments de Physique, Geneva, Switzerland. 442,838, ren. 8-26-69. Cl. 23.  
Societe Lyonnaise des Applications Catalytiques S.L.A.C., Caluire (Rhone), France. 875,641, pub. 6-10-69. Cl. 34.  
Sola Basic Industries, Inc., Milwaukee, Wis., from Dielectric Products Engineering Co., Inc. Littleton, Mass. 875,636, pub. 9-3-68. Cl. 34.  
Songrand Corp., The, Kansas City, Mo. 875,705, pub. 6-10-69. Cl. 44.  
South Florida Growers Association, Inc., Goulds, Fla. 875,733, pub. 6-10-69. Cl. 46.  
Southern Entomological Co., to Wyco, Inc., West Palm Beach, Fla. 516,968, ren. 8-26-69. Cl. 6.  
Southern Railway Co., Richard, Va. 875,661, pub. 6-10-69. Cl. 38.  
Spa International, Inc., Houston, Tex. 875,828, pub. 6-10-69. Cl. 107.  
Spalding, A. G. & Bros., Inc., Chicopee, Mass. 510,318, ren. 8-26-69. Cl. 22.  
Spalding, A. G. & Bros., Inc., Chicopee, Mass. 510,326, ren. 8-26-69. Cl. 22.  
Spartan Plastics, Inc., Holt, Mich. 875,761, pub. 6-10-69. Cl. 50.  
Spring Bloc Corp. of America, New York, N.Y. 875,548, pub. 6-10-69. Cl. 22.  
Springfield Grocer Co., Springfield, Mo. 511,288, ren. 8-26-69. Cl. 37.  
Springfield Grocer Co., Springfield, Mo. 511,618, ren. 8-26-69. Cl. 46.  
Sponge-Cushlon, Inc., Morris, Ill. 875,697, pub. 6-10-69. Cl. 42.  
Squibb, E. R. & Sons, Inc., New York, N.Y. 875,510, pub. 6-10-69. Cl. 18.  
Standard Industrial Minerals, Inc., Bishop, Calif. 875,414, pub. 6-10-69. Cl. 1.  
Standard Mfg. Co., Inc., Chicago, Ill. 875,486, pub. 6-10-69. Cl. 13.  
Standard Oil Co., Flemington, N.J. 875,445, pub. 6-10-69. Cl. 6.  
Standard Oil Co., Flemington, N.J. 875,502, pub. 6-10-69. Cl. 18.  
Standard Playing Card Co., Chicago, Ill., to The United States Playing Card Co., d.b.a. Congress Playing Cards, Cincinnati, Ohio. 260,837, ren. 8-26-69. Cl. 22.  
Stat Products: See—  
Volinn, George.  
Stebro Automotive Mfg. Ltd., Pointe Claire, Quebec, Canada. 875,517, pub. 6-10-69. Multiple Class (Classes 19 and 23).  
Sterno Industries, Inc., Harrison, N.J. 875,438, pub. 6-10-69. Cl. 5.  
Stevens, J. P. & Co., Inc., New York, N.Y. 875,696, pub. 6-10-69. Cl. 42.  
Stewart Film Screen Corp., Torrance, Calif. 875,607, pub. 6-10-69. Cl. 26.  
Stop-Motion Devices Corp., Plainview, N.Y. 875,592, pub. 6-10-69. Cl. 23.  
Straser Candy Co., Inc., from H. Alex. Rosenfelder, d.b.a. Betina Confectionery Co., Denver, Colo. 752,580, can. Cl. 46.  
Stress-Plus, Inc., St. Paul, Minn. 875,468, pub. 6-10-69. Cl. 12.  
Struhl, Morris, Inc., New York, N.Y. 875,450, pub. 6-10-69. Multiple Class (Classes 8 and 30).  
Suburban Plastics, Inc., North Wilbraham, Mass. 875,424, pub. 6-10-69. Cl. 2.  
Sullcraft Mfg. Co., Inc., New York, N.Y. 875,678, pub. 6-10-69. Cl. 39.  
Sunderland's Inc., Seattle, Wash. 875,617, pub. 6-10-69. Cl. 28.  
Sunroc Corp., Chicago, Ill. 875,488, pub. 6-10-69. Cl. 13.  
Super Mold Corp., Lodi, Calif. 875,591, pub. 6-10-69. Cl. 23.  
Sweetheart Bakers Ltd., Brooklyn, N.Y. 875,849. Cl. 46.  
Swimquip, Inc., El Monte, Calif. 752,355, can. Cl. 12.  
Swish Products Ltd., Tamworth, Stafford, England. 875,484, pub. 6-10-69. Cl. 13.  
Syracuse Pharmacal Co., Inc., Syracuse, N.Y. 752,392, can. Cl. 18.  
T. G. & Y. Stores Co., Oklahoma City, Okla. 875,460, pub. 6-10-69. Cl. 10.  
TNT Communications, Inc., New York, N.Y. 875,821, pub. 6-10-69. Multiple Class (Classes 104 and 107).  
Takara Shuzo Co., Ltd., Shimogyoku, Kyoto, Japan. 875,756, pub. 6-10-69. Cl. 48.  
Tandy Corp., d.b.a. Tex Tan Western Leather Co., Fort Worth, Tex. 875,432-3, pub. 6-10-69. Cl. 3.  
Teich, Curt, & Co., Chicago, Ill. 517,333, ren. 8-26-69. Cl. 38.  
Teleflora Delivery Service, Inc., El Segundo, Calif. 875,799, pub. 6-27-67. Cl. 100.  
Tenderbest Corp., Cleveland, Ohio. 875,710, pub. 6-10-69. Cl. 46.  
Tex Tan Western Leather Co.: See—  
Tandy Corp.  
Thermotech Industries, Inc., Minneapolis, Minn. 875,577, pub. 6-10-69. Multiple Class (Classes 23 and 106).  
Thomas & Betts Co., The: See—  
Thomas & Betts Corp.  
Thomas & Betts Corp., from The Thomas & Betts Co., Elizabeth, N.J. 875,834. Cl. 21.  
Thomas Organ Co., Sepulveda, Calif. 875,642, pub. 6-10-69. Cl. 36.  
Thomas & White, Inc., West Orange, N.J. 752,648, can. Cl. 101.  
Thornfield, Alec, d.b.a. Furmoto Chemical Co., London, England. 875,435, pub. 6-10-69. Cl. 4.  
Tomlinson Industries, Inc., Cleveland, Ohio. 510,294, ren. 8-26-69. Cl. 52.  
Topas Hosiery Mills, Inc., New York, N.Y. 875,682, pub. 6-10-69. Cl. 39.  
Topp Import & Export, Inc., Miami, Fla. 875,535, pub. 6-10-69. Multiple Class (Classes 21, 31, 34, and 36).  
Topp's Chewing Gum, Inc., Brooklyn, N.Y. 752,466, can. Cl. 22.  
Torque Controls, Inc., Union City, N.J. 752,510, can. Cl. 27.  
Tourneau, Inc., New York, N.Y. 517,737, ren. 8-26-69. Cl. 27.  
Towle Maple Syrup Co., The, to General Foods Corp., White Plains, N.Y. 74,056. Am. 7(d). Cl. 46.  
Towleaver, Inc., Los Angeles, Calif. 875,487, pub. 6-10-69. Multiple Class (Classes 13 and 37).  
Tri State Industries, Inc., d.b.a. Tri State Supply Co., Dubuque, Iowa. 752,631, can. Cl. 52.  
Tri State Supply Co.: See—  
Tri State Industries, Inc.  
Tri-Valley Growers, San Francisco, Calif. 875,743, pub. 6-10-69. Cl. 49.  
Trommer, John F., Inc., to Piel Bros. Inc., Brooklyn, N.Y. 511,338, ren. 8-26-69. Cl. 48.  
Tru-Foto, Inc.: See—  
Progressive Industries Corp.  
Truth Inc., Owatonna, Minn. 875,470, pub. 6-10-69. Multiple Class (Classes 12 and 13).  
Turco Paint & Varnish Co., Philadelphia, Pa. 875,490, pub. 6-10-69. Cl. 16.  
Turtle Wax, Inc., Chicago, Ill. 875,436, pub. 6-10-69. Cl. 4.  
Twapak Ltd., Lachine, Quebec, Canada. 870,816, cor. Cl. 22.  
USV Pharmaceutical Corp., New York, N.Y. 875,501, pub. 9-17-68. Cl. 18.  
Ullano, J. & Co., Inc., Brooklyn, N.Y. 875,605, pub. 6-10-69. Cl. 28.  
Uneeda Doll Co., Inc., Brooklyn, N.Y. 875,554, pub. 6-10-69. Cl. 22.  
Unifroyal, Inc., New York, N.Y. 875,420, pub. 6-10-69. Cl. 1.  
United Air Filter Co., Charlotte, N.C. 872,135, cor. Cl. 31.  
United Chemical Co., Dallas, Tex. 875,784, pub. 6-10-69. Cl. 51.  
United Citrus Growers: See—  
Damus, Shibil S.  
United Fruit Co., Boston, Mass. 875,423, pub. 6-10-69. Cl. 2.  
United Vintners, Inc., d.b.a. Italian Swiss Colony, San Francisco, Calif. 875,853. Cl. 47.  
U.S. Balrd Corp.: See—  
Associated Patentees, Inc.  
United States Borax & Chemical Corp., Los Angeles, from Columbia Wax Co., Glendale, Calif. 752,342, can. Cl. 6.  
United States National Bank of Oregon, Portland, Ore. 875,819, pub. 6-10-69. Cl. 102.  
United States Playing Card Co., The: See—  
Standard Playing Card Co.  
Universal Cigar Corp.: See—  
Odence, Charles, Co.  
Universal International Cigar Corp.: See—  
Sensenbrenner, A., Sons.  
Universal Oil Products Co., Des Plaines, Ill., from Bostrom-Amalgam Corp., Menomonee Falls, Wis. 875,421, pub. 6-10-69. Cl. 1.  
Universal Oil Products Co., Des Plaines, Ill. 875,444, pub. 6-10-69. Cl. 6.  
Universal Systems Institute, Inc., New York, N.Y. 875,831, pub. 6-10-69. Cl. 107.  
Utica Tool Co., Inc., Orangeburg, S.C. 875,596, pub. 6-10-69. Cl. 23.  
Valentine-Seaver Co., Chicago, to Koehler Mfg. Co., Naperville, Ill. 261,595, ren. 8-26-69. Cl. 32.  
Van Heugten Western Hemisphere A.G., Lucerne, Switzerland. 875,520, pub. 6-10-69. Cl. 20.  
Van Raalte Co., Inc., New York, N.Y. 508,155, ren. 8-26-69. Cl. 39.  
Vanguard Studios, Inc., Chatsworth, Calif. 875,760, pub. 6-10-69. Cl. 50.  
Vaquero Enterprises, Tulsa, Okla. 875,803, pub. 6-10-69. Cl. 100.  
Vaughan Machinery Co., The, Cuyahoga Falls, Ohio. 514,684, ren. 8-26-69. Cl. 23.  
Vernon Devices, Inc., Mount Vernon, N.Y. 875,570, pub. 6-10-69. Cl. 23.  
Vesely Co., Lapeer, Mich. 875,542, pub. 6-10-69. Cl. 21.  
Visual Control Systems, Inc., Buffalo, N.Y. 875,611, pub. 6-10-69. Cl. 26.  
Vitaminerals, Inc., Glendale, Calif. 875,514, pub. 6-10-69. Cl. 18.  
Volinn, George, d.b.a. Stat Products, Quincy, Mass. 875,427, pub. 6-10-69. Cl. 2.  
Votre Ami Cosmetic Co.: See—  
Goldberg, Lillian.  
Wagner, Delmer W., d.b.a. Wagner Electronic Products, Terrebonne, Ore. 875,614, pub. 11-12-68. Cl. 26.  
Wagner Electronic Products: See—  
Wagner, Delmer W.  
Warehouse Storage Systems Co.: See—  
Seitz Corp.  
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 752,404, can. Cl. 18.  
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 875,499, pub. 6-10-69. Cl. 18.  
Warren Molded Plastics, Inc., Cortland, Ohio. 752,619, can. Cl. 50.  
Warren Tool Corp., Warren, Ohio. 875,566, pub. 6-10-69. Cl. 23.  
Water Gremlin Co., White Bear Lake, Minn. 875,556, pub. 6-10-69. Cl. 22.  
West Town Archery: See—  
West Town Archery, Inc.  
West Town Archery, Inc., from West Town Archery, Wauwatosa, Wis. 875,551, pub. 6-10-69. Cl. 22.



- Western Imports Inc., St. Louis, Mo. 875,531, pub. 6-10-69.  
Multiple Class (Classes 21 and 36).  
Western Insulfoam: *See*—  
Western Insulfoam Corp.  
Western Insulfoam Corp., from Marine Commuter Corp., d.b.a.  
Western Insulfoam, Seattle, Wash. 875,472, pub. 6-10-69.  
Cl. 12.  
Whink Products Co., Eldora, Iowa. 875,442, pub. 6-10-69.  
Cl. 6.  
White House Creamery Co., Burlington, Iowa. 752,598, canc.  
Cl. 46.  
White Machine Co., Kenilworth, N.J. 875,585, pub. 6-10-69.  
Cl. 23.  
Whitman, Charles B., d.b.a. Pelmo Park Perennial Gardens,  
Weston, Ontario, Canada. 752,307, canc. Cl. 2.  
Whitman Publishing Co., Racine, Wis. 875,437, pub. 6-10-69.  
Cl. 5.  
Wilkinson & Son, Inc., Somerville, N.J. 875,475, pub. 6-10-  
69. Cl. 12.  
Wilson Sporting Goods Co., River Grove, Ill. 875,555, pub.  
6-10-69. Cl. 22.  
Winter Brothers Co., assor. to National Twist Drill & Tool Co.,  
Rochester, Mich., and Wrentham, Mass., to National Twist  
Drill & Tool Co., Rochester, Mich. 512,810, ren. 8-26-69.  
Cl. 23.
- Wiss, J., & Sons Co., Newark, N.J. 752,478, canc. Cl. 23.  
Wolfie's: *See*—  
Schwartz, Sadie.  
Wood Flong Corp., Hoosick Falls, N.Y. 875,759, pub. 6-10-  
69. Cl. 50.  
Wood, John, Co.: *See*—  
Bennett Pumps Corp.  
Wyandotte Chemicals Corp., Wyandotte, Mich. 875,793, pub.  
6-10-69. Cl. 52.  
Wyco, Inc.: *See*—  
Southern Entomological Co.  
Yankee Chemical Inc., Santa Ana, Calif. 752,637, canc. Cl.  
52.  
Yardley of London, Inc., Paterson, N.J. 752,698, canc. Cl. 51.  
Yardley of London, Inc., Totowa, N.J. 875,769, pub. 6-10-  
69. Cl. 51.  
Yardley of London, Inc., Totowa, N.J. 875,856, Cl. 51.  
Yerlan, Cameron J., d.b.a. Liniccept Film Libraries, Ann Arbor,  
Mich. 875,657, pub. 6-10-69. Cl. 38.  
Yours . . . By Request, Inc., Waverly, Fla. 752,605, canc.  
Cl. 46.  
Zenith Radio Corp., Chicago, Ill. 875,541, pub. 6-10-69. Cl.  
21.



OFFICIAL  
GAZETTE  
UNITED STATES  
PATENT OFFICE  
VOL. 865

AUGUST 1969

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